

DISCUSSION PAPER

POSSIBLE ADOPTION WITHIN THE PUBLIC HEALTH SECTOR OF THE GLOBALLY HARMONISED SYSTEM FOR THE CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) IN REGARD TO DOMESTIC AND CONSUMER CHEMICALS (INCLUDING PESTICIDES)

*An Analysis of the Possible Implications Associated with the Adoption of
GHS Classification Criteria and Labelling Elements within the Framework
for the Uniform Scheduling of Drugs and Poisons (SUSDP)*

Paper Prepared by the Office of Chemical Safety
and Environmental Health, Department of Health and Ageing

GLOSSARY

ASCC	Australian Safety and Compensation Council
APVMA	Australian Pesticides and Veterinary Medicines Authority
BCC	Business Cost Calculator
FAI	First Aid Instructions
FAISD	First Aid Instructions and Safety Directions
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
NDPSC	National Drugs and Poisons Scheduling Committee
NCCTG	National Coordinating Committee on Therapeutic Goods
OBPR	Office of the Best Practice Regulator
OCS	Office of Chemical Safety
OECD	Organisation for Economic Co-operation and Development
PPE	Personal Protection Equipment
RIS	Regulatory Impact Statement
SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons

DISCUSSION PAPER - TABLE OF CONTENTS

GLOSSARY	2
EXECUTIVE SUMMARY	4
1. INTRODUCTION.....	7
1.1 BACKGROUND	7
1.2 PURPOSE AND SCOPE OF THE GHS	7
1.3 APPLICATION OF THE GHS	9
1.4 AUSTRALIA, THE GHS AND PUBLIC HEALTH PROTECTION STANDARDS.....	9
2.0 IDENTIFICATION OF THE ISSUE	10
3.0 OBJECTIVE OF THE GOVERNMENT ACTION	12
4.0 AVAILABLE OPTIONS TO ACHIEVE THE OBJECTIVE (S).....	12
5.0 ANALYSIS OF AVAILABLE OPTIONS.....	13
6.0 BUSINESS COMPLIANCE COST CALCULATIONS	23
7.0 CONSULTATION: STAKEHOLDER VIEWS	25
8.0 IMPLEMENTATION AND REVIEW.....	26
ATTACHMENT 1 SITUATIONAL ANALYSIS.....	27

EXECUTIVE SUMMARY

This discussion paper explores the options and possible implications that might arise from the adoption of the GHS in respect to domestic and consumer chemicals (including pesticides) within the Australian regulatory framework for the uniform scheduling of drugs and poisons. The discussion paper also provides a comparative analysis of the health hazard criteria used in the current system of poisons scheduling for domestic and consumer chemicals in Australia with those proposed in the Globally Harmonised System of Classification and Labelling of Chemicals (GHS). The paper outlines the options for possibly adopting the GHS, the likely costs and benefits of those options and a technical assessment of the similarities and differences between current poisons scheduling criteria and GHS criteria which may have a bearing on the scope of any future proposal to implement the GHS.

The considerations in this document recognise the fact that the toxicological assessment of chemicals for classification purposes is undertaken at a Commonwealth level while scheduling (based on classification proposals) and elements of chemical labelling such as signal words, pictograms, hazard and precautionary statements as defined by the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) are implemented under State and Territory legislation.

The main purpose of the GHS is to introduce an internationally harmonised approach to classification and labelling of chemical substances which will provide the foundation for the development of national programs to ensure the safe management of chemicals during their entire life cycle. The GHS is intended to cover hazardous chemicals, either in their pure form, as dilute solutions or in mixtures. Human and veterinary pharmaceuticals, food additives, pesticide residues in food and cosmetics are not covered by the GHS in terms of labelling at the point of intake/administration. However, the GHS may apply to these chemicals in the manufacturing environment where workplace health and safety and/or public health issues may be of prime importance. The need to adopt a single classification system within the scheduling framework and desirably across all sectors may, however, have consequences for the classification and scheduling of classes eg veterinary medicines which are to be exempted from the GHS harmonisation process.

The GHS specifies criteria for classifying chemicals according to their physical, health and environmental hazards and for harmonised hazard communication. Adoption of the GHS system places certain obligations on government authorities in terms of the classification criteria specified by the GHS. However, competent authorities are allowed some degree of flexibility in the adoption of the various labelling elements.

In examining the appropriateness of adopting the GHS in relation to domestic use and consumer chemicals (including pesticides), a number of possible options for implementation of the GHS have been previously considered by the National Drugs and Poisons Schedule Committee (NDPSC) in an effort to promote a harmonised approach between States and Territories in regard to the GHS. The NDPSC is mindful that there may be a range of options for achieving integration of the GHS within the scheduling system. However, having regard to the extensive NDPSC discussion to date, the operating environment for the scheduling of domestic and consumer chemicals and the possible impact changes in scheduling practices and procedures may have on existing legislation and other elements of the wider regulatory system, including the implications for users of chemicals both professional and the general

public, the NDPSC has identified four options for further discussion. Consideration of other options is not precluded. The four options now identified for further consideration include:

1. Maintaining the status quo ie rejecting the adoption of the GHS classification criteria and labelling elements.
2. Adoption of GHS classification criteria, adoption of the GHS hazard and precautionary statements, rejection of the GHS signal words and pictograms, preserving existing SUSDP Schedules 5, 6 and 7 with GHS classification criteria being appropriately aligned with these existing schedules.
3. Adoption of GHS classification criteria (with significant change to schedules 5, 6 and 7 to align with GHS criteria), acceptance of the GHS hazard and precautionary statements, rejection of the GHS signal words and pictograms.
4. Full adoption of the GHS through adoption of the GHS classification criteria and GHS labelling elements with a consequential overhaul of the current poisons scheduling system to align with GHS categories.

Of these, option 2 is considered by the NDPSC to be the most pragmatic approach for Australia, considering the overall need to maintain existing standards in protecting public health, as well as balancing the likely risks, benefits and costs involved in implementing the GHS.

Based on the present analysis, adoption of the GHS classification system into the poisons scheduling framework provides for an improved classification system representing best practice approaches. Only slight changes to the current poisons scheduling criteria are required. Overall, there would be minimal impact to existing regulation and industry arising from the need to amend product labels to comply with a GHS-aligned classification (scheduling) system. There would also be minimal, if any, impact on the States and Territories as no change to legislation would be required and little or no necessity for retraining of chemical users in label interpretation.

Certain GHS labelling elements are identified as not adding value or in fact, potentially weakening the current level of protection achieved through existing SUSDP requirements. As such, GHS signal words and pictograms, which have not been evaluated for user comprehensibility within the Australian community would not be recommended for adoption at this time. However, hazard and precautionary statements are generally in alignment with existing statements and offer opportunities to further enhance and harmonise label text. Not adopting GHS signal words and pictograms would, however, prevent Australia from being considered 'fully harmonised' with the GHS in regard to domestic and consumer chemicals labelling.

The favoured approach offered by way of adoption of option 2 into the SUSDP is evaluated as maintaining existing standards of public health protection, having minimal impact on existing scheduling classifications and product labelling (with consequent implications for industry) and avoiding the need for amendment to State/Territory legislation and the training of chemical users, including the broad public, in the interpretation of new and unfamiliar label elements. The lack of Australian data on user comprehension and acceptance of GHS pictograms is of particular concern.

It is stressed that risk based labelling would be retained and in relation to the responsibilities of the NDPSC would continue to be guided by legislative provisions outlined in S52E of the *Therapeutic Goods Act, 1989*, which include:

- (a) the toxicity and safety of a substance;
- (b) the risks and benefits associated with the use of a substance;
- (c) the potential hazards associated with the use of a substance;
- (d) the extent and patterns of use of a substance;
- (e) the dosage and formulation of a substance;
- (f) the need for access to a substance, taking into account its toxicity compared with other substances available for a similar purpose;
- (g) the potential for abuse of a substance;
- (h) the purposes for which a substance is to be used;
- (i) any other matters that the Committee considers necessary to protect public health, including the risks (whether imminent or long-term) of death, illness or injury resulting from its use;

The labelling, packaging and presentation of a substance may also be taken into account.

The discussion paper is accompanied by a situational analysis (Attachment 1) which compares GHS and NDPSC classification and labelling criteria and explores the impact of adopting the GHS.

Background information on the NDPSC can be found at <http://www.tga.gov.au/ndpsc/index.htm>

Comments on this Discussion Paper should be forwarded to:

Email:

greg.hooper@health.gov.au

By post:

The Director
Office of Chemical Safety and Environmental Health
Department of Health and Ageing
GPO Box 9848
CANBERRA ACT 2601

Street address (for deliveries):

The Director
Office of Chemical Safety and Environmental Health,
Level 1, Canberra House
40 Marcus Clarke Street
CANBERRA ACT 2601
AUSTRALIA

The closing date for the receipt of comments is Friday, 15 May, 2009.

1. INTRODUCTION

1.1 Background

The Globally Harmonised System of Classification and Labelling of Chemicals (GHS) is an international effort to achieve harmonisation of chemical hazard classification and labelling by way of label communication elements associated with hazard identification and management. The work was initially coordinated and managed under the auspices of the Inter-organisational Program for the Sound Management of Chemicals (IOMC) Coordinating Group for the Harmonisation of Chemical Classification Systems (CG/HCCS). On completion in 2001, the work was transmitted to the new United Nations Economic and Social Council's Sub-Committee of Experts on the Globally Harmonised System of Classification (UNSCEGHS). In September 2002, the World Summit on Sustainable Development encouraged countries to implement the new GHS as soon as possible with a view to having the system fully operational by 2008. No country has yet to fully adopt the GHS.

The Office of Chemical Safety and Environmental Health (OCSEH) has prepared several internal discussion papers and reports for the NDPSC detailing the progress of GHS implementation in Australia. These documents canvassed possible approaches available for adoption and implementation of GHS in Australia. Recently, the OCSEH presented an interim report to the Committee with a preliminary analysis comparing the health hazard criteria of NDPSC and GHS for chemicals classification.

This report builds on that previous advice to the NDPSC and analyses options for the most practical approach for adoption of the GHS in Australia for domestic and consumer chemicals (including pesticides) within the Commonwealth/State/Territory framework for the protection of public health. This paper also includes a situational analysis (Attachment 1) with proposals for refinement of existing NDPSC chemicals classification criteria in line with those of the GHS. Furthermore, significant changes in labelling through alignment of current labelling with GHS hazard and precautionary statements are also flagged for possible adoption. GHS signal words and pictograms are not proposed for adoption. The proposals put forward in this document would strengthen, modernise and most importantly, harmonise the NDPSC's chemicals classification criteria with what is now regarded as 'worlds best practice'.

1.2 Purpose and Scope of the GHS

At present, the national systems used to inform workers and consumers about physical, health and/or environmental hazards associated with the use of chemicals vary between countries, and in some cases, a range of different systems are used in different sectors within a single country, including Australia. In some countries chemicals classification and labelling systems are lacking, or at best, rudimentary. These differences can create barriers for product manufacturers engaged in international trade and can cause confusion and potential risks to people because of inconsistent labelling. To address these problems, governments and stakeholders have worked together to develop a harmonized international classification and labelling system: the GHS.

In the context of the extensive global trade in chemicals, the main purpose of the GHS is to introduce an internationally harmonised approach to a single agreed classification and

labelling system, which would provide the foundation for the development of national programs to ensure the safe use, transport, and disposal of commodity chemicals primarily targeted to improving workplace safety. Improvement in the management of chemicals is expected to lead to safer conditions for the global population and the environment. The promotion of greater consistency in national requirements for hazard classification and communication would facilitate international trade in chemical products.

The GHS is intended to cover all hazardous chemicals, either in their pure form, as dilute solutions or in mixtures. Human and veterinary pharmaceuticals, food additives, pesticide residues in food and cosmetics are not covered by the GHS in terms of labelling at the point of intake/administration. However, as these chemicals also undergo hazard classification as part of a risk assessment for safe use, certain opportunities exist for partial application of GHS elements to these sectors. The need to adopt across all sectors a single classification system within the current poisons scheduling framework is, however, likely to have consequences for the classification and scheduling of 'exempted' classes eg veterinary pharmaceuticals.

The GHS includes harmonised criteria for classifying chemicals according to their health, environmental and physical hazards and for harmonised hazard communication. The GHS end-points are:

Physical Hazards

Explosives
Flammable gases
Flammable aerosols
Oxidizing gases
Gases under pressure
Flammable liquids
Flammable solids
Self-reactive substances
Pyrophoric liquids
Pyrophoric solids
Self-heating substances
Substances which, in contact with water, emit flammable gases
Oxidizing liquids
Oxidizing solids
Organic peroxides
Corrosive to metals

Health Hazards

Acute toxicity
Skin corrosion/irritation
Serious eye damage/eye irritation
Respiratory or skin sensitisation
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
Systemic toxicity-single dose
Systemic toxicity-repeated dose

Environmental Hazards

Aquatic toxicity

The mode of application of the hazard communication components of the GHS may vary by product category or stage in the life cycle, ie production, storage, transport, workplace use, consumer use, and presence in the environment. The GHS is not intended to harmonise risk assessment procedures or risk management decisions.

When implemented, it is expected that, at the global level, the GHS will:

- enhance the protection of human health and the environment by providing an internationally comprehensible system for hazard communication
- provide a recognized framework for those countries without an existing system

- reduce the need for testing and evaluation of chemicals, and
- facilitate international trade in chemicals whose hazards have been properly assessed and identified on an international basis.

It should be noted however, that full international harmonisation with the GHS will only be achieved if every country adopts all elements of the GHS without change. This is unlikely at the outset, but should be the goal over time.

The full details of the GHS, including its historical background, GHS implementation activities, reports and papers associated with the deliberations of the UN Sub-Committee of Experts on the GHS and the GHS classification criteria can be found at http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html

1.3 Application of the GHS

The goal of the GHS is to identify the intrinsic hazards of chemicals and mixtures and to convey information in an internationally consistent manner about these hazards to the user. Physical, health and environmental hazards are included in the process of classification. A general principle of the GHS is that the test data already generated for the classification of chemicals under existing schemes should be accepted when classifying these chemicals under the harmonised system, thereby avoiding duplicative testing and unnecessary use of animals.

In many cases the classification of a chemical in a particular GHS category may be easily determined by comparison of test results with the GHS criteria (eg. acute toxicity). In some cases classification is based on the total weight of evidence which requires an assessment of all available information, including in human populations (eg. carcinogenicity). The GHS also prescribes a process for the classification of mixtures in the absence of toxicity data on the actual formulation.

Based on the nature and severity of the particular hazard, and the applicable GHS criteria, a chemical is placed in a GHS category for the end-point in question. Each category for each endpoint requires specified label elements to communicate the identified hazard. The label elements include signal words, pictograms, hazard and precautionary statements.

Where a chemical presents more than one hazard, GHS criteria stipulate that a more stringent requirement for a signal word and a pictogram should take precedence on the label. In this case all relevant hazard statements are required to be specified.

1.4 Australia, the GHS and public health protection standards

Australia has supported the GHS in principle since the initial international decision to pursue a harmonised classification and labelling system was taken in 1992. However, the underlying caveat has been that adoption of the GHS should not diminish the level of public health protection now afforded through the current classification (scheduling) and labelling requirements.

It has to be recognised that the scheduling and labelling of chemicals is the responsibility of the States and Territories. In that process, the NDPSC provides a forum to coordinate

scheduling and related issues. However, the Department of Health and Ageing, through the Office of Chemical Safety and Environmental Health, and on behalf of the NDPSC undertakes the toxicological assessment of chemicals to assist the NDPSC in its classification of poisons. The labelling elements, especially in regard to signal words and pictograms are vested in State/Territory legislation. Achieving satisfactory GHS outcomes requires acceptance of GHS classification criteria and agreement to changes in labelling of domestic and consumer poisons by the States/Territories. Harmonisation across Australia is paramount.

2.0 IDENTIFICATION OF THE ISSUE

2.1 Policy background

While there has been no formal whole-of-government commitment to implementation of the GHS in Australia across all sectors, there has been support for the GHS at the individual sector level ie workplace, agriculture, transport and consumer, The Banks Regulatory Taskforce Report into reducing regulatory burden on business (Rethinking Regulation, June 2006) provided further status to the GHS (specifically relating to labelling of chemicals) and recommended that deviation from internationally agreed processes of chemicals management should be justified on a cost-benefit basis. However, a decision on implementing the GHS in the public health sector remains a decision for the Australian Health Ministers Council through its policy committee, the National Coordinating Committee on Therapeutic Goods (NCCTG).

The Banks Taskforce also recommended that an independent public review of regulation in the chemicals and plastics sector be conducted. In response to this recommendation, adoption of the GHS was one of the issues recently addressed in the report of the Productivity Commission's Review of Chemicals and Plastics Regulation. While noting the benefits offered by the GHS, the report also noted that Australia's implementation of the GHS should be delayed until it can be demonstrated that the system would deliver a net benefit. In response to the recommendations of the Productivity Commission, the Council of Australian Governments (COAG) has subsequently agreed that implementation of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) in the workplace chemicals sector, as part of the review of the national standards and codes for workplace hazardous chemicals as well as in other sectors, should not occur unless there is a demonstrated net benefit to the community and not in advance of Australia's major trading partners.

While many countries identified 2008 as being the date for the introduction of the GHS, no country has yet fully implemented GHS, particularly across all sectors. The EU has set a transition timeframe of 2010 for the adoption of the GHS for chemical substances and 2015 for mixtures. However, since January 2009, chemicals can legally be classified and labelled according to the GHS. New Zealand has adopted GHS classification guidelines but has not yet mandated GHS labelling elements. New Zealand will continue to accept labels from other countries, including Australia, Canada, the EU and the USA until December 2010. The USA has not indicated a formal position on the possible adoption of the GHS.

A factor that might extend the time to adopt the GHS in individual countries is the opportunity for countries to take up the 'options' within the GHS framework to facilitate transition to GHS arrangements. These options, include the building block approach, competent authority options, and cut-offs for mixture hazard communication. These

“variables” contribute to the possibility that harmonised and consistent adoption of the GHS in all countries may be unlikely. This reinforces the view of the Productivity Commission which has since been endorsed by the Council of Australian Governments (COAG) that Australia should not move too far in advance of the pace of adoption in overseas countries so as to maximise trade benefits.

2.2 Definition of the issue

The safe use, storage and transport of chemicals require proper communication of their hazardous properties. In this regard, the GHS is an increasingly accepted international approach to defining chemical hazards, classifying chemicals based on the best available data, and communicating hazard information on labels and safety data sheets. It has been developed after nearly a decade of international negotiations and is based on harmonizing the approaches taken in the major existing classification systems used throughout the world.

The situational analysis accompanying this discussion paper compares more closely, the differences between the health hazard criteria used by the NDPSC for chemicals classification purposes and those included in the GHS and also differences in labelling elements (signal words, hazard and precautionary statements and pictograms). The existing NDPSC criteria provide a robust and sound platform for chemicals classification and labelling in accordance with existing poisons schedules. However, the possible implementation of the GHS with associated refinements in health hazard criteria developed at the international level requires the current system to be critically reviewed and compared to GHS criteria to gauge the level of continued alignment (or disruption) with current scheduling outcomes, the required high level of public health protection and the potential impact on community safety as well as to industry should existing classification and labelling outcomes need to be changed under a GHS regime.

It must be stressed, however, that there is no significant deficiencies in the existing chemicals classification system of the SUSDP. The issue being addressed in this paper is about introducing positive enhancements and some new elements of chemical regulation to the current framework with the aim of improving public health protection whilst achieving international harmonisation where possible. In particular, adoption of the GHS classification and labelling elements would replace the limited and possibly subjective criteria with criteria considered more objective in nature thereby enhancing the NDPSC classification and labelling criteria. A significant outcome is likely to be greater consistency and transparency in decision making.

Australia has made contributions and commitments to the GHS implementation process as well as to other international chemicals management programs. Australia has also contributed significantly to the development of the GHS and, as part of a global economy must ensure that its chemicals management framework reflects what is judged to be “best international practice”. Adoption of the GHS may impact on stakeholders in ways that might be judged to be beneficial, yet also possibly disruptive, costly and without producing positive benefits. Non adoption of the GHS would be seen as inconsistent with Australia’s national and international efforts on chemicals with possible ramifications for industry, particularly in respect to labelling of chemicals moving in international trade.

3.0 OBJECTIVE OF THE GOVERNMENT ACTION

In respect to chemicals classification and labelling, the objective of government action should be to ensure that where criteria for chemicals classification and labelling are applied, they are applied efficiently and consistently and that the form, scale and costs of such regulation are appropriate/proportionate for the degree of risks posed and stakeholder demands/needs, thereby achieving an improvement in clarity, consistency and economic efficiency within the process of chemicals regulation for the benefit of the community as a whole.

Generally, the objective of government action in relation to the adoption of the GHS could be summarised as follows:

- Creating and maintaining a consistent and transparent process for domestic and consumer chemicals classification and labelling thereby mitigating possible human health risks associated with chemical use.
- Harmonising the domestic and consumer chemicals classification approach of the OCSEH/NDPSC with the GHS where possible, while also achieving harmonisation with workplace hazardous substances classification as much as possible.
- Ensuring that the chemicals assessment and product approval process deals adequately with chemical related risks to human health and international trade.

4.0 POSSIBLE OPTIONS TO ACHIEVE THE OBJECTIVE(S)

Based on the aim to have the GHS adopted as appropriate in Australia for the classification and labelling of chemicals, a number of options indicating the possible extent to which the GHS criteria might be incorporated into the scheduling process have been identified. These options are identified in the following sections with a discussion on possible costs, benefits and risks for each option.

Option 1 is to maintain the status quo.

Option (1): Maintain the status quo ie reject the adoption of the GHS classification criteria and labelling elements.

Further options fall within the overall scope of adopting the GHS so that Australia adheres to the “best international practice” whilst protecting public health to current standards as above. Three options have been considered practical:

Option (2): Adoption of GHS classification criteria, adoption of the GHS hazard and precautionary statements, rejection of the GHS signal words and pictograms. Preserve existing SUSDP Schedules 5, 6 and 7 with GHS classification criteria appropriately aligned with these schedules.

Option (3): Adoption of GHS classification criteria (with significant change to schedules 5, 6 and 7 to align with GHS criteria), acceptance of the GHS hazard and precautionary statements, rejection of the GHS signal words and pictograms.

Option (4): Full adoption of the GHS through adoption of the GHS classification criteria and GHS labelling elements with a consequential overhaul of the current poisons scheduling system to align with GHS categories.

5.0 ANALYSIS OF THE IDENTIFIED OPTIONS

An analysis of the options for adopting the GHS in Australia needs to be undertaken with due regard to, and understanding of, the individual elements of the GHS and the purpose and expected outcomes of their application to the classification and labelling of chemicals. Only then can the impact of adopting new classification criteria and labelling elements on current scheduling arrangements, standards of public health protection and the possible impacts on government, industry and the community be properly considered.

Classification Criteria

The classification of chemicals is based on a toxicological assessment of the hazardous properties of the substance. The classification outcome reflects the identified toxicological hazards possibly with weight of evidence considerations, evidence from human exposure if available and the application of expert judgement. Toxicological requirements are, for many chemicals, harmonised internationally and classification end-points increasingly have international acceptance. Consequently, the adoption of the GHS classification elements promotes international harmonisation and further assists to promote transparency and consistency in regulatory decision making to the benefit of government, industry and consumers.

GHS classification criteria have been assessed as being very similar to current criteria used by the NDPSC for scheduling purposes. Their acceptance, resulting in improved alignment of Australia's classification system with international practice thereby resulting in greater transparency and consistency in decision making would therefore be seen as positive. However to minimise the impact on current schedules (S5, S6 and S7) and therefore impact upon industry and consumers, it would be desirable that the GHS classification criteria be 'bundled' in a way that complements current schedules, thereby avoiding considerable disruption to the current scheduling system for poisons.

Signal Words

A signal word means a word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in the GHS are 'Danger' and 'Warning'. 'Danger' is used for more severe hazard categories while 'warning' is used for less severe. The current SUSDP signal words are 'Dangerous Poison', 'Poison' and 'Caution' and are aligned with Schedules 7 (most hazardous), schedule 6 and schedule 5 respectively.

Under current scheduling arrangements, the signal word is not only associated with hazard but also the risk associated with the product, hence the 'cascade' of scheduling which often accompanies similar products containing the same active ingredient(s) but with accompanying risk mitigation measures such as lower concentration of active ingredient, child resistant closures, reduced pack size or different formulation eg granules vs dusts. The alignment of specific signal words with schedule 5, 6 and 7 substances reinforces this

approach. However, GHS signal words are based on defined toxicity end-points. Should the GHS signal words be adopted, then this alignment is diminished as the GHS signal words of ‘danger’ and ‘warning’ would align across the broad schedule 5, 6 and 7 spectrum unless there were significant amendments to the scheduling structure. This could limit the impact of the signal word in identifying the level of risk associated with the product. This change in labelling could therefore be disruptive and costly for all stakeholders. Retention of the existing schedules would also remove the cascade of GHS requirements which results in the classification leading to the signal word which in turn defines the pictograms to be applied.

The signal words also have some alignment with hazard statements which, under present arrangements are further reinforced by the three signal word approach of ‘dangerous poison’, ‘poison’ and ‘warning’. This is particularly so for ‘dangerous poisons’ ie schedule 7 substances.

Adoption of the GHS signal words within the well established and understood Australian scheduling system would need to be undertaken with due regard to the likely loss of emphasis on labels in respect to hazard and risk, the costs of realignment of substances into a new structure of schedules, the cost of amending the labels of all products containing scheduled substances and the possible confusion to users which may have serious repercussions for public health. Legislative amendment would be required in all States and Territories to support new signal words. This would impact on all chemical substances, including those ‘excluded’ from the GHS.

Pictograms

A pictogram means the graphical composition that includes a symbol plus other graphic elements such a border, background pattern or colour that is intended to convey specific information. The pictograms proposed by the GHS are based on a standard set used in the *UN Recommendations on the Transport of Dangerous Goods, Model Regulations*. Apart from the skull and crossbones symbol, (though now not favoured by the NDPSC) these symbols have not been used in Australia in the domestic and consumer products sector in association with the labelling of domestic and consumer products for public health purposes.

The potential benefit of including GHS pictograms on a label is that pictograms convey the information in a way that is additional to precautionary statements and which may protect people with different reading abilities. As the GHS has been designed to maximise the benefits of using signal words, hazard statements, precautionary statements and pictograms to convey information, removing some of these elements may not be considered to be implementation of the GHS and may reduce the efficiency of the overall scheme for hazard classification and labelling.

However, the adoption of pictograms without a comprehensive national education program as to their interpretation would be costly and, of most concern, confusing to users. This may have serious public health consequences. It is noted that there has been no comprehensibility testing associated with the inclusion of GHS pictograms on labels. The GHS does, however, provide comprehensibility testing methodology. Information on developing GHS implementation strategies (prepared by UNITAR, ILO and IOMC) suggests that individual countries undertake comprehensibility testing as a key measure to identify where capacity building intervention will be needed.

In the absence of any assessment of the comprehensibility (in any sector) of GHS pictograms under Australian conditions, the benefits of adopting pictograms in regard to the protection of public health (as against their use in the workplace sector) are uncertain, especially when users are more familiar with other communication elements ie signal words and warning statements. Desirably, pictograms should be consistent across all chemical classes to avoid further confusion.

No evidence has been found that comprehensibility testing of GHS pictograms has been undertaken in any country which has indicated an intention to adopt the GHS, including New Zealand and countries within the EU.

Hazard and Precautionary Communication Statements

A hazard statement means a phrase assigned to a hazard class and category that describes the nature of the hazards of a hazardous product, including where appropriate, the degree of hazard.

