

Waste classification assessment protocol



Environment
Protection
Authority Victoria



Publication 1827.1* June 2020

*This replaces 1827 issued March 2020

This protocol has an intended commencement date of 1 July 2021

Protocol

Introduction

In Victoria, waste must be classified to meet waste duties under Part 6.4 (Duties relating to industrial waste) and 6.5 (Duties and controls relating to priority waste) of the *Environment Protection Act 2017*.

The Environment Protection Regulations (the Regulations), Part 4.2 (Industrial waste and priority waste) specifies the process for classifying waste.

This *Waste classification assessment protocol*, as published by Environment Protection Authority Victoria (EPA) from time to time, is incorporated into the Regulations without modification.

A thorough understanding of the waste being classified, including its nature, source and composition will help identify the most appropriate waste code and waste classification. These are set out in Schedule 5 of the Regulations.

There are two types of codes in Schedule 5 of the Regulations:

- **pre-classified**, which EPA has pre-classified based on hazard and risk of mismanagement
- **mirror codes**, which may be hazardous or non-hazardous, indicated by a paired code ending in -H and NH.

Under the Regulations, a holder of waste identified as a mirror code, or a waste not listed in Schedule 5 must determine if that waste is hazardous or non-hazardous.

This protocol establishes a process for complying with the Regulations, specifically, classification of:

- waste identified as a mirror code, or
- not listed in Schedule 5 of the Regulations.



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How to use this publication

The tables in the following sections list the criteria against which certain wastes (i.e. wastes with mirror codes and wastes not in the schedule) must be assessed to classify the waste.

Table 1 provides specific criteria for wastes identified as mirror codes in Schedule 5 of the Regulations where classification criteria is available.

If a waste is not listed in Schedule 5 or in the classification criteria in Table 1, classification will depend on an assessment of the hazardous properties of the waste in accordance with Table 2. Once an assessment has been undertaken for a waste not listed in Schedule 5, you can apply to EPA for a designation setting out a waste code, waste classification and any relevant conditions.

Testing requirement

Wherever this publication requires testing to be completed, such as for determining:

- a dangerous goods class
- hazard class, or
- the presence of persistent, bioaccumulative and toxic properties,

it is a requirement that testing be undertaken by a National Association of Testing Authorities, Australia (NATA) accredited laboratory.

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Definitions

Term	Description of terms
Mirror code	Wastes which may be either hazardous (H) or non-hazardous (NH), indicated by a paired code ending in either -H or NH.
Pre-classified	Wastes which EPA has pre-classified based on hazard and risk of mismanagement. These wastes must be classified according to EPA's assessment. EPA has determined that the hazards posed by these wastes are constant.
Industrial waste	As defined in the <i>Environment Protection Act 2017</i> industrial waste means— (a) waste arising from commercial, industrial or trade activities or from laboratories; or (b) waste prescribed to be industrial waste for the purposes of this definition. As prescribed in the Environment Protection Regulations Part 4.2, the following waste is prescribed to be industrial waste— (a) waste from any source received at a place or premises which stores or handles waste generated at another location for the purpose of resource recovery or off-site disposal; or (b) waste transported for fee or reward, other than the collection of kerbside waste by or on behalf of a council or a Waste and Resource Recovery Group.
Priority waste	As defined in the <i>Environment Protection Act 2017</i> priority waste is any waste, including municipal waste and industrial waste, that is prescribed to be priority waste for the purposes of— (a) eliminating or reducing risks of harm to human health or the environment posed by the waste; or (b) ensuring the priority waste is managed in accordance with Part 6.5 of the Act; or (c) facilitating waste reduction, resource recovery and resource efficiency. Wastes prescribed as priority wastes are indicated under Column 6 of Schedule 5 of the Regulations or as otherwise determined by a designation issued by EPA.
Reportable Priority waste (transactions)	Priority waste prescribed as reportable priority waste for the purposes of section 142 of the <i>Environment Protection Act 2017</i> . Wastes prescribed to be reportable priority waste (transactions) are indicated under Column 7 of Schedule 5 of the Regulations. They may also be determined by a designation issued by EPA.
Reportable Priority waste (transport)	Priority waste prescribed as reportable priority waste for the purposes of section 143 of the <i>Environment Protection Act 2017</i> . Wastes prescribed to be reportable priority wastes are indicated under Column 8 of Schedule 5 of the Regulations. They may also be determined by a designation issued by EPA.
Schedule 5 of the Regulations	List of Waste codes and classifications under the Regulations.
Specifications acceptable to the Authority	Relevant specifications approved by the Environment Protection Authority Victoria for the purposes of this Protocol.

