DRAFT FOR CONSULTATION

Australian Government
Department of the Environment and Energy

National Standard for Environmental Risk Management of Industrial Chemicals

Draft National Standard

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Disclaimer

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Foreword

Stakeholders should note that the contents of this document should be considered with the understanding that any aspect presented in this document may change based on feedback from consultation and issues identified during legislative drafting. While the policy intent and details informed by consultation will be presented before Parliament for consideration, the Australian Government and state and territory governments will make the final decision on the National Standard. The Australian Government and state and territory governments will also make the final decision in relation to legislation in the respective jurisdictions.

The foreword will be completed following agreement to the National Standard.

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- Environment and Planning Directorate, Australian Capital Territory
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- Environment Protection Authority, South Australia
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- Australian Government Department of Defence
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- Australian Government Department of Prime Minister and Cabinet
- Australian Government Attorney General's Department
- Australian Government Department of Infrastructure and Regional Development
- Australian Government Department of Agriculture and Water Resources

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Acronyms and Abbreviations

AICS	Australian Inventory of Chemical Substances
BAF	Bioaccumulation factor
BCF	Bioconcentration factor
BMF	Biomagnification factor
COAG	Council of Australian Governments
ICNA Act	Commonwealth *Industrial Chemicals (Notification and Assessment) Act 1989*
NICNAS	National Industrial Chemicals Notification and Assessment Scheme
OBPR	Office of Best Practice Regulation
OECD	Organisation for Economic Cooperation and Development
PEC	Predicted Environmental Concentration
PNEC	Predicted No-Effect Concentration
RIS	Regulation Impact Statement
SAICM	Strategic Approach to International Chemicals Management
US EPA	United States Environment Protection Agency

Glossary of terms

Note: Definitions below align with the current *Industrial Chemicals (Notification and Assessment) Act 1989* (ICNA Act). Reforms to the ICNA Act mean that some definitions related to industrial chemicals may be updated and refined. Where appropriate, these new definitions will be reflected in the legislation for the National Standard.

Accidental Release	Release of a chemical substance that is uncontrolled and unintended despite management approaches being in place to prevent the release.
Advisory Committee	The expert body established to provide risk management advice to the Decision Maker under the National Standard.
Article	An object that: • is manufactured for use for a particular purpose, being a purpose that requires that the object have a particular shape, surface or design, and • is formed to that shape, surface or design during manufacture, and • undergoes no change of chemical composition when used for that purpose except as an intrinsic aspect of that use • but does not include a particle or a fluid.
Best available technology	The most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole.
Bioaccumulation	Bioaccumulation is the increase in concentration of a chemical substance in or on an organism relative to the concentration of the

	chemical substance in the surrounding medium. Bioaccumulation results from both bioconcentration and biomagnification processes further defined in the Explanatory Document.
Chemical substance	For the purposes of this paper, a chemical substance describes a: • chemical element, including a chemical element contained in a mixture, or • compound, polymer or complex of a chemical element, including such a compound, polymer or complex contained in a mixture, or • substance of unknown or variable composition, complex reaction products or biological materials (UVCB), or • naturally-occurring chemical but does not include: • an article, or • a radioactive chemical, or • a mixture. The use of 'Chemical', 'Chemical Substance' or 'Substance' in the context of the paper refers to those with industrial uses (see Industrial chemical).
Concern	Concern is a measure of the potential consequences of a chemical substance being introduced and used in Australia. Potential consequences of a chemical substance's use could be positive or negative. They include considerations of the risk defined by the risk assessment, the inherent hazard characteristics of a chemical substance or its degradation products, and any relevant social and economic impacts related to a chemical's use. Chemicals are proposed to be categorised in High (Environment Schedules 7 and 8), Intermediate (Environment Schedules 3 to 6) and Low (Environment Schedules 1 and 2) Concern Environment Schedules.
Consumer	A person in the general public who purchases chemicals or their products for personal and domestic use.
Controlled release	Release to the environment that is intended and managed to prevent excessive release.
Decision Maker	The Decision Maker is the person with responsibility to make decisions under the National Standard. The Decision Maker is the Minister responsible for the federal Environment portfolio or their delegate.
The Department	Australian Government Department of the Environment and Energy.
Adverse effect	A change in the morphology, physiology, growth, development, reproduction, or life span of an organism, system, or (sub)population that results in: (i) an impairment of functional capacity, (ii) an impairment of the capacity to compensate for additional stress, or (iii) an increase in susceptibility to other influences (WHO/UNEP/OECD/ILO, 2004)

Endocrine active	An endocrine active substance has the potential to be endocrine active in aquatic or terrestrial organisms but is not demonstrated to be endocrine disrupting.
Endocrine disruptor	An endocrine disruptor is an exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or populations.
Environment	The natural world including the surroundings which life inhabits. For the purposes of the National Standard, environment does not include people's indoor dwellings or places of business.
Environment agency	A statutory authority that has responsibility for the management and protection of the environment.
Environment ministers	Ministers responsible for the environment portfolios in their respective jurisdictions.
Environmental harm	Environmental harm for the purposes of the National Standard is the consequence of a chemical having an adverse effect on organisms or other aspects of the environment, such as waterways or the ozone layer.
Environment Schedule	For the purpose of the National Standard, there are seven (7) groups, referred to as Environment Schedules, into which chemicals can be categorised. Each Environment Schedule, with its own criteria, outlines a set of conditions that describes how industrial chemicals in that Environment Schedule are to be managed. Chemicals are assigned to a particular Environment Schedule based on their concern to the environment. Substances of lowest concern to the environment are categorised in Environment Schedule 1 and substances of highest concern to the environment are categorised in Environment Schedule 7.
Estuarine water	Confined coastal waters where fresh and salt waters meet, either seasonally or for longer periods, and tides are experienced. Estuaries may also be closed to the ocean through formation of adaptable barriers such as sand bars for a period of time and may become hypersaline.
Exposure (environmental)	Exposure is the amount of chemical released to the environment and the route by which it is released. Environmental exposure assessments in risk assessments characterise either the extent to which organisms may be exposed to a chemical stressor, or the concentration of a chemical in various environmental compartments (e.g. water, soil, air), which may then have the potential to affect organisms. The three main steps to an exposure assessment are: • Release estimation • Consideration of the environmental fate and partitioning behaviour • Derivation of a predicted environmental concentration. Additional information on environmental exposure assessment is presented in the Environmental Risk Assessment Guidance Manual for Industrial Chemicals[1].
Freshwater	For the purpose of the National Standard, freshwater is inland surface waters that are not salty. This includes water bodies such as rivers, lakes and inland wetlands.

[1] The Environmental Risk Assessment Guidance Manual for Industrial Chemicals can be found at http://www.scew.gov.au/resource/chemical-risk-assessment-guidance-manuals