A precautionary statement means a phrase (and/or pictogram) that describes recommended measures that should be taken to minimise or prevent adverse effects resulting from exposure to a hazardous product or through improper storage or handling.

As part of the situational analysis (Attachment 1), a comparison of existing hazard and precautionary statements with those proposed by GHS shows a high level of alignment. Adoption of GHS hazard and precautionary statements would therefore be unlikely to significantly impact on the current scheduling system, the level of public health protection or on stakeholders overall. Australia-specific statements would be retained.

The benefit of the GHS scheme in regard to hazard classification is that unlike present arrangements, the GHS hazard classification determines which precautionary statements are applicable. This is in contrast to the First Aid Instructions and Safety Directions Handbook which contains a wide range of statements for different product types prescribed for use under a variety of use situations.

The Options

5.1 Status Quo

Option 1 Maintain the status quo ie reject the adoption of the GHS classification criteria and labelling elements.

This Option retains the current poisons scheduling system and would not lead to international harmonisation with the majority of trading partners who have indicated some consideration of implementing the GHS, either in part or fully across all chemical sectors.

Benefits:

Public:

- Because this option would continue to maintain the existing public health standards, it may not represent a cost to the public. However, there are some new hazard end-

points and refinements in hazard classifications that would mean these hazards will remain unidentified for certain poisons.

Industry:

- Not adopting the GHS means that there would be no ramifications for industry, particularly in relation to packaging and labelling of chemicals under current national systems.
- There are no changes to scheduling and therefore no relabelling costs to industry or costs associated with revised product scheduling eg supplier and user education.
- Where other major trading partners adopt GHS (in part or fully), some labelling differences are expected compared with Australian classification and labelling systems. This would add costs for companies who import and/or export.

Government:

- This Option will retain the existing poisons scheduling system. Not adopting the GHS for chemicals classification and labelling as a regulatory option would result in no costs associated with review, update and implementation of new classification and labelling arrangements.
- Would avoid any changes and disruption to existing legislative, regulatory, user training and commercial arrangements. However, Government would be seen to be endorsing an old classification and labelling regime out of step with what is recognised as current scientific best practice under the OECD-developed hazard classification system for GHS.

Costs:

Public

- As other sectors are strongly committed to the introduction of the GHS in Australia (eg. the workplace chemicals sector), not adopting the GHS in regard to the classification and labelling of chemicals in the consumer and agricultural chemical sectors may add to inconsistency between sectors which, over time may be untenable, particularly given the stated commitment to GHS and government pressure to adopt international standards. This option maintains the current public health classification standards.
- Costs to industry of having to potentially undertake Australia-specific classification and labelling for poisons will be passed on to consumers resulting in an increase in the price of chemical products (but without any increase in the scientific rigor applied to chemicals classification and labelling).

Industry

- Not adopting the GHS may have quite significant cost implications for industry, particularly in respect to labelling of chemicals moving in international trade.
- With this option, there are no changes to schedules and labels, and would not be a cost to industry.
- There is no significant improvement in the transparency and consistency of scheduling decisions.

Government

- This option maintains the current situation and would have no direct cost to government agencies.
- Not adopting the GHS would ignore the fact that Australia has supported the development of the GHS and is a major partner of a globalised economy, and therefore increasingly must follow what is judged to be “best international practice”, especially for classification criteria in regard to human health endpoints..
- Not adopting GHS would also ignore the fact that Australia plays, and continues to play a significant role in chemicals management in a wide range of areas at the international level and in that process has consistently pursued in numerous international fora, the importance of international harmonisation and cooperation for the benefit of consumers, industry and government. Non adoption of the GHS would be seen as inconsistent with Australia’s overall international efforts on chemicals.
- As other sectors are strongly committed to the introduction of the GHS in Australia (eg. the workplace chemicals sector), not adopting the GHS in regard to scheduling of chemicals in the consumer and agricultural chemical sectors may add to inconsistency between sectors,
- Non-adoption or alignment with the GHS could also make harmonisation efforts in other areas such as work sharing, and exchange and use of overseas assessment reports more difficult.

Electing to maintain the status-quo provides no net benefits. There would be potential trade disadvantages with associated costs to industry being passed on to consumers. Furthermore, progress to date with the adoption of the GHS makes it unlikely that Australia would decide not to adopt the GHS or to progress towards its adoption having regard to specific Australian needs and requirements.

5.2 Alternative models (Options)

Adopting the alternative options, could impact significantly on the classification and labelling of chemicals and chemical products with cost, product availability and trade implications for industry, government and consumers. It could be expected that with some change in the classification criteria there may be some upward or downward movement in the classification (scheduling) of substances compared to the present scheduling outcomes. This could have practical and commercial consequences. Some GHS-hazard and precautionary statements may also be different thereby impacting on existing labels. The costs to industry of amending labels as well as costs to government and confusion for users arising from label modification with the inclusion of new and unfamiliar wording could be significant without some assessment and understanding of the level of likely disruption.

To gauge the level of impact arising from the adoption of either alternative options (2), (3) or (4), the OCS has undertaken a situational analysis, closely comparing existing classification end-points against proposed GHS classification and labelling principles. The results of this analysis are reported in Attachment 1. The overall conclusion is that by adopting the GHS in a manner that aligns with the existing schedules (Schedules 5, 6 and 7), the impact on existing scheduling outcomes is likely to be minimal. Furthermore, the analysis has shown that the differences in the wording of both current and GHS hazard and precautionary statements are also generally minor in nature. The implications associated with the adoption

of GHS hazard and precautionary statements for existing labels may therefore be of limited consequence. Most importantly, based on the work to date, the changes to classification and labelling to align with the GHS are judged to be of no consequence in regard to the level of public health protection and therefore their adoption could be gradual and in a way that minimises costs and other impacts upon industry and the wider community.

The Options (2), (3) and (4) above would require changes to the existing poisons scheduling system to varying degrees. Options (2) and (3) would lead to harmonisation with the GHS classification system. However, the GHS labelling elements (eg. signal words, pictograms, hazard and precautionary statements) may not all be adopted thereby not achieving full harmonisation with GHS, but avoiding severe disruption to the current scheduling system through the need for widespread legislative amendments, stakeholder education programs and the need to amend all labels in the marketplace.

Option 2 Adoption of GHS classification criteria, adoption of the GHS hazard and precautionary statements, rejection of the GHS signal words and pictograms. SUSDP Schedules 5, 6 and 7 to be retained with GHS classification criteria being appropriately aligned with these schedules.

This option would fully adopt the GHS classification criteria with only some minor changes to closely align with current classification criteria. The existing poisons schedules (Schedules 5, 6 and 7) would be retained with the GHS classification criteria being aligned with these schedules in order to minimise disruption to the existing scheduling system. No legislative amendments would be required and the impact on existing labels would be minimal. GHS signal words and pictograms would not be adopted. Existing hazard and precautionary statements would be rationalised in number and aligned fully with GHS statements as they exhibit close similarity to current labelling requirements. High levels of public health standards would be maintained and there would be no need for further public education to respond to a new labelling system.

Benefits:

Public

- This option will retain and maintain the existing public health standards.
- No need for major education programs to educate public and chemical users.
- In general, the transition to GHS labelling (in part) will be ‘invisible’.
- Old and new labels can reside in the marketplace concurrently without confusion.

Industry

- International consistency and greater transparency in classification (scheduling) criteria and decision outcomes.
- Promotion of increased consistency in national requirements for hazard classification and communication would facilitate international trade in chemical products.
- Minimal changes to product labels.

Government

- “Best international practice” in regard to chemicals classification is enhanced through adoption of internationally accepted standards.
- The ability to share evaluation reports and promote work-share arrangements which may reduce the ongoing costs of chemical regulation is maintained.
- Increased efficiency in chemicals regulation and management with greater consistency and transparency in decision making.
- Maintenance of the current public health standards with minimal adjustments.
- There would be no significant costs involved in public education campaign, or changes in State and Territory legislation.

Costs:

Public

- Loss of some ‘international’ products from the market as labelling incorporating GHS signal words and pictograms would not be acceptable if not in compliance with poisons scheduling requirements.

Industry

- Some amendments to the product labels would be required, but this is expected to be minimal and the cost to industry would be short term. The cost involved could be minimised by allowing a phase-in period to update labels at the next printing (usually takes place once in every five years or so).
- Lack of harmonisation with GHS compliant markets may be a cost to industry in the long term because of labelling differences.
- Small businesses have little trade in chemicals and would suffer no additional burden.

Government

- This Option would require re-examination of some scheduled substances against the slightly amended classification criteria. However, this would be a short-term, one-off cost to Government (OCS, NDPSC), which is expected to be insignificant. The cost and regulatory burden on other agencies eg. APVMA would be minimal.
- Government may be challenged on commitment to international harmonisation as a result of not fully adopting GHS labelling elements.

Option 3 Adoption of GHS classification criteria (with significant change to schedules 5, 6 and 7 to align with GHS criteria), acceptance of the GHS hazard and precautionary statements, rejection of the GHS signal words and pictograms.

Under this option the GHS classification criteria would be adopted but the existing schedules 5, 6 and 7 would be realigned with the GHS hazard categories. This would require a redefining of the definitions of schedules 5, 6 and 7 as well as a reclassification (rescheduling) of all substances. GHS signal words and pictograms would not be adopted. Hazard and precautionary statements would be aligned with current statements.

Benefits:

Public

- This option will retain and maintain the existing public health standards.
- Labels would be similar to current labels. However availability of some products may be affected as a result of change in scheduling status.

Industry

- Promotion of increased consistency in national requirements for hazard classification.
- Greater consistency and transparency in scheduling decision outcomes.

Government

- “Best international practice” in regard to chemicals classification is enhanced through adoption of internationally accepted standards.
- The ability to share evaluation reports and promote work-share arrangements which may reduce the ongoing costs of chemical regulation is maintained.
- Increased efficiency in chemicals regulation and management with greater consistency and transparency in decision making.
- Maintenance of the current public health standards with minimal adjustments.

Costs:

Public

- This Option may represent some level of a cost to the public arising from initial confusion in labelling

Industry

- Amendments to labels would be required and would be significant. This is a cost to industry in the short term, but could be minimised by allowing a phase-in period to update labels at the next printing.
- If our major trading partners adopt the GHS, the lack of harmonisation may be a cost to industry in the long term because of labelling differences ie. pictograms and signal words.
- Small businesses would suffer through difficulty in accessing data to support the reclassification of substances.

Government

- This Option would require re-examination of scheduled substances against the significantly amended criteria. Though it would be a one-off cost to Government (OCSEH, NDPSC and APVMA), it is expected to be quite significant and time consuming to the OCSEH.
- There would be a need for an education campaign to inform all chemical users about new classification outcomes and the change in availability of some products. Educational and regulatory literature would require amendment.
- Government may be challenged on commitment to international harmonisation as a result of not fully adopting GHS labelling elements.

Option 4 Full adoption of the GHS through adoption of the GHS classification criteria and GHS labelling elements with a consequential overhaul of the current poisons scheduling system to align with GHS categories. (The number of schedules would go from three to five in order to align with the GHS's five categories 'schedules').

This option fully adopts the GHS classification system and the labelling elements and would therefore move the Australian classification and labelling arrangements to a more hazard based system. The existing poisons scheduling system would be abolished in favour of a new classification system and complete harmonisation with the GHS would be achieved. Legislative amendment would be required in all States/Territories and all labels containing a scheduled poison would need to be revised and reprinted to comply with GHS labelling requirements, in particular signal words and pictograms.

Benefits:

Public

- Harmonisation of labels could lead to benefits such as a reduction in the cost of products and the earlier introduction of newer and potentially safer products.

Industry

- Promotion of increased consistency in national requirements for hazard classification and communication would facilitate international trade in chemical products.
- Greater transparency in classification and scheduling decision outcomes.

Government

- Adopting GHS would ensure that Australia would continue to lead and maintain its position as encouraging the adoption of "best international practice" in chemicals regulation.
- The benefits of international harmonisation may lead to increased sharing of evaluation reports and work-share arrangements.
- Increased efficiency in chemicals management.

Costs:

Public

- GHS classification may 'overstate' hazard (especially in the absence of risk assessment) thereby leading to loss of products from the marketplace.
- With no risk-based considerations, more 'risky' products may enter the market with consumers being expected to judge the possible risk based on hazard labelling. This is considered unacceptable public health practice.
- May result in greater risk to chemical users as the onus would fall to the community to make judgements about the risk posed by individual chemicals/products thereby potentially lowering the standard of public health protection.

- The introduction of hazard statements on the label as against the current risk-based approach may lead to uncertainties for consumers. Therefore, an educational/advertising program to accompany the new system would be required.

Industry

- The majority of product labels would require amendment. This would be a significant cost to industry in the short term, but could be minimised by allowing a phase-in period to update labels at the next printing.
- If our major trading partners adopt the GHS, harmonisation should reduce costs to industry in the long term because, in some cases (but not in regard to pesticides), the label is acceptable world wide and international movement of chemicals would be facilitated.
- Small businesses would be particularly affected as all labels would need to be amended.

Government

- This option would require the re-examination of all substances in S7, S6, S5 and Appendix B of the SUSDP, against the amended criteria and the process would be extensive and resource intensive. This would be a one-off cost to Government (OCSEH, NDPSC and APVMA).
- Other costs include the education campaign for the public, possible changes in State and Territory and APVMA legislation.

5.3 Favoured Option for the Adoption of GHS in Australia based on risks and benefits

Option (2) is currently favoured by the NDPSC. If adopted, it would allow NDPSC classification guidelines to be harmonised with GHS thereby aligning with international practice. Option (2) would also see the adoption of GHS hazard and precautionary statements which in general are in alignment with NDPSC statements. Option (2) would not see the adoption of GHS signal words or pictograms. This would avoid changes to all State/Territory poisons legislation (where the schedules and signal wording requirements are defined and specified), the need for extensive public and chemical user education programs, and amendment to all labels in the marketplace containing scheduled substances arising from GHS requirements that would require change to signal words.

Whilst Option (2) would represent full adoption of GHS classification system, with slight changes to the current poisons scheduling criteria, it would result in minimal adjustment in the current public health standards. This option would achieve enhancement in the NDPSC system and lead to a simplification of the current criteria. For example, at present, there is a degree of judgement required to determine which schedule correctly applies to a corrosive substance. Modifications to the existing NDPSC system through adoption of the relevant GHS criteria for local toxicity would overcome this uncertainty and would lead to greater consistency and transparency in decision making. Schedules 7, 6 and 5 would equate to the three GHS Categories 1, 2A and 2B for eye irritation and Categories 1, 2 and 3 for skin irritation, respectively. Respiratory and skin sensitisers in GHS Category 1 would be listed in Schedule 6. Appendix B of the SUSDP would capture substances with no irritation or sensitisation potential.

In this regard, the GHS criteria for scoring skin and eye irritation would be adopted to enhance the current NDPSC classification criteria. The NDPSC signal words would remain appropriate given that the use of GHS signal words would be subjected to uncertainty. If adopting option (2), some of the GHS hazard statements would be incorporated in the NDPSC criteria noting that this would enhance the present classification system. Additionally, the current NDPSC requirements for precautionary statements would be maintained. Given that only a few substances are scheduled on the basis of local toxicity alone, there would be minimal changes to current poisons schedules.

A detail analysis of option (2) with a comparison of the health hazard criteria currently used by the NDPSC with those proposed in GHS is also outlined in Attachment 1. The application of option (2) to a number of chemical substances has also been undertaken in order to test the proposal and to compare the outcomes with existing classification and labelling requirements. All relevant data in tabular form are given in Attachment 1.

6.0 COMPLIANCE COSTS FOR STAKEHOLDERS

Should the adoption of the GHS proceed, then further consultation and a Regulatory Impact Statement (RIS) will need to be conducted. This will include a detailed analysis of costs and benefits. However, at this stage, the information needed to undertake such an in-depth analysis is not available across the various classes of consumer products. It would be the intention that representatives of government, industry and other stakeholders address in detail, the associated costs of introducing the GHS as part of the development of the RIS.

Business compliance costs are likely to fall into the following areas:

- Reclassification of chemicals (substances and mixtures)
- Label review and new label production and printing
- Stock losses (removal of old stock/labels from the market place)
- Business administration costs (new processes, records, IT, manuals etc)
- Staff training
- Public education
- Adjustments for downstream businesses

Businesses affected could be across the entire chemicals industry engaged in consumer chemicals, including pesticides and veterinary medicines. These would include chemical manufacturers and downstream businesses that use chemicals as an input to production, wholesalers and retailers and consumers of chemical products.

Public authorities are also likely to incur costs, including:

- Amendment of legislation especially if GHS components such as signal words were to be adopted.
- Regulatory activities associated with the reclassification of chemicals, approval of new labels, and compliance and enforcement costs associated with ensuring products meet new requirements while non-compliant products are removed from the market.
- The possible need to undertake in some circumstances new risk assessments if a chemical is reclassified under GHS.

- Revision of documentation associated with the regulatory system, guidance materials for users of products, both professional and the general public
- Education programs for enforcement personnel and professional chemical users eg pesticide spray operators and farmers and the public

No data source is available that identifies the total number of substances and mixtures (consumer products) that are produced in Australia. Some indication of possible costs to an industry sector can however be obtained through a broad analysis of the agricultural and veterinary chemicals sector where pre-marketing approval (registration) is required. Useful (though limited) information is therefore available which includes accurate information on the number of pesticide products in the marketplace and number of labels. Product registrants can be identified and the sales of products can help to identify the number of large, medium and small business enterprises. In addition, based on broad industry advice, some assumptions can be made in regard to the costs of reclassifying chemicals and amending labels. However, the likely costs associated with internal company administrative issues such as the updating of IT systems to reflect GHS hazard endpoints and staff education and training costs are not available at this time. Information from industry sectors is specifically requested.

Table 1: AgVet Product Distribution and Sales by Company Size (2006-07)*

	Zero Annual Sales	Small Company Annual Sales >\$0.0m - <\$5.0m	Medium Company Annual Sales >\$5.0m - <\$20.0m	Large Company Annual Sales >\$20.0m	TOTAL
Total Companies (Number)	144	600	39	26	809
Total Annual Sales (\$)		322.514m	359.357m	1.674.325m	2356.196m
Average Annual Sales per company (\$)		0.538m	9.214m	64.397	2.912
Total products (Number)	295	3877	1921	2693	8786
Average Annual Sales per Product		0.083m	0.187m	0.622m	0.268m

* **Source:** Australian Pesticides and Veterinary Medicines Authority, Draft Cost Recovery Impact Statement, December 2008.

Table 1 demonstrates that in the agricultural sector (including pesticides and veterinary medicines), there were (in 2006-2007), 8786 products registered by 809 companies. Most companies (639) were small to medium enterprises. Average annual sales per company ranged from \$0.538m to \$9.214m.

Some products can have various labels eg labels to accommodate varying pack sizes or to reflect different uses eg home garden use as against professional use. If we assume that there are 10,000 approved labels for agricultural and veterinary chemical products then some very broad assessment of costs just to amend labels with GHS label requirements can be made.

Industry advice is that the cost of amending labels (design, artwork, printing plates, regulatory costs etc) can be of the order of \$5,000 per label. This is conservative and can be much more particularly when labels other than paper or plastic are involved eg screen printing of metal drums.

If all labels required amendment, such as the inclusion of GHS signal words, then the cost for this alone could be on the order of \$50,000,000 (10,000 x \$5000). This might be offset in part by undertaking the changes at the time of the next label reprint though this would be minimal if the basic label content or structure is to change, thereby requiring new printing plates etc. Should say 50% of labels require amendment then the cost would be \$25,000,000, while at 10% requiring amendment, the cost would be \$5,000,000.

As noted above, in addition to label costs there would be the cost of undertaking the reclassification of substances and mixtures with resultant costs for downstream businesses. However, as the Situational Analysis suggests, the majority of substances and mixtures may not have to be reclassified once the GHS is implemented. There may also be regulatory costs associated with approval eg by APVMA and NDPSC, the costs of updating company databases with new classification criteria, education and training of company personnel and broad public education associated with new product labelling.

The availability and access to data from data 'owners' on which to base classifications from generic manufacturers is a further complicating factor across all sectors, with data protection issues being a possible further complicating factor in regard to agricultural and veterinary chemicals.

Having regard to the above limited information for agvet chemicals, a preliminary qualitative assessment would suggest that option (2) would be the least cost option. Labels would only need to be amended to reflect new classification outcomes and alignment with GHS hazard and precautionary statements. These costs could be somewhat offset if the overall GHS implementation strategy allowed sufficient time for this to be done through the normal cycle of label reprint and/or label expansion in the case of pesticides. By not adopting the GHS signal words or pictograms, there would be no need to amend **all** labels of products containing a scheduled poison, to amend legislation, develop new education and training materials or to possibly change the basic scheduling structure.

A similar situation is likely to exist for other consumer products eg general consumer and household products. Unfortunately, there are no details available on the number of products in the marketplace (though obviously they run into the many thousands), no easily identifiable record of the 'owners' of these products (as unlike agvet chemicals a pre-marketing approval process does not exist) and no information on the impact GHS classification and labelling would have on companies.

In response to this Discussion Paper, the OCSEH would specifically welcome detailed stakeholder comment on likely compliance costs, supported by relevant data.

7.0 CONSULTATION: STAKEHOLDER VIEWS

Stakeholders are invited to provide written responses on this Discussion Paper. Where necessary, the OCSEH may give presentations for stakeholders, including State and Territory representatives on the potential impacts of GHS implementation in Australia in regard to consumer chemicals, including pesticides.

Comments will be referred to the NDPSC and taken into consideration in framing a more definitive position on the GHS in respect to the poisons scheduling system. The information gathered in response to the discussion paper will be utilised in the development of a

Regulatory Impact Statement (RIS) in relation to the adoption of the GHS in the domestic/consumer product sector. The RIS, which would be undertaken by the Department of Health and Ageing, will be subject to further public and industry comment and may address a wider range of policy issues.

8.0 IMPLEMENTATION AND REVIEW

The poisons classification criteria are national guidelines formulated by the NDPSC and NCCTG. The NCCTG coordinates the legislative and administrative controls on therapeutic goods and poisons and makes recommendations to the Australian Health Ministers' Advisory Council as necessary. The NDPSC will continue to monitor ongoing developments with the GHS, associated guidelines and its global implementation.

Following the RIS and should the favoured position be accepted, amended classification criteria will be incorporated into the NDPSC guidance manual. The new criteria will be made available to industry and appropriate regulators in the form of a reference guidance manual. It is expected that once considered and endorsed by the NCCTG as a policy document, industry, regulators and the NDPSC would commence utilising the amended criteria for chemicals classification. An implementation strategy would be agreed with industry and regulators.

Should relevant GHS health-related elements (classification, signal words, hazard and precautionary statements, pictograms) be adopted for consumer products (including pesticides), they would take effect by way of the poisons scheduling procedures. Therefore, there will be no duplication with other labelling codes such as those applying to agricultural and veterinary chemicals.

-----oOo-----

**SITUATIONAL ANALYSIS COMPARING THE NDPSC
AND PROPOSED GHS CRITERIA FOR THE
CLASSIFICATION (SCHEDULING) AND LABELLING
OF DOMESTIC AND CONSUMER CHEMICALS
(INCLUDING PESTICIDES)**

**Developed in Support of the Discussion Paper “Possible Adoption within
the Public Health Sector of the Globally Harmonised System for the
Classification and Labelling of Chemicals (GHS) in Regard to Domestic
and Consumer Chemicals (Including Pesticides)”**

Analysis Prepared by the Office of Chemical Safety
and Environmental Health, Department of Health and Ageing

ATTACHMENT 1 - TABLE OF CONTENTS

GLOSSARY	29
TECHNICAL NOTES: COMPARISON OF NDPSC AND GHS HEALTH HAZARD CRITERIA.....	31
1 CLASSIFICATION AND LABELLING OF CHEMICALS: CURRENT AUSTRALIAN SYSTEM .	31
1.1 THE NATIONAL DRUGS AND POISONS SCHEDULE COMMITTEE	31
1.2 THE SCHEDULES	31
1.3 POISONS SCHEDULING	32
2 COMPARISON OF THE AUSTRALIAN AND GHS CLASSIFICATION SYSTEMS	33
3 ANALYSIS OF HEALTH HAZARD CLASSIFICATION AND LABELLING CRITERIA OF NDPSC AND GHS.....	37
3.1 ACUTE ORAL, DERMAL AND INHALATIONAL TOXICITY	37
3.2 COMPARISON OF ACUTE LOCAL TOXICITY CRITERIA	41
3.3 COMPARISON OF NDPSC AND GHS CLASSIFICATION CRITERIA: OTHER TOXICITY ENDPOINTS..	46
3.4 COMPARISON OF NDPSC AND GHS SIGNAL WORDS, AND PRECAUTIONARY STATEMENTS	57
4 ADDITIONAL PROVISIONS AVAILABLE IN SUSDP: FIRST AID INSTRUCTIONS	62
4.1 COMPARISON OF SUSDP FIRST AID INSTRUCTIONS WITH “RESPONSE STATEMENTS” OF GHS..	62
4.2 WARNING STATEMENTS AND GENERAL SAFETY DIRECTIONS.....	68
4.3 POISONS INFORMATION CENTRE TELEPHONE NUMBERS	77
5 DISCUSSION	77
6 REFERENCES.....	84
APPENDIX 1. LABELLING OF SOME CHEMICALS USING NDPSC AND GHS CRITERIA.....	85

GLOSSARY

ASCC	Australian Safety and Compensation Council
APVMA	Australian Pesticides and Veterinary Medicines Authority
BCC	Business Cost Calculator
DEEWR	Department of Education, Employment and Workplace Relations
FAI	First Aid Instructions
FAISD	First Aid Instructions and Safety Directions
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
NDPSC	National Drugs and Poisons Scheduling Committee
NCCTG	National Coordinating Committee on Therapeutic Goods
OBPR	Office of the Best Practice Regulator
OCSEH	Office of Chemical Safety and Environmental Health
OECD	Organisation for Economic Co-operation and Development
PPE	Personal Protection Equipment
RIS	Regulatory Impact Statement
SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons

PURPOSE

The situational analysis and its appendices make a direct comparison of the classification and labelling criteria for domestic and consumer chemicals under the current scheduling arrangements as defined in the SUSDP with those of the GHS. The analysis provides technical support for the discussion paper by comparing the NDPSC scheduling and GHS criteria for the classification and labelling of chemical substances undertaken by the OCSEH on behalf of the NDPSC.

Section 1 compares the current NDPSC classification and labelling criteria.

Section 2 tabulates and compares the technical data which underpin the scheduling (classification) of poisons under the SUSDP with those of the GHS.

Section 3 compares the labelling outcomes of selected chemicals under existing scheduling and labelling arrangements with those of the GHS should the most favoured option for the adoption of the GHS be accepted (viz adoption of GHS classification criteria, adoption of the GHS hazard and precautionary statements and rejection of the GHS signal words and pictograms (SUSDP Schedules 5, 6 and 7 to be retained with GHS classification criteria being appropriately aligned with these existing schedules).

Appendix 1 applies the NDPSC and GHS criteria to selected chemicals and compares the labelling outcomes.

TECHNICAL NOTES: COMPARISON OF NDPSC AND GHS HEALTH HAZARD CRITERIA

1 CLASSIFICATION AND LABELLING OF CHEMICALS: CURRENT AUSTRALIAN SYSTEM

1.1 The National Drugs and Poisons Schedule Committee

The National Drugs and Poisons Schedule Committee (NDPSC) is a statutory committee established under the *Therapeutic Goods Act 1989* (as amended) and the *Therapeutic Goods Regulations 1990* (as amended). The decisions of NDPSC in relation to the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) have no force in Commonwealth law but are recommended for incorporation into State and Territory drugs/poisons legislation.