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Table 1: Waste classification criteria – mirror codes

Table 1 provides the criteria for wastes identified as mirror codes in Schedule 5 of the Regulations. These criteria must be used to assess whether a waste is hazardous or non-hazardous. This will enable selection of the correct code.

Waste code	Section	Descriptive title	Waste classification criteria	Classification
K310-H	Putrescible/organic wastes	Timber treated with hazardous substances, including sawdust.	Timber, wood or material derived from wood (including sawdust and engineered wood) that is likely to have been treated or chemically altered or coated with a hazardous substance, including paint, varnish, preservative or fumigant to enhance the performance of the original wood. <i>Note: excludes timber, wood or material derived from wood which has been treated with heat only.</i>	Priority waste (non-reportable)
K310-NH	Putrescible/organic wastes	Untreated timber, including sawdust.	Timber, wood or material derived from wood (including sawdust and engineered wood) that does not meet the criteria of K310-H.	Industrial waste (non-priority)
K400-H	Putrescible/organic wastes	Treated sewage solids and sludge that does not meet specifications of Permit Conditions (A15).	Does not meet the criteria listed for K400-NH.	Reportable Priority waste (transaction) & Reportable Priority waste (transport)
K400-NH	Putrescible/organic wastes	Biosolids that meet specifications of Permit Conditions (A15).	Meets specifications of Permit Conditions (A15). If assessed in accordance with EPA Publication 943 Guidelines for Environmental Management as: <ul style="list-style-type: none"> • Treatment Grade equal to or better than T2; and • Contaminant Grade equal to or lower than C2. 	Priority waste (non-reportable)
L200-H	Industrial washwaters and wastewaters	Industrial wastewater (excluding sewage) not otherwise specified in this schedule.	Does not meet the criteria listed for L200-NH.	Reportable Priority waste (transaction) & Reportable Priority waste (transport)

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Waste code	Section	Descriptive title	Waste classification criteria	Classification
L200-NH	Industrial washwaters and wastewaters	Industrial wastewaters (excluding sewage) which meets the conditions in a permission in the Table in Schedule 1 of the Regulations.	Meets the specifications of a permission.	Priority waste (non-reportable)
T130-H	Miscellaneous	Sludges or slurries, including drilling muds containing hazardous substances.	Does not meet the criteria listed for T130-NH.	Reportable Priority waste (transaction) & Reportable Priority waste (transport)

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Waste code	Section	Descriptive title	Waste classification criteria	Classification
T130-NH	Miscellaneous	Sludges or slurries, including drilling muds other than T130-H.	<p>Meets all of the following criteria:</p> <ul style="list-style-type: none"> • Drilling muds comprised of only the following materials: <ul style="list-style-type: none"> ○ Naturally occurring rock and soil including sandstone, shale and clay; ○ Naturally occurring organic matter including tree roots, grass and shrubs; and ○ Water and drilling fluid (which primarily consist of water and may also contain non-synthetic additives such as bentonite). • Drilling muds generated during directional drilling or non-destructive hydro-excavation of non-contaminated soils (determined through site contamination assessment or preliminary risk screen assessment), excluding material generated from: <ul style="list-style-type: none"> ○ drilling for mineral, gas or coal exploration ○ drilling in marine environments, and/or ○ when additives or contaminants are introduced during drilling or excavation operation. <p>For sludges or slurries other than drilling muds, see the next section and undertake a hazardous properties assessment.</p>	Priority waste (non-reportable)

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Table 2: Hazardous properties assessment criteria

The following table provides the criteria for (a) wastes identified as mirror codes with no classification criteria in Table 1; or (b) wastes not found in Schedule 5 of the Regulations. These criteria must be assessed to determine the level of hazard to enable classification of the waste.

The criteria detailed in Table 2 are consistent with the methodology EPA used in order to classify the pre-classified wastes in Schedule 5 of the Regulations.