Groundwater	Naturally occurring water that is held underground in spaces, cracks or crevices in soil, sand and rock.
Hazard (environment)	The environmental hazards of a chemical are those characteristics of a substance, whether they be measured, observed or calculated, that have the potential to cause harm to an organism, or any other aspect of the environment, for example, the ozone layer. A chemical's properties, and therefore hazards, are characteristics that generally do not change, although new information on them may become available.
High ecological value aquatic system	A high ecological value aquatic system is a waterway that is relatively undisturbed areas, protected due to their ecological significance are designated as being of 'high conservation value'. This would include pristine waters in National Parks or other defined areas, marine reserves or wetlands of significance such as those detailed in the Ramsar Convention. These areas will be specifically defined for the purposes of the National Standard.
Industrial chemical	Under the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cth), an industrial chemical is any chemical that has an industrial use (s 7(1)). The term 'industrial use' is defined to mean a use other than an excluded use (s 7(2)). The term 'excluded use' is defined in s 7(2). Therefore, an industrial chemical is any chemical that is not: • An agricultural chemical or a constituent of an agricultural chemical; or • A veterinary chemical or a constituent of a veterinary chemical; or • A therapeutic chemical or an ingredient or component in the preparation or manufacture of goods for therapeutic use; or • A food intended for consumption by humans or animals or a constituent in such food; or • A food additive in food referred to above.
Jurisdictions	The Australian Government and state and territory governments.
Land	Land refers to soil and sediment, and includes moisture and air within the soil.
Marine water	For the purposes of the National Standard, marine waters mean surface waters that are in the open-ocean or unprotected coastal habitats. Marine waters are at or near the full salinity of seawater.
Nanomaterial	A nanomaterial is a material intentionally produced, manufactured or engineered to have unique properties or specific composition at the nanoscale, that is a size range typically between 1 nm and 100 nm, and is either a nano-object (i.e. that is confined in one, two, or three dimensions at the nanoscale) or is nanostructured (i.e. having an internal or surface structure at the nanoscale).
National Standard	The National Standard is the term used to describe the Environment Schedules with standard set of risk management measures for industrial chemicals according to a chemical's level of concern to the environment. The National Standard will outline the standard risk management measures, scheduling criteria, scheduling processes and scheduling decisions.
Perfluorinated functionality	Substances that contain perfluorinated functionality are substances containing perfluorinated bonds in a carbon chain length of three or

	more. Carbons in a substance that are fully fluorinated, that is, all bonds that are not C-H or C-C bonds are C-F bonds, are perfluorinated. Both polymers and chemicals may contain perfluorinated functionality.
Persistent	A chemical substance that has a: • half-life in water greater than two months, or • half-life in soil greater than six months, or • half-life in sediment greater than six months, or • half-life in air greater than two days.
Radioactive substance	A chemical substance having a specific activity >35 becquerels/g.
Risk (environmental)	Risk is the probability of adverse effects caused under specified circumstances by an agent in an organism, a population, or an ecological system. It is based on the hazard of a chemical and its level of exposure for a specific use and location. Risk is analysed during the risk assessment process and can be represented simplistically as: Risk = function (Hazard × Exposure).
Risk assessment	Risk assessment is the systematic scientific evaluation of potential adverse effects resulting from exposure to a hazardous agent or situation. Risk assessment requires the integration of both quantitative as well as qualitative scientific information. Risk assessments that inform scheduling decisions under the National Standard will be undertaken by the Risk Assessor.
Risk assessor	The risk assessor for the purposes of the National Standard is the Australian Government. Risk assessments are currently undertaken through the National Industrial Chemicals Notification and Assessment Scheme (NICNAS). The risk assessor will complete risk assessments and make risk management recommendations to the National Standard.
Risk management	Risk management is the process by which policy actions are chosen and implemented to control risks identified in the risk assessment. Risk management involves consideration of the scientific evidence and risk assessment and, if needed, any social or economic factors. For the purposes of the National Standard, risk management involves the scheduling decisions (including decisions on risk management measures), implementation of decisions by jurisdictions, and relevant compliance and enforcement activities.
Risk management advice	Risk management advice is prepared by the Advisory Committee for consideration by the Decision Maker. Risk management advice outlines the considered risk management recommendation and any socio-economic implications for a scheduling decision.
Risk management measure	Risk management measures are outcomes-based requirements that apply to chemicals scheduled under the National Standard. They will outline the outcome that must be achieved for chemicals in order to prevent harm to the environment.
Risk management recommendation	Risk management recommendations are prepared by the risk assessor following scientific evaluations of the risks posed to the environment. Risk management recommendations are included in the risk assessment and take into consideration the scheduling criteria under the National Standard.
Scheduling criteria	Scheduling criteria are developed upfront and outline the hazards and risks taken into consideration by the risk assessor when developing a risk management recommendation.

Scheduling decision	Scheduling decisions are made by the Decision Maker. They will outline the Environment Schedule to which a chemical is assigned based on its scope of assessment and the risk management measures that are appropriate for the chemical. Scheduling decisions will be enforceable and be publicly available.
Scope of assessment	A defined scope of assessment is a description of the parameters within which the risk assessment was undertaken. This may include volume and use information and any other relevant information regarding the particulars of the chemical that lead to the risk characterisation. The scope may be describe broadly or narrowly.
Surface water	Naturally occurring water bodies and waterways that occur on the surface of the planet without deep penetration, for example, oceans, seas, lakes, and rivers.
Terrestrial Area of Ecological Significance	An area of land that is relatively undisturbed areas, protected due to their ecological significance are designated as being of 'high conservation value'. This would include National Parks or other defined areas of significance. These areas will be specifically defined for the purposes of the National Standard.
Toxicity	Toxicity is the ability of a substance to cause poisonous effects resulting in severe biological harm or death after exposure to, or contamination with, that substance.
Uncontrolled Release	Intentional release of the chemical substance to the environment or through waste streams that is not or cannot be managed. For example, a number of consumer products are intentionally released to the environment following use or during use. This would be considered uncontrolled release.
User	A chemical user is anyone who uses a chemical for its intended purpose, or undertakes an action in relation to the use of the chemical such as storage, disposal or handling.
Waterways	A passageway for water to travel, for example, rivers and canals. Waterways may be naturally occurring or man-made.

1. Introduction

The draft National Standard should be read in conjunction with the Explanatory Report. Text with this formatting throughout the draft National Standard indicates that the reader should refer to related documents (including the Explanatory Report) for more information.

For more information on background, objectives, scope, and how to use the Standard, please refer to Section 2 of the Explanatory Report.

For more information on related policies, standards and procedures please refer to Section 11 of the Explanatory Report.

1.1 Background

[*Text will be inserted here directing readers to the Act. The Standard will be established under Commonwealth legislation and detail decisions made under the National Standard.*]

The Standard provides a framework for managing the risks that industrial chemicals may pose to the environment. Jurisdictions are automatically adopting scheduling decisions including assigned risk management measures. Each jurisdiction is responsible for compliance activities

and enforcement of the scheduled risk management approaches within the areas pertaining to their responsibilities. For example, the Australian Government will be responsible for risk management activities undertaken on Commonwealth land and in Commonwealth waters, and controls on import and export.

The Standard aims to achieve better protection of the environment while providing a consistent, transparent, predictable and streamlined approach for governments, industry and the community. The outcomes-based risk management measures under the Standard will encourage continued innovation in environmental protection and allow industry to keep costs related to risk management as low as possible. To avoid duplication and ensure an appropriate separation of regulatory responsibilities, the National Standard has been developed to integrate with existing regulatory regimes in the Australian chemicals framework.

1.2 Objectives of the National Standard

The overarching objectives of the National Standard are:

- To achieve better protection of the environment through improved management of the environmental risks posed by industrial chemicals;
- To provide a nationally consistent, transparent, predictable and streamlined approach to environmental risk management of industrial chemicals for governments, industry and the community.

The benefits of a nationally consistent approach to the management of risks industrial chemicals may pose to the environment include:

- Providing Australians greater confidence that potentially harmful, high risk chemicals are subject to appropriate and consistent environmental measures across the nation
- Reducing regulatory burden by making it simpler and more cost-effective for industry to fulfil its obligations for managing the environmental implications of chemicals by streamlining current systems, reducing fragmentation, and improving transparency, simplicity and consistency
- Increasing information about, and understanding of, chemicals and the environment so that governments, industry and the community can make informed choices about chemicals and help identify areas needing greater attention so that resources can be allocated strategically to deliver improved outcomes
- Implementing an outcomes-based risk management approach to encourage continued innovation and efficiency in environmental protection
- Assisting Australia in meeting its international obligations for sound management of chemicals.

1.3 Scope of the Standard

The National Standard outlines risk management approaches for industrial chemicals. Industrial chemicals are defined under the *Industrial Chemicals (Notification and Assessment) Act 1989*.