1.2 The Schedules

In the drugs and poisons scheduling process, chemical substances are placed in a particular schedule depending on a variety of factors, as described below. In general, domestic chemicals that require scheduling would be listed in Schedules 5, 6 or 7. In practice however, the substances listed in schedule 7 are unlikely to be available to the public. Under certain circumstances, some substances may be considered not to require scheduling and are listed in Appendix B. The placement of substances in Appendix B or in Schedules 5, 6 and 7 represent increasingly strict controls. Additionally, agricultural chemicals and many veterinary drugs may be listed in Schedules 7, 6, 5 or Appendix B. A general description of the schedules as stated in the SUSDP is given below:

Schedule 7: Substances with a high potential for causing harm at low exposure and which require special precautions during manufacture, handling or use. These poisons should be available only to specialised or authorised users who have the skills necessary to handle them safely. Special regulations restricting their availability, possession, storage or use may apply (*Substances and preparations with high to extremely high toxicity, which can cause death or severe injury at low exposures, which require special precautions in their manufacture, handling or use, which may require special regulations restricting their availability, possession or use, and which are too hazardous for domestic use or use by untrained persons are listed in this Schedule*).

Schedule 6: Substances with a moderate potential for causing harm, the extent of which can be reduced through the use of distinctive packaging with strong warnings and safety directions on the label (*substances and preparations with moderate to high toxicity and which may cause death or severe injury if ingested, inhaled or in contact with skin or eyes are listed in this Schedule*).

Schedule 5: Substances with a low potential for causing harm, the extent of which can be reduced through the use of appropriate packaging with simple warnings and safety directions on the label (*substances and preparations that have low toxicity or a low concentration, have low to moderate hazard, capable of causing only minor adverse effects to human beings in normal use, and require caution in handling, storage and use are listed in this Schedule*).

Appendix B: Substances for which the available information suggests that inclusion in the poisons schedules is not necessary or not the most appropriate means of controlling the risk to public health (see below for more details on Appendix B listing).

1.3 Poisons Scheduling

To facilitate appropriate and effective scheduling and ensure that public health objectives are met, all scheduling decisions of the NDPSC routinely include consideration of certain essential factors. Consideration of these factors permits the objective assessment of the risk/benefit balance for the consumer at different levels of access and optimal public availability. The assessment factors listed are guidelines only and these should not be regarded as an inflexible standard from which there is no deviation.

In addition, the SUSDP contains additional requirements (via Appendices) that are stipulated for control of use including labelling elements.

Factors considered in classification of substances

When considering applications for scheduling, all relevant information as established under Section 52E of the *Therapeutic Goods Act 1989* (as amended) (“the Act”) is considered, with emphasis given to public health matters. These considerations include:

- (a) the toxicity and safety of a substance;
- (b) the risks and benefits associated with the use of a substance;
- (c) the potential hazards associated with the use of a substance;
- (d) the extent and patterns of use of a substance;
- (e) the dosage and formulation of a substance;
- (f) the need for access to a substance, taking into account its toxicity compared with other substances available for a similar purpose;
- (g) the potential for abuse of a substance;
- (h) the purposes for which a substance is to be used;
- (i) any other matters that the Committee considers necessary to protect public health, including the risks (whether imminent or long-term) of death, illness or injury resulting from its use; and may take into account the labelling, packaging and preparation of a substance.

The process may take into account the labelling, packaging and presentation of a substance. The NDPSC must also comply with any guidelines of the Australian Health Ministers’ Advisory Council or its subcommittee, the NCCTG.

2 COMPARISON OF THE AUSTRALIAN AND GHS CLASSIFICATION SYSTEMS

Health hazard criteria used by NDPSC for Poisons Scheduling

When considering substances for scheduling, the NDPSC utilises numerical cut-off limit values together with other toxicological characteristics given in the Table 1 (see next page) for acute toxic effects. The guidance limit values are based on the OECD recommended endpoints for toxicological testing where available. It should be noted that these values are indications only, and they are to be considered in the context and association of other toxicity data. If the acute toxicity value in another animal species is substantially lower, a tighter restriction in scheduling may be applied. Human toxicity experience is given precedence over animal data. These data are further compared with the GHS classification criteria in the detailed comparative analysis provided in later sections of this document.

At various times, the NDPSC has considered substances for which the available information suggests that inclusion in the Poisons Schedules is not necessary or not the most appropriate means of controlling the risk to public health. Listing a substance in Appendix B of SUSDP means that a decision has been taken not to list a substance anywhere in the Schedules, either for a specific purpose, or generally. It is an inclusive, but not exhaustive list, ie. there may be substances not included in Appendix B, which may be hazardous or non-hazardous, but have not been considered in relation to the need for Scheduling. Substances may be included in Appendix B because they have intrinsically low toxicity, or where other factors suggest that the potential public health risk would be minimal. The factors which are considered when determining an Appendix B entry are given in Table 1. Inclusion in Appendix B will not prevent reconsideration of the scheduling of a substance where adverse information becomes available about the Appendix B entry for that substance. While the NDPSC considers applications for scheduling, the applications for entry into Appendix B are not accepted.

Based on the possibility that at least some elements of the GHS will be adopted in Australia for the classification and labelling of domestic and agricultural chemicals and certain veterinary drugs, the most favoured option as outlined in the discussion paper viz adoption of GHS classification criteria, adoption of the GHS hazard and precautionary statements and rejection of the GHS signal words and pictograms (SUSDP Schedules 5, 6 and 7 to be retained with GHS classification criteria being appropriately aligned with these existing schedules) is explored to indicate possible mechanisms for incorporating the GHS criteria into the scheduling process.

Table 1. Health hazard Criteria currently used by the NDPSC for Poisons Classification*

Appendix B

- The toxicology profile is adequately characterised and not consistent with inclusion in any of the schedules.
- The use, purpose or product presentation minimises any hazard to the public such as to not require scheduling.
- Public access is limited such that scheduling is inappropriate or unnecessary.

Schedule 5

- Acute oral toxicity in the rat is between 2000 mg/kg bw and 5000 mg/kg bw.
- Acute dermal toxicity is more than 2000 mg/kg bw.
- Acute inhalation toxicity in the rat is more than 3 mg/L (4 hours).
- Dermal irritation is slight to moderate.
- Eye irritation is slight to moderate.
- Dermal sensitisation is slight or nil.
- There is no other significant toxicity.
- Low hazard from repeated use and should be unlikely to produce irreversible toxicity.

Schedule 6

- Acute oral toxicity in the rat is between 50 mg/kg bw and 2000 mg/kg bw.
- Acute dermal toxicity is between 200 mg/kg bw and 2000 mg/kg bw.
- Acute inhalation toxicity in the rat is between 0.5 mg/L and 3 mg/L (4 h).
- Dermal irritation is severe to corrosive.
- Eye irritation is severe to corrosive.
- Dermal sensitisation is moderate to severe.
- Any other acute effects are nil to moderate.
- Moderate hazard from repeated use and low risk of producing irreversible toxicity.

Schedule 7

- Acute oral toxicity in the rat is 50 mg/kg bw or less.
- Acute dermal toxicity is 200 mg/kg bw or less.
- Acute inhalation toxicity in the rat is 0.5 mg/L (4 h) or less.
- Dermal irritation is corrosive.
- Eye irritation is corrosive.
- Severe hazard from repeated use, or significant risk of producing irreversible toxicity.

*See notes on the next page.

*Explanatory Notes to the Table 1:

The eye irritation terms "slight", "moderate", "severe", and "corrosive" have the following meanings:

- Corrosive – Irreversible tissue damage in the eye.
- Severe irritation - Corneal opacity, not reversible in 7 days.
- Moderate irritation - Corneal opacity, reversible in 7 days.
- Slight irritation - No corneal opacity.

The skin irritation terms "slight", "moderate", "severe", and "corrosive" have the following meanings:

- Corrosive – Irreversible tissue damage in the skin.
- Severe irritation - Severe irritation at 72 h.
- Moderate irritation - Moderate irritation at 72 h.
- Slight irritation - Slight irritation at 72 h.

Health hazard Classification criteria in GHS

Health hazard classification criteria for different hazard classes specified in the GHS are comprehensive with numerical cut-off values, extensive notes and explanatory text throughout the document. Consequently, all these criteria are not possible to include in this document, rather the reader is referred to the Part 3 of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) to obtain more details (Purple Book, Second revised edition, 2007; Part 3, Health hazards, pp 107-214; http://www.unece.org/trans/danger/publi/ghs/ghs_rev02/02files_e.html). Nonetheless, for comparative purposes and to draw attention to the extent of detail in the GHS health hazard classification criteria, the fundamental principles stipulated for the three major acute toxicity hazard categories namely, acute oral, dermal and inhalational toxicity, are shown in Table 2 with associated explanatory notes only. It should be noted that the information given in Table 2 does not include the full set of GHS classification guidelines on these parameters. Additional text and explanatory notes on specific considerations, classification of mixtures, hazard communication aspects and decision logic pathways given under "Acute toxicity" are not presented in this report as these are extensive.

Table 2. Acute toxicity hazard categories and acute toxicity estimate (ATE) values defining the respective categories.

Exposure route	Category 1	Category 2	Category 3	Category 4	Category 5
Oral (mg/kg bw) See note (a)	5	50	300	2000	5000
Dermal (mg/kg bw) See note (a)	50	200	1000	2000	See detailed criteria in Note (f)
Gases (ppmV) See note (a) (b)	100	500	2500	20000	
Vapours (mg/L) See note (a) (b) (c) (d)	0.5	2.0	10	20	
Dusts and mists (mg/L) See note (a) (b) (e)	0.05	0.5	1.0	5	

Note: gas concentrations are expressed in parts per million per volume (ppmV).

Notes to Table 2:

- (a) The acute toxicity estimate (ATE) for the classification of a substance or an ingredient in a mixture is derived using:
- (i) the LD50/LC50 where available
 - (ii) the appropriate conversion value from Table 3.1.2 (of Purple Book) that relates to the results of a range test, or
 - (iii) the appropriate conversion value from Table 3.1.2 that relates to a classification category;
- (b) Inhalation cut-off values in the table are based on 4 hour testing exposures. Conversion of existing inhalation toxicity data which has been generated according to 1 hour exposures should be by dividing by a factor of 2 for gas and vapours and 4 for dusts and mists.
- (c) It is recognized that saturated vapour concentration may be used as an additional element by some regulatory systems to provide for specific health and safety protection. (e.g. UN Recommendations for the Transport of Dangerous Goods);
- (d) For some chemicals the test atmosphere will not just be a vapour but will consist of a mixture of liquid and vapour phases. For other chemicals the test atmosphere may consist of a vapour which is near the gaseous phase. In these latter cases, classification should be based on ppmV as follows: Category 1 (100 ppmV), Category 2 (500 ppmV), Category 3 (2500 ppmV), Category 4 (20000 ppmV).

The terms "dust", "mist" and "vapour" are defined as follows:

- (i) Dust: solid particles of a substance or mixture suspended in a gas (usually air);
- (ii) Mist: liquid droplets of a substance or mixture suspended in a gas (usually air);
- (iii) Vapour: the gaseous form of a substance or mixture released from its liquid or solid state.

Dust is generally formed by mechanical processes. Mist is generally formed by condensation of supersaturated vapours or by physical shearing of liquids. Dusts and mists generally have sizes ranging from < 1 to about 100 μm ;

- (e) The values for dusts and mists should be reviewed to adapt to any future changes to DECD Test Guidelines with respect to technical limitation in generating, maintaining and measuring dust and mist concentrations in respirable form;
- (f) Criteria for Category 5 are intended to enable the identification of substances which are of relatively low acute toxicity hazard but which under certain circumstances may present a danger to vulnerable populations. These substances are anticipated to have an oral or dermal LD50 in the range of 2000-5000 mg/kg bodyweight and equivalent doses for inhalation. The specific criteria for Category 5 are:
- (i) The substance is classified in this Category if reliable evidence is already available that indicates the LD50 (or LC50) to be in the range of Category 5 values or other animal studies or toxic effects in humans indicate a concern for human health of an acute nature.
 - (ii) The substance is classified in this Category, through extrapolation, estimation or measurement of data if assignment to a more hazardous category is not warranted, and:
 - reliable information is available indicating significant toxic effects in humans; or
 - any mortality is observed when tested up to Category 4 values by the oral, inhalation, or dermal routes; or
 - where expert judgement confirms significant clinical signs of toxicity, when tested up to Category 4 values, except for diarrhoea, piloerection or an ungroomed appearance; or
 - where expert judgement confirms reliable information indicating the potential for significant acute effects from other animal studies.

Recognizing the need to protect animal welfare, testing in animals in Category 5 ranges is discouraged and should only be considered when there is a strong likelihood that results of such a test would have a direct relevance for protecting human health.

3 ANALYSIS OF HEALTH HAZARD CLASSIFICATION AND LABELLING CRITERIA OF NDPSC AND GHS

Classification Elements

3.1 Acute oral, dermal and inhalational toxicity

The Tables presented in the following sections compare and contrast the classification criteria currently used by the NDPSC with those of the GHS. In these Tables, when the GHS statements align with the NDPSC statements, they have been placed parallel to each other for easier comparison.

The present analysis expands the earlier work by the OCSEH to analyse in detail the impact of applying GHS to the chemicals classification and labelling system with that of the GHS. The analysis compares the poisons scheduling criteria of the NDPSC with those proposed in GHS.

The cut-off limits given in Table 3 attempts to compare the acute oral, dermal and inhalational toxicity criteria used by the NDPSC and those specified for the GHS. Except for the GHS acute inhalation toxicity category, which has been divided into three sub-categories, no major differences in acute oral and dermal toxicity criteria can be seen between the two classification systems. As the cut-off limits for these two endpoints indicate, GHS Categories 1 and 2 would equate to Schedule 7, Categories 3 and 4 would equate to Schedule 6 and, and GHS Category 5 would equate to Schedule 5. The substances considered not to require control by scheduling would be included in Appendix B. These substances would fall outside the above GHS Categories.

Table 3. Comparison of NDPSC and GHS acute oral and dermal toxicity classification criteria*

Endpoint	NDPSC Schedules and GHS Categories with relevant Cut-off limits					
<i>Oral toxicity (LD₅₀ mg/kg bw)</i>						
NDPSC LD ₅₀	Schedule 7 ≤50		Schedule 6 50-2000		Schedule 5 2000-5000	Appendix B >5000
GHS LD ₅₀	Cat 1 ≤5	Cat 2 5-50	Cat 3 50-300	Cat 4 300-2000	Cat 5 2000-5000	>5000
<i>Dermal toxicity (LD₅₀ mg/kg bw)</i>						
NDPSC LD ₅₀	Schedule 7 ≤200		Schedule 6 200-2000		Schedule 5 >2000	Nil criteria**
GHS LD ₅₀	Cat 1 ≤50	Cat 2 50-200	Cat 3 200-1000	Cat 4 1000-2000	Cat 5 2000-5000	-

*No scheduling changes are expected under either of these criteria. **Nil NDPSC criteria exist for Appendix B labelling.

From the Table above, it can be seen that both the GHS and NDPSC classification criteria cover the same toxicity range for a scheduled, hazardous substance. Therefore, there would be no reduction in the number of substances classified for acute oral and dermal toxicity if GHS classification criteria were to be adopted. Consequently, the adoption of these GHS criteria and hazard categories would not result in a reduction in existing public health standards.

Acute inhalation toxicity

Tables 4 and 5 present a comparison of acute inhalation toxicity classification criteria of the NDPSC and GHS.

The NDPSC numeric acute inhalation classification values, which make no distinction between gases, vapours and dust/mist, are provided in $\text{mg}/\text{m}^3/4 \text{ h}$. Equivalent values in $\text{mg}/\text{L}/4 \text{ h}$ units are provided in the GHS for vapours and dust/mist, but for gases these values are given in ppm units. Therefore, for this comparison, the NDPSC values were compared only against those for vapour and dust/mist in the GHS scheme (Tables 4 & 5).

It is noteworthy that when gaseous substances were considered by the NDPSC for scheduling, only a few substances have been scheduled so far on the basis of acute inhalation toxicity alone (Table 6). Generally, the scheduling decisions are based on the entire toxicity profile of a substance. Nonetheless, the new GHS acute inhalation toxicity criteria, which is based on emerging scientific data, are expected to enhance the current NDPSC criteria as the lung toxicity caused by gases, vapours and dusts/mists are reported to be different due to their varying lung infiltration rates. Because, the majority of substances contained in domestic products are usually tested as mists or dusts, with some being tested in their vapour phase, the new GHS criteria would particularly be helpful for evaluators to identify the relevant hazard category of a substance based on the inhalation toxicity.

Of the LC_{50} values for vapours, the cut-off limits for Category 1 toxicants fall within the SUSDP Schedule 7 criteria. However, the values for other GHS Categories namely, 2, 3, and 4 do not fully align with the NDPSC criteria. Additionally, the GHS cut-off limits for dust/mist in Categories 1, 2 and 3 appear to be standing parallel with the NDPSC Schedule criteria, but the cut-off limits for Categories 4 and 5 do not align with the NDPSC Schedules 6 and 5 criteria. If the GHS classification criteria were to be adopted, this may lead to some changes (up-scheduling) to some of the scheduled substances as a result of these anomalies. The GHS cut-off limits for gases cannot be directly compared with the current NDPSC inhalation toxicity criteria as the concentration limits are specified in parts per million (ppm) notations and hence an estimate of LC_{50} of a given substance would be dependant on its relative density.

Table 4. Comparison of NDPSC and GHS acute inhalational toxicity classification criteria for vapours*

Inhalation toxicity (4 h LC ₅₀)						
NDPSC Schedule	Schedule 7	Schedule 6	Schedule 5			Appendix B
LC ₅₀ criteria (mg/L)	≤0.5	>0.5 - ≤3.0	>3.0			-
GHS hazard category	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	-
Hazard statement	Fatal if inhaled	Fatal if inhaled	Toxic if inhaled	Harmful if inhaled	May be harmful if inhaled	
LC ₅₀ criteria (vapours; mg/L)	≤0.5	>0.5 - ≤2.0	>2.0 - ≤10.0	>10.0 - ≤20.0	>20.0	-

Table 5. Comparison of NDPSC and GHS acute inhalational toxicity classification criteria for dust/mist*

Inhalation toxicity (4 h LC ₅₀)						
NDPSC Schedule	Schedule 7	Schedule 6	Schedule 5			Appendix B
LC ₅₀ criteria (mg/L)	≤0.5	>0.5 - ≤3.0	>3.0			-
GHS hazard category	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	-
Hazard statement	Fatal if inhaled	Fatal if inhaled	Toxic if inhaled	Harmful if inhaled	May be harmful if inhaled	
LC ₅₀ criteria (dust/mist; mg/L)	≤0.05	>0.05 - ≤0.5	>0.5 - ≤1.0	>1.0 - ≤5.0	>5.0 - ?	-

*GHS makes a distinction between gases, vapours and dust/mists when classifying the inhalation toxicity of substances, but NDPSC criteria make no such differentiation.

It is proposed that NDPSC considers adopting the GHS classification criteria and hazard categories for inhalation toxicity which distinguish gases, vapours and dusts/mist. If adopted, this would be a refinement over the NDPSC classification criteria, and adoption of the GHS acute inhalation toxicity classification criteria and hazard categories for all physical forms is expected to provide an enhancement to the existing NDPSC classification criteria.

The data presented in Table 6 for a selected list of fumigants support the fact that in practice, the substances of this nature are not generally classified based on their acute inhalation toxicity alone, but with the weight of evidence approach following consideration of all available toxicology data for the substance. Of these, sulfuryl fluoride is in Schedule 6 of the SUSDP owing to its acute inhalation toxicity. However, the remainder of substances with low to moderate acute inhalation toxicity (matching Schedule 6 criteria) have been placed in Schedule 7 owing to their potential genotoxic, carcinogenic and developmental or reproductive toxicity effects. Under the cut-off limits in GHS, the estimated LC₅₀ values

(ppm) of these substances fall within Category 3 and 4 criteria (except for ethylene dibromide), but they would also be listed in Category 1 of GHS due to other toxicological hazards (genotoxicity, carcinogenicity and developmental or reproductive toxicity) associated with these substances which would take precedence over acute inhalational toxicity.

Table 6. Classification of some gases (selected fumigants) using NDPSC and GHS criteria*

NDPSC	Schedule 7	Schedule 6	Schedule 5		
LC ₅₀ (mg/L)	≤0.5	0.5- 3	>3		
<i>Sulfuryl fluoride</i>	-	1.6 – 2.5	-		
Ethylene dibromide	<i>Severe skin & eye irritancy (irreversible effects), Carcinogenicity</i>	~2.5	-		
Ethylene oxide	<i>Reproductive & neurotoxicity, genotoxicity & carcinogenicity</i>	1.5-2.3	-		
Methyl bromide	<i>Severe irritancy (irreversible effects), genotoxicity & developmental toxicity</i>	3.0	-		
Propylene oxide	<i>Severe skin & eye irritancy (irreversible effects), neurotoxicity, genotoxicity & carcinogenicity</i>	-	9.5		
GHS	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5
LC ₅₀ (ppm)	≤100	100-500	500-2500	2500-5000	>5000
<i>Sulfuryl fluoride</i>	-	400	600	-	-
Ethylene dibromide	<i>Severe skin & eye irritancy (irreversible effects) carcinogenicity</i>	320	-	-	-
Ethylene oxide	<i>Reproductive & neurotox/genotox & carcinogenicity</i>	-	818-1254	-	-
Methyl bromide	<i>Severe skin irritancy (irreversible effects) genotoxicity & develop: toxicity</i>	-	759	-	-
Propylene oxide	<i>Severe skin & eye irritancy (irreversible effects) neurotox/genotox & carcinogenicity</i>	-	-	3934	-

*Text in *italics* represents the toxicological basis for classification.

Conclusions: Acute oral and dermal toxicity classification criteria for SUSDP Schedules 7, 6 and 5 align well with GHS Categories 1 and 2, 3 and 4, and 5, respectively. For inhalation toxicity, the GHS criteria stipulate three subsets of criteria for this hazard class (for gases, vapours, and dusts and mists, respectively), though NDPSC considers all three categories under one cluster. Because of this reason, the criteria for vapours in Categories 2, 3, 4 and 5, and dust/mist in Categories 4 and 5 do not stand parallel with NDPSC Schedules. It is anticipated that the new inhalation toxicity classification criteria would provide clarity and consistency to the chemicals classification. If GHS were to be adopted, though it is expected to be minimal, the differences in classification criteria may lead to changes of some scheduled substances. Nevertheless, adoption of the GHS inhalation toxicity criteria for all physical forms would be a positive refinement over the existing NDPSC classification criteria. Thus, it is expected that the new GHS criteria would provide an enhancement to the existing NDPSC classification principles resulting in achieving better public health protection levels.

3.2 Comparison of acute local toxicity criteria

Skin and eye irritation

It should be noted that the current NDPSC criteria do not utilise numerical cut-offs to classify substances into schedules, rather rely on hazard classification statements to achieve this purpose. Although in animal experiments the extent of local skin reactions are evaluated, scored, and the mean irritation scores are established, the nature and severity of lesions and their reversibility or lack of reversibility are communicated by way of hazard classification statements.

While the definition for corrosivity is more descriptive in the GHS than in the NDPSC, both classification systems are considered to be comparable with regard to identification of corrosive substances. It is also noteworthy that the GHS classification criteria for both skin and eye irritation are descriptive and clearer than the NDPSC criteria.

For skin irritation, GHS distinguishes between corrosivity, erythema/eschar and oedema formation, and for eye irritation, corneal opacity, iritis, conjunctival erythema and oedema, and provides classification criteria and numerical cut-offs for classification between hazard categories. Although in the current practice, toxicology evaluators and regulators carefully consider all these hazards when evaluating toxicology data (originating from an internationally accepted and validated test methods; eg. OECD), the GHS criteria appear to provide straightforward guidance for skin and eye irritant classification while also specifying guidance values (mean irritation score ranges) for different GHS Categories. The persistence of effects on the skin or eye is also a criterion that has been specified well in the GHS. In contrast, the NDPSC criteria for classification of skin and eye irritation require judgement particularly for corrosivity and slight irritation endpoints, when placing substances in Schedules. However in the NDPSC criteria, allocation of a hazard statement to a substance is primarily based on mean irritation scores.

The data presented in Table 7 evaluates the NDPSC criteria against the 'basis' of the GHS hazard statement. It can be seen that while the skin corrosivity criteria are considered to be comparable between the GHS and NDPSC, a corrosive substance can be classified in either Schedule 7 or 6 of SUSDP, while they are only classified in one GHS hazard category (Category 1). It is considered that the minimum criteria for placing a substance in Schedule 5 (ie. slight irritation) would be comparable to the GHS category 3 criteria for mild irritation. Consequently, though it can be seen from Table 7 that the GHS and NDPSC criteria are considered to cover the same toxicity range for a hazardous/scheduled substance, the GHS hazard categories do not fully align with NDPSC schedules.

Table 7. Comparison of NDPSC Schedules and GHS hazard categories for corrosivity and skin irritation

NDPSC Schedule	Schedule 7	Schedule 6	Schedule 5	Appendix B
Criteria	Corrosive	Severe irritation, at 72 hours, to corrosive	Slight to moderate irritation at 72 hours.	Nil
GHS	Cat 1A, 1B, 1C	Cat 2	Cat 3	-
Hazard statement	Causes severe skin burns and eye damage	Causes skin irritation	Causes mild skin irritation	
'Basis' of GHS hazard statement	Corrosive	Irritant	Mild irritant	-

Although the criteria used for eye irritant classification is somewhat similar to that for skin irritation, the following comparison includes consideration of criteria on the persistence of observed effects which is common to both classification schemes. As for skin irritation, it can be seen that corrosive substances can be classified in two NDPSC schedules, but they are included in only one GHS hazard category (Category 1). Schedule 5 is considered to be equivalent to GHS Category 2B and both schemes stipulate the corneal effects are reversible within 7 days. Although the GHS and NDPSC criteria are considered to cover the same toxicity range for a hazardous substance, only one of three GHS hazard categories fully aligns with a SUSDP schedule (Table 8).

Table 8: Comparison of NDPSC Schedules and GHS hazard categories for eye irritation

NDPSC Schedule	Schedule 7	Schedule 6	Schedule 5	Appendix B
Criteria	Corrosive	Severe - Corrosive	Slight - Moderate	Nil
Hazard basis	Tissue destruction, corneal perforation	Corneal opacity not reversible in 7 days to tissue destruction, corneal perforation, conjunctival erosion, destruction of the nictitating membrane	Slight irritation with no corneal opacity to corneal opacity reversible in 7 days, extreme conjunctival effects with near maximal scores for redness, chemosis and discharge	
GHS	Cat 1	Cat 2A	Cat 2B	-
Hazard statement	Causes serious eye damage	Causes serious eye irritation	Causes eye irritation	
Relevant elements of GHS criteria	Corneal opacity, iritis or conjunctiva redness/oedema not fully reversed in 1 animal in 21 days (<i>Corrosive</i>)	Corneal opacity iritis or conjunctiva redness/oedema not fully reversed within 21 days	Corneal opacity reversed within 7 days	-

Adoption of these GHS classification criteria would not lead to a reduction in the number of substances presently classified for these health effects.

The GHS criteria with guidance values for mean irritation scores are considered to be beneficial when evaluators attempt to allocate the most suitable Schedule to a substance. It is expected that adoption of the GHS criteria for scoring and classification of skin and eye irritation would overcome some uncertainties currently encountered by the toxicology evaluators, regulators and other relevant authorities thus leading to greater consistency and transparency in decision making. The present analysis proposes that the NDPSC considers including the GHS criteria for skin and eye irritation in its classification system.