Item	Criteria	Hazard	Waste Classification
1	If any constituent of the waste or the waste itself: <ul style="list-style-type: none"> can be classified as a class of dangerous goods as per Appendix A. 	Very high	Reportable Priority waste (transaction) & Reportable Priority waste (transport)
2	Where the above condition(s) do not apply, if any constituent of the waste or the waste itself: <ul style="list-style-type: none"> meets the criteria for a hazard class as per Appendix B; and/or has persistent, bioaccumulative and/or toxic properties, as per Appendix C. 	High	Reportable Priority waste (transaction) & Reportable Priority waste (transport)
3	Where the above condition(s) do not apply, if: <ul style="list-style-type: none"> the waste is liquid in form as described in Appendix E OR <ul style="list-style-type: none"> any constituent of the waste or the waste itself has any of the following properties of concern as per Appendix D: <ul style="list-style-type: none"> Metals or metal ions of concern to the environment Perflurinated functionality Endocrine disruption Hazardous break down products. 	Moderate	Priority waste (non-reportable)
4	If none of the above criteria apply.	Low	Industrial waste (non-priority)

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Appendix A – Dangerous goods classes

Dangerous goods classes, descriptions and references for classification

Dangerous goods class	Description	Reference for classification
Class 3 dangerous goods	Flammable liquids	The Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
Class 4 dangerous goods	Flammable solids, substances liable to spontaneous combustion and substances which in contact with water emit flammable gases	
4.1	Flammable solids, self-reactive substances and solid desensitised explosives	
4.2	Substances liable to spontaneous combustion	
4.3	Substances which in contact with water emit flammable gases	
Class 5 dangerous goods	Oxidising substances and organic peroxides	
5.1	Oxidising substances	
5.2	Organic peroxides	
Class 6.1 dangerous goods	Toxic substances	
Class 8 dangerous goods	Corrosive substances	
Class 9 dangerous goods	Miscellaneous dangerous substances and articles	ADG Code and Dangerous Goods (Transport by Road or Rail) Regulations 2018
Goods too dangerous to be transported	<p>Goods listed in Appendix A to the ADG Code.</p> <p>Goods determined under regulation 30(2)(a) of the Dangerous Goods (Transport by Road or Rail) Regulations 2018 to be too dangerous to be transported.</p> <p>Goods (other than goods mentioned above) that are so sensitive or unstable they cannot be safely transported even if the relevant requirements of the Dangerous Goods (Transport by Road or Rail) Regulations 2018 and the ADG Code are complied with.</p>	
C1 combustible liquids	<p>A liquid dangerous good with a flashpoint greater than 60°C but not greater than 93°C and a fire point less than its boiling point.</p> <p>A combustible liquid declared by WorkSafe to be a C1 combustible liquid under regulation 10 of the Dangerous Goods (Storage and Handling) Regulations 2012.</p>	Dangerous Goods (Storage and Handling) Regulations 2012

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Appendix B – Global Harmonised System of classification and labelling of chemicals (GHS) Hazard classes

GHS Hazard classes and references for classification¹

GHS Hazard Class	References for classification
Explosives	GHS
Flammable gases	
Flammable aerosols	
Oxidizing gases	
Gases under pressure <ul style="list-style-type: none"> • Compressed gas • Liquified gas • Refrigerated liquefied gas • Dissolved gas 	
Flammable liquids	
Flammable solids	
Self-reactive substances and mixtures	
Pyrophoric liquids	
Pyrophoric solids	
Self-heating substances and mixtures	
Substances and mixtures, which in contact with water, emit flammable gases	
Oxidizing liquids	
Oxidizing solids	
Organic peroxides	
Corrosive to metals	
Acute toxicity	
Skin corrosion/irritation	
Serious eye damage/eye irritation	
Respiratory sensitizer	
Skin sensitizer	For classification of mixtures containing respiratory sensitiser or skin sensitiser – see Occupational Health and Safety Regulations 2017 (OHS Regulations)
Germ cell mutagenicity	GHS

¹ *Global Harmonised System of classification and labelling of chemicals (GHS)*, Third revised edition, Fourth revised edition or Fifth revised edition, published by the United Nations, as modified under Schedule 7 of the Occupational Health and Safety Regulations 2017 (OHS Regulations).