Industrial chemicals can enter the environment at any stage during their lifecycle. The lifecycle of a chemical includes all stages of a chemical's useful life, from manufacture to end of life processes, such as disposal or destruction. The National Standard is applicable during all stages of a chemical's lifecycle in Australia, from introduction to end of life.

The National Standard includes three general categories for industrial chemicals – High, Intermediate and Low Concern. These general categories are broken into a total of seven

specified categories known as Environment Schedules. Substances of lowest concern to the environment are categorised in Environment Schedule 1 and substances of highest concern to the environment are categorised in Environment Schedules 6 and 7.

Each of the seven Environment Schedules has a set of clear, outcomes-based risk management measures. The risk management measures under the National Standard target risks to the environment from the intended use of industrial chemicals and may cover the entire lifecycle of the chemical. The risk management measures focus on protecting the environment from the releases of industrial chemicals that may occur during the intended use and processes associated with the intended use of the chemical. Responsibility for managing environmental risks of chemicals throughout their lifecycle will be targeted at those who have the capability of understanding and preventing release of chemicals to the environment. For example, where a chemical is used in consumer products, the product manufacturer will be responsible for ensuring the use of that chemical or product does not breach the risk management requirements during the intended, normal use of the chemical or product by consumers.

The outcomes-based risk management measures under the National Standard will encourage continued innovation in environmental protection and allow industry to manage risks as efficiently as possible. To avoid duplication and ensure an appropriate separation of regulatory responsibilities, the National Standard has been developed to integrate with existing regulatory regimes in the Australian chemicals framework.

1.4 Related Policies, Standards and Procedures

In Australia, there are other related policies, standards and procedures that have requirements relating to industrial chemicals additional to the requirements of the Standard. The Standard is not intended to duplicate or replace existing management systems that are already in place, rather it is intended to be compatible and complementary. The Standard has been developed in consideration with the following international approaches, legislative instruments and documents including:

- Australian Code for the Transport of Dangerous Goods by Road and Rail
- National Standard for the Storage and Handling of Workplace Dangerous Goods (NOHSC) 2001
- Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
- The Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
- National Industrial Chemical Notification and Assessment Scheme (NICNAS)
- Work Health and Safety (WHS) Regulations
- Agricultural and Veterinary Chemicals Code
- European Chemical Substances Information System (ESIS)
- Therapeutic Goods Order
- State and territory guidelines

1.5 How to use this Standard

The National Standard sets out measures related to processes associated with use of industrial chemicals that have an environmental risk assessment completed by an Australian Government.

The National Standard will be used by:

- Australian governments, and the Risk Assessor through the National Industrial Chemicals Notification and Assessment Scheme (NICNAS), as a tool for recommending appropriate scheduling and risk management measures
- the Decision Maker in reviewing scheduling recommendations, requesting advice and making scheduling decisions
- jurisdictions to undertake compliance and enforcement activities pertaining to their responsibilities
- the chemical industry and users to understand decisions on the risk management requirements for protecting the environment.

The National Standard may also be used by the chemical industry as a guide to possible scheduling and risk management decisions for the chemicals in use and proposed to be used, and the community to increase the general awareness of requirements of industrial chemical use and disposal in Australia.

2. Schedules

For more information on the draft National Standard Environment Schedules and Criteria, please refer to Section 7 of the Explanatory Document.

2.1 Introduction

The Standard contains three general categories for scheduling industrial chemicals – High, Intermediate and Low Concern. These general categories span seven Environment Schedules:

- Environment Schedule 1 and 2 – Low Concern
- Environment Schedule 3 to 5 – Intermediate Concern
- Environment Schedule 6 and 7 – High Concern

Industrial chemicals are categorised into a particular Environment Schedule based on their concern to the environment. Determining the level of concern that a chemical poses to the environment involves consideration of:

- the harm that the industrial chemical that could cause to the environment (hazard)
- the probability the chemical may pose harm to the environment based on the intended use and volume of use of the industrial chemical (risk).

A single industrial chemical with several different uses and different assessed risks may be categorised into different Environment Schedules depending on the concern the chemical poses to the environment. Each scheduling decision outlines the scope of the risk assessment that was undertaken including the use and volume of use of the chemical substance.

This approach will ensure risk management measures are risk based and proportionate and that chemical substances will be scheduled with substances that require similar regulatory controls. Inclusion of an industrial chemical in an Environment Schedule does not indicate:

- that the industrial chemical is available for general use
- that it has been approved and/or is available for any use
- that it negates any obligation for registration of the industrial chemical for any other use.

Regulated persons in the chemical industry and chemical manufacturers and introducers must continue to meet their obligations under the *Industrial Chemicals (Notification and Assessment) Act 1989* and all relevant state and territory regulations.

2.2 Criteria for Scheduling

Chemicals are scheduled under the Standard based on their concern to the environment for a particular use and volume. Although toxicity is one of the factors considered, industrial chemicals are not scheduled solely on the basis of a universal scale of toxicity. The decision to assign an industrial chemical to a particular Environment Schedule also takes into account many other criteria, such as the bioaccumulation potential, persistence in the environment, endocrine disrupting properties that may exist for living organisms, hazard properties for inorganic chemicals, as well as the use and potential for release of the chemical.

Table 1 provides a description of the Environment Schedules and the characteristics industrial chemicals exhibit to be characterised in each Environment Schedule.

Table 1: Criteria for Assigning an Industrial Chemical to a Schedule

Concern Category	Environment Schedule	Characteristics
High Concern	***Schedule 7*** Prohibited	**Substances:** • are persistent, bioaccumulative and toxic[2] (PBT) OR • have degradation products that are PBT OR • are other substances of significant environmental concern. Note: The Advisory Committee will review all substances categorised into Schedule 7. Schedule 7 substances that have viable alternatives, do not have an essential use in Australia and do not present a net benefit to the community will be prohibited substances under the National Standard.
High Concern	***Schedule 6*** Restricted	**Substances:** • are persistent, bioaccumulative and toxic (PBT) OR • have degradation products that are PBT OR • are other substances of significant environmental concern Note: The Advisory Committee will review all substances categorised into Schedule 6. These substances will need to have an essential use in Australia, have no viable alternatives and have a net benefit to the community from their use. In their recommendation, the Advisory Committee will consider detailing *all* circumstances under which the substance may be used in Australia.
Intermediate Concern	***Schedule 5*** Substances with a potentially significant and long lasting impact on the environment	Substances must not meet the criteria for Schedule 6 or Schedule 7. **Substances:** • are harmful, toxic or very toxic to any aspect of the environment according to the GHS *AND* • are predicted to cause harm to any aspect of the environment following exposure to the environment resulting from the defined scope of assessment[3]. This includes: ○ the predicted concentration in the environment is greater than or equal to the concentration predicted to cause harm to the environment for the specified use and volume i.e. PEC ≥ PNEC; OR

[2] 'Toxic' in the context of PBT chemicals means 'toxic' according to the National PBT Criteria, which is generally 'very toxic' according to the GHS with some exceptions. The National PBT Criteria are outlined on the NICNAS website under the Inventory Multi-tiered Assessment and Prioritisation (IMAP) Framework documentation and in the Environment Risk Assessment Guidance Manual for Industrial Chemicals available online.

[3] Note: The scope of assessment will be as defined by NICNAS. It will be the volume of substance introduced, the use of the substance, and the emission of the substance based on reviewed and agreed emission scenarios (OECD or industry developed scenarios). Additional controls noted by introducers/users during assessment will not be considered for categorisation of the chemical, but may be taken into consideration in applying risk management conditions.