It should be emphasised that adoption of GHS criteria on acute local toxicity would not lead to any adjustments in public health standards and the NDPSC would be able to maintain the current requirements for warning and precautionary statements. Given that under the current system only a few substances are scheduled on the basis of local toxicity alone, and that the above comparisons on skin and eye irritation indicate that the GHS and NDPSC cover the same toxicity range, there would be minimal or no disruption to the existing poisons schedules.

Skin and respiratory sensitisation

A noteworthy endpoint in the GHS local toxicity cluster is the toxicity endpoint of respiratory sensitisation. A respiratory sensitiser is a substance that will lead to hypersensitivity of the airways following inhalation. For respiratory sensitisation, the pattern of induction followed by elicitation phases is shared in common with skin sensitisation (Globally Harmonised System of Classification and labelling of chemicals; GHS; United Nations; Purple Book, 2007). In the current practice, skin sensitisation is the only sensitisation endpoint considered by NDPSC and they are routinely included in Schedule 6 of the SUSDP. Whilst the NDPSC criteria do not specifically mention respiratory sensitisation, it is considered as an endpoint that represents a moderate hazard from repeated use, which is reversible. Nonetheless, respiratory sensitisation related fatalities have been reported in the medical literature. Recent case reports of death from acute asthmatic attack in sensitised individuals following occupational exposure to isocyanates, which are known respiratory sensitisers in humans,^{1,2} are some examples. [Most widely used isocyanate compounds are diisocyanates, which contain two isocyanate groups, and polyisocyanates. Isocyanates (free organic, boiling below 300° C **except** in: viscous polyurethane adhesives; or viscous polyurethane sealant; containing not more than 0.7 per cent of free organic isocyanates boiling below 300° C) are covered under Schedule 6 SUSDP entry].

One of the commonly used diisocyanates is methylene-bis-(phenyl)-isocyanate (MDI) is listed in Schedule 6 of SUSDP. Some known chemical, respiratory sensitisers in the health care industry are glutaraldehyde and formaldehyde³, are listed in SUSDP Schedules 2 and 5, and 2 and 6, respectively. In a recent review², it has been reported that a male furniture factory worker died of acute asthmatic attack following exposure to diisocyanate vapour at work. In this case, the deceased individual had had a previous history of acute asthma attack triggered by exposure to diisocyanate from spray painting. The report also confirms that the fatal outcome occurred due to repeated exposure to the chemical in the occupational setting,

¹ NIOSH Safety and Health Topics: Isocyanates, National Institute for Occupational Safety and Health (<http://www.cdc.gov/niosh/topics/isocyanates/>);

² Lee SM & Koh D (2008) Lessons from an isocyanate tragedy. Singapore Med Journal, 49 (5): 372-374, 2008 (<http://smj.sma.org.sg/4905/4905ra1.pdf>).

³ Smedley J & Coggan D (1996) Health surveillance for hospital employees exposed to respiratory sensitisers. Occp Med 46 (1): 33-36.

providing further evidence for the underlying pathological principles of the disease process. Sensitiser-induced occupational asthma is generally associated with a latency period of months to years between first exposure to an agent and development of immunologic sensitisation and asthma⁴ (isocyanates have a variable period of latency ranging from 10 months to 15 years after the initial exposure)². It is known that recognition of occupational asthma and removal of affected individuals from these exposures is critical and can prevent progression of the disease to irreversible or even fatal asthma. Considering these scientific literatures and in line with the current NDPSC approach, the respiratory sensitisers cannot be regarded as highly toxic substances that would fall within Schedule 7 classification criteria, but as moderately toxic substances. Consequently, the present analysis confirms that the existing NDPSC classification criteria for sensitisers remain appropriate. This would mean that GHS Category 1 classification of respiratory and skin sensitisers would equate to NDPSC Schedule 6 (Tables 9 & 10).

Although, based on the general NDPSC criteria, skin sensitisers are likely to be split between Schedules 6 and 5 of SUSDP (for moderate and slight skin sensitisers, respectively); in practice, however, they have been routinely included in Schedule 6. Conversely, in the GHS, both the skin and respiratory sensitisers are grouped as Category 1 toxicants and therefore do not fully align with NDPSC categories (Table 10). This is due to the fact that there are no animal or other test systems to sub-categorise (eg. strong versus weak sensitisers) that have been validated and accepted.

Table 9: Comparison of the GHS hazard category for respiratory sensitisation with the NDPSC classification criteria*

Respiratory sensitisation				
NDPSC Schedule	Schedule 7	Schedule 6	Schedule 5	Appendix B
<i>Hazard basis</i>	-	No specific criteria available but considered to be a moderate hazard from repeated use, which is reversible	-	-
GHS hazard category	-	Cat 1		-
GHS hazard statement		May cause allergic or asthma symptoms or breathing difficulties if inhaled	-	-

*New toxicity endpoint for NDPSC.

⁴Ortega HG, Kreiss K, Schill DP & Weisman DN (2002). Fatal asthma from powdering shark cartilage and review of fatal occupational asthma literature. American J Ind Med 42: 50-54.

Table 10. Comparison of NDPSC and GHS acute local toxicity (skin sensitisation) classification criteria*

<i>Skin sensitisation</i>				
NDPSC	Schedule 7	Schedule 6	Schedule 5	Appendix B
<i>Hazard classification</i>	-	Moderate-Severe	Nil-Slight	Nil
GHS	-	Cat 1	-	-
<i>Hazard statement</i>		May cause allergic skin reaction		
<i>Relevant elements of GHS criteria</i>		Evidence in humans of skin sensitisation in a substantial number of persons or positive results from an appropriate animal test		

*No change to the current scheduling is expected if the new GHS criteria were adopted.

The present analysis proposes that the new GHS hazard category for respiratory sensitisation and the associated classification criteria be included in the NDPSC system as this toxicity endpoint represents more recent scientific contributions to toxicology and there appears to be a gap in the current NDPSC scheduling regimen. Adoption of the GHS respiratory sensitisation classification criteria and hazard category is expected to provide an enhancement to the existing NDPSC classification criteria. Substances would be classified as respiratory sensitisers if there is evidence in humans for that a given substance can induce specific respiratory hypersensitivity and/or when there are positive results from an appropriate animal test when a validated test became available⁵. [Hypersensitivity reactions normally seen as asthma and other respiratory reactions such as rhinitis, conjunctivitis and alveolitis in humans are considered as manifestations of respiratory sensitisation].

Adoption of the new GHS criteria on respiratory sensitisation would not lead to any significant adjustments or reduction in existing public health standards. NDPSC would be able to maintain the current requirements for warning statements and precautionary statements. As a result, no changes to existing poisons schedules are expected and the current practice of scheduling could be continued by placing moderate skin sensitisers in Schedule 6 and slight skin sensitisers in Schedule 5 of the SUSDP. Appendix B of the SUSDP would capture the substances with no skin or respiratory sensitisation potential. There is also a need for the development of clear criteria for the classification of “slight” skin sensitisers to include within NDPSC system.

Conclusions: The terminology in hazard statements in the acute local toxicity classification criteria in GHS generally aligns with the hazard classification principles of the NDPSC. In GHS, however, the scoring and classification guidance appear to be clearer and more straightforward than that of NDPSC. A notable difference in the GHS local toxicity cluster is the toxicity endpoint for respiratory sensitisation. It is proposed that the GHS criteria for skin

⁵ At present, recognised animal models for the testing of respiratory hypersensitivity are not available. Under certain circumstances, animal testing may be used, eg. a modification of the guinea pig maximisation test for determination of relative allergenicity of protein. However, these tests still need validation (Chapter 3.4, Purple Book, 2nd revised edition, 2007).

and eye irritation, and respiratory sensitisation be incorporated into NDPSC guidelines. In particular, the latter represents a more recent contribution to the battery of toxicity endpoints normally considered by the regulators, and there are some apparent gaps in current scheduling regime. Additionally, there appears to be a need for the development of clear criteria for the classification of “slight” skin sensitisers to include in the existing NDPSC system.

3.3 Comparison of NDPSC and GHS classification criteria: other toxicity endpoints

Specific target organ toxicity (single/repeat-dose)

NDPSC has no specific criteria for scheduling on the basis of single-dose systemic toxicity and the hazard bases given in Table 11 below have been derived from the general criteria specified within the system. The existing NDPSC classification criteria focus mainly systemic toxicity following repeat-dose administration. At present, systemic toxicity following acute exposure is covered under acute oral, dermal and inhalational toxicity endpoints whilst taking in to consideration of the overall toxicology profile of a substance. The findings and the data in both acute and repeat-dose toxicity studies are subjected to critical and independent analysis during study evaluations and substances are placed in Appendix B, Schedules 5, 6 and 7 of the SUSDP based on the likelihood of producing irreversible toxicity. Appendix B, Schedules 5, 6 and 7 represent increasingly strict container and labelling requirements with special regulatory controls over the availability of the poisons listed in Schedule 7.

The GHS classification criteria introduce two distinct hazard classes for specific target organ systemic toxicity namely, systemic toxicity following acute and repeat-dose exposures, and defines the hazard basis for each situation with dosage ranges for different GHS Categories. It would seem that the guidance values specified for GHS Category 1 and 2 toxicants could be of use in the classification of hazardous substances by NDPSC. Therefore, it is proposed that whilst maintaining the current approach and practice on systemic toxicity following single exposure, the NDPSC considers adopting the GHS guidance values and hazard statements for this toxicity end point for further enhancement of the existing guidelines. Noting the criteria proposed in GHS, the existing NDPSC classification criteria (hazard basis) were revised thus making them unambiguous (Table 11). The nature of health effects and clinical signs of GHS Category 3 substances are generally covered under the current Schedule 5 classification criteria and hence not included in Table 11.

Adoption of the above GHS elements would not interrupt continued maintenance of current public health standards and the NDPSC practice. Further, the current SUSDP requirements for precautionary statements could be maintained, and if adopted, transition to GHS would have no implications on currently scheduled substances.

Table 11. Comparison of NDPSC and GHS specific target organ toxicity classification criteria*

Endpoint	NDPSC Schedules and GHS Categories, hazard basis and hazard statements			
<i>Systemic toxicity-Acute</i>				
NDPSC	Schedule 7	Schedule 6	Schedule 5	Appendix B
<i>Existing hazard basis</i>	Severe hazard or significant risk of irreversible toxicity	Moderate hazard or low risk of irreversible toxicity	Low hazard and unlikely to produce irreversible toxicity	Reversible toxicity only in animals at moderate exposure levels
<i>Proposed hazard basis</i>	<i>Irreversible toxicity in humans or evidence of severe irreversible toxicity in animals at low exposures*</i>	<i>Toxicity in humans or evidence of irreversible toxicity in animals at low exposures levels*</i>	<i>Evidence of significant toxicity in animals at moderate exposure levels*</i>	
GHS	Cat 1		Cat 2	-
<i>Hazard basis</i>	Causes damage to organs (or state all organs affected, if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)		May cause damage to organs (or state all organs affected, if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	
<i>Guidance values</i>	[oral: ≤300 mg/kg bw, dermal: 1000 mg/kg bw, inhalation (gas): 2500 ppm; (vap): ≤10 & (dust): ≤1 mg/L]		[oral: 300-2000 mg/kg bw, dermal: 1000-2000 mg/kg bw, inhalation (gas): 2500-5000 ppm; (vap): 10-20 & (dust): 1-5 mg/L]	

*Amended NDPSC criteria are given in bold-faced *italic* text. These criteria would maintain the current public health standards and the GHS guidance values (in *italics*; for NDPSC) would also be considered in classification.

Similar to the criteria for acute exposure, GHS defines specific criteria and guidance values for specific target organ toxicity following repeat exposure. The GHS classification criteria for this endpoint also distinguish between oral, dermal and inhalation toxicity. Currently, the NDPSC classification is based on the available guidelines, and the overall toxicity profile of a substance, and the labelling elements are applied in accordance with the ultimate poisons schedule classification. Although, the potential systemic toxicity does not of itself, result in specific labelling requirements, first aid instructions, warning statements and/or safety directions may be required. As described for specific target organ toxicity following acute exposure, it is proposed that the existing NDPSC criteria for systemic toxicity following repeat exposure be maintained, but amended slightly as indicted for specific target organ

toxicity following acute exposure (Table 12). The GHS Category 1 equates to Schedules 7 and 6 and GHS Category 2 would equate to Schedule 5. Appendix B would include substances falling outside of the NDPSC classification system. Along with the proposed amendments to the existing criteria on hazard basis, it is proposed that the NDPSC consider adopting the GHS guidance values and hazard statements. The GHS guidance values would be of assistance to toxicology evaluators, industry and other regulators and the GHS hazard statements would provide an enhancement to the current system. Overall, it is expected that these amendments help harmonise with GHS, would have no implications on current practice of the NDPSC and could be adopted without disruption to existing schedules.

Table 12. Comparison of NDPSC and GHS specific target organ toxicity classification criteria – repeated dose*

<i>End Point</i>	NDPSC Schedules and GHS Categories, hazard basis and hazard statements			
<i>Systemic toxicity-repeated-dose</i>				
NDPSC	Schedule 7	Schedule 6	Schedule 5	Appendix B
<i>Hazard basis</i>	Severe hazard or significant risk of irreversible toxicity	Moderate hazard or low risk of irreversible toxicity	Low hazard and unlikely to produce irreversible toxicity	Reversible toxicity only in animals at moderate exposure levels
<i>Amended hazard basis</i>	<i>Irreversible toxicity in humans or evidence of severe irreversible toxicity in animals at low exposures*</i>	<i>Toxicity in humans or evidence of irreversible toxicity in animals at low exposures*</i>	<i>Evidence of significant toxicity in animals at moderate exposure levels*</i>	
GHS	- Cat 1		Cat 2	-
<i>Hazard basis</i>	Causes damage to organs (or state all organs affected, if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)		May cause damage to organs (or state all organs affected, if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	
<i>Guidance values</i>	<i>[oral: ≤10 mg/kg bw/d, dermal: 20 mg/kg bw/d, inhalation (gas): 50 ppm/6h/d; (vap): ≤0.2 & (dust): ≤0.02 mg/L/d]</i>		<i>[oral: 10-100 mg/kg bw/d, dermal: 20-200 mg/kg bw/d, inhalation (gas): 50-250 ppm/6h/d; (vap): 0.2-1.0 & (dust): 0.02-0.2 mg/L/d]</i>	

*Amended NDPSC criteria to be aligned with GHS are given in bold-faced *italic* text. These criteria would maintain the current public health standards and the GHS guidance values (in *italics*; for NDPSC) would be considered when classifying substances.

Conclusions: It is proposed that the hazard bases in NDPSC criteria for acute and repeat-dose toxicity be slightly modified to enhance the clarity in the existing system. It is expected that the amended criteria together with GHS hazard statements would bring about consistency in scheduling decisions and help harmonise with the GHS. Further, the new criteria would

enable to maintain the current public health standards and the current practice of scheduling. In adopting the modified criteria, the guidance values in GHS would be considered when classifying substances together with all other toxicological endpoints together with intended uses and use patterns. For both exposure scenarios, the GHS Category 1 would equate to Schedules 7 and 6 and Category 2 would equate to Schedule 5. Appendix B would accommodate the substances falling outside the NDPSC classification system. Adoption of new hazard basis for systemic toxicity would have no implications on current schedules.

Carcinogenicity

At present, NDPSC also has no specific criteria for scheduling potentially carcinogenic compounds. The general criteria for Schedule 7 refer to severe hazards and irreversible toxicity (severe hazard from repeated use, or significant risk of producing irreversible toxicity) that take account of carcinogenic activity of a substance. Signal words and other label statements are applied based on the ultimate poisons schedule classification of the substance following consideration of the overall toxicology profile of a substance together with a range of other factors. Based on the present criteria and continuing the current practice, the potential for carcinogenicity of a chemical is communicated to the product user through warning statements and safety directions.

It must be emphasized that the current NDPSC classification is based on the totality of the available information on carcinogenicity of a substance. Substances that have induced benign and malignant tumours in well performed laboratory animal studies are considered to be presumed or suspected human carcinogens unless there is strong evidence that the mechanism of tumour formation is not relevant for humans. If the carcinogenic hazard to humans cannot be ruled out, the NDPSC would place the substance in question in Schedule 7. A conclusion of no carcinogenic potential would not require scheduling of the substance (ie. an all or none decision).

In GHS, the carcinogen classification is a one-step, criterion-based process and involves two interrelated determinations; evaluation of strength of evidence and consideration of all other relevant information to place chemicals with human cancer potential into hazard categories. Chemicals are allocated to one of two categories [Category 1 (1A and 1B) or Category 2] based on the strength of evidence and weight of evidence. In some instances, route specific classification may be warranted. Placing of a chemical in Category 1 is based on the epidemiological and/or animal data. A chemical may be distinguished further as either Category 1A or 1B based on human evidence or animal data, respectively (Table 13). The placing of a chemical substance in Category 2 would be on the basis of evidence obtained from human/or animal studies, and when such evidence is not sufficiently convincing to place it in Category 1.

Some important factors taken into consideration and common to both the NDPSC and GHS classification systems when classifying substances include the following: routes of exposure, toxicokinetics, tumour type, background incidence, multi-species response, progression of lesions to malignancy, latency period, sex and species differences, histopathology, confounding effects, mode of action and its relevance to humans, mutagenicity, genotoxicity with growth stimulation, mitogenesis and immunosuppression.

Table 13. Comparison of NDPSC and GHS carcinogenicity classification criteria*

<i>Carcinogenicity</i>					
NDPSC	Schedule 7		Schedule 6	Schedule 5	Appendix B
<i>Hazard basis</i>	Carcinogenic in humans or evidence for carcinogenic potential in experimental animals		-	-	-
GHS	Cat 1 (1A & 1B)	Cat 2:		-	
<i>Hazard statements</i>	<p>Cat 1A: May cause or suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)</p> <p>Cat 1B: May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)</p>	<p>Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)</p>		-	

*No amendments are proposed to the existing criteria.

It is proposed that the current NDPSC classification criteria for carcinogenicity remain appropriate as these guidelines provide sufficient control. In the current practice, the scheduling decisions are made following consideration of all available data, peer-reviewed studies and additional data accepted by other regulatory agencies together with a weight of evidence approach. Any deviation from the current approach would lead to major changes in the current criteria, amendments to scheduled substances and possibly reduction in existing public health standards. Because no modifications are recommended to the existing criteria, there would be no disruption to the maintenance of the existing public health standards. Consequently, the GHS Categories 1A, 1B and 2 for carcinogenicity would equate to Schedule 7 of SUSDP. The current SUSDP requirements for precautionary statements and warning statements would be maintained and the transition to GHS would have no effect on the current scheduling status.

Genotoxicity

NDPSC also has no specific criteria for scheduling potentially genotoxic compounds. However, the general criteria for Schedule 7 refer to severe hazards and irreversible toxicity, which also encompasses the genotoxic activity of a substance which could be taken in to account when taking scheduling decisions. Signal words and other label statements are applied based on the ultimate poisons schedule classification of the substance. The potential for genotoxicity would be advised through appropriate precautionary statements, warning statements and safety directions.

In GHS, the genotoxicity is covered under the broad hazard class of “germ cell mutagenicity”. The criteria, which are generally comparable to carcinogenicity criteria, specify two different categories to accommodate germ cell mutagens based on the weight of evidence approach. It should be mentioned that the proposed GHS criteria are hazard-based and therefore, not intended for quantitative risk assessment of a chemical.

In the current practice, NDPSC scheduling decisions are based on the totality of the available information. That means if a genotoxic hazard to humans cannot be ruled out, the substance in question would be placed in S7. A conclusion of no genotoxic potential would not require scheduling of the substance, ie. it would be an all or none decision. Any deviation from this approach would lead to major changes in existing criteria, amendments to already scheduled substances and possibly reduction in public health standards. Because of this reason, it is proposed that NDPSC retains the current classification system. The existing hazard basis in NDPSC criteria was slightly amended to make it unequivocal. Consequently, the respective GHS Categories (1A, 1B and 2) would align with Schedule 7 of SUSDP (Table 14). Because there would be no alterations to the existing NDPSC classification approach, the current SUSDP requirements for precautionary statements and warning statements would be maintained and the transition to GHS would have no effect on current schedules. It is proposed that the NDPSC considers adopting relevant GHS hazard statements on this toxicity endpoint as there are gaps in the current system.

Table 14. Comparison of NDPSC and GHS genotoxicity (Germ cell mutagenicity) classification criteria*

<i>Genotoxicity (Germ cell mutagenicity)</i>				
NDPSC	Schedule 7		Schedule 6	Schedule 5
<i>Hazard basis</i>	Genotoxic in humans or evidence for genotoxic potential in experimental animals		-	-
<i>Amended hazard basis</i>	Known, presumed or suspected genotoxin in humans			
GHS	Cat 1A & 1B	Cat 2	-	-
<i>Hazard statements</i>	Cat 1A: May cause genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard) Cat 1B: May cause genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)		

*No amendments are proposed to the existing criteria.

Reproductive and developmental toxicity

At present, no specific criteria are available within the NDPSC to classify reproductive and development toxicants into different Schedules. However, the general description for Schedule 7 intended to recognize the substances of “severe hazard from repeated use, or with significant risk of producing irreversible toxicity” or the description for Schedule 6 intended to recognise substances of moderate hazard from repeated use, and related criteria are applied. These general criteria take account of reproductive and developmental toxicity effects of a substance. In the current practice, NDPSC considers reproductive and development toxicity as two distinct toxicity endpoints. The scheduling decisions are based on the observations in acceptable laboratory animal studies conducted to assess reproductive and/or developmental toxicity. The data in laboratory animal studies are subjected to thorough and independent analyses with due consideration on potential exposures in consumers under normal conditions of use or foreseeable misuse. Signal words and other label statements are applied based on the ultimate poisons schedule classification of the substance. In case there are concerns, the potential for reproductive and developmental toxicity are communicated to the user through appropriate warning statements and safety directions. According to the current practice, substances that are likely to induce irreversible reproductive or developmental hazards at low doses would be placed in Schedule 7. Substances causing irreversible effects in experimental animals at higher doses would be placed in Schedule 6, and those causing reversible or secondary effects in experimental animals would be included in Schedule 5.

In GHS, the adverse effects on sexual function and fertility in adult males and females as well as developmental toxicity in the offspring are covered under the broad category of “Reproductive toxicity”, though it is subdivided to distinguish the two different toxicity endpoints. The reason for this division is that some reproductive toxic effects cannot be clearly assigned to either impairment of sexual function and fertility or to developmental toxicity.

Whilst substances could be allocated to one of two categories on the basis of their reproductive and/or developmental effects, they would be classified as reproductive toxicants and assigned with appropriate hazard statements. GHS also introduces provisions for an additional toxicity category to classify substances that may cause harm to breast-fed children covering potential effects on or via lactation. The NDPSC may wish to consider this new additional hazard category for inclusion and further refinement of the existing classification system. In any event, no scheduling changes could be expected with this slight amendment to existing criteria given that no significant differences could be seen between the NDPSC and GHS classification approach. As a result, GHS Categories 1A and 1B would equate to Schedule 7 and Category 2 would equate to Schedule 6. The current SUSDP requirements for precautionary statements would be maintained and the transition to GHS would have no effect on current schedules (Table 15).

Table 15. Comparison of NDPSC and GHS Reproductive and developmental toxicity classification criteria*

Reproductive and developmental toxicity				
NDPSC	Schedule 7	Schedule 6	Schedule 5	Appendix B
<i>Hazard basis (no specifics)</i>	Reproductive/developmental toxicity in humans or irreversible effects in experimental animals at low doses	Irreversible effects in experimental animals at high doses	Reversible or secondary effects in experimental animals	No reproductive or developmental toxicity
GHS	Cat 1 (1A & 1B)	Cat 2	Additional Category if needed**	
<i>Hazard statements</i>	<p>Cat 1A: May damage fertility or the unborn child (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)</p> <p>Cat 1B: May damage fertility or the unborn child (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)</p>	Suspected of damaging fertility or unborn child (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)		

*No amendments are proposed to the existing criteria. **May cause harm to breast-fed children (eg. for effects on or via lactation).

Conclusions: GHS criteria stipulates two distinct specific target organ systemic toxicity categories namely, systemic toxicity following acute and repeat-dose exposure, and specifies guidance (cut-off limits) values. The terminology used to describe these new categories is slightly different from that used by the NDPSC. Nevertheless, the dosage cut-off limits for GHS Category 1 and 2 toxicants align with the criteria for Schedule 6 and 5 of the SUSDP, respectively. The carcinogenic and genotoxic substances to be classified as GHS Category 1 and 2 toxicants would stand parallel with Schedule 7 poisons. No major amendments to the existing reproductive and developmental toxicity classification criteria are proposed but, the NDPSC may wish to consider the inclusion of new GHS hazard category to classify substances that may cause harm to breast-fed children (effects on or via lactation) for further refinement of the existing criteria.

Aspiration hazard

The GHS also introduces a new hazard class to encompass the potential aspiration hazards of chemicals. This endpoint is not described in the NDPSC classification criteria though taken into account when establishing the overall toxicology profile of a substance. Given that aspiration of a substance can occur as it is vomited, often following ingestion, current NDPSC practice is to provide appropriate directions for first aid attention through first aid instruction statements in case of poisoning and further safety directions.

Aspiration hazard class in GHS contains two hazard categories namely Category 1 and Category 2. In GHS, aspiration toxicity is described as the entry of a substance through the oral or nasal cavity, or indirectly from vomiting, into the trachea and lower respiratory tract producing effects such as chemical pneumonia, varying degrees of pulmonary injury or death⁶.

Because this is a new hazard class in GHS based on emerging scientific findings, the present analysis recommends that the NDPSC considers that “respiration hazard” be included in the existing classification criteria as an endpoint to provide further enhancement to the present system. Based on the current NDPSC Schedule descriptions and toxicity assessment criteria, GHS Category 1 and Category 2 for aspiration hazard would equate to Schedule 6 and Schedule 5 of the SUSDP (Table 16), respectively. Adoption of this new hazard class with hazard statements would have no implication on the current schedules or lower existing public health standards, but enhance the NDPSC classification system enabling harmonisation with the GHS.

Table 16. Proposed placement of the GHS hazard categories for aspiration hazard within NDPSC schedules

Aspiration hazard				
NDPSC Schedule	Schedule 7	Schedule 6	Schedule 5	Appendix B
<i>Basic criteria (Schedule description)</i>	-	Substances which may cause death or severe injury if ingested, inhaled or in contact with the skin or eyes	Substances which are capable of causing only minor adverse effects human beings in normal use	
GHS hazard category	-	Cat 1	Cat 2	-
GHS hazard statement	-	May be fatal if swallowed and enters airways	May be harmful if swallowed and enters airways	-

Conclusions: GHS introduces a new hazard class to encompass the aspiration hazard of a chemical which is not described as a distinct toxicity endpoint in the NDPSC classification criteria. It contains two hazard categories namely, Category 1 and Category 2. Because this is a new hazard class in the GHS based on emerging scientific findings, it is proposed that the NDPSC considers including it in the existing classification criteria to provide further enhancement to the present system. According to existing schedule descriptions and criteria on toxicity assessment factors, GHS Category 1 and Category 2 would equate to Schedule 6 and Schedule 5 of the SUSDP, respectively. Adoption of this new hazard class and hazard statements would have no implication on the current schedules or lower existing public health standards, but enhance the NDPSC classification system and help harmonise with the GHS.