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GHS Hazard Class	References for classification
Carcinogenicity	GHS For classification of mixtures containing carcinogens – see OHS Regulations
Toxic to reproduction	GHS For classification of mixtures containing reproductive toxicants – see OHS Regulations
Effects on or via lactation	GHS
Specific target organ toxicity following single exposure	GHS For classification of mixtures containing specific target organ toxicants (single exposure) – see OHS Regulations
Specific target organ toxicity following repeated exposure	GHS For classification of mixtures containing reproductive toxicants (repeated exposures) – see OHS Regulations
Aspiration hazard	GHS
Acute hazards to the aquatic environment	
Long-term hazards to the aquatic environment	
Hazard to the ozone layer	

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Appendix C – Persistent, bioaccumulative and toxic properties

Persistent, bioaccumulative and toxic properties criteria

Hazard characteristic	Environmental medium (or compartment or trophic level)	Indicators and numerical thresholds for positive hazard categorisation
Persistence	Air	Half-life in air ($T_{1/2}$) ≥ 2 days
	Water	Half-life in water ($T_{1/2}$) ≥ 60 days
	Soil	Half-life in soil ($T_{1/2}$) ≥ 6 months
	Sediment	Half-life in sediment ($T_{1/2}$) ≥ 6 months
Bioaccumulation	Aquatic	BAF ≥ 2000 or BCF ≥ 2000 or $\log K_{ow} \geq 4.2$ (if BAF and BCF are not available).
	Terrestrial	$\log K_{oa} > 6$ and $\log K_{ow} \geq 2$.
	Food-chain bioaccumulation potential	BMF > 1 .
Toxicity	Aquatic – acute	
	Fish	96 h LC50 ≤ 1 mg/L and/or
	Invertebrates	48 h EC50 ≤ 1 mg/L and/or
	Algae or other aquatic plants	72 or 96 h ErC50 ≤ 1 mg/L.
	Aquatic – chronic	
	Fish	Chronic NOEC or ECx ≤ 0.1 mg/L and/or
Invertebrates	Chronic NOEC or ECx ≤ 0.1 mg/L and/or	
Algae or other aquatic plants	Chronic NOEC or ECx ≤ 0.1 mg/L.	

Note: $T_{1/2}$ = Half-life; BCF = bioconcentration factor; BAF = bioaccumulation factor; K_{ow} = n-octanol/water partition coefficient; K_{oa} = octanol/air partition coefficient; BMF = biomagnification factor; LC50 = concentration lethal to 50% of the population; $E(r)C50(x)$ = concentration that has adverse effects to 50% of the population (or growth rate for algae); NOEC = No Observable Effect Concentration.

Appendix D – Properties of concern

1. **Metals and metal ions of concern:**

- copper
- nickel
- cadmium
- zinc
- silver
- chromium
- aluminium
- mercury
- lead.

This is regardless of whether or not it is in a form that is, or could become, bioavailable following release from the assessed use.

- 2. Perfluorinated functionality** – 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 carbon-hydrogen or carbon-carbon bonds are carbon-fluorine bonds, are perfluorinated. Both polymers and chemicals may contain perfluorinated functionality.
- 3. Endocrine disruptor** – 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.
- 4. Hazardous degradation products** – if any of the degradation or by-products formed during use or after disposal meets any of the criteria in this table.

Other properties to consider when assessing hazard as part of General Environmental Duty:

- 1. Harmful to organisms other than aquatic organisms** – if there is sound evidence that a substance may harm any organism in the environment other than aquatic organisms.
- 2. Other characteristics that may result in adverse short or long term effects on the environment:**
 - nanomaterials
 - substances that are persistent with the potential to have adverse effects on the environment as they accumulate
 - substances that have the potential to be endocrine active in aquatic or terrestrial organisms but are not demonstrated to be endocrine disrupting.

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Appendix E – Liquid waste

Liquid waste means any waste that:

- has an angle of repose of less than 5 degrees above horizontal; or
- becomes free-flowing at or below 60 degrees Celsius or when it is transported; or
- is generally not capable of being picked up by a spade or shovel; or
- is otherwise defined by regulations.

THIS PROTOCOL IS INTENDED TO APPLY FROM 1 JULY 2021