Concern Category	Environment Schedule	Characteristics
		○ where the PEC cannot be calculated, substances are released to the environment and are very toxic to the environment with long lasting effects ***OR* Substances:** • are metals or metal ions of concern to the environment AND are in forms that are or could become bioavailable following release from the assessed use AND are at least toxic to the environment with acute and/or long lasting effects; OR • are metals or metal ions that are of concern to the environment AND are in forms that are or could become bioavailable following release from the assessed use AND are likely to accumulate in organisms causing adverse effects. ***OR* Substances:** • are PB (persistent AND bioaccumulative); OR • are PT (very toxic to the environment AND persistent); OR • are BT (very toxic to the environment AND bioaccumulative); OR • are bioaccumulative AND an endocrine disruptor; OR • have perfluorinated functionality AND are an endocrine disruptor.
Intermediate Concern	***Schedule 4*** Hazardous, higher risk substances	Substances must not meet the criteria for Schedule 5 to Schedule 7. **Substances:** • are harmful, toxic or very toxic to any aspect of the environment according to the GHS *AND* • are not predicted to harm the environment or any aspect of the environment following exposure to the environment resulting from the defined scope of assessment, but may cause harm if the circumstances change. This includes: ○ the predicted concentration in the environment is <u>less</u> than the concentration predicted to cause harm to the environment for the specified use and volume i.e. PEC/PNEC < 1; AND ○ the predicted concentration in the environment that is <u>greater</u> than 10% of the concentration predicted to cause harm to the environment for

Concern Category	Environment Schedule	Characteristics
		the specified use and volume i.e. PEC/PNEC ≥ 0.1; OR ○ where the PEC cannot be calculated, substances are released to the environment and are toxic to the environment with long lasting effects ***OR* Substances:** • are metals or metal ions of concern to the environment AND are in a form that are or could become bioavailable following release from the assessed use AND are harmful to the environment with acute and/or long lasting effects. ***OR* Substances:** • are bioaccumulative OR • have perfluorinated functionalities OR • are endocrine disruptors.
Intermediate Concern	***Schedule 3*** Hazardous, moderate risk substances	Substances must not meet the criteria for Schedule 4 to Schedule 7. **Substances:** • are harmful, toxic or very toxic to any aspect of the environment according to the GHS *AND* • are not predicted to harm the environment or any aspect of the environment following exposure to the environment resulting from the defined scope of assessment, but may cause harm if the circumstances change significantly. This includes: ○ the predicted concentration in the environment is <u>less</u> than 10% of the concentration predicted to cause harm to the environment for the specified use and volume i.e. PEC/PNEC < 0.1; AND ○ the predicted concentration in the environment that is <u>greater</u> than 1% of the concentration predicted to cause harm to the environment for the specified use and volume i.e. PEC/PNEC ≥ 0.01; AND/OR ○ where the PEC cannot be calculated, substances are released to the environment and are harmful to the environment with long lasting effects **OR Substances:**

Concern Category	Environment Schedule	Characteristics
		• are metals or metal ions of concern to the environment AND are not in a form that are or could become bioavailable following release from the assessed use. **OR Substances:** • have other characteristics that may result in adverse short or long term effects on the environment[4]
Low Concern	***Schedule 2*** Hazardous, low risk substances	Substances must not meet the criteria for Schedule 3 to Schedule 7. **Substances:** • are harmful, toxic or very toxic to any aspect of the environment according to the GHS *AND* • are not predicted to harm the environment or any aspect of the environment following exposure to the environment resulting from the defined scope of assessment, and are not likely to harm the environment if the circumstances change significantly. This includes: ○ the predicted concentration in the environment that is less than 1% of the concentration predicted to cause harm to the environment for the specified use and volume i.e. PEC/PNEC < 0.01
Low Concern	***Schedule 1*** Not hazardous and low hazard substances	Substances that are low hazard or not hazardous to the environment and do not meet the criteria for Schedule 2 to Schedule 7.

[4] e.g. nanomaterials, persistent substances that may have adverse effects on the environment as they accumulate such as chemicals exhibiting endocrine activity but are not identified endocrine disruptors, or chemicals with Global Warming Potential.

3. Risk Management Measures for Industrial Chemicals

For more information on risk management measures for industrial chemicals, please refer to Section 9 of the Explanatory Document.

3.1 Introduction

Each Environment Schedule under the Standard has a set of defined risk management measures. Risk management measures are directive, outcomes-based controls that are relevant to the scheduled chemical under the Standard.

Risk management measures will be selected from the set of defined measures to reduce the risk to an acceptable level and prevent harm to the environment. Not all risk management measures will be appropriate for every chemical in the Environment Schedule. Therefore, risk management measures will be selected based on considerations that include the physicochemical properties and use of the chemical.

Risk management measures aim to prevent harm to the environment for the assessed use and disposal of a chemical.

The risk assessor will recommend risk management measures as part of an environmental risk assessment. If the Advisory Committee review the chemical, the Committee may also provide advice to the Decision Maker or their delegate on appropriate risk management measures. The risk management measures are directed toward minimising environmental impact during normal use.

Each risk management measure outlined below has standard text and amendable text (outlined in square brackets). Only ‘amendable text’ may be changed and will become fixed when the scheduling decision is made.

3.2 Outcomes-based risk management measures

The risk management measures in this Standard are outcomes-based. Outcomes-based measures outline the end result that a person or business must achieve to protect the environment during the intended use of industrial chemicals.

Risk management measures, including general use provisions are detailed in the following sections. Each Environment Schedule under the Standard has a set of defined risk management measures that must be implemented based on the outcome of the assessment of the industrial chemical.

Risk management measures are including in the following tables:

- Table 2 Risk management measures relating to general use measures
- Table 3 Risk management measures relating to storage, handling and containment
- Table 4 Risk management measures relating to treatment and disposal
- Table 5 Risk management measures to protect waters
- Table 6 Risk management measures to protect groundwater
- Table 7 Risk management measures to protect land

- Table 8 Risk management measures to protect air

3.3 General use risk management measures

General use risk management measures should be employed as a minimum to protect the environment from adverse effects associated with use and controlled discharge or disposal of an industrial chemical into the environment. General use measures apply to all industrial chemicals. The general use measures outlined in the National Standard are listed in Table 2.

Table 2 General use risk management measures

Environment Schedule	General use risk management measures	Description
Schedule 1 Not hazardous and low hazard substances **Schedule 2** Hazardous, low risk substances **Schedule 3** Hazardous, moderate risk substances **Schedule 4** Hazardous, higher risk substances **Schedule 5** Substances with a potentially significant and long lasting impact on the environment	GU (all)	**GU_1.1** Take action to rectify any non-conformance with the risk management measures assigned for the industrial chemical. **GU_2.1** Do not permit uncontrolled release of the chemical substance to the environment at concentrations that may cause harm. **GU_2.2** Prevent unnecessary use of excessive quantities of the chemical substance so as to minimise the release of the chemical substance to the environment. **GU_2.3** Do not use the chemical substance where it is practicable to use an alternative chemical substance that is of lower concern to the environment for the use. G**U_2.4** Do not dispose of the chemical where it is practicable to reuse and recycle the chemical. **GU_2.5** Do not adopt risk management measures that will have adverse impacts on the environment. **GU_2.6** Report uncontrolled or accidental release of a chemical to a state, territory or federal government environment agency. **GU_2.7** Report adverse environmental effects observed following release of the chemical to a state, territory or federal government environment agency.
Schedule 6 are persistent, bioaccumulative and toxic (PBT)	**Restricted**	Risk management measures for high concern chemicals in Schedule 6 will be recommended to the Decision Maker by the Advisory Committee or through a risk analysis for Convention chemicals undertaken by the Australian Government. Risk management measures may be chosen from all available standardised risk

Environment Schedule	General use risk management measures	Description
OR have degradation products that are PBT OR are other substances of significant environmental concern.		management measures that apply to any of the Schedules, or tailored risk management measures may be developed to ensure appropriate management of the chemical. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.
Schedule 7 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern.	**Prohibited**	If a chemical is a Prohibited substance, it is not to be imported, manufactured or used in Australia. However, the National Standard may specify specific exemptions for a chemical. Alternatively, if a party seeks to undertake an activity that is otherwise inconsistent with a management measure, that party may request a specific exemption from the Decision Maker. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.