⁶ There are no standardised animal tests to determination of this hazard. Carefully assessed positive results in an animal test could serve as a guide to possible aspiration hazard in humans (Purple Book , 2007)

SUMMARY OF COMPARISON ON NDPSC AND GHS HAZARD CLASSES

The following Tables (Tables 17 & 18) present a summary of the comparisons on different GHS hazard classes outlined in this report thus far and their alignment with the respective NDPSC Schedules. The Tables below distinguish those NDPSC toxicity endpoints for which specific criteria exist from those with no specific criteria but a variety of other factors in combination with the overall toxicology profile is used in Scheduling.

The following shading codes apply to the Tables below:

	GHS hazard category does not align with a NDPSC schedule
	Cannot be determined if the NDPSC and GHS cover the same toxicity range
	NDPSC scheme covers a greater toxicity range than that of the GHS

Table 17. Summary of hazard classes showing a comparison and alignment between NDPSC and GHS classification criteria

NDPSC Schedule	Schedule 7		Schedule 6		Schedule 5		Appendix B
Acute oral toxicity							
GHS hazard category	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5		-
Acute dermal toxicity							
GHS hazard category	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5		-
Acute Inhalation toxicity (4hr LC₅₀) vapours							
GHS hazard category	Cat 1		Cat 2	Cat 3	Cat 4	Cat 5*	-
Acute Inhalation toxicity (4hr LC₅₀) dust/mist							
GHS hazard category	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5*		-
Skin irritation							
GHS hazard category	Cat 1		Cat 2		Cat 3		-
Eye irritation							
GHS hazard category	Cat 1		Cat 2A		Cat 2B		-
Skin sensitisation							
GHS hazard category	-		Cat 1		**		-
Specific target organ toxicity repeated exposure							
GHS hazard category	Cat 1				Cat 2		-

*It is not known if the NDPSC or GHS cover the same toxicity range for these hazard classes, as no guidance values provided in the GHS or NDPSC.

**The GHS and NDPSC do not cover the same toxicity range for these hazard classes. This may result in fewer substances being classified under the GHS compared to the NDPSC scheme.

Table 18. Summary of hazard classes for which no specific NDPSC criteria (general classification criteria apply), and their alignment with respective GHS hazard categories

NDPSC Schedule	Schedule 7	Schedule 6	Schedule 5	Appendix B		
Acute Inhalation toxicity (4hr LC₅₀) gases						
GHS hazard category*	Cat 1	Cat 2	Cat 3	Cat 4	Cat 5	-
Respiratory sensitisation						
GHS hazard category		Cat 1		-		-
Specific target organ toxicity single exposure						
GHS hazard category		Cat 1		Cat 2		-
Carcinogenicity						
GHS hazard category	Cat 1 (1A & 1B) & Cat 2			-		-
Genotoxicity						
GHS hazard category	Cat 1 (1A & 1B) & Cat 2			-		-
Reproductive toxicity						
GHS hazard category	Cat 1 (1A & 1B)	Cat 2		Category (additional if needed)		-
Aspiration hazard						
GHS hazard category	-	Cat 1		Cat 2		-

*No exact upper limit exists in NDPSC or GHS criteria and the guidance values in GHS are given in mg/L Units. Appropriate numeric value will depend on the density of the substance.

Labelling Elements

When considering applications for scheduling, all relevant information required under Section 52E of the *Therapeutic Goods Act (1989)* is considered with an emphasis given to a range of public health matters described in Section 1.3 of this report. Whilst considering the issues such as toxicity and safety, risks and benefits associated with use, potential hazards and extent and the use pattern of a substance, NDPSC also considers all other matters necessary to protect public health, including the risks (whether imminent or long-term) of death, illness or injury resulting from use of a substance. Additionally, Part 2 of the SUSDP states that a person must not sell or supply a poison unless it is labelled in accordance with the criteria specified in paragraphs 3 to 19 of the Standard. For example, the specifications include general requirements for labelling, containers, requirements on the inclusion of hazard-based signal words and cautionary statements, risk-based safety directions, first aid instruction statements and a range of specifications for containers including those for child-resistant closures.

First aid instructions, warning statements and general safety precautions are substance specific and generally apply to all formulations in which a particular substance is an ingredient, and in concentrations at which the substance is scheduled in the SUSDP. Safety directions are product specific and apply regardless of scheduling considerations related to the product. Whilst a single entry in the Safety Directions section of the FAISD Handbook may cover a number of individual products, these directions apply only to that specific formulation description. There are a number of minor variations to these general principles. First aid instructions, warning statements and general safety precaution statements may, for

example, differ when the substance is in different concentration ranges or in different Schedules of the SUSDP.

While the specific risk assessment approach has not been addressed or harmonised in GHS, certain general principles described for consumer product labelling based on the likelihood of injury are as follows (Annex 5, Globally Harmonised System of classification and labelling of chemicals, Purple Book, 2007):

- All substances should be classified based on GHS classification criteria; the first step in the process of classifying hazards and communicating information should always be classification of intrinsic hazards based on the GHS criteria for substances and mixtures.
- Risk-based labelling can only be applied to the chronic health hazards of chemicals in the consumer setting. All acute health (environmental and physical) hazards should be labelled based on intrinsic hazards; the hazard classification should lead directly to labelling of acute health effects (environmental and physical hazards). The labelling approach that involves a risk assessment should only be applied to chronic health hazards, eg carcinogenicity, reproductive toxicity or target organ toxicity based on repeated exposure. The only chemicals it may be applied to are those in the consumer product setting where consumer exposures are generally limited in quantity and duration.
- Estimates of possible exposures and risks to consumers should be based on conservative, protective assumptions to minimise the possibility of underestimating exposure or risk; exposure assessments or estimates should be based on data and/or conservative assumptions; assessment of the risk and the approach to extrapolating animal data to humans should also involve a conservative margin of safety through establishment of uncertainty factors.

From the above, it can be seen that the NDPSC criteria employs a much broader set of criteria and guidance when scheduling and making recommendations for risk-based labels. The NDPSC label elements, therefore, are not always based only on the intrinsic hazards of a substance.

3.4 Comparison of NDPSC and GHS signal words, and precautionary statements

Signal words

Significant differences were observed between the NDPSC and GHS in allocation of signal words for labelling. NDPSC specifies three different signal words ie. “Dangerous poison”, “Poison” or “Caution” when labelling Schedule 7, 6 and 5 substances, respectively. These signal words have been in use for many years, and in particular their meaning and interpretation are familiar to the product user. It has been established that the NDPSC signal words unambiguously communicate the level of potential hazard of a scheduled poison. In GHS, however, the three main categories (Categories 1, 2 and 3) that are attempted to be compared and aligned with the SUSDP Schedules 7, 6 and 5, respectively, would be assigned one of two signal words, ie either “Danger” or “Warning” depending on the toxicity endpoint that underpins the final classification. As a result, the use of signal words in GHS appears to be not as straight forward as that in NDPSC (Table 19).

For example, when labelling acute oral, dermal and inhalational toxicants in GHS Categories 1, 2 and 3, the labels are to be assigned the signal word “Danger” for all three Categories. As well, the skin and eye irritants, genotoxic and carcinogenic substances in GHS Categories 1 and 2 would be assigned the signal words “Danger” and “Warning”, respectively. In the local toxicity cluster, the NDPSC criteria recognise the severity of the effects for skin sensitisation when scheduling (in Schedule 6 or 5) noting all available information on potency of a substance to cause sensitisation and the strength of available information (see Section 1.3). However, the GHS criteria do not recognise the severity of skin and respiratory sensitisation in classification and uses a single Category ie., Category 1 to specify skin and respiratory sensitisers that generate positive results. In this case, whilst the Category 1 respiratory sensitisers are labelled with the signal word “Danger”, the skin sensitisers in the same category are assigned the signal word “Warning”. Because of these reasons, the adoption of GHS without changes to existing signal words is favoured.

Table 19. Comparison of NDPSC signal words with those in GHS Category 1, 2 and 3*

DPSC	Schedule 7	Schedule 6	Schedule 5
For all hazard classes	Signal word		
	Dangerous poison	Poison	Caution
GHS			
	Category 1	Category 2	Category 3
Hazard class	Signal word		
Acute oral, dermal and inhalational toxicity	Danger	Danger	Danger
Skin irritation	Danger	Warning	-
Eye irritation	Danger	Warning	-
Respiratory sensitisation	Danger	-	-
Skin sensitisation	Warning	-	-
Genotoxicity	Danger	Warning	-
Carcinogenicity	Danger	Warning	-
Reproductive toxicity	Danger	Warning	-
Systemic toxicity (acute)	Danger	Warning	Warning
Systemic toxicity (repeat dose)	Danger	Warning	-

*Only those GHS Categories that are attempted to align with NDPSC Schedules 5, 6 & 7 are presented in the Table.

Precautionary statements

Precautionary statements are used to identify potential hazards of chemical substances and recommend ways to minimize or avoid risks associated with them. There is a list of precautionary statements available in SUSDP to include in product labels depending on the situation (9 statements). In contrast, GHS lists a large number of precautionary statements under four sub categories namely, prevention, response, storage and disposal. Those GHS precautionary statements listed under prevention, storage and disposal are given in the Table below (Table 20) for comparison and contrast with those of the NDPSC. It should be noted that the GHS statements given under the “response” sub category and relevant to the present comparison and analysis are considered separately and in detail under the First Aid

Instructions and/or Safety Directions Sections of this report. There are some GHS precautionary statements which could be included in the NDPSC system to provide further enhancement to the current labelling criteria enabling harmonisation with GHS. For example, the GHS precautionary statement “If medical advice is needed, have a product container or label at hand” (general public) and “IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing” (response statement; serious eye damage), were considered to be a useful statements for inclusion in NDPSC criteria. Particularly the former provides relates to the information on the product container or the label which may be of use to the Poisons Information Centre or medical personnel (Table 12) in accidental exposure situations, and the latter relates to a situation presently not covered in the NDPSC criteria. The present analysis proposes that the NDPSC considers including these new GHS precautionary statements in its classification guidelines and revises the existing labelling criteria in the future.

An additional set of statements (31 statements) established by the OCSEH following ongoing evaluation of a range of agricultural and veterinary chemical products is also listed in the FAISD Handbook under the sub category of “Precautions” (see under “Standard statements”⁷). Each statement has a code. This is an additional, supplementary tool kit available for regulators, and depending on the situation, these statements could be used as appropriate singly and/or in combination. The statements listed therein cover a wide range of product use situations (Table 20) and are useful when establishing Safety Directions for products.

⁷ <http://www.health.gov.au/internet/main/publishing.nsf/content/ocs-faisd-handbook.htm>

Table 20. Comparison and alignment of NDPSC and GHS general precautionary statements (*Comparable GHS statements are given in bold text and placed next to the corresponding NDPSC statements*).

Topic	NDPSC Schedules, GHS Categories and words	
<i>General precautionary statements</i>		
	NDPSC/SUSDP	GHS
<i>Statements</i>	<p>Keep out of reach of children.</p> <p>Can kill if swallowed. Do not put in drink bottles; keep locked up.</p> <p>Burns skin and throat.</p> <p>Read safety directions before opening and use.</p> <p>Do not swallow.</p> <p>Possession without authority illegal.</p> <p>Fire and explosion hazard.</p> <p>An anticholinesterase compound</p> <p>For animal treatment only.</p>	<p>Keep out of reach of children.</p> <p>Store locked up</p> <p>-</p> <p>-</p> <p>Read label before use. Obtain special instructions before use Do not handle until all safety precautions have been read and understood</p> <p>If medical advice is needed, have a product container or label at hand.</p> <p>-</p> <p>-</p> <p>Keep from any possible contact with water, because of violent reaction and possible flash fire Keep away from heat Keep away from clothing and other combustible materials Handle under inert gas, protect from moisture Take any precaution to avoid mixing with combustibles/.... Do not allow contact with air Keep wetted with ... Protect from moisture Ground/bond container and receiving equipment</p> <p>-</p>
<i>Statements for disposal</i>		
-	-	Dispose of contents/container to...(in accordance with local /regional /national /international regulation).
<i>Additional statements in FAISD Handbook</i>		
<i>Statement code</i>	<i>Statement</i>	-

140	Do not touch or rub eyes, nose or mouth with hand	-
141	When handling [granules] [powder] [other form]	-
181	Sensitive workers should use protective clothing	-
202	Apply UV protective creams or lotions to all exposed areas of skin	-
210	Avoid contact with	-
211	Eyes and skin (and)	-
212	Clothing	-
213	Open wounds	-
219	Avoid handling	-
220	Do not inhale	-
221	Dust (or)	-
222	Vapour (or)	-
223	Spray mist	-
-	-	Do not breath dust/fume/gas/mist/vapours/spray
224	Sprays only	-
225	Smoke	-
230	Protect eyes while using [In addition to this statement, there is a full range of standard statements in the FAISD Handbook for personal protection equipment].	Wear face protection Wear eye/face protection Use personal protective equipment as required Wear respiratory protection Wear protective gloves clothing Wear cold insulating gloves/face shield/eye protection Do not subject to <i>rough handling such as grinding/shock/friction</i> Wear fire/flame resistant/retardant clothing
-	-	Pressurised container: do not pierce burn, even after use Do not spray on an open flame or any white-hot material
250	Do not touch bait	-
251	Use scoop or measure	-
252	If on skin after each baiting, wash thoroughly with soap and water	-
270	Open container in the open air	-
271	Use and store (only) in well ventilated areas	Store in well-ventilated place Store in cool/well ventilated place Use only outdoors or well ventilated area.
-	-	Protect from sunlight and store in well ventilated place Store away from other materials Store in temperatures not exceeding (./°C/./°F) Store in a dry place and/or in closed container Store away from combustibles/..... Protect from sunlight Store container tightly closed in well-ventilated place
272	Ensure adequate ventilation during use	-

373	Obtain an emergency supply of atropine tablets 0.6 mg	-
380	Do not open inner (envelop) (pouch) until ready for use	-
381	Do not remove insecticidal (strip) (disc) from (collar) (medallion)	-
382	Do not allow children to play with (collar) (medallion) (other form)	-
410	Open pouches only as they needed	-
411	Reseal container tightly	-
-	-	Keep container tightly closed Keep only in the original container
412	Keep away from water and liquids	-
413	Keep away from naked flames – forms toxic gas	Keep away from flames and hot surfaces Keep away from <i>ignition sources such as</i> (heat/sparks/open flames – no smoking Leaking gas fire: Do not extinguish, unless leak can be stopped safely Eliminate all ignition sources if safe to do so Use explosion proof electrical /ventilating /lighting /.../equipment Use only non-sparking tools Take precautionary measures against static discharge Keep reduction valves free from grease and oil Do not subject to grinding/shock/.../friction Pressurised container; do not pierce or burn, even after use
414	Use entire contents in one operation; if not possible, seal thoroughly with water proof adhesive tape or air-tight closure.	-

Conclusions: Significant differences were noted between NDPSC and GHS in allocation of signal words. Whilst, the NDPSC has three signal words, ie. “Dangerous poison”, “Poison” or “Caution”, for Schedule 7, 6 and 5, respectively, the GHS Categories 1, 2 and 3 carry either one of two signal words, “Danger” or “Warning” depending on the toxicity endpoint that underpins the classification. Because the meaning and interpretation of the existing NDPSC signal words are well known to the product user and they also clearly communicate the degree of potential hazard of a scheduled poison, the adoption of GHS without changes to signal words is favoured. GHS specifies a large number of precautionary statements under four categories. There are some GHS precautionary statements that can be included in the existing NDPSC labelling criteria to bring about further enhancement to the present system.

4 ADDITIONAL PROVISIONS AVAILABLE IN SUSDP: FIRST AID INSTRUCTIONS

4.1 Comparison of SUSDP First Aid Instructions with “Response statements” of GHS

First aid in the work place means providing the initial treatment and life support for people suffering an injury or illness at work. In many instances, first aid can reduce the severity of

the injury or illness and in extreme cases, this would mean the difference between life and death.

Under poisons legislation, scheduled substances and their preparations are required to be labelled with appropriate directions for first aid attention in case of poisoning. It is the responsibility of the manufacturer, packer and supplier of a drug or poison to ensure that the first aid instructions included on the label of a poison are appropriate for a specific product. Standard statements specified in the Appendix E of the SUSDP may be varied provided that the intent of the statement is not changed. The directions listed for any particular substance may require modification to take into account combination of that substance with other substances, both toxic and non toxic, in a formulation, as well as the physical form and presentation of the product. Any such modification should be concise and readily understood.

Currently, there are 17 standard First Aid Instruction statements in SUSDP listed under the sub-groups of basic (2 statements), general (6 statements), eyes (2 statements), respiratory system (2 statements), and skin (5 statements), with an additional statement for special purpose. Besides these, there is another list of 15 statements in the FAISD Handbook, thus making it a total of 32 statements.

NDPSC recognises that if a poison is not for human internal use and is not a Schedule 3, Schedule 4 or Schedule 8 poison, those substances are to be assigned with appropriate first aid instructions. The statements are required to be grouped together and prefaced by the words “FIRST AID”. Table 21 presents the two sets of first aid instructions, ie. those specified in the SUSDP and the GHS. In GHS the first aid instructions are identified as “response statements”.

Of the four types of precautionary statements in GHS previously mentioned, the response statements are equivalent to SUSDP first aid instructions. The “Response statements” in GHS are apparently linked to each GHS hazard statement and type of hazard [in GHS, a precautionary statement is a phrase (and/or pictogram), which describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposures to a hazardous product]. There are 25 additive response statements derived from 51 individual response statements. Of these 25 statements, 20 are considered to be equivalent to SUSDP first aid instructions.

The GHS and NDPSC statements are similar in many ways, the SUSDP statements being meaningful and subdivided according to the exposure scenario. Of those in the GHS that are more applicable to human health effects, the noteworthy statements are those specified for eye irritation (remove contact lenses, if present and easy to do) and respiratory sensitisation (IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms call a POISONS CENTRE or doctor/physician), skin irritation arising from Category 2 & 3 skin irritants and Category 1 skin sensitisers (if irritation persists, get medical advice/attention). Additionally, GHS criteria specify provisions for suitable first aid instructions for germ-cell mutagenicity, carcinogenicity and reproductive toxicity and specific target organ systemic toxicity (IF exposed or concerned: Get medical attention/advice). It is considered that these new statements give clear instructions to the rescuer to employ first aid to the affected person or to remove the individual from the contaminated area and contact the Poisons Information Centre or seek medical attention, if needed. The present analysis proposes that these new statements be included in NDPSC criteria to achieve further enhancement in the current system.

An additional first aid instruction is listed in the First Aid Instructions and Safety Directions (FAISD) Handbook. The statement is different from the standard statements in the SUSDP, being substance specific and comprehensive, as it has been established following consideration of specific products (Table 22).

In relation to the two sets of First Aid Instructions given in SUSDP and FAISD handbook, there appears to be a need for an internal consolidation of these statements into a single document and further refinement for easy reference. As previously mentioned, the FAISD handbook contains a wide range of statements for different product types registered for use under a variety of use situations, which would be maintained by the OCSEH with regular revision and update.

Table 21. Comparison of SUSDP First Aid Instructions and GHS response statements*

SUSDP	GHS
First Aid Instructions	Response statements
Basic	Acute oral toxicity
For advice, contact a Poisons Information Centre (Phone <i>eg Australia 13 1126; New Zealand 0800 764 766</i>) or a doctor (at once).	IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Rinse mouth.
If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126, New Zealand 0800764 766.</i>	Specific Treatment (see ... on this label for FAI's and antidote etc).
	IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
	Call a POISON CENTRE or doctor/physician if you feel unwell.
If swallowed, do NOT induce vomiting.	Do not induce vomiting.
First aid is not generally required. If in doubt, contact a Poisons Information Centre (Phone 13 11 26) or a doctor.	-
Give plenty of water.	-
General	-
Urgent hospital treatment is likely to be needed. (Note – the words ‘at once’ to be added to instruction A).	-
If swallowed, give activated charcoal if instructed. (Note – the words ‘at once’ to be added to instruction A).	-
Immediately give a glass of water.	-
Avoid giving milk or oils	-
Avoid giving alcohol.	
If sprayed in mouth, rinse mouth with water.	-
If poisoning occurs, get to a doctor or hospital quickly.	
If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126, New</i>	-

SUSDP	GHS
<i>Zealand 0800764 766.</i>	
If swallowed, do NOT induce vomiting. Give a glass of water.	-
Give activated charcoal and keep patient quiet, in a dark place if possible.	-
Do not give mouth-to-mouth resuscitation if swallowed. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well ventilated area.	-
Eyes	Eye damage/irritation
If in eyes wash out immediately with water.	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.	
If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.	
Respiratory system	Acute inhalational toxicity
If inhaled, remove from contaminated area. Apply artificial respiration if not breathing. If swallowed or inhaled, remove from contaminated area. Apply artificial respiration if not breathing. Do not give direct mouth to mouth resuscitation. To protect rescuer, use air viva, oxy viva or one way mask. Resuscitate in a well ventilated area.	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126, New Zealand 0800764 766.</i>	Immediately call a POISON CENTRE or doctor/physician. Specific treatment is urgent (see.. on this label for First Aid Instruction and antidote etc).
Remove from contaminated area. Give oxygen and if necessary, artificial respiration. If giving mouth-to-mouth resuscitation wash out patient's mouth and lips - do not inhale patient's expired air. Remove contaminated clothing and wash contaminated skin thoroughly. Get to a hospital or doctor quickly.	-
-	Respiratory sensitisation
Remove from contaminated area. Apply artificial respiration if not breathing.	<i>IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.</i>
If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126, New Zealand 0800764 766.</i>	<i>If experiencing respiratory symptoms call a POISONS CENTRE or doctor/physician.</i>

SUSDP	GHS
<i>Skin</i>	<i>Acute dermal toxicity</i>
If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.	Remove/Take off immediately all contaminated clothing. IF ON SKIN: Gently wash with plenty of soap and water. IF ON SKIN: Wash with plenty of soap and water.
If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126, New Zealand 0800764 766.</i> <i>Safety Direction: After each day's use, wash contaminated clothing.</i>	Immediately call a POISON CENTRE or doctor/physician. Specific measures (see.. on this label for FAI's & cleansing agents). Wash contaminated clothing before reuse.
If skin contact occurs, remove contaminated clothing and wash skin thoroughly.	-
If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre or a doctor.	-
If on skin, remove any contaminated clothing, wash skin thoroughly with soap and water, then methylated spirit if available. Contact the Poisons Information Centre or a doctor.	-
-	<i>Skin corrosion/irritation</i>
If skin contact occurs, remove contaminated clothing and wash skin thoroughly.	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing
If on skin, remove any contaminated clothing, wash skin thoroughly with soap and water, then methylated spirit if available. Contact the Poisons Information Centre or a doctor.	Rinse skin with water/shower.
If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.	IF ON SKIN: Wash with plenty of soap and water.
	If skin irritation occurs: Get medical advice/attention.
-	<i>Skin sensitization</i>
-	<i>IF ON SKIN: Wash with plenty of soap and water. If skin irritation or a rash occurs, seek medical advice/attention.</i>
-	<i>Germ cell mutagenicity, carcinogenicity, reproduction</i>
	IF exposed or concerned: Get medical attention/advice.

SUSDP	GHS
-	<i>Specific target organ systemic toxicity(single exposure)</i>
-	IF exposed: Call a POISON CENTRE or doctor/physician. Specific treatment (see On this label) (Cat 1)
-	Call a POISON CENTRE or doctor/physician if you feel unwell. (Cat 2)
-	Call a POISON CENTRE or doctor/physician if you feel unwell. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing (Cat 3) .
-	<i>Specific target organ systemic toxicity(repeat exposure)</i>
-	Get medical attention/advice if you feel unwell (Cat 1 & 2)
Special purpose	
If swallowed, splashed on skin or in eyes, or inhaled, contact a Poisons Information Centre (Phone eg Australia 131 126; New Zealand 0800 764 766) or a doctor at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed, activated charcoal may be advised. Give atropine if instructed.	-
If on skin, immediately remove any contaminated clothing, wash skin with methylated spirit or PEG (polyethylene glycol) 300 or 400 if available, then flush under running water until advised to stop by the Poisons Information Centre or a doctor.	-
If skin contact occurs, immediately remove contaminated clothing. Flush skin under running water for 15 minutes. Then apply calcium gluconate gel. Contact the Poisons Information Centre.	-
If sprayed on skin, wash thoroughly. If sprayed in mouth, rinse mouth with water.	-
Immediately apply calcium gluconate gel to affected skin.	-
No first aid directions are recommended for labeling purposes.	-

*The text in bold-faced letters under GHS column is not found in SUSDP or FAISD Handbook. Some common GHS statements were not included under each hazard category in the table as they found to be repetitive (eg. Immediately call a POISON CENTRE or doctor/physician).

Table 22. Specific First Aid Instructions in FAISD handbook

FAISD	GHS
First Aid Instruction	Response statement
(Cresols, Xylenols or Phenols 25 percent or less) - If spilt on skin, remove any contaminated clothing, wash skin thoroughly with soap and water, then methylated spirit. (Cresols, Xylenols or Phenols above 25 per cent) - If spilt on skin, remove any contaminated clothing, swab skin repeatedly with glycerine (glycerol), PEG (polyethylene glycol) or PEG -	-

FAISD	GHS
methylated spirit mixture or if necessary methylated spirit alone.	

Conclusions: SUSDP specifies a wide range of First Aid Instruction statements and they are equivalent to GHS response statements in many aspects with both systems being categorised and grouped according to the pathways of exposure. However, the GHS statements specified under a given exposure pathway could vary depending on the toxicity category. In GHS, some noteworthy response statements are those specified for eye and skin irritation, and respiratory sensitisation. Further, the GHS provides specific statements suitable for germ- cell mutagenicity, carcinogenicity and reproductive toxicity and specific target organ systemic toxicity. It is considered that these statements provide clear instructions to the rescuer. The present analysis proposes that these new statements be included in NDPSC criteria to achieve further enhancement in the current system. There appear to be a need for an internal revision and consolidation of First Aid Instruction statements into a single document for easy reference by OCSEH evaluators.

4.2 Warning Statements and general safety directions

Warning statements in SUSDP

In accordance with the current guidelines, scheduled substances, which may be harmful to the user, must also be labelled with appropriate warning statements and/or safety directions. These statements provide precautionary language advising the product user of the potential hazards associated with a product. For this purpose, Appendix F (parts 1 and 2) of the SUSDP specifies a range of warning statements and general safety directions, respectively. It is the responsibility of the manufacturer, packer and supplier of a drug or poison to ensure that the product user is given sufficient information to be able to use the product correctly and safely. Selection of warning statements and safety directions to be included on a product label would depend on factors such as hazard profile of the product, the product composition, and the use for which it is sold or supplied.

Appendix F of the SUSDP catalogues 102 hazard-based warning statements and 35 risk-based general safety directions. Relevant NDPSC criteria states that the wording of warning statements and safety directions given in this appendix may be varied when included in product labels provided that the intent of the former is not changed. The product registrants could include additional statements on a label to ensure that the user of a product is sufficiently advised of its harmful nature and how to avoid any deleterious effects. However, the interpretations of these additional statements should be such that they do not alter the intentions of the warning statements established by the competent authority.

Warning statements in GHS

Warning statements in GHS are labelled as “Hazard communication statements”. A GHS hazard statement is a phrase assigned to a hazard class and category that describes the nature of hazard, including, where appropriate, the degree of hazard of a substance. Thus, GHS warning statements are purely hazard based. Consequently, the GHS contains less hazard

statements compared to NDPSC which also contains warning statements that address risk (eg. use).

Overall, it is clear that, in comparison to a wide range of risk-based warning statements given in the SUSDP covering a range of product types and exposure situations, the GHS catalogues a limited number of warning statements for the purpose of product classification and labelling.

