

23. HAZARDOUS SUBSTANCES

23.1 EXEMPTIONS – HAZARDOUS SUBSTANCES

23.1.1 The following hazardous substances, facilities and activities are not subject to the provisions of this chapter:

- (a) Fuel contained in tanks of motor vehicles, agricultural and forestry equipment, boats, aircraft, locomotives and small engines and the storage of fuel for a primary production activity where it complies with the Guidelines for Above Ground Fuel Storage on Farms (Environmental Protection Authority, January 2012).
- (b) Storage and use of hazardous substances for private domestic purposes. (For the purposes of this Rule "stored in domestic quantities" means, in relation to flammable substances, up to 50 litres of substances with a flash point lower than 23° celsius and up to 100 litres of substances with a flash point of between 23° and 60° celsius, stored in containers with a capacity no greater than 15 litres.)
- (c) Storage for retail sale of hazardous substances packaged for private domestic purposes. (For the purposes of this clause "packaged in domestic quantities" means, in relation to flammable substances, substances with a flash point of up to 60° celsius, packaged in containers with a capacity no greater than 15 litres.)
- (d) Storage of compressed gases in the following quantities:
 - (i) LPG - 100 kg.
 - (ii) Other flammable gases - 100m³.
 - (iii) Oxygen - 200m³.
 - (iv) Toxic gases - 250 kg.
- (e) Storage of fertiliser or lime on farms for the purpose of primary production activities in the Rural Zone where that storage is in accordance with the Fertiliser Group Standards (corrosive (HSR002569), oxidising (HSR002570), subsidiary hazard HSR002571) and Toxic (HSR002572) 2006.

Note: The exemptions specified in Rule 23.1 are still subject to the requirements in the Horizons Regional Council One Plan for fertiliser and agricultural use.
- (f) Milk, other than at an industrial milk collection or processing facility.
- (g) Storage of up to 50,000 litres of liquid organic food or beverages, other than milk.
- (h) Gas and oil pipelines.
- (i) Electricity zone substations, distribution substations and transformers containing up to 1,000 litres of oil.
- (j) Solid hazardous wastes contained in waste disposal facilities.

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- (k) Trade waste or sewage stored, transported, treated or disposed of, in trade waste sewage treatment or disposal facilities authorised by Council or Horizons Regional Council.
- (l) Facilities using genetically modified or new organisms.
- (m) Use and storage of agrichemicals covered by, and in accordance with New Zealand Standard 8409:2004 Management of Agrichemicals.

Explanation and Reasons

The exemptions cover hazardous substances held or used in such a manner that control by this part of the District Plan is not warranted. This is either because of the small quantities of substances involved, or the impracticality of exercising control, or because industry codes of practice provide adequate levels of security, or because controls under other parts of the RMA and other legislation deal with the hazard.

23.2 PERMITTED ACTIVITIES

23.2.1 The following activities shall be Permitted Activities, provided they comply with all of the Conditions for Permitted Activities:

- (a) Any activity listed as a permitted activity in the relevant zone and involves the storage of hazardous substances which are not identified in Chapter 23: Hazardous Substances Appendix 1 - 'Table 23-1: Classification of Hazardous Substances'.
 - (b) Any activity listed as a permitted activity in the relevant zone and involves the storage of hazardous substances in quantities not exceeding those specified in the permitted column in Chapter 23: Hazardous Substances Appendix 1 - 'Table