3.4 Risk management measures relating to storage, handling and containment

For certain industrial chemicals, particularly those chemicals in the higher schedules, there will be specific storage, handling and containment requirements because of the level of concern these chemicals pose to the environment. Risk management measures relating to containment are listed in Table 3.

Table 3 Risk management measures relating to storage, handling and containment

Environment Schedule	Storage, Handling and Containment Risk Management Measures	Description
Schedule 1 Not hazardous and low hazard substances	**N/A**	Chemicals in Schedule 1 will have no additional requirements other than general use measures that apply to all chemicals.
Schedule 2 Hazardous, low risk substances	**SHC_1.1, SHC_1.2**	**SHC_1.1** Do not use [packaging/ containment systems/plant and equipment] for the [storage and/or handling] of the chemical substance that may allow the chemical to leak into the environment. **SHC_1.2** Do not use the chemical substance in situations where its disposal is not able to be controlled.
Schedule 3 Hazardous, moderate risk substances	**SHC_1.1, SHC_1.2**	**SHC_1.1** Do not use [packaging/ containment systems/plant and equipment] for the [storage and/or handling] of the chemical substance that may allow the chemical to leak into the environment. **SHC_1.2** Do not use the chemical substance in situations where its disposal is not able to be controlled.

Schedule 4 Hazardous, higher risk substances	**SHC_1.1, SHC_1.2, SHC_1.3, SHC_1.4, SHC_1.5, SHC_1.6, SHC_1.7**	**SHC_1.1** Do not use [packaging/ containment systems/plant and equipment] for the [storage and/or handling] of the chemical substance that may allow the chemical to leak into the environment. **SHC_1.2** Do not use the chemical substance in situations where its disposal is not able to be controlled. **SHC_1.3** Do not permit [bird life/ taxonomic rank descriptor] to come into contact, or otherwise be exposed, to the chemical substance [above x concentration] **SHC_1.4** Do not permit [mammal/taxonomic rank descriptor] to come into contact, or otherwise be exposed, to the chemical substance [above x concentration] **SHC_1.5** Do not permit [insect/taxonomic rank descriptor] to come into contact, or otherwise be exposed, to the chemical substance [above x concentration] **SHC_1.6** Do not permit [invertebrates/vertebrates] to come into contact, or otherwise be exposed, to the chemical substance [above x concentration] **SHC_1.7** Do not permit [plant/taxonomic rank descriptor] to be exposed to the chemical substance [above x concentration].
Schedule 5 Substances with a potentially significant and long lasting impact on the environment	**SHC_1.1, SHC_1.2, SHC_1.3, SHC_1.4, SHC_1.5, SHC_1.6, SHC_1.7**	**SHC_1.1** Do not use [packaging/ containment systems/plant and equipment] for the [storage and/or handling] of the chemical substance that may allow the chemical to leak into the environment. **SHC_1.2** Do not use the chemical substance in situations where its disposal is not able to be controlled. **SHC_1.3** Do not permit [bird life/ taxonomic rank descriptor] to come into contact, or otherwise be exposed, to the chemical substance [above x concentration] **SHC_1.4** Do not permit [mammal/taxonomic rank descriptor] to come into contact, or otherwise be exposed, to the chemical substance [above x concentration] **SHC_1.5** Do not permit [insect/taxonomic rank descriptor] to come into contact, or otherwise be exposed, to the chemical substance [above x concentration] **SHC_1.6** Do not permit [invertebrates/vertebrates] to come into contact, or otherwise be exposed, to the chemical substance [above x concentration] **SHC_1.7** Do not permit [plant/taxonomic rank descriptor] to be exposed to the chemical substance [above x concentration]

Schedule 6 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern	**Restricted**	Risk management measures for high concern chemicals in Schedule 6 will be recommended to the Decision Maker by the Advisory Committee or through a risk analysis for Convention chemicals undertaken by the Australian Government. Risk management measures may be chosen from all available standardised risk management measures that apply to any of the Schedules, or tailored risk management measures may be developed to ensure appropriate management of the chemical. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.
Schedule 7 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern.	**Prohibited**	If a chemical is a Prohibited substance, it is not to be imported, manufactured or used in Australia. However, the National Standard may specify specific exemptions for a chemical. Alternatively, if a party seeks to undertake an activity that is otherwise inconsistent with a management measure, that party may request a specific exemption from the Decision Maker. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.

3.5 Risk management measures relating to treatment and disposal

Industrial chemicals, particularly those in the higher schedules, will require treatment prior to disposal, and disposal may be limited to particular options. Risk management measures relating to treatment and disposal are listed in Table 4.

Table 4 Risk management measures relating to treatment and disposal

Environment Schedule	Treatment and Disposal Risk Management Measures	Description
Schedule 1 Not hazardous and low hazard substances	**N/A**	Chemicals in Schedule 1 will have no additional requirements other than general use measures that apply to all chemicals.
Schedule 2 Hazardous, low risk substances	**TD_1.1, TD_1.2** **TD_2.2**	**Treatment** **TD_1.1** Apply best available techniques when treating a substance containing the chemical for disposal. **TD_1.2** Do not adopt measures for treatment or disposal that will result in adverse effects on the environment. **Sewer** **TD_2.2** Do not discharge to sewer at concentrations greater than [x concentration].

Environment Schedule	Treatment and Disposal Risk Management Measures	Description
Schedule 3 Hazardous, moderate risk substances	**TD_1.1, TD_1.2, TD_1.3** **TD_2.1, TD_2.2, TD_2.3, TD_2.4, TD_2.5** **TD_3.1**	**Treatment** **TD_1.1** Apply best available treatment technologies when treating a substance containing the chemical for disposal. **TD_1.2** Do not adopt measures for treatment or disposal that will result in adverse effects on the environment. **TD_1.3** Do not dispose of empty storage containers and drums containing the chemical substance other than through a [licensed/approved/treatment/ disposal/facility/receiver]. **Sewer** **TD_2.1** Do not discharge the chemical to the sewer unless it is permitted under the terms of a [trade waste agreement/approval/agreed concentration] with the relevant sewerage authority. **TD_2.2** Do not discharge to sewer at concentrations greater than [x concentration]. **TD_2.3** Do not discharge the chemical to sewer [above its limit of quantification]. **TD_2.4** Do not use the chemical substance at concentrations greater than [x concentration] in [products] intended to be disposed of to sewer. **TD_2.5** Do not discharge to sewer if the discharge will result in concentrations in re-purposed biosolids greater than [x concentration]. **Landfill** **TD_3.1** Do not dispose of wastes containing the chemical substance to landfill if the waste composition is contrary to the requirements of the landfill [licence/agreement/permit/acceptance criteria/class].
Schedule 4 Hazardous, higher risk substances	**TD_1.1, TD_1.2, TD_1.3, TD_1.4** **TD_2.1, TD_2.2, TD_2.3, TD_2.4, TD_2.5, TD_2.6** **TD_3.1, TD_3.2, TD_3.3**	**Treatment** **TD_1.1** Apply best available treatment technologies when treating a substance containing the chemical for disposal. **TD_1.2** Do not adopt measures for treatment or disposal that will result in adverse effects on the environment. **TD_1.3** Do not dispose of empty storage containers and drums containing the chemical substance other than through a [licensed/approved/treatment/ disposal/facility/receiver]. **TD_1.4** Treat the chemical substance to destroy the chemical, or render it