Comparison of NDPSC warning statements and GHS hazard communication statements

In addition to the warning statements in the SUSDP, FAISD Handbook lists another set of statements (given in *italics* in Table 23) that can be used in chemicals classification and labelling. Generally, the statements listed in the SUSDP and FAISD Handbook are comparable with the GHS hazard communication statements. Some differences were noted between the NDPSC and GHS and these include the statements that warn the user on acute oral, dermal and inhalational toxicity (may be harmful if swallowed, may be harmful in contact with skin, and may be harmful if inhaled) and genotoxicity (may cause genetic defects or suspected of causing genetic defects) of substances. It was also noted that there is no general warning statement in the NDPSC criteria to cover chemical effects on the male reproductive system and fertility or male and female reproductive systems in general. The statements in the existing criteria cover only the effects on the female reproductive system and developmental toxicity in the off-spring. An appropriate statement to this effect could be adopted from the statements in GHS to be included in the NDPSC criteria.

The GHS statements, for which no equivalent statements could be found within the SUSDP are given in bold-faced text (Table 23). Particularly, the new warning statements in the GHS on specific target organ toxicity and genotoxicity that warn the product users of potential toxicity together with specify the organ(s) that are likely to be affected (with the route of exposure if that is conclusively proven in laboratory animal experiments) were judged to be informative to the product user. It is proposed that these statements are straightforward and provide more transparency to regulatory decisions and hence be included in the NDPSC criteria for further enhancement of the existing system. This would not result in any reduction to the current public health standards.

Table 23. Comparison of SUSDP/FAISD warning statements with corresponding GHS hazard communication statements (the statements given in *italics* are from *FAISD Handbook*)*.

SUSDP/FAISD Handbook	GHS
<i>General</i>	
Highly corrosive (1)	-
Corrosive liquid (3)	-
Liquid will cause burns (15)	-
Strongly alkaline (4)	-
May produce severe burns (10)	-
May be fatal if inhaled, swallowed or absorbed through skin (13)	May be fatal if swallowed and enter airways
-	May be harmful if swallowed and enter airways
-	Obtain special instructions before use.
<i>Acute oral</i>	
<i>Can kill if swallowed (128 & 133)</i>	Fatal if swallowed
<i>Poisonous if swallowed (130 & 133)</i>	Toxic if swallowed
<i>Harmful if swallowed (129 & 133)</i>	Harmful if swallowed
-	May be harmful if swallowed
(Powder) (and) (concentrated solutions) are dangerous if swallowed (26)	
<i>Acute dermal</i>	
<i>Can kill if absorbed by skin contact (128 & 131)</i>	Fatal in contact with skin
<i>Poisonous if absorbed by skin contact (130 & 131)</i>	Toxic in contact with skin
<i>Harmful if absorbed by skin contact (129 & 131)</i>	Harmful in contact with skin
-	May be harmful in contact with skin
For external washing only. Rinse skin thoroughly after use (24)	-
<i>Acute inhalational</i>	
<i>Can kill if inhaled (128 & 132)</i>	Fatal if inhaled
<i>Poisonous if inhaled (130 & 132)</i>	Toxic if inhaled

SUSDP/FAISD Handbook	GHS
<i>Harmful if inhaled (129 & 132)</i>	Harmful if inhaled
-	May be harmful if inhaled
WARNING – Vapour may be harmful (11)	-
Vapour is harmful to health on prolonged exposure (12)	-
Breathing vapour is dangerous. Provide adequate ventilation during application. Do not use in the presence of a naked flame. Do not smoke (84)	-
<i>Acute local toxicity: Skin and eye irritation</i>	
Attacks skin and eyes (78)	Causes severe skin burns and eye damage
Corrosive (2)	Causes serious eye damage.
	Causes skin irritation
<i>Slight skin irritant</i>	Causes mild skin irritation
<i>Severe eye irritant</i>	Causes serious eye irritation
WARNING - Skin contact may be dangerous. Take every precaution to avoid contact wash off after spillage and after use (19)	-
Contact with eyes even for short periods can cause blindness (17)	-
Will irritate eyes (79)	Causes eye irritation
<i>Moderate eye irritant or</i>	-
<i>Slight eye irritant</i>	-
Irritant (5)	-
Product will irritate the eyes, nose, throat and skin (18)	-
Irritant to skin, eyes, mucous membranes and upper respiratory tract (51).	-
Dust will irritate and burn eyes, nose and skin (14)	-
<i>Skin and respiratory sensitization</i>	
-	May cause respiratory irritation.
-	May cause drowsiness or dizziness.
May cause allergy (59).	-
Breathing vapour or spray mist is harmful and may cause an asthma-like reaction (52)	May cause allergy or asthma symptoms or breathing difficulties if inhaled

SUSDP/FAISD Handbook	GHS
(Over) (Repeated exposure may cause sensitisation (28).	May cause an allergic skin reaction.
<i>Repeated exposure may cause allergic disorders (180)</i>	-
<i>Genotoxicity</i>	
-	May cause genetic defects (...)**
	Suspected of causing genetic defects (...)**
<i>Carcinogenicity</i>	
-	
May cause cancer (6)	May cause cancer (...)**
-	Suspected of causing cancer (...)**
<i>Developmental toxicity</i>	
Causes birth defects (7)	-
CAUTION – (Name of substance) should not be used by pregnant women (53).	-
WARNING – Contains (name of substance) which causes birth defects in laboratory animals. Women of child bearing age should avoid contact with (name of substance (46) & also (47; product).	May damage fertility or the unborn child (...)**
WARNING - This product forms cyhexatin which causes birth defects in certain laboratory animals. Women of child bearing age are advised not to mix, load or spray this product. They should keep out of crops being sprayed (48)	-
<i>Reproductive toxicity</i>	
-	Suspected of damaging fertility or the unborn child (...)**
-	May cause harm to breast-fed children
<i>Repeat-dose toxicity /Specific target organ toxicity following repeated exposure</i>	
-	Causes damage to organs (....)
-	May cause damage to organs (...)
-	May cause respiratory irritation

SUSDP/FAISD Handbook	GHS
-	May cause drowsiness and dizziness
-	Causes damage to organs (...) through prolonged or repeated exposure (...)
The following statements have been derived following consideration of specific chemical substances and Australian use situations. It is intended that these would be retained. Further statements can be added when needed.	
Highly reactive oxidising chlorine compound (22)	
WARNING - Do not mix with other medication except on veterinarian's advice (49)	-
Unless adequately fired, utensils glazed with this preparation must not be used as containers for food or beverages; to do so may cause lead poisoning (50)	-
Highly reactive oxidising bromine and chlorine compound (58)	-
Do not mix with detergents or other chemicals (60)	-
This paint is dangerous to health, even when dry. For industrial use only. Do not use on toys or furniture. Do not use on, in or around the home (83)	-
This paint contains lead and is dangerous to health, even when dry. For industrial use only. Do not use on toys or furniture. Do not use for painting any building or fixed structure. Do not use where contact with food nr drinking water is possible (85)	-
This tinter contains lead. Do not add to any paint which is for application to any toy, furniture, building (interior or exterior), fixed structure or to anything which may contact food or drinking water (86)	-
Causes severe burns, which are not likely to be immediately painful or visible (93)	-
<i>While this product is well tolerated by [insert target species], there is a risk of severe injury to humans associated with accidental self injection. Care should be taken to avoid needle-stick injury when injecting this product (41)</i>	-
<i>Caution: Accidental self-injection may affect fertility in both men and women and pregnancy. Not to be used by women of child bearing age. Care should be taken to avoid accidental self injection and needle-stick injury when administering this product. In the event of accidental self-injection, seek medical advice immediately (42)</i>	-
<i>Should not be used in areas accessible to children (43)</i>	-
<i>Do not use on the clothing of infants or in the bedrooms of young children (44)</i>	-
<i>Avoid bare skin contact with treated surfaces for 7 days (46)</i>	-
<i>Do not apply to food producing plants (47)</i>	-

SUSDP/FAISD Handbook	GHS
Can be fatal to children if sucked or swallowed (9)	-
Forms dangerous gas near radiators or naked flames (16)	-
May give off dangerous gas if mixed with other products (20)	-

*Numbers within brackets are SUSDP or FAISD statement numbers. The statements in bold-faced letters under GHS column are not found in SUSDP or FAISD Handbook.

Conclusions: Generally the warning statements listed in the SUSDP and FAISD Handbook are comparable with the hazard communication statements in GHS. The GHS statements that are not found within SUSDP are the statements on possible or suspected genotoxicity, systemic effects with specific target organ toxicity, and male reproductive toxicity and a general statement to cover the effects on both sexes. If adopted, these statements would also allow regulators to specify the particular organ(s) that are likely to be affected and the route of exposure if that is conclusively proven in animal experiments.

General safety directions

Appendix F of the SUSDP lists 34 general safety directions that could be used when considering safety directions for agricultural and veterinary chemical products. The NDPSC stipulates that these statements are to be grouped together with those specified in the section on warning statements and general safety precautions, and prefaced with the words “SAFETY DIRECTIONS” on product labels.

In addition, FAISD Handbook contains a total of 154, risk-based safety direction statements (or phrases) established for products that have been referred to the OCSEH by APVMA for registration consideration and advice. These safety directions (phrases or statements), when used individually or in combination, include statements relating to the potential hazards of a product and the requirements for protective equipment to ensure the safety of the operator when the product is used. These safety directions contain advice necessary during the preparation and use of a product, and after its use. They also include some specific statements relating to first aid more appropriately located under “SAFETY DIRECTIONS than in first aid instructions section. However, they do not include warnings and precautions such as flammability, disposal of containers, spillage, re-entry periods and withholding periods.

In GHS, the safety actions are linked to the type of hazard that exists and grouped as “Prevention statements” within the broad category of “Precautionary statements”. As previously mentioned, the GHS precautionary statements include four types of statements covering prevention, response (in case of an accidental spillage or exposure), and storage and disposal aspects of a product life cycle. Additional supplemental information on a label, such as directions for use, may also be included at the discretion of the manufacturer/supplier and/or competent authority.

A comparison of SUSDP/FAISD general safety directions with those in GHS (precautionary statement matrix under “Prevention”) are given in Table 24. It can be seen that both the SUSDP and FAISD Handbook provide a broader range of hazard- and risk-based safety directions for use on agricultural and veterinary chemical product labels. An example for a GHS statement which was not found in SUSDP/FAISD is “Obtain special instructions before use”.

Table 24. Comparison of SUSDP/FAISD Handbook general safety directions and GHS prevention statements (the statements given in *italics* are from FAISD Handbook).

SUSDP/FAISD	GHS (prevention)
Read safety directions before opening or using (cautionary statement).	Do not handle until all safety precautions have been read and understood.
<i>After use and before eating, drinking or smoking, wash hands thoroughly with soap and water.</i>	Do not eat, drink or smoke when using this product.
<i>Avoid contact with eyes and skin and clothing</i>	Do not get in eyes, on skin or on clothing
Avoid contact with eyes.	-
Attacks eyes – protect eyes when using.	-
Wear eye protection when using or mixing.	-
Avoid contact with skin.	-
<i>Sixty nine out of 152 statements in FAISD could be used in combination to specify a range of PPE requirements (during mixing and using) for different use situations.</i>	Wear protective gloves/clothing as specified by the manufacturer/supplier or the competent authority.
	Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.
	Wear protective gloves as specified by the manufacturer/supplier or the competent authority.
	Wear eye/face protection as specified by the manufacturer/supplier or the competent authority.
	Use personal protective equipment as required.
After each day's use wash contaminated clothing.	Contaminated clothing should not be allowed out of the work place.
Wear protective gloves when mixing or using.	-
Wash hands after use.	-
Wash hands thoroughly after use.	Wash thoroughly after handling.
Avoid breathing dust (or) vapour (or) spray mist.	Do not breathe dust/fume/gas/mist/vapours/spray. Do not breathe dust or mist.
Use only in well ventilated area.	Use only outdoors or in a well-ventilated area.
Ensure adequate ventilation when using.	-
No smoking.	-
Do not allow product to come into contact with other chemicals, especially acids.	-
Do not allow product to come into contact with combustible materials such as paper, fabric, sawdust or kerosene.	-
Do not allow to get damp.	-
Store under cover in a dry, clean, cool, well ventilated place away from sunlight.	-
Store and transport in an upright container.	-
Do not mix with other chemicals.	-
Do not mix with different types of chlorinating chemicals.	-
Use clean containers for dispensing.	-
Mix with water only.	-
Do not add water to product – add product to water, but in case of fire drench with water.	-
In case of spillage, flush with large quantities of water.	-
Keep away from heat, sparks and naked flames.	-
Avoid contact with the crystals or strong solutions with the eyes, mouth, nose and other mucous membranes.	-
Avoid contact with food.	-
Avoid contact with clothing.	-
Wear positive-pressure air supplied full-face respirator whilst spraying and until spray mist has been effectively dispersed.	-
<i>A range of PPE statements in FAISD Handbook.</i>	In case of inadequate ventilation, wear respiratory

	protection.
	Wear respiratory protection.
Do not mix with hot water.	-
Obtain a supply of calcium gluconate gel.	-
Mix strictly according to instructions.	-
May cause fire it comes into contact with other chemicals, paper or other flammable materials.	-
Wash gloves thoroughly, immediately after use.	-
Do not use if pregnant (Warning statement)	Avoid contact during pregnancy/while nursing.

Conclusions: Appendix F of the SUSDP lists 34 general safety directions that could be used when considering safety directions for different products. The FAISD Handbook lists additional risk-based safety directions and PPE requirements for products (about 154) that have been referred to the OCSEH by the APVMA for consideration and advice. These safety directions include statements relating to the potential hazards and the requirements for protective equipment to ensure the safety of the product user. In GHS, the safety actions are linked to the type of hazard that exists and grouped as “Prevention statements”. Additional supplemental information on the label, such as directions for use, may also be included at the discretion of the manufacturer/supplier and/or competent authority. Both the SUSDP and FAISD Handbook provide a broader range of hazard- and risk-based safety directions for use on the labels of products.

4.3 Poisons Information Centre Telephone Numbers

In addition to a range of regulatory tools, the Appendices E and F of SUSDP provides provisions for product manufacturers to specify the Poisons Information Centre telephone number on product label (s) (Australia 131 126; New Zealand 0800 764 766) in case of an accident or poisoning. This information represents the standard First Aid Instruction statement ‘a’ in Part 1, Appendix E (First Aid Instructions for Poisons) of SUSDP.

5 DISCUSSION

As outlined in the accompanying Discussion Paper, the favoured option and most pragmatic approach for Australia, considering the risks, benefits and costs involved in harmonising with the GHS would result in adoption of GHS classification criteria, adoption of the GHS hazard and precautionary statements and rejection of the GHS signal words and pictograms. SUSDP Schedules 5, 6 and 7 would be retained with GHS classification criteria could be appropriately aligned with these existing schedules.

The GHS has between 1 and 5 categories for chemical substances depending on the toxicological end-point concerned. Based on the premise that full adoption of GHS classification system is possible with slight changes to the current poisons scheduling criteria, the present analysis indicates that, in most instances, aligning the GHS categories with the current poisons schedules is possible. Exceptions to this prospect are the acute inhalational toxicity and local toxicity endpoints (skin and eye irritation and skin and respiratory sensitisation), requiring some amendments to the existing NDPSC scheduling principles to be harmonised with the GHS. Moreover, it is expected that, adoption of new GHS criteria for acute inhalation toxicity for gases, vapours, and dust and mists, and the new hazard class of respiratory sensitisation would help refine and enhance the existing NDPSC criteria as new proposals distinguish the differences in toxicity of the inhaled material. The OCSEH

recognises that these new toxicity criteria are based on the findings of intense and ongoing international research. These elements are discussed in more detail in the following sections.

It should be mentioned that the existing NDPSC criteria provide a robust and effective platform for chemicals classification and scheduling having regard to the contemporary international standards. However, the possible implementation of the GHS with refinements in health hazard criteria developed at the international level requires, the current NDPSC system to be critically reviewed and compared with the GHS criteria for the level of continued alignment (or disruption) with current scheduling outcomes, the required high level of public health protection and the potential impact on industry, should existing classification and labelling outcomes need to be changed under GHS.

It should be emphasised that, as far as the regulation in Australia is concerned, currently there is no deficiency in the existing chemicals classification system. However, considering a range of benefits which would bring about increased clarity and consistency for NDPSC scheduling decisions, particularly where international classification elements were to be adopted, it is evident that adoption of GHS criteria is possible with slight changes to the existing poisons scheduling criteria.

Analysis of GHS and NDPSC poisons classification criteria

As recognised in previous OCSEH reports, the most practical approach available for Australia is adoption of the new GHS proposals with slight changes to the existing NDPSC poisons scheduling criteria. The analysis presented below was conducted in accordance with this approach.

The acute oral and dermal toxicity classification criteria for SUSDP Schedules 7, 6 and 5 align well with GHS Categories 1 and 2, 3 and 4, and 5, respectively, and therefore, the existing scheduling system appears to provide adequate regulatory control when scheduling substances.

With respect to acute inhalation toxicity, the GHS criteria stipulate three subsets of criteria for classification of gasses, vapours, and dusts and mists, respectively, with LC₅₀ cut-off limits for each subset. Currently, the NDPSC considers all three groups under one cluster. The criteria for vapours in GHS Categories 2, 3, 4 and 5, and dusts and mists in Categories 4 and 5 do not stand parallel with NDPSC Schedules. It is of note that the majority of substances contained in domestic products usually tested as mist or dust, with some being tested in the vapour phase. Therefore, the differentiation of these physical states of substances into distinct subgroups in the proposed GHS is regarded as a positive development in the chemicals classification domain. The GHS cut-off limits for gases, however, cannot be compared with the existing NDPSC cut-off limits given in mg/m³ units as the GHS LC₅₀ estimates are specified in parts per million notations (ppm values could be transformed in to mg/m³ units with the use of relative density).

If GHS were to be adopted, it is expected that the new criteria for inhalation toxicity would provide enhanced clarity and consistency to the scheduling process. However, though it would be minimal, the amendments to the existing system may lead to changes in some scheduled substances. Nevertheless, adoption of new GHS criteria would enhance the existing classification system as it represents emerging classification science, and an endpoint not previously covered by the NDPSC. The amended criteria are expected to provide clear

guidance to NDPSC resulting in better public health protection levels. A comparative analysis of status of some fumigants in Schedules 7 and 6 in accordance to the GHS classification principles showed no discrepancies or likelihood of any deviations to their current scheduling. This is primarily due to the fact that, in the current practice, not only acute inhalation toxicity of a gas or mist/vapour/dust of a substance, but other toxicological hazards (eg. local toxicity, genotoxicity, carcinogenicity, developmental toxicity) are also considered by the NDPSC with the weight-of-evidence approach when establish regulatory decisions on such substances.

In regards to skin and eye irritation classification, the terminology in GHS is generally comparable to that of the NDPSC. However, the criteria and guidance appeared to be comprehensive, objective and unambiguous in GHS than in NDPSC. It is expected that the new GHS criteria for scoring skin and eye irritation in particular, would overcome some uncertainties encountered in the current system thus leading to greater consistency and transparency in decision making. Therefore, it is proposed that the NDPSC considers including the new GHS criteria for skin and eye irritation in its classification system.

A notable difference in the GHS local toxicity cluster is a new toxicity endpoint, respiratory sensitisation. Given that this new endpoint represents an emerging classification practice and an endpoint not previously covered in the SUSDP. An additional hazard class in GHS namely, “Aspiration hazard” covers aspiration toxicity of substances. The present analyse proposes that these two new endpoints be included in the NDPSC classification guidelines. This inclusion should be regarded as enhancements to the existing NDPSC classification system.

In relation to systemic toxicity, GHS stipulates two distinct hazard classes namely; systemic toxicity following acute and repeat-dose exposures, with cut-off limit values for each exposure pathway. The terminology used to describe these hazard classes are different from that used by the NDPSC, but the cut-off limits for Category 1 and 2 toxicants generally stand parallel with the SUSDP criteria for Schedules 6 and 5, respectively. As shown in Tables 11 and 12, slight amendments to existing NDPSC criteria, particularly, the descriptions to hazard bases for Schedules 6 and 5 are proposed. These minor adjustments would not lead to any changes to the current practice or existing schedules. The genotoxic and carcinogenic substances to be classified as GHS Category 1 and 2 toxicants would be continued to be classified as Schedule 7 poisons by the NDPSC based on the existing criteria, and hence no implications on currently scheduled substances could be expected.

No significant amendments to the existing reproductive and developmental toxicity classification criteria are proposed but, the NDPSC may wish to consider the inclusion of new GHS hazard category to classify substances that may cause harm to breast-fed children (for effects on or via lactation) for further refinement of the existing classification criteria. In addition, a general warning statement could be included in the NDPSC criteria to cover the potential chemical effects on the reproductive systems of both males and females.

Labelling elements

It is in considering the labelling elements specified by the GHS system that the some difficulties relating to harmonisation with GHS arise. The GHS labelling requirements are often not compatible with the requirements of the allocated poisons schedule of the SUSDP,

particularly due to incompatibility in the use of signal words and uncertainties surrounding interpretation of pictograms.

Signal words

Differences were noted between the NDPSC and GHS in the allocation of signal words. SUSDP specifies three different signal words namely, “Dangerous poison”, “Poison” or “Caution” for labels in Schedule 7, 6 and 5 substances, respectively. These signal words have been in use for a long period of time and are judged to be unambiguous representing the level of hazard associated with the substances in respective schedules. However, the Category 1, 2 and 3 toxicants in GHS that align with these Schedules are to be assigned one of two different signal words (Danger or Warning) depending on the toxicity endpoint concerned. In some cases, intended purpose of the GHS signal word is unambiguous (eg. acute oral, dermal and inhalational toxicity), but in other instances (eg. skin sensitisation/respiratory sensitisation) it is not straightforward as such. The present analysis confirms that the current NDPSC signal words remain appropriate as they indicate the relative level of severity of the hazard of a scheduled chemical and alert the product user to a potential hazard. The system of signal words and their allocation in the GHS may lead to uncertainty, particularly in the product user.

Pictograms

A pictogram means the graphical composition that includes a symbol plus other graphic elements such as a border, background pattern or colour that is intended to convey specific information of a hazardous substance. The pictograms proposed by the GHS are based on a standard set used in the *UN Recommendations on the Transport of Dangerous Goods, Model Regulations*. Apart from the skull and crossbones symbol, these symbols have not been used in Australia for labelling domestic and consumer products to achieve public health protection. Additionally, the GHS pictograms are to be used together with the appropriate signal words to convey the intended specific information to the product user. Given that the existing NDPSC signal words are favoured over those of the GHS, and that adoption of GHS pictograms without a comprehensive national education program as to their interpretation would be costly, and that pictograms as they are, would be somewhat confusing to users, the present analysis considers that adoption of GHS pictograms may lead to serious public health consequences. Therefore, adoption of GHS pictograms in Australia was not considered to be a positive enhancement to the current scheduling and classification principles.

In the absence of any assessment of the comprehensibility of GHS pictograms under Australian conditions, the benefits of adopting pictograms are uncertain especially when users are more familiar with other communication elements (ie. signal words and warning statements).

Precautionary statements

Precautionary statements in the NDPSC system describe recommended measures that should be taken to minimise or prevent adverse effects resulting from exposure to a hazardous product, or improper storage or handling of a hazardous product. No significant differences could be found between NDPSC and GHS systems. In fact, the number of precautionary statements listed within the NDPSC criteria was greater than that in the GHS. However, some new precautionary statements found in GHS, were judged to be appropriate including in

NDPSC criteria: eg. If medical advice is needed, have a product container or label at hand”. The reason for this proposal is that the advice contained in the above statement would be particularly important as the information on a product container or label would be useful to the Poisons Information Centre or medical personnel in accidental exposure situations. In addition to those listed in the SUSDP, another set of precautionary statements (31 statements), derived following consideration of a range of agricultural and veterinary chemical products by the OCSEH, are also listed in the FAISD Handbook. This is an additional tool kit available for regulators and the statements listed therein cover a wide range of use situations.

First aid instructions

SUSDP specifies a broad range of appropriate statements. Both the NDPSC and GHS have sub-divided these statements according to different exposure pathways. The statements specified by the NDPSC for different active constituents are based on the level of hazard associated with each substance and therefore, linked to respective SUSDP Schedule. The statements specified under a given GHS exposure scenario may vary depending on the GHS toxicity category. Of those in the GHS criteria, the noteworthy first aid instructions for inclusion in NDPSC criteria are the statements specified for eye irritation, skin irritation and respiratory sensitisation. Further, GHS provides specific statements in relation to germ-cell mutagenicity, carcinogenicity and reproductive toxicity and specific target organ toxicity. It is considered that these statements provide adequate and clear directions to the rescuer and product user.

Oral administration of atropine sulphate tablets (0.6 mg tablets) following organophosphate poisoning has recently become a debatable issue due to the practicality and effectiveness of such a treatment have been reported to be uncertain to the medical profession and chemical regulators. Therefore, the First Aid Instruction given under “Special purpose” in Appendix E (Part 1), [If swallowed, splashed on skin or in eyes, or inhaled, contact a doctor or Poisons Information Centre (*Phone Australia 131126. New Zealand 0800 764 766*) at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed activated charcoal may be advised. Give atropine if instructed], would likely to be amended following consideration by the NDPSC in the near future by deleting the reference to atropine sulphate administration in this statement. The present analysis considers that the new GHS response statements (equivalent to NDPSC first aid instructions) would help to achieve further enhancement in the current system and harmonisation with GHS. In line with these considerations in the GHS, there also appears to be a need for internal consolidation and further refinement of first aid instructions in the current SUSDP and FAISD handbook for easy reference by OCSEH evaluators.

Warning statements

Warning statements within the NDPSC system are intended to provide sufficient information to the product user or to use the product correctly and safely. Generally, the warning statements listed in the SUSDP and FAISD Handbook are comparable with the equivalent “hazard communication statements” in the GHS. The GHS statements that were not found within SUSDP are the statements on possible or suspected genotoxicity, systemic effects with specific target organ toxicity and male reproductive toxicity or a general statement to cover both sexes. Moreover, if adopted, the new GHS warning statements for these toxicity endpoints would allow OCSEH evaluators to specify particular organ(s) or organ systems that

are likely to be affected following an exposure and the route of exposure when formulating safety directions for products.

General safety directions

Appendix F of the SUSDP lists 34 general safety directions that could be utilised when considering establishing safety directions for products. As well, the current FAISD Handbook records a total of 154, risk-based safety directions and PPE requirements for products that have been referred to the OCSEH by the APVMA for consideration and advice. These safety direction statements/phrases, when used singly or in combination, include statements relating to the potential hazards and the specifications for personal protection equipment to ensure the safety of the product. Personal protection equipment and procedures described in these statements have been formulated considering specific agricultural conditions, practices and use situations in Australia. There are no statements, warnings or precautions for flammability, disposal of containers, spillage, re-entry periods and withholding periods. In the GHS, the safety actions that need to be specified for a particular substance or product are linked to the type of hazard expected. The safety actions are grouped as “Prevention statements” within the broad category of “Precautionary statements”. GHS provides flexibility so that additional supplemental information on the label, such as directions for use, could also be included on labels at the discretion of the manufacturer, supplier and/or competent authority. The SUSDP and FAISD Handbook together provide a broader range of hazard- and risk-based safety directions for use on labels of agricultural and veterinary products. The list of safety directions in the FAISD Handbook is subjected to continued revision and update as the OCSEH continues to complete public health risk assessments of modern agricultural and veterinary products.

By and large, the GHS classification system seems to be compatible with the existing NDPSC poisons classification principles to a great extent and hence, adoption of its proposals is possible, with slight changes to the current NDPSC scheduling criteria. The present analysis confirms that adoption of the new GHS criteria under the conditions discussed in this document would not lead to any reduction in public health standards, but would indeed provide enhancement to the existing chemicals classification system of the NDPSC.

Classification and labelling of some scheduled chemicals using NDPSC and GHS criteria

Appendix 1 of this document provides a comparative analysis, in which some randomly selected chemicals in SUSDP Schedule 7, 6 and 5 were classified using both the NDPSC and proposed GHS classification and labelling principles. In this comparison, the NDPSC labelling elements, which include signal words, hazard statements, first aid instructions, precautionary and warning statements, and general safety directions listed in the SUSDP, were placed side by side with corresponding GHS statements for comparison with an aim to examine the differences between the two systems. In particular, the differences that would lead to any discrepancies in the regulatory outcomes in Australia were checked. Only those labelling elements directly pertinent to the toxicological characteristics of the active constituents are provided in Appendix 1.

The present analysis confirmed that the current NDPSC chemical classification system parallels the GHS system in most aspects showing no major differences in classifying chemicals. Comparison of likely labelling elements for some Schedule 7 chemicals under NDPSC and GHS classification and labelling principles showed that the criteria used in the

two systems are parallel resulting in similar regulatory controls as expected. However, some new GHS labelling elements (response statements and hazard communication statements, which equates to NDPSC first aid instructions and warning statements, respectively) that describe the recommended first aid measures and likely hazards of a chemical are considered to be clearer to the product user compared to those of NDPSC. Some of these new statements are identified in the relevant sections above. Some GHS hazard communication statements linked to genotoxicity and reproductive toxicity, repeat-dose toxicity and, response statements were identified for further consideration and possible inclusion in NDPSC criteria (eg. May cause genetic defects, If skin irritation or rash occurs, seek medical advice/attention, Remove contact lenses if present and easy to do so, If exposed or concerned: Get medical attention/advice, If eye irritation persists, get medical advice/attention, May damage the immune system, nervous system, Exposure may cause kidney damage).

A comparative analysis of labelling elements of some Schedule 6 chemicals revealed that the current NDPSC classification system conforms in many ways to the international best practice standards of chemicals classification for the majority of the chemicals. The ten chemicals examined showed a slight deviation from NDPSC labelling principles in most cases the major differences being attributable to the incompatibility in signal words and hazard-based warning statements of the two classification systems. For example, under NDPSC criteria, the active constituent acephate would be assigned the signal word (or signal heading) “Poison” and hazard-based warning statement of “poisonous if swallowed” consistent with the relevant Schedule 6 criteria. However, according to GHS labelling principles, it would be assigned the signal word “Warning” and the hazard communication statement “harmful if swallowed”, the latter being corresponding to the Schedule 5 NDPSC criteria (based on the worst oral LD₅₀ value in mice of 324 mg/kg bw).

Additionally, the analysis showed that the Schedule 5 feed additive virginiamycin with skin sensitisation potential would be placed in Category 1 if it were to be classified and labelled under GHS. This classification would equate to NDPSC Schedule 7 in line with other acute toxicity endpoints. Although in this case there appears to be a marked difference between NDPSC and GHS, the Schedule 5 entry allotted to this substance also has a concentration cut-off thereby ensuring additional control over public and occupational exposure. Moreover, the access to virginiamycin is further controlled by limiting its use to animal feed and the maximum quantity that could be included in a package (ie. Schedule 5: in animal feed additives containing 1 per cent or less of virginiamycin for the prevention of laminitis in horses when in a pack of 5 kg or less). This is a good example that demonstrates the fact that not only the hazard profile of a chemical, but also factors such as purpose of use, safety in use and the need for the substance are considered when chemicals are classified under the NDPSC classification system. The current NDPSC approach is supported by the lack of any exposure related adverse experience or health effect reports on this substance.

In this analysis it was noted that there is no relevant hazard-based warning statement in the NDPSC criteria or in GHS to indicate the potential skin paresthesia associated with the active constituent esfenvalerate, which apparently underpins the Schedule 6 listing of this substance. However, the issues of this nature could be resolved when OCSEH updates and consolidates the existing warning statements and first aid instructions.

Except for the above minor discrepancies, the present analysis showed that parallel standards exist between the NDPSC and GHS classification systems in the majority of cases. A few GHS response and hazard communication statements identified for inclusion in the NDPSC

guidelines were considered to be important as they have been derived based on the recent scientific developments and contemporary international standards. Overall, these statements are expected to provide enhancement, clarity and the focus in the present classification and labelling system.

6 REFERENCES

In addition to those listed under footnotes given at various places in this report, the following major reports were used in preparation of this report.

- I. GHS- progress report on the situational analysis of possible adoption of GHS elements for public health protection. Presentation to NDPSC by Dr Margaret Hartley, October 2005.
- II. Draft National Code of Practice for the labelling of workplace hazardous chemicals. Draft report of the Australian safety and Compensation Council, 2006.
- III. Guidelines for the National Drugs and Poisons Scheduling Committee, 2007.
- IV. Globally Harmonised System of classification and labelling of chemicals (GHS). United Nations. First Ed: 2005, Second Ed: 2007.

**LABELLING OF SELECTED CHEMICALS USING
NDPSC AND GHS CRITERIA**

Table 25. Classification and labelling of some scheduled chemicals using NDPSC and GHS criteria (*statements that are specific or new for each situation are given in bold text*)

Schedule 7 chemicals

Chemical	Basis for classification	NDPSC	GHS	Revised label elements following adoption of GHS (as per option (b) of the regulatory impact assessment)
		Signal heading/words, hazard/precautionary statements	Signal headings/words, hazard communication statements and prevention statements	Signal heading/words, hazard statements and precautionary statements
Acrolein	High acute oral, dermal & inhalational toxicity, eye, skin and respiratory corrosion and irritation, mutagenicity	<p>Dangerous poison</p> <p>Keep out of reach of children</p> <p>Read Safety Directions before opening and use.</p> <p>Very dangerous, particularly the concentrate.</p> <p>Corrosive liquid.</p> <p>Will attack eyes and skin.</p> <p>Vapour will irritate the nose and throat.</p> <p>-</p> <p>Can kill if inhaled, swallowed or absorbed by skin contact.</p>	<p>Danger</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before use.</p> <p>Do not handle until all safety precautions have been read and understood.</p> <p>-</p> <p>Causes severe skin burns and eye damage.</p> <p>Corrosive to the respiratory tract.</p> <p>May cause genetic defects.</p> <p>Fatal if swallowed, inhaled or in contact with skin.</p>	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and use.</p> <p>Very dangerous, particularly the concentrate.</p> <p>Corrosive liquid.</p> <p>Causes severe skin burns and eye damage.</p> <p>Vapour will irritate the nose and throat.</p> <p>May cause genetic defects.</p> <p>Can kill if inhaled, swallowed or absorbed by skin contact.</p>

		<p>Avoid contact with skin and eyes (clothing).</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Do not inhale vapour.</p> <p>Use only in well ventilated area.</p> <p>Wear eye protection/protective gloves/clothing when mixing or using (a range of PPE options in FAISD).</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766e.</i></p> <p>If skin contact occurs, remove contaminated clothing and wash skin thoroughly.</p> <p>If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.</p> <p>If swallowed, do NOT induce vomiting,</p>	<p>Do not get in eyes, on skin or on clothing.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Do not breathe vapour.</p> <p>Use only outdoors or in a well ventilated area.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>-</p> <p>IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.</p> <p>IF SWALLOWED: Rinse mouth. Do not induce vomiting.</p>	<p>Avoid contact with skin and eyes (clothing).</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Do not inhale vapour.</p> <p>Use only in well ventilated area.</p> <p>Wear eye protection/protective gloves/clothing when mixing or using (a range of PPE options in FAISD).</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>If skin contact occurs, remove contaminated clothing and wash skin thoroughly</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.</p> <p>If swallowed, do NOT induce vomiting. Rinse mouth.</p>
--	--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		Remove from contaminated area. Apply artificial respiration if not breathing. Wash hands thoroughly after use.	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or a doctor/physician. Specific treatment is urgent (see ... on this label) (FAIs and antidote). Wash hands thoroughly after handling.	Remove from contaminated area. Apply artificial respiration if not breathing. Wash hands thoroughly after handling.
Allyl alcohol	Moderate acute oral toxicity (MSDS based); severe dermal toxicity, severe skin irritancy, eye irritancy leading to opacity; high dermal penetration; mutagenicity; (no animal data)	Dangerous poison Keep out of reach of children. Read safety directions before opening and using. Very dangerous, particularly the concentrate Poisonous if absorbed by skin contact. Harmful if inhaled or swallowed. Will attack eyes, skin and nose and throat. - Avoid contact with eyes and skin (clothing). Do not inhale vapour.	Danger Keep out of reach of children. Do not handle until all safety precautions have been read and understood. - Fatal if inhaled or in contact with skin. Toxic if swallowed. Causes severe skin burns and eye damage; corrosive to respiratory tract. May cause genetic defects. Do not get in eyes, on skin or on clothing. Do not breathe vapour.	Dangerous poison Keep out of reach of children. Read safety directions before opening and using. Very dangerous, particularly the concentrate Poisonous if absorbed by skin contact. Harmful if inhaled or swallowed. Causes severe skin burns and eye damage; corrosive to respiratory tract. May cause genetic defects. Avoid contact with eyes and skin (clothing). Do not inhale vapour.

		<p>Use only in well ventilated area.</p> <p>Wear eye protection/protective gloves/clothing when mixing or using (a range of PPE options in FAISD).</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>If skin contact occurs, remove contaminated clothing and wash skin thoroughly</p> <p>If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.</p> <p>If swallowed, do NOT induce vomiting,</p> <p>If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.</p>	<p>Use only outdoors or in a well ventilated area.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>-</p> <p>IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.</p> <p>IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Specific treatment (see... on this label) (FAIs and antidote). Rinse mouth.</p> <p>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or doctor/physician. Specific treatment is urgent (see... on this label) (FAIs and</p>	<p>Use only in well ventilated area.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>If skin contact occurs, remove contaminated clothing and wash skin thoroughly</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.</p> <p>If swallowed, do NOT Induce vomiting. Rinse mouth.</p> <p>If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.</p>
--	--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		<p>After each day's use, wash gloves and contaminated clothing.</p> <p>Wash hands thoroughly after use.</p>	<p>antidote).</p> <p>Wash contaminated clothing before reuse.</p> <p>Wash hands thoroughly after handling.</p>	<p>After each day's use, wash gloves and contaminated clothing.</p> <p>Wash hands thoroughly after handling.</p>
Azinphos-methyl	<p>High acute oral, dermal and inhalational toxicity, skin sensitisation, slight eye irritancy.</p>	<p>Dangerous poison</p> <p>Anticholinesterase compound.</p> <p>Keep out of reach of children.</p> <p>Read safety directions before opening and using.</p> <p>Very dangerous particularly the concentrate.</p> <p>Can kill if inhaled, swallowed or absorbed through skin.</p> <p>May irritate eyes.</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>Avoid breathing vapour or spray mist.</p> <p>Repeated exposure may cause allergic disorders.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face</p>	<p>Danger</p> <p>-</p> <p>Keep out of reach of children.</p> <p>Read safety directions before use.</p> <p>-</p> <p>Fatal if swallowed, inhaled or in contact with skin.</p> <p>Causes eye irritation.</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>Avoid breathing mist/vapours/spray.</p> <p>May cause an allergic skin reaction.</p> <p>Do not eat, drink or smoke when using this product.</p>	<p>Dangerous poison</p> <p>Anticholinesterase compound.</p> <p>Keep out of reach of children.</p> <p>Read safety directions before opening and using.</p> <p>Very dangerous particularly the concentrate.</p> <p>Can kill if inhaled, swallowed or absorbed through skin.</p> <p>Causes eye irritation.</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>Avoid breathing vapour or spray mist.</p> <p>Repeated exposure may cause allergic disorders.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap</p>

		<p>thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If swallowed, splashed on skin or in eyes, or inhaled, contact a doctor or Poisons Information Centre (<i>Phone Australia 131126. New Zealand 0800 764 766</i>) at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed activated charcoal may be advised. Give atropine if instructed.</p> <p>After each day's use, wash gloves/contaminated clothing.</p>	<p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>IF SWALLOWED: Immediately call a POISONS CENTRE or doctor/physician. Specific treatment (see... on this label) (FAIs and antidote). Rinse mouth.</p> <p>IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.</p> <p>Contaminated work clothing should not be allowed out of the work place.</p> <p>If skin irritation or rash occurs, seek medical advice/attention.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or doctor/physician. Specific treatment is urgent (see on this label) (FAIs and antidote).</p>	<p>and water.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If swallowed, splashed on skin or in eyes, or inhaled, contact a doctor or Poisons Information Centre (<i>Phone Australia 131126. New Zealand 0800 764 766</i>) at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed activated charcoal may be advised. Give atropine if instructed.</p> <p>After each day's use, wash gloves/contaminated clothing.</p> <p>If skin irritation or rash occurs, seek medical advice/attention.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.</p> <p>If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.</p>
--	--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		<p>Repeated minor exposure may have a cumulative poisoning effect.</p> <p>Obtain an emergency supply of atropine tablets 0.6 mg.</p> <p>After each day's use, wash gloves and contaminated clothing.</p> <p>Wash hands thoroughly after use.</p>	<p>-</p> <p>Wash contaminated clothing before reuse.</p> <p>Wash hands thoroughly after handling.</p>	<p>Repeated minor exposure may have a cumulative poisoning effect.</p> <p>After each day's use, wash gloves and contaminated clothing.</p> <p>Wash hands thoroughly after handling.</p>
Benzene	<p>Chronic toxicity, immunotoxicity, CNS effects, mutagenicity/ carcinogenicity, repro/develop toxicity, moderate skin and eye irritancy (NICNAS/ 21/2001).</p>	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read safety direction before opening and using.</p> <p>Harmful if swallowed.</p> <p>Will irritate eyes, skin and nose and throat.</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>May cause cancer</p> <p>May damage the fertility or the unborn child.</p>	<p>Danger</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before use.</p> <p>Do not handle until all safety precautions have been read and understood.</p> <p>-</p> <p>Harmful if swallowed.</p> <p>Causes irritation to eye, skin and the nose and throat.</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>May cause cancer and genetic defects.</p> <p>May damage the immune system, nervous system, fertility or the unborn child.</p>	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read safety direction before opening and using.</p> <p>Harmful if swallowed.</p> <p>Will irritate eyes, skin and nose and throat.</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>May cause cancer and genetic defects.</p> <p>May damage the immune system, nervous system, fertility or the unborn child.</p>

		<p>WARNING: Causes birth defects (or Warning statement 46; Contains benzene which causes birth defects in laboratory animals. Women of child bearing age should avoid contact with benzene) or</p> <p>Do not use if pregnant.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves/clothing when mixing or using (a range of PPE options in FAISD).</p> <p>If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water</p> <p>If in eyes, wash out immediately with water.</p> <p>-</p>	<p>May damage the fertility or the unborn child.</p> <p>Avoid contact during pregnancy/while nursing.</p> <p>Obtain special instructions before use.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>IF ON SKIN: Gently wash with plenty of water. Remove/Take off immediately all contaminated clothing.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.</p> <p>If eye irritation persists, get medical advice/attention.</p>	<p>May damage the fertility or the unborn child.</p> <p>Avoid contact during pregnancy/while nursing.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves/clothing when mixing or using (a range of PPE options in FAISD).</p> <p>If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.</p> <p>If eye irritation persists, get medical advice/attention.</p>
--	--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		<p>If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>If swallowed, do not induce vomiting.</p> <p>Wash hands thoroughly after use.</p>	<p>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>Immediately call a POISON CENTRE or doctor/physician. Specific treatment is urgent (see on this label) (FAIs and antidote).</p> <p>If swallowed do not induce vomiting. Rinse mouth.</p> <p>Wash hands thoroughly after handling.</p>	<p>If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>If swallowed do not induce vomiting. Rinse mouth.</p> <p>Wash hands thoroughly after handling.</p>
Chlorfenvinphos	<p>High acute oral, dermal and inhalational toxicity; weak skin sensitiser; reproductive effects at doses that inhibit ChE; evidence for altered neurological function.</p>	<p>Dangerous poison</p> <p>Anticholinesterase compound.</p> <p>Very dangerous, particularly the concentrate.</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and use.</p> <p>Very dangerous particularly the concentrate.</p> <p>Can kill if absorbed by skin contact, inhaled or swallowed.</p> <p>Repeated minor exposure may have a</p>	<p>Danger</p> <p>-</p> <p>Keep out of reach of children.</p> <p>Read safety directions before use.</p> <p>-</p> <p>Fatal if swallowed, inhaled or in contact with skin.</p> <p>-</p>	<p>Dangerous poison</p> <p>Anticholinesterase compound.</p> <p>Very dangerous, particularly the concentrate.</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and use.</p> <p>Very dangerous particularly the concentrate.</p> <p>Can kill if absorbed by skin contact, inhaled or swallowed.</p> <p>Repeated minor exposure may have a cumulative</p>

		<p>cumulative poisoning effect.</p> <p>Repeated exposure may cause allergic disorders.</p> <p>Avoid contact with eyes and skin.</p> <p>Avoid breathing vapour or spray mist.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If swallowed, splashed on skin or in eyes, or inhaled, contact a doctor or Poisons Information Centre (<i>Phone Australia 131126. New Zealand 0800 764 766</i>) at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed activated charcoal may be advised. Give atropine if instructed.</p>	<p>May cause an allergic skin reaction.</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>Avoid breathing vapours/mist/spray.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Specific treatment is urgent (see... on this label) (reference to FAIs and antidotes)</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.</p> <p>IF ON SKIN: Gently wash with plenty of water. Remove/Take off immediately all contaminated clothing.</p>	<p>poisoning effect.</p> <p>Repeated exposure may cause allergic disorders.</p> <p>Avoid contact with eyes and skin.</p> <p>Avoid breathing vapour or spray mist.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If swallowed, splashed on skin or in eyes, or inhaled, contact a doctor or Poisons Information Centre (<i>Phone Australia 131126. New Zealand 0800 764 766</i>) at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed activated charcoal may be advised. Give atropine if instructed.</p>
--	--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		<p>-</p> <p>May damage the fertility or the unborn child.</p> <p>Contains (name of substance) which causes birth defects in laboratory animals. Women of child bearing age should avoid contact with (name of substance).</p> <p>-</p> <p>Obtain an emergency supply of atropine tablets 0.6 mg.</p> <p>After each day's use, wash contaminated gloves and clothing.</p> <p>Wash hands thoroughly after use.</p>	<p>IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or a doctor/physician. Specific treatment is urgent (see... on this label) (reference to FAIs and antidotes)</p> <p>May damage the nervous system, fertility or the unborn child.</p> <p>Avoid contact during pregnancy/while nursing.</p> <p>If exposed or concerned: Get medical attention/advice.</p> <p>Obtain special instructions before use.</p> <p>-</p> <p>Wash/Decontaminate removed clothing before reuse.</p> <p>Wash hands thoroughly after handling.</p>	<p>May damage the nervous system, fertility or the unborn child.</p> <p>Avoid contact during pregnancy/while nursing.</p> <p>If exposed or concerned: Get medical attention/advice.</p> <p>-</p> <p>-</p> <p>After each day's use, wash contaminated gloves and clothing.</p> <p>Wash hands thoroughly after handling.</p>
Chlorhexidine	Severe eye irritancy, slight skin irritancy, high acute inhalation toxicity,	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and use.</p>	<p>Danger</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before use.</p>	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and use.</p>

	<p>respiratory tract irritation; data limitations.</p>	<p>Will damage eyes.</p> <p>Harmful if swallowed.</p> <p>Will irritate the nose and throat.</p> <p>May irritate the skin</p> <p>Can kill if inhaled.</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>Avoid breathing vapour or spray mist.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>-</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>If swallowed do NOT induce vomiting. Give a glass of water.</p> <p>Wash hands thoroughly after use.</p>	<p>Causes serious eye damage.</p> <p>Harmful if swallowed.</p> <p>Causes respiratory irritation.</p> <p>Causes mild skin irritation.</p> <p>Fatal if inhaled.</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>Do not breathe vapours/mist/spray.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>If skin irritation occurs, get medical advice attention.</p> <p>IF SWALLOWED: Immediately call a Poison Centre or doctor/physician. Rinse mouth.</p> <p>If swallowed do NOT induce vomiting. Rinse mouth.</p> <p>Wash hands thoroughly after handling.</p>	<p>Causes serious eye damage.</p> <p>Harmful if swallowed.</p> <p>Will irritate the nose and throat.</p> <p>Causes mild skin irritation.</p> <p>Can kill if inhaled.</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>Avoid breathing vapour or spray mist.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If skin irritation occurs, get medical advice attention.</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>If swallowed do NOT induce vomiting. Give a glass of water.</p> <p>Wash hands thoroughly after handling.</p>
--	--------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<p>Creosote</p>	<p>Skin & eye irritancy, corrosion: Genotoxicity, Carcinogenicity, Endocrine disruption</p>	<p>Dangerous poison</p> <p>Harmful if swallowed.</p> <p>Read Safety Directions before opening and use.</p> <p>Attacks eyes.</p> <p>Will irritate the skin.</p> <p>May cause cancer</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>Avoid breathing vapour or spray mist.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>-</p> <p>If in eyes, hold eye lids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or at least 15 minutes.</p> <p>If skin or hair contact occurs, remove contaminated clothing and flush skin and</p>	<p>Danger</p> <p>Harmful if swallowed.</p> <p>Read Safety Directions before use.</p> <p>Causes serious eye damage.</p> <p>Causes skin irritation.</p> <p>May cause genetic defects/cancer</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>Do not breathe vapours/mist/spray.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>May damage the endocrine system.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.</p> <p>IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.</p>	<p>Dangerous poison</p> <p>Harmful if swallowed.</p> <p>Read Safety Directions before opening and use.</p> <p>Causes serious eye damage.</p> <p>Causes skin irritation.</p> <p>May cause genetic defects/cancer</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>Avoid breathing vapour or spray mist.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>May damage the endocrine system.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.</p> <p>If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.</p>
------------------------	-------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		<p>hair with running water.</p> <p>If swallowed do NOT induce vomiting.</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>After each day's use, wash contaminated gloves/clothing.</p> <p>Wash hands thoroughly after use.</p>	<p>Rinse skin with water/shower.</p> <p>If skin irritation occurs, get medical advice attention.</p> <p>IF SWALLOWED: Immediately call a Poison Centre or doctor/physician. Rinse mouth.</p> <p>Wash contaminated clothing before reuse.</p> <p>Wash hands thoroughly after handling.</p>	<p>If skin irritation occurs, get medical advice attention.</p> <p>If swallowed do NOT induce vomiting. Rinse mouth.</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766</i> at once.</p> <p>After each day's use, wash contaminated gloves/clothing.</p> <p>Wash hands thoroughly after handling.</p>
Diquat	High acute oral, dermal and inhalational toxicity	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and use.</p> <p>Can kill if swallowed, inhaled or absorbed by skin contact. Do not put in drink bottles, Keep locked up.</p> <p>-</p> <p>Avoid breathing vapour or spray mist.</p>	<p>Danger</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before use.</p> <p>Fatal if swallowed, inhaled or in contact with skin.</p> <p>Exposure may cause eye and lung damage.</p> <p>Do not breathe vapours/mist/spray.</p>	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and use.</p> <p>Can kill if swallowed, inhaled or absorbed by skin contact. Do not put in drink bottles, Keep locked up.</p> <p>Exposure may cause eye and lung damage.</p> <p>Avoid breathing vapour or spray mist.</p>

		<p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves/clothing when mixing or using (a range of PPE options in FAISD).</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766</i> or a doctor.</p> <p>If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.</p> <p>After each day's use, wash gloves and contaminated clothing.</p>	<p>Do not eat, drink or smoke when using this product.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.</p> <p>IF SWALLOWED: Immediately call a Poison Centre or doctor/physician. Rinse mouth.</p> <p>IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or a doctor/physician.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.</p> <p>Obtain special instructions before use.</p> <p>Wash/Decontaminate removed clothing before reuse.</p>	<p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves/clothing when mixing or using (a range of PPE options in FAISD).</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766</i> at once.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.</p> <p>After each day's use, wash gloves and contaminated clothing.</p>
--	--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		Wash hands thoroughly after use.	Wash hands thoroughly after handling.	Wash hands thoroughly after handling.
Endosulfan	High acute oral, dermal and inhalational toxicity	<p>Dangerous poison.</p> <p>Keep out of reach of children</p> <p>Read Safety Directions before opening and use.</p> <p>Very dangerous particularly the concentrate.</p> <p>Can kill if swallowed, inhaled or absorbed by skin contact</p> <p>-</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>Avoid breathing vapour or spray mist.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p>	<p>Danger</p> <p>Keep out of reach of children</p> <p>Read Safety Directions before use.</p> <p>-</p> <p>Fatal if swallowed, inhaled or in contact with skin</p> <p>Exposure may cause kidney damage</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>Do not breathe vapours/mist/spray.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>IF ON SKIN: Gently wash with plenty of water. Immediately call a POISON CENTRE or doctor/physician. Specific</p>	<p>Dangerous poison.</p> <p>Keep out of reach of children</p> <p>Read Safety Directions before opening and use.</p> <p>Very dangerous particularly the concentrate.</p> <p>Can kill if swallowed, inhaled or absorbed by skin contact</p> <p>Exposure may cause kidney damage</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>Avoid breathing vapour or spray mist.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p>

			<p>measures (see...on label) (FAIs and antidote) Remove/Take off immediately all contaminated clothing.</p> <p>IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Rinse mouth. Specific treatment (see...on this label) (FAIs and antidote).</p> <p>IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or a doctor/physician.</p> <p>Obtain special instructions before use</p>	
		<p>After each day's use, wash gloves and contaminated clothing.</p> <p>Wash hands thoroughly after use.</p>	<p>Wash/Decontaminate removed clothing before reuse.</p> <p>Wash hands thoroughly after handling.</p>	<p>After each day's use, wash gloves and contaminated clothing.</p> <p>Wash hands thoroughly after handling.</p>
Paraquat	<p>Moderate acute oral toxicity (mice & rats); High acute oral toxicity (G. pigs, rabbits and monkeys) (and humans); high inhalational toxicity, severe</p>	<p>Dangerous poison</p> <p>Keep out of reach of children</p> <p>Read Safety Directions before opening and use</p> <p>Can kill if swallowed or inhaled. Do not put in drink bottles, Keep locked up.</p>	<p>Danger</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before use.</p> <p>Fatal if swallowed or inhaled. Do not put in drink bottles, keep locked up.</p>	<p>Dangerous poison</p> <p>Keep out of reach of children</p> <p>Read Safety Directions before opening and use</p> <p>Can kill if swallowed or inhaled. Do not put in drink bottles, Keep locked up.</p>