Environment Schedule	Treatment and Disposal Risk Management Measures	Description
		[inactive/harmless] prior to release to the environment. **Sewer** **TD_2.1** Do not discharge the chemical to the sewer unless it is permitted under the terms of a [trade waste agreement/approval/agreed concentration] with the relevant sewerage authority. **TD_2.2** Do not discharge to sewer at concentrations greater than [x concentration]. **TD_2.3** Do not discharge the chemical to sewer [above its limit of quantification]. **TD_2.4** Do not use the chemical substance at concentrations greater than [x concentration] in [products] intended to be disposed of to sewer. **TD_2.5** Do not discharge to sewer if the discharge will result in concentrations in re-purposed biosolids greater than [x concentration]. **TD_2.6** Do not discharge to sewer if the sludge from the discharge will be applied to land as re-purposed biosolids. **Landfill** **TD_3.1** Do not dispose of wastes containing the chemical substance to landfill if the waste composition is contrary to the requirements of the landfill [licence/agreement/permit/acceptance criteria/class]. **TD_3.2** Do not dispose the chemical substance with a concentration greater than [x concentration] to a landfill that does not have sufficient infrastructure and control systems to prevent its release to the environment. **TD_3.3** Do not dispose the chemical substance to landfill at concentrations greater than [x concentration/its limit of quantification].
Schedule 5 Substances with a potentially significant and long lasting impact on the environment	**TD_1.1, TD_1.2, TD_1.3, TD_1.4** **TD_2.1, TD_2.2, TD_2.3, TD_2.4, TD_2.5, TD_2.6** **TD_3.1, TD_3.2, TD_3.3**	**Treatment** **TD_1.1** Apply best available treatment technologies when treating a substance containing the chemical for disposal. **TD_1.2** Do not adopt measures for treatment or disposal that will result in adverse effects on the environment. **TD_1.3** Do not dispose of empty storage containers and drums containing the chemical substance other than through a [licensed/approved/treatment/ disposal/facility/receiver]. **TD_1.4** Treat the chemical substance to destroy the chemical, or render it

Environment Schedule	Treatment and Disposal Risk Management Measures	Description
		[inactive/harmless] prior to release to the environment. **Sewer** **TD_2.1** Do not discharge the chemical to the sewer unless it is permitted under the terms of a [trade waste agreement/approval/agreed concentration] with the relevant sewerage authority. **TD_2.2** Do not discharge to sewer at concentrations greater than [x concentration]. **TD_2.3** Do not discharge the chemical to sewer [above its limit of quantification]. **TD_2.4** Do not use the chemical substance at concentrations greater than [x concentration] in [products] intended to be disposed of to sewer. **TD_2.5** Do not discharge to sewer if the discharge will result in concentrations in re-purposed biosolids greater than [x concentration]. **TD_2.6** Do not discharge to sewer if the sludge from the discharge will be applied to land as re-purposed biosolids. **Landfill** **TD_3.1** Do not dispose of wastes containing the chemical substance to landfill if the waste composition is contrary to the requirements of the landfill [licence/agreement/permit/acceptance criteria/class]. **TD_3.2** Do not dispose the chemical substance with a concentration greater than [x concentration] to a landfill that does not have sufficient infrastructure and control systems to prevent its release to the environment. **TD_3.3** Do not dispose the chemical substance to landfill at concentrations greater than [x concentration/its limit of quantification].

Environment Schedule	Treatment and Disposal Risk Management Measures	Description
Schedule 6 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern	**Restricted**	Risk management measures for high concern chemicals in Schedule 6 will be recommended to the Decision Maker by the Advisory Committee or through a risk analysis for Convention chemicals undertaken by the Australian Government. Risk management measures may be chosen from all available standardised risk management measures that apply to any of the Schedules, or tailored risk management measures may be developed to ensure appropriate management of the chemical. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.
Schedule 7 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern.	**Prohibited**	If a chemical is a Prohibited substance, it is not to be imported, manufactured or used in Australia. However, the National Standard may specify specific exemptions for a chemical. Alternatively, if a party seeks to undertake an activity that is otherwise inconsistent with a management measure, that party may request a specific exemption from the Decision Maker. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.

3.6 Risk management measures to protect waters

Risk management measures to protect surface water and groundwater from release of industrial chemicals are listed in Table 5 and Table 6 . These measures relate to direct release of the chemical substance to waters and do not cover release of a chemical substance to waters through disposal routes such as sewage treatment facilities and landfills.

Certain waters are highly sensitive and measures will be required to protect these waters. The measures listed in Table 5 include measures related to particular sensitive water bodies.

Where the measures relate to discharges to surface water, the measures also relate to stormwater containing the industrial chemical that discharges into the receiving water.

Table 5 Risk management measures to protect surface waters

Environment Schedule	Discharge to Surface Water	Description
Schedule 1 Not hazardous and low hazard substances	**N/A**	Chemicals in Schedule 1 will have no additional requirements other than general use measures that apply to all chemicals
Schedule 2 Hazardous, low risk substances	**W_1.1, W_1.2, W_1.3, W_1.4**	**Surface Water** **W_1.1** Do not release the chemical substance directly to surface waters at a concentration greater than [x concentration]. **W_1.2** Do not release the chemical substance to marine water at a concentration greater than [x concentration]. **W_1.3** Do not release the chemical substance to freshwater at a concentration greater than [x concentration]. **W_1.4** Do not release the chemical substance to estuarine waters at a concentration greater than [x concentration].

Environment Schedule	Discharge to Surface Water	Description
Schedule 3 Hazardous, moderate risk substances	**W_1.1, W_1.2, W_1.3, W_1.4, W_1.6, W_1.7, W_1.8, W_1.9, W_1.10, W_1.11, W_1.15, W_1.17**	**Surface Water** **W_1.1** Do not release the chemical substance directly to surface waters at a concentration greater than [x concentration]. **W_1.2** Do not release the chemical substance to marine water at a concentration greater than [x concentration]. **W_1.3** Do not release the chemical substance to freshwater at a concentration greater than [x concentration]. **W_1.4** Do not release the chemical substance to estuarine waters at a concentration greater than [x concentration]. **W_1.6** Do not release the chemical substance to marine water [above its limit of quantification]. **W_1.7** Do not release the chemical substance to freshwater [above its limit of quantification]. **W_1.8** Do not release the chemical substance to estuarine water [above its limit of quantification]. **W_1.9** Do not release the chemical substance into marine water which has a pH value [greater than/less than/equal to pH value]. **W_1.10** Do not release the chemical substance into freshwater which has a pH value [greater than/less than/equal to pH value]. **W_1.11** Do not release the chemical substance into estuarine water which has a pH value [greater than/less than/equal to pH value]. **W_1.15** Do not release the chemical substance to waterways that discharge into a high ecological value aquatic system. **W_1.17** Do not use the chemical within the designated boundaries of a high ecological value aquatic system [above x concentration].

Environment Schedule	Discharge to Surface Water	Description
Schedule 4 Hazardous, higher risk substances	**W_1.1, W_1.2, W_1.3, W_1.4, W_1.5, W_1.6, W_1.7, W_1.8, W_1.9, W_1.10, W_1.11, W_1.12, W_1.13, W_1.14, W_1.15, W_1.17**	**Surface Water** **W_1.1** Do not release the chemical substance directly to surface waters at a concentration greater than [x concentration]. **W_1.2** Do not release the chemical substance to marine water at a concentration greater than [x concentration]. **W_1.3** Do not release the chemical substance to freshwater at a concentration greater than [x concentration]. **W_1.4** Do not release the chemical substance to estuarine waters at a concentration greater than [x concentration]. **W_1.5** Do not release the chemical substance to surface water [above its limit of quantification]. **W_1.6** Do not release the chemical substance to marine water [above its limit of quantification]. **W_1.7** Do not release the chemical substance to freshwater [above its limit of quantification]. **W_1.8** Do not release the chemical substance to estuarine water [above its limit of quantification]. **W_1.9** Do not release the chemical substance into marine water which has a pH value [greater than/less than/equal to pH value]. **W_1.10** Do not release the chemical substance into freshwater which has a pH value [greater than/less than/equal to pH value]. **W_1.11** Do not release the chemical substance into estuarine water which has a pH value [greater than/less than/equal to pH value]. **W_1.12** Do not release the chemical into marine water where it will result in a reduction of Dissolved Oxygen of greater than [x %]. **W_1.13** Do not release the chemical into freshwater where it will result in a reduction of Dissolved Oxygen of greater than [x %]. **W_1.14** Do not release the chemical into estuarine water where it will result in a reduction of Dissolved Oxygen of greater than [x %]. **W_1.15** Do not release the chemical substance to waterways that discharge into a high ecological value system.

Environment Schedule	Discharge to Surface Water	Description
		W_1.17 Do not use the chemical within the designated boundaries of a high ecological value aquatic system [above x concentration].
Schedule 5 Substances with a potentially significant and long lasting impact on the environment	**W_1.1, W_1.2, W_1.3, W_1.4, W_1.5, W_1.6, W_1.7, W_1.8, W_1.9, W_1.10, W_1.11, W_1.12, W_1.13, W_1.14, W_1.15, W_1.16, W_1.17**	**Surface Water** **W_1.1** Do not release the chemical substance directly to surface waters at a concentration greater than [x concentration]. **W_1.2** Do not release the chemical substance to marine water at a concentration greater than [x concentration]. **W_1.3** Do not release the chemical substance to freshwater at a concentration greater than [x concentration]. **W_1.4** Do not release the chemical substance to estuarine waters at a concentration greater than [x concentration]. **W_1.5** Do not release the chemical substance to surface water [above its limit of quantification]. **W_1.6** Do not release the chemical substance to marine water [above its limit of quantification]. **W_1.7** Do not release the chemical substance to freshwater [above its limit of quantification]. **W_1.8** Do not release the chemical substance to estuarine water [above its limit of quantification]. **W_1.9** Do not release the chemical substance into marine water which has a pH value [greater than/less than/equal to pH value]. **W_1.10** Do not release the chemical substance into freshwater which has a pH value [greater than/less than/equal to pH value]. **W_1.11** Do not release the chemical substance into estuarine water which has a pH value [greater than/less than/equal to pH value]. **W_1.12** Do not release the chemical into marine water where it will result in a

Environment Schedule	Discharge to Surface Water	Description
		reduction of Dissolved Oxygen of greater than [x %]. **W_1.13** Do not release the chemical into freshwater where it will result in a reduction of Dissolved Oxygen of greater than [x %]. **W_1.14** Do not release the chemical into estuarine water where it will result in a reduction of Dissolved Oxygen of greater than [x %]. **W_1.15** Do not release the chemical substance to waterways that discharge into [a high ecological value system]. **W_1.16** Do not release the chemical substance to waters that discharge into waters adjacent to a high ecological value system. **W_1.17** Do not use the chemical within the designated boundaries of a high ecological value aquatic system [above x concentration].
Schedule 6 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern.	**Restricted**	Risk management measures for high concern chemicals in Schedule 6 will be recommended to the Decision Maker by the Advisory Committee or through a risk analysis for Convention chemicals undertaken by the Australian Government. Risk management measures may be chosen from all available standardised risk management measures that apply to any of the Schedules, or tailored risk management measures may be developed to ensure appropriate management of the chemical. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.
Schedule 7 are persistent, bioaccumulative and toxic (PBT)	**Prohibited**	If a chemical is a Prohibited substance, it is not to be imported, manufactured or used in Australia. However, the National Standard may specify specific exemptions for a chemical. Alternatively, if a party seeks to undertake an activity that is otherwise inconsistent with a management measure, that party may request a specific exemption from the Decision Maker.

Environment Schedule	Discharge to Surface Water	Description
OR have degradation products that are PBT OR are other substances of significant environmental concern.		Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.

Table 6 Risk management measures to protect groundwater

Environment Schedule	Groundwater risk management measures	Description
Schedule 1 Not hazardous and low hazard substances	**N/A**	Chemicals in Schedule 1 will have no additional requirements other than general use measures that apply to all chemicals.
Schedule 2 Hazardous, low risk substances	**W_2.1, W_2.3**	**W_2.1** Do not release the chemical substance to groundwater with a concentration greater than [x concentration]. **W_2.3** Do not permit the chemical substance in groundwater extracted for use to exceed [x concentration].
Schedule 3 Hazardous, moderate risk substances	**W_2.1, W_2.2, W_2.3, W_2.4, W_2.6**	**W_2.1** Do not release the chemical substance to groundwater with a concentration greater than [x concentration]. **W_2.2** Do not permit the chemical substance in groundwater to discharge to surface water [at a concentration greater than x concentration]. **W_2.3** Do not permit the chemical substance in groundwater extracted for use to exceed [x concentration]. **W_2.4** Do not permit the chemical substance to spread beyond [x distance] from the source of injection in groundwater. **W_2.6** Do not release the chemical substance to groundwater which has a pH value [greater than/less than/equal to pH value].
Schedule 4 Hazardous, higher risk substances	**W_2.1, W_2.2, W_2.3, W_2.4, W_2.6, W_2.7, W_2.8**	**W_2.1** Do not release the chemical substance to groundwater with a concentration greater than [x concentration]. **W_2.2** Do not permit the chemical substance in groundwater to discharge to surface water [at a concentration greater than x concentration]. **W_2.3** Do not permit the chemical substance in groundwater extracted for use to exceed [x concentration]. **W_2.4** Do not permit the chemical substance to spread beyond [x distance] from the source of injection in groundwater. **W_2.6** Do not release the chemical substance to groundwater which has a pH value [greater than/less than/equal to pH value].

Environment Schedule	Groundwater risk management measures	Description
		W_2.7 Do not release the chemical substance to groundwater that recharges a high ecological value system. **W_2.8** Do not use the chemical within [x distance of] the designated boundaries of a high ecological value aquatic ecosystem [above x concentration]
Schedule 5 Substances with a potentially significant and long lasting impact on the environment	**W_2.1, W_2.2, W_2.3, W_2.4, W_2.5, W_2.6, W_2.7, W_2.8**	**W_2.1** Do not release the chemical substance to groundwater with a concentration greater than [x concentration]. **W_2.2**Do not permit the chemical substance in groundwater to discharge to surface water [at a concentration greater than x concentration]. **W_2.3** Do not permit the chemical substance in groundwater extracted for use to exceed [x concentration]. **W_2.4** Do not permit the chemical substance to spread beyond [x distance] from the source of injection in groundwater. **W_2.5** Do not release of the chemical substance to groundwater [above its limit of quantification]. **W_2.6** Do not release the chemical substance to groundwater which has a pH value [greater than/less than/equal to pH value]. **W_2.7** Do not release the chemical substance to groundwater that recharges a high ecological value system. **W_2.8** Do not use the chemical within [x distance of] the designated boundaries of a high ecological value aquatic ecosystem [above x concentration]
Schedule 6 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern.	**Restricted**	Risk management measures for high concern chemicals in Schedule 6 will be recommended to the Decision Maker by the Advisory Committee or through a risk analysis for Convention chemicals undertaken by the Australian Government. Risk management measures may be chosen from all available standardised risk management measures that apply to any of the Schedules, or tailored risk management measures may be developed to ensure appropriate management of the chemical. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management

Environment Schedule	Groundwater risk management measures	Description
		measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.
Schedule 7 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern.	**Prohibited**	If a chemical is a Prohibited substance, it is not to be imported, manufactured or used in Australia. However, the National Standard may specify specific exemptions for a chemical. Alternatively, if a party seeks to undertake an activity that is otherwise inconsistent with a management measure, that party may request a specific exemption from the Decision Maker. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.

3.7 Risk management measures to protect Land

Risk management measures to protect land from controlled release of industrial chemicals are listed in Table 7. In the context of this Standard, “land” refers to soil and sediment, and includes water and air within the soil. In general, the resulting concentrations of a chemical in soil should not be at a level that will adversely affect the environmental values or beneficial use of the land.