	<p>eye irritancy; moderate skin irritation; high repeat-dose toxicity.</p>	<p>Very dangerous particularly the concentrate.</p> <p>Harmful if absorbed by skin contact.</p> <p>Will attack eyes.</p> <p>Will irritate the nose, throat and skin.</p> <p>Avoid contact with eyes and skin.</p> <p>Do not inhale vapour/spray mist.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>If poisoning occurs get to a doctor or hospital quickly.</p>	<p>-</p> <p>Harmful in contact with skin.</p> <p>Causes serious eye damage.</p> <p>Causes skin and respiratory tract irritation.</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>Do not breathe vapours/mist/spray.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTRE or doctor/physician if you feel unwell. Specific measures (see...on this label) (FAIs and antidote etc).</p>	<p>Very dangerous particularly the concentrate.</p> <p>Harmful if absorbed by skin contact.</p> <p>Causes serious eye damage.</p> <p>Will irritate the nose, throat and skin.</p> <p>Avoid contact with eyes and skin.</p> <p>Do not inhale vapour/spray mist.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>If poisoning occurs get to a doctor or hospital quickly.</p>
--	----------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		<p>After each day's use, wash gloves/contaminated clothing.</p> <p>Wash hands thoroughly after use.</p>	<p>Wash/Decontaminate removed clothing before reuse.</p> <p>IF SWALLOWED: Immediately call a Poison Centre or doctor/physician. Specific treatment on this label Rinse mouth.</p> <p>IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or a doctor/physician.</p> <p>Obtain special instructions before use</p> <p>Causes damage to lungs through exposure via ingestion, inhalation or absorbed by skin contact.</p> <p>Wash hands thoroughly after handling.</p>	<p>After each day's use, wash gloves/contaminated clothing.</p> <p>Causes damage to lungs through exposure via ingestion, inhalation or absorbed by skin contact.</p> <p>Wash hands thoroughly after handling.</p>
Methylene blue	<p>Severe eye irritancy, genotoxicity/ carcinogenicity (suspected), embryo lethality, developmental toxicity</p>	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and use</p> <p>Poisonous if swallowed.</p> <p>Will damage eyes.</p> <p>-</p>	<p>Danger</p> <p>Keep out of reach of children;</p> <p>Read Safety Directions before use;</p> <p>-</p> <p>Fatal if swallowed</p> <p>Causes serious eye damage.</p> <p>May cause cancer/genetic defects</p>	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and use</p> <p>Poisonous if swallowed.</p> <p>Causes serious eye damage.</p> <p>May cause cancer/genetic defects</p>

		<p>Will irritate the nose and throat.</p> <p>Warning: Contains methylene blue which causes birth defects in laboratory animals. Women of child bearing age should avoid contact with methylene blue.</p> <p>-</p> <p>Avoid contact with eyes and skin.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves/clothing when mixing or using (a range of PPE options in FAISD).</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766</i> at once.</p> <p>Wash hands thoroughly after use.</p>	<p>Causes respiratory tract irritation.</p> <p>-</p> <p>May damage the fertility or the unborn child.</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>-</p> <p>Wash hands thoroughly after handling.</p>	<p>Will irritate the nose and throat.</p> <p>Warning: Contains methylene blue which causes birth defects in laboratory animals. Women of child bearing age should avoid contact with methylene blue.</p> <p>May damage the fertility or the unborn child.</p> <p>Avoid contact with eyes and skin.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves/clothing when mixing or using (a range of PPE options in FAISD).</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766</i> at once.</p> <p>Wash hands thoroughly after handling.</p>
Mercury	High inhalational toxicity, reproductive, developmental and CNS toxicity,	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and</p>	<p>Danger</p> <p>Keep out of reach of children</p> <p>Read Safety Directions before use.</p>	<p>Dangerous poison</p> <p>Keep out of reach of children.</p> <p>Read Safety Directions before opening and using.</p>

	<p>skin/eye irritation/corrosion, and skin sensitisation, chronic toxicity</p>	<p>using.</p> <p>Poisonous if absorbed by skin contact, inhaled or swallowed.</p> <p>Attacks skin and eyes.</p> <p>Will irritate the nose and throat.</p> <p>Repeated exposure may cause sensitisation (or allergic disorders).</p> <p>-</p> <p>Repeated minor exposure may have a cumulative poisoning effect.</p> <p>WARNING – Causes birth defects.</p> <p>-</p> <p>Avoid contact with eyes and skin.</p> <p>WARNING – skin contact may be dangerous. Take every precaution to avoid contact – wash off after spillage and after use.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p>	<p>Fatal if swallowed, inhaled or in contact with skin</p> <p>Causes serious eye damage.</p> <p>Causes irritation to the respiratory tract;</p> <p>May cause an allergic skin reaction,</p> <p>May cause genetic defects.</p> <p>-</p> <p>May damage the fertility or the unborn child.</p> <p>May damage the CNS.</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>-</p> <p>Do not eat, drink or smoke when using this product.</p>	<p>Poisonous if absorbed by skin contact, inhaled or swallowed.</p> <p>Causes serious eye damage.</p> <p>Will irritate the nose and throat.</p> <p>Repeated exposure may cause sensitisation (or allergic disorders).</p> <p>May cause genetic defects.</p> <p>Repeated minor exposure may have a cumulative poisoning effect.</p> <p>May damage the fertility or the unborn child.</p> <p>May damage the CNS.</p> <p>Avoid contact with eyes and skin.</p> <p>WARNING – skin contact may be dangerous. Take every precaution to avoid contact – wash off after spillage and after use.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p>
--	--------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		<p>-</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If skin contact occurs, remove contaminated clothing and wash skin thoroughly.</p> <p>After each day's use, wash gloves/contaminated clothing.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after use.</p>	<p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTRE or doctor/physician if you feel unwell. Specific measures (see...on this label) (FAIs and antidote etc).</p> <p>Wash/Decontaminate removed clothing before reuse.</p> <p>Wash hands thoroughly after handling.</p>	<p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If skin contact occurs, remove contaminated clothing and wash skin thoroughly.</p> <p>After each day's use, wash gloves/contaminated clothing.</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766</i> at once.</p> <p>Wash hands thoroughly after handling.</p>
Procymidone	Reproductive and developmental toxicity, limited data.	<p>Dangerous poison</p> <p>Keep out of reach of children;</p> <p>Read Safety Directions before opening and using.</p> <p>Harmful if swallowed.</p> <p>WARNING: Contains procymidone, which causes birth defects in laboratory animals.</p>	<p>Danger</p> <p>Keep out of reach of children;</p> <p>Read Safety Directions before use.</p> <p>Harmful if swallowed.</p> <p>-</p>	<p>Dangerous poison</p> <p>Keep out of reach of children;</p> <p>Read Safety Directions before opening and using.</p> <p>Harmful if swallowed.</p> <p>WARNING: Contains procymidone, which causes birth defects in laboratory animals. Women of child</p>

		<p>Women of child bearing age should avoid contact with procymidone.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after use.</p>	<p>May damage the fertility or the unborn child.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p>	<p>bearing age should avoid contact with procymidone.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>For advice, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766</i> at once.</p> <p>Wash hands thoroughly after handling.</p>
Selenium	<p>High acute oral toxicity, moderate skin irritancy, Severe eye irritancy, skin sensitisation, genotoxicity & reproductive toxicity</p> <p>Repeat-dose toxicity (liver and kidney), lack of data.</p>	<p>Dangerous Poison</p> <p>Keep out of reach of children;</p> <p>Read Safety Directions before opening and using.</p> <p>Can kill if swallowed.</p> <p>Will damage eyes.</p> <p>Will irritate the skin.</p> <p>Repeated exposure may cause allergic disorders.</p> <p>-</p>	<p>Danger</p> <p>Keep out of reach of children;</p> <p>Read Safety Directions before use.</p> <p>Fatal if swallowed.</p> <p>Causes serious eye irritation.</p> <p>Causes skin irritation.</p> <p>May cause an allergic skin reaction</p> <p>May cause genetic defects.</p>	<p>Dangerous Poison</p> <p>Keep out of reach of children;</p> <p>Read Safety Directions before opening and using.</p> <p>Can kill if swallowed.</p> <p>Causes serious eye irritation.</p> <p>Causes skin irritation.</p> <p>Repeated exposure may cause allergic disorders.</p> <p>May cause genetic defects.</p>

		<p>-</p> <p>-</p> <p>Avoid contact with eyes and skin.</p> <p>If skin contact occurs, remove contaminated clothing and flush skin with running water.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after use.</p>	<p>May damage the fertility or the unborn child.</p> <p>May damage the liver and kidney.</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>IF ON SKIN: Gently wash with plenty of water.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wear protective gloves/clothing, respiratory protection as specified by the manufacturer/supplier or the competent authority.</p> <p>IF SWALLOWED: Immediately call a Poison Centre or doctor/physician. Rinse mouth.</p> <p>Wash hands thoroughly after handling.</p>	<p>May damage the fertility or the unborn child.</p> <p>May damage the liver and kidney.</p> <p>Avoid contact with eyes and skin.</p> <p>If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after handling.</p>
Abamectin	High acute oral toxicity and developmental toxicity	<p>Dangerous Poison</p> <p>Keep out of reach of children</p> <p>Read safety directions before opening or using</p>	<p>Danger</p> <p>Keep out of reach of children</p> <p>Read safety directions before use</p>	<p>Dangerous Poison</p> <p>Keep out of reach of children</p> <p>Read safety directions before opening or using</p>

		<p>Can kill if swallowed.</p> <p>Poisonous if absorbed by skin contact.</p> <p>Harmful if inhaled.</p> <p>May irritate the eyes.</p> <p>Avoid contact with the eyes and skin (clothing).</p> <p>Do not inhale vapour.</p> <p>Use only in well ventilated area.</p> <p>.</p> <p>-</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face</p>	<p>Fatal if swallowed.</p> <p>Toxic in contact with skin.</p> <p>Harmful if inhaled.</p> <p>Causes mild eye irritation.</p> <p>Do not get in eyes, on skin or on clothing.</p> <p>Avoid breathing vapour.</p> <p>Use only outdoors or in a well ventilated area.</p> <p>Remove/Take off immediately all contaminated clothing. IF ON SKIN: Wash with plenty of soap and water</p> <p>May damage the fertility or the unborn child.</p> <p>Wear eye/face protection, protective gloves/clothing as specified by the manufacturer/supplier or the competent authority.</p> <p>Do not eat, drink or smoke when using this product.</p>	<p>Can kill if swallowed.</p> <p>Poisonous if absorbed by skin contact.</p> <p>Harmful if inhaled.</p> <p>Causes mild eye irritation.</p> <p>Avoid contact with the eyes and skin (clothing).</p> <p>Do not inhale vapour.</p> <p>Use only in well ventilated area.</p> <p>If clothing becomes contaminated with product, remove clothing immediately.</p> <p>May damage the fertility or the unborn child.</p> <p>Wear eye protection/protective gloves when mixing or using (a range of PPE options in FAISD).</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap</p>
--	--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		<p>thoroughly with soap and water.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>After each day's use, wash gloves, goggles and contaminated clothing.</p> <p>Wash hands thoroughly after use.</p>	<p>Wash hands thoroughly after handling.</p> <p>IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Rinse mouth. Call a POISON CENTRE or doctor/physician if you feel unwell.</p> <p>Wash/decontaminate removed clothing before reuse.</p> <p>Wash hands thoroughly after handling.</p>	<p>and water.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 76.</i></p> <p>After each day's use, wash gloves, goggles and contaminated clothing.</p> <p>Wash hands thoroughly after handling.</p>
--	--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Schedule 6 Chemicals

Chemical	Basis for classification	NDPSC	GHS	Revised label elements following adoption of GHS
Acephate	Moderate acute oral toxicity	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>If swallowed, splashed on skin or in eyes, or inhaled, contact a doctor or Poisons Information Centre (<i>Phone Australia 131126. New Zealand 0800 764 766</i>). Remove any contaminated clothing and wash skin thoroughly. If swallowed</p>	<p>Warning</p> <p>Keep out of reach of children.</p> <p>Harmful if swallowed (Cat 4).</p> <p>IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth.</p>	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>If swallowed, splashed on skin or in eyes, or inhaled, contact a doctor or Poisons Information Centre (<i>Phone Australia 131126. New Zealand 0800 764 766</i>). Remove any contaminated clothing and wash skin thoroughly. If swallowed activated charcoal may be advised. Give atropine if</p>

		<p>activated charcoal may be advised. Give atropine if instructed.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after use.</p>	<p>Do not eat, drink or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p>	<p>instructed.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after use.</p>
Bromoxynil	Moderate acute oral, inhalational toxicity, severe eye irritancy	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed or inhaled.</p> <p>Will damage eyes.</p> <p>Avoid contact with eyes.</p> <p>When using the product, wear goggles.</p> <p>If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.</p> <p>-</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone</i></p>	<p>Danger</p> <p>Keep out of reach of children.</p> <p>Toxic if swallowed (Cat 3).</p> <p>Causes serious eye irritation (Cat 2A).</p> <p>-</p> <p>Wear eye protection/face protection.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.</p> <p>If eye irritation persists: get medical advice/attention.</p> <p>IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.</p>	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed or inhaled.</p> <p>Causes serious eye irritation (Cat 2A).</p> <p>Avoid contact with eyes.</p> <p>When using the product, wear goggles.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.</p> <p>If eye irritation persists: get medical advice/attention.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126.</i></p>

		<p><i>Australia 131126.</i></p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after use.</p>	<p>Specific treatment (see.....on this label) (for FAI). Rinse mouth.</p> <p>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor/physician.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p>	<p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after handling.</p>
Chlorpyrifos	Moderate acute oral toxicity, low dermal and inhalational toxicity, slight to moderate eye irritancy, slight skin irritancy	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>Will irritate the eyes and skin.</p> <p>Avoid contact with eyes and skin.</p> <p>When using the product, wear goggles/protective clothing (range of PPE options).</p> <p>Repeated minor exposure may have a cumulative poisoning effect.</p> <p>If in eyes, hold eyes open, flood with water</p>	<p>Danger</p> <p>Keep out of reach of children.</p> <p>Toxic if swallowed (Cat 3).</p> <p>Causes skin and eye irritation.</p> <p>Do not get in eyes, on skin, or on clothing.</p> <p>Wear eye protection/face protection/protective clothing.</p> <p>-</p> <p>IF IN EYES: Rinse cautiously with water for</p>	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>Causes skin and eye irritation.</p> <p>Avoid contact with eyes and skin.</p> <p>When using the product, wear goggles/protective clothing (range of PPE options).</p> <p>Repeated minor exposure may have a cumulative poisoning effect.</p> <p>IF IN EYES: Rinse cautiously with water for</p>

		<p>for at least 15 minutes and see a doctor.</p> <p>-</p> <p>If swallowed, splashed on skin or in eyes, or inhaled, contact a doctor or Poisons Information Centre (<i>Phone Australia 131126. New Zealand 0800 764 766</i>). Remove any contaminated clothing and wash skin thoroughly. If swallowed activated charcoal may be advised. Give atropine if instructed.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after use.</p>	<p>several minutes. Remove contact lenses if present and easy to do.</p> <p>Continue rinsing.</p> <p>If eye irritation persists: get medical advice/attention.</p> <p>IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Specific treatment (see.....on this label) (for FAI).</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p>	<p>several minutes. Remove contact lenses if present and easy to do.</p> <p>Continue rinsing.</p> <p>If eye irritation persists: get medical advice/attention.</p> <p>If swallowed, splashed on skin or in eyes, or inhaled, contact a doctor or Poisons Information Centre (<i>Phone Australia 131126. New Zealand 0800 764 766</i>). Remove any contaminated clothing and wash skin thoroughly. If swallowed activated charcoal may be advised. Give atropine if instructed.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after handling.</p>
Dichlobenil	Moderate acute oral and dermal toxicity	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>Harmful if absorbed by skin contact.</p> <p>Avoid contact with skin.</p>	<p>Danger</p> <p>Keep out of reach of children.</p> <p>Toxic if swallowed (Cat 3).</p> <p>Harmful in contact with skin (Cat 4).</p> <p>-</p>	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>Harmful if absorbed by skin contact.</p> <p>Avoid contact with skin.</p>

		<p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>-</p> <p>When using the product, wear gloves/protective clothing (range of PPE options).</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>After each day's use, wash gloves, goggles and contaminated clothing.</p> <p>Wash hands thoroughly after use.</p>	<p>IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Rinse mouth. Specific measures (seeon this label).</p> <p>IF ON SKIN: Wash with plenty of soap and water. Call a Poison Centre or doctor/physician if you feel unwell. Specific measures (see... on label)</p> <p>Wear protective gloves/protective clothing.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wash contaminated clothing before reuse.</p> <p>Wash hands thoroughly after handling.</p>	<p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>When using the product, wear gloves/protective clothing (range of PPE options).</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>After each day's use, wash gloves, goggles and contaminated clothing.</p> <p>Wash hands thoroughly after handling.</p>
Esfenvalerate	Slight eye irritancy, skin paresthesia	<p>Caution</p> <p>Keep out of reach of children</p> <p>Will irritate the eyes.</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>If in eyes, hold eyes open, flood with water</p>	<p>Warning</p> <p>Keep out of reach of children.</p> <p>Causes eye irritation.</p> <p>Do not get in eyes, skin or clothing.</p> <p>IF IN EYES: Rinse cautiously with water</p>	<p>Caution</p> <p>Keep out of reach of children</p> <p>Will irritate the eyes.</p> <p>Avoid contact with eyes and skin (clothing).</p> <p>IF IN EYES: Rinse cautiously with water for</p>

		<p>for at least 15 minutes and see a doctor.</p> <p>-</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>If product on skin immediately wash area with soap and water.</p> <p>Wash hands thoroughly after use.</p>	<p>for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation occurs, get medical advice/attention.</p> <p>IF PRODUCT ON SKIN: Wash with plenty of soap and water.</p> <p>-</p> <p>Wash hands thoroughly after handling.</p>	<p>several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation occurs, get medical advice/attention.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>If product on skin immediately wash area with soap and water.</p> <p>Wash hands thoroughly after use.</p>
Levamisole	Moderate acute oral toxicity, skin and eye irritation	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>Will irritate the eyes and skin.</p> <p>Avoid contact with eyes and skin.</p> <p>When using the product, wear goggles/protective clothing (range of PPE options).</p> <p>If product in eyes, wash it out immediately with water.</p>	<p>Danger</p> <p>Keep out of reach of children.</p> <p>Toxic if swallowed (Cat 3).</p> <p>Causes skin and eye irritation.</p> <p>Do not get in eyes, on skin, or on clothing.</p> <p>Wear eye protection/face protection/protective clothing.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses</p>	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>Will irritate the eyes and skin.</p> <p>Avoid contact with eyes and skin.</p> <p>When using the product, wear goggles/protective clothing (range of PPE options).</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present</p>

		<p>If product on skin, immediately wash area with soap and water.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after use.</p>	<p>if present and easy to do. Continue rinsing.</p> <p>IF ON SKIN: Wash with plenty of soap and water. Specific treatment (see...on label)</p> <p>If eye/skin irritation persists: get medical advice/attention.</p> <p>IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Specific treatment (see.....on this label) (for FAI).</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p>	<p>and easy to do. Continue rinsing.</p> <p>If product on skin, immediately wash area with soap and water.</p> <p>If eye/skin irritation persists: get medical advice/attention.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after use.</p>
Nitroxynil	Moderate acute oral toxicity	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>If poisoning occurs, contact a doctor or</p>	<p>Warning</p> <p>Keep out of reach of children.</p> <p>Harmful if swallowed (Cat 4).</p> <p>IF SWALLOWED: Call a POISON</p>	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>If poisoning occurs, contact a doctor or Poisons</p>

		<p>Poisons Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after use.</p>	<p>CENTRE or doctor/physician if you feel unwell. Rinse mouth.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p>	<p>Information Centre. <i>Phone Australia 131126. New Zealand 0800 764 766.</i></p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after handling.</p>
Profenofos	<p>Moderate acute oral toxicity, slight skin irritancy, moderate eye irritancy, slight skin sensitisation</p>	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>Will irritate the eyes and skin.</p> <p>Repeated exposure may cause allergic disorders.</p> <p>Avoid contact with eyes and skin.</p> <p>If product on skin, immediately wash area with soap and water.</p> <p>If product in eyes, wash it out Immediately with water.</p> <p>-</p>	<p>Danger</p> <p>Keep out of reach of children.</p> <p>Toxic if swallowed (Cat 3).</p> <p>Causes eye and skin irritation.</p> <p>May cause an allergic skin reaction.</p> <p>-</p> <p>IF ON SKIN: Wash with plenty of soap and water.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye/skin irritation occurs, get medical</p>	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>Will irritate the eyes and skin.</p> <p>Repeated exposure may cause allergic disorders.</p> <p>Avoid contact with eyes and skin.</p> <p>If product on skin, immediately wash area with soap and water.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye/skin irritation occurs, get medical</p>

		<p>If swallowed, splashed on skin or in eyes, or inhaled, contact a Poisons Information Centre (<i>Phone Australia 131126</i>) or a doctor at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed, activated charcoal may be advised. Give atropine if instructed.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after use</p>	<p>advice/attention.</p> <p>IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p>	<p>advice/attention</p> <p>If swallowed, splashed on skin or in eyes, or inhaled, contact a Poisons Information Centre (<i>Phone Australia 131126</i>) or a doctor at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed, activated charcoal may be advised. Give atropine if instructed.</p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after handling.</p>
Spiroxamine	Moderate acute oral, dermal and inhalational toxicity, moderate skin and eye irritation, skin sensitisation	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed, inhaled or absorbed by skin contact</p> <p>Will irritate the eyes and skin.</p> <p>Avoid contact with eyes and skin.</p> <p>When using the product, wear goggles/protective clothing (range of PPE options).</p>	<p>Warning</p> <p>Keep out of reach of children.</p> <p>Harmful if swallowed, inhaled or in contact with skin (Cat 4).</p> <p>Causes skin and eye irritation.</p> <p>Do not get in eyes, on skin, or on clothing.</p> <p>Wear eye protection/face protection/protective clothing.</p>	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed, inhaled or absorbed by skin contact</p> <p>Causes skin and eye irritation.</p> <p>Avoid contact with eyes and skin.</p> <p>When using the product, wear goggles/protective clothing (range of PPE options).</p>

		<p>If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.</p> <p>If product on skin, wash it out immediately with soap and water.</p> <p>Repeated exposure may cause allergic disorders.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after use.</p>	<p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.</p> <p>IF ON SKIN: Wash with plenty of soap and water.</p> <p>If eye/skin irritation persists: get medical advice/attention.</p> <p>May cause an allergic skin reaction.</p> <p>IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Specific treatment (see.....on this label) (for FAI).</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p>	<p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.</p> <p>If product on skin, wash it out immediately with soap and water.</p> <p>If eye/skin irritation persists: get medical advice/attention.</p> <p>Repeated exposure may cause allergic disorders.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after use.</p>
Triclopyr	Moderate acute oral toxicity, slight skin and eye irritancy	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>Will irritate the eyes and skin.</p>	<p>Warning</p> <p>Keep out of reach of children.</p> <p>Harmful if swallowed (Cat 4).</p> <p>Causes skin and eye irritation.</p>	<p>Poison</p> <p>Keep out of reach of children.</p> <p>Poisonous if swallowed.</p> <p>Causes skin and eye irritation.</p>

		<p>Avoid contact with eyes and skin (clothing).</p> <p>When using the product, wear rubber gloves.</p> <p>-</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after use.</p>	<p>Do not get in eyes, on skin, or on clothing.</p> <p>Wear protective clothing.</p> <p>If eye/skin irritation persists: get medical advice/attention.</p> <p>IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Specific treatment (see.....on this label) (for FAI).</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p>	<p>Avoid contact with eyes and skin (clothing).</p> <p>When using the product, wear rubber gloves.</p> <p>If eye/skin irritation persists: get medical advice/attention.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.</p> <p>Wash hands thoroughly after use.</p>
--	--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Schedule 5 Chemicals

Chemical	Basis for classification	NDPSC	GHS	Revised label elements following adoption of GHS
Atrazine	Slight eye irritancy	<p>Caution</p> <p>Keep out of reach of children</p> <p>May irritate the eyes.</p>	<p>Warning</p> <p>Keep out of reach of children.</p> <p>Causes mild eye irritation.</p>	<p>Caution</p> <p>Keep out of reach of children</p> <p>May irritate the eyes.</p>

		<p>Avoid contact with eyes.</p> <p>If product in eyes, wash it out immediately with water.</p> <p>-</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after use.</p>	<p>Do not get in eyes.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation occurs, get medical advice/attention.</p> <p>-</p> <p>Wash hands thoroughly after handling.</p>	<p>Avoid contact with eyes.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation occurs, get medical advice/attention.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800</i></p> <p>Wash hands thoroughly after handling.</p>
Chlorsulfuron	Slight eye irritancy	<p>Caution</p> <p>Keep out of reach of children</p> <p>May irritate the eyes.</p> <p>Avoid contact with eyes.</p> <p>If product in eyes, wash it out immediately with water.</p> <p>-</p>	<p>Warning</p> <p>Keep out of reach of children.</p> <p>Causes mild eye irritation.</p> <p>Do not get in eyes.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation occurs, get medical advice/attention.</p>	<p>Caution</p> <p>Keep out of reach of children</p> <p>May irritate the eyes.</p> <p>Avoid contact with eyes.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation occurs, get medical advice/attention.</p>

		<p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after use.</p>	-	<p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after handling.</p>
--	--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Spinosad	Slight eye irritancy.	<p>Caution</p> <p>Keep out of reach of children</p> <p>May irritate the eyes.</p> <p>Avoid contact with eyes.</p> <p>If product in eyes, wash it out immediately with water.</p> <p>-</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>Wash hands after use.</p>	<p>Warning</p> <p>Keep out of reach of children.</p> <p>Causes mild eye irritation.</p> <p>Do not get in eyes.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation occurs, get medical advice/attention.</p> <p>-</p> <p>Wash hands thoroughly after handling.</p>	<p>Caution</p> <p>Keep out of reach of children</p> <p>May irritate the eyes.</p> <p>Avoid contact with eyes.</p> <p>If product in eyes, wash it out immediately with water.</p> <p>If eye irritation occurs, get medical advice/attention.</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>Wash hands after handling.</p>
Triflumuron	Haemolytic anaemia following repeat dosing at low doses	<p>Caution</p> <p>Keep out of reach of children</p> <p>-</p>	<p>Warning</p> <p>Keep out of reach of children.</p> <p>May cause damage to blood cells through prolonged or repeated exposure.</p>	<p>Caution</p> <p>Keep out of reach of children</p> <p>May cause damage to blood cells through prolonged or repeated exposure.</p>

		<p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after use.</p>	<p>-</p> <p>Wash hands thoroughly after handling.</p>	<p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>Wash hands thoroughly after use.</p>
Virginiamycin	Skin sensitisation	<p>Caution</p> <p>Keep out of reach of children</p> <p>Repeated exposure may cause allergic disorders.</p> <p>Sensitive workers should use protective clothing.</p> <p>Avoid contact with skin.</p> <p>Avoid inhaling dust/vapour/spray mist.</p> <p>If product on skin, wash area with soap and water.</p> <p>-</p> <p>-</p>	<p>Warning (Category 1)</p> <p>Keep out of reach of children.</p> <p>May cause allergic skin reaction.</p> <p>Wear protective gloves.</p> <p>-</p> <p>Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>IF ON SKIN: Wash with plenty of soap and water.</p> <p>If skin irritation or rash occurs, get medical advice/attention.</p> <p>Specific treatment (see On this label) (For specific FAI)</p>	<p>Caution</p> <p>Keep out of reach of children</p> <p>Repeated exposure may cause allergic disorders.</p> <p>Sensitive workers should use protective clothing.</p> <p>Avoid contact with skin.</p> <p>Avoid inhaling dust/vapour/spray mist.</p> <p>If product on skin, wash area with soap and water.</p> <p>-</p> <p>If skin irritation or rash occurs, get medical advice/attention.</p> <p>-</p>

		<p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>After each days use, wash gloves and contaminated clothing.</p> <p>Wash hands thoroughly after use.</p>	<p>-</p> <p>Wash contaminated clothing before reuse.</p> <p>Wash hands thoroughly after handling.</p>	<p>If poisoning occurs, contact a doctor or Poisons Information Centre. <i>Phone Australia 131126; New Zealand 0800 764 766.</i></p> <p>After each days use, wash gloves and contaminated clothing.</p> <p>Wash hands thoroughly after handling.</p>
--	--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------