Table 7 Risk management measures to protect land

Environment Schedule	Land risk management measures	Description
Schedule 1 Not hazardous and low hazard substances	**N/A**	Chemicals in Schedule 1 will have no additional requirements other than general use measures that apply to all chemicals.
Schedule 2 Hazardous, low risk substances	**L_1.1, L_1.2**	**L_1.1** Do not apply the chemical substance directly to land at a concentration greater than [x concentration]. **L_1.2** Do not apply the chemical substance to land where it could be mobilised in stormwater.
Schedule 3 Hazardous, moderate risk substances	**L_1.1, L_1.2, L_1.3, L_1.4, L_1.5**	**L_1.1** Do not apply the chemical substance directly to land at a concentration greater than [x concentration]. **L_1.2** Do not apply the chemical substance to land where it could be mobilised in stormwater. **L_1.3** Do not use the chemical within the designated boundaries of a terrestrial area of ecological significance [above x concentration]. **L_1.4** Do not apply the chemical substance with a concentration greater than [x concentration] within [x distance] of the designated boundaries of a terrestrial area of ecological significance. **L_1.5** Do not release the chemical substance [adjacent to/within] the designated boundaries of a terrestrial area of ecological significance [above x concentration].
Schedule 4 Hazardous, higher risk substances	**L_1.1, L_1.2, L_1.3, L_1.4, L_1.5, L_1.6**	**L_1.1** Do not apply the chemical substance directly to land at a concentration greater than [x concentration].

Environment Schedule	Land risk management measures	Description
		L_1.2 Do not apply the chemical substance to land where it could be mobilised in stormwater. **L_1.3** Do not use the chemical within the designated boundaries of a terrestrial area of ecological significance [above x concentration]. **L_1.4** Do not apply the chemical substance with a concentration greater than [x concentration] within [x distance] of the designated boundaries of a terrestrial area of ecological significance. **L_1.5** Do not release the chemical substance [adjacent to/within] the designated boundaries of a terrestrial area of ecological significance [above x concentration]. **L_1.6** Do not apply the chemical substance to land [above its limit of quantification].
Schedule 5 Substances with a potentially significant and long lasting impact on the environment	**L_1.1, L_1.2, L_1.3, L_1.4, L_1.5, L_1.6**	**L_1.1** Do not apply the chemical substance directly to land at a concentration greater than [x concentration]. **L_1.2** Do not apply the chemical substance to land where it could be mobilised in stormwater. **L_1.3** Do not use the chemical within the designated boundaries of a terrestrial area of ecological significance [above x concentration]. **L_1.4** Do not apply the chemical substance with a concentration greater than [x concentration] within [x distance] of the designated boundaries of a terrestrial area of ecological significance. **L_1.5** Do not release the chemical substance [adjacent to/within] the designated boundaries of a terrestrial area of ecological significance [above x concentration]. **L_1.6** Do not apply the chemical substance to land [above its limit of quantification].
Schedule 6 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of	**Restricted**	Risk management measures for high concern chemicals in Schedule 6 will be recommended to the Decision Maker by the Advisory Committee or through a risk analysis for Convention chemicals undertaken by the Australian Government. Risk management measures may be chosen from all available standardised risk management measures that apply to any of the Schedules, or tailored risk management measures may be developed to ensure appropriate management of the chemical.

Environment Schedule	Land risk management measures	Description
significant environmental concern		Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.
Schedule 7 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern.	**Prohibited**	If a chemical is a Prohibited substance, it is not to be imported, manufactured or used in Australia. However, the National Standard may specify specific exemptions for a chemical. Alternatively, if a party seeks to undertake an activity that is otherwise inconsistent with a management measure, that party may request a specific exemption from the Decision Maker. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.

3.8 Risk Management Measures to protect Air

Risk management measures to protect air from release of industrial chemicals are listed in Table 8.

Table 8 Risk management measures to protect air

Environment Schedule	Discharge to air risk management measures	Description
Schedule 1 Not hazardous and low hazard substances	**N/A**	Chemicals in Schedule 1 will have no additional requirements other than general use measures that apply to all chemicals.
Schedule 2 Hazardous, low risk substances	**A_1.1**	**A_1.1** Do not release the chemical substance to air with a concentration greater than [x concentration].
Schedule 3 Hazardous, moderate risk substances	**A_1.1, A_1.2 A_1.3, A_1.4, A_1.5, A_1.6**	**A_1.1** Do not release the chemical substance to air with a concentration greater than [x concentration]. **A_1.2** Do not release the chemical substance to air [above its limit of quantification]. **A_1.3** Do not store or handle the chemical in locations where it may be subject to windborne transport. **A_1.4** Do not release the chemical substance to air during periods of [high/low] winds and where winds are [above x speed/below x speed]. **A_1.5** Do not release the chemical to air when the direction of the wind is toward a sensitive aquatic or terrestrial ecosystem within [x distance] of the release zone [and the wind is greater than x speed].

Environment Schedule	Discharge to air risk management measures	Description
		A_1.6 Do not release the chemical to air when ambient air temperature is expected to be [above/below x temperature].
Schedule 4 Hazardous, higher risk substances	**A_1.1, A_1.2, A_1.3, A_1.4, A_1.5, A_1.6**	**A_1.1** Do not release the chemical substance to air with a concentration greater than [x concentration]. **A_1.2** Do not release the chemical substance to air [above its limit of quantification]. **A_1.3** Do not store or handle the chemical in locations where it may be subject to windborne transport. **A_1.4** Do not release the chemical substance to air during periods of [high/low] winds and where winds are [above x speed/below x speed]. **A_1.5** Do not release the chemical to air when the direction of the wind is toward a sensitive aquatic or terrestrial ecosystem within [x distance] of the release zone [and the wind is greater than x speed]. **A_1.6** Do not release the chemical to air when ambient air temperature is expected to be [above/below x temperature].
Schedule 5 Substances with a potentially significant and long lasting impact on the environment	**A_1.1, A_1.2, A_1.3, A_1.4, A_1.5, A_1.6**	**A_1.1** Do not release the chemical substance to air with a concentration greater than [x concentration]. **A_1.2** Do not release the chemical substance to air [above its limit of quantification]. **A_1.3** Do not store or handle the chemical in locations where it may be subject to windborne transport. **A_1.4** Do not release the chemical substance to air during periods of [high/low] winds and where winds are [above x speed/below x speed]. **A_1.5** Do not release the chemical to air when the direction of the wind is toward a sensitive aquatic or terrestrial ecosystem within [x distance] of the release zone [and the wind is greater than x speed]. **A_1.6** Do not release the chemical to air when ambient air temperature is expected to be [above/below x temperature].

Environment Schedule	Discharge to air risk management measures	Description
Schedule 6 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern.	**Restricted**	Risk management measures for high concern chemicals in Schedule 6 will be recommended to the Decision Maker by the Advisory Committee or through a risk analysis for Convention chemicals undertaken by the Australian Government. Risk management measures may be chosen from all available standardised risk management measures that apply to any of the Schedules, or tailored risk management measures may be developed to ensure appropriate management of the chemical. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.
Schedule 7 are persistent, bioaccumulative and toxic (PBT) OR have degradation products that are PBT OR are other substances of significant environmental concern.	**Prohibited**	If a chemical is a Prohibited substance, it is not to be imported, manufactured or used in Australia. However, the National Standard may specify specific exemptions for a chemical. Alternatively, if a party seeks to undertake an activity that is otherwise inconsistent with a management measure, that party may request a specific exemption from the Decision Maker. Where Australia is a party to an international convention, risk management measures will satisfy, as a minimum, the relevant international convention. Risk management measures that are set out in international conventions include obligations relating to the import, manufacture, use, emissions, storage and end of life processes (e.g. disposal, destruction, recovery, recycling, reuse, reclamation, etc) of a chemical. The Decision Maker must consult with states and territories on the risk management measures to meet international obligations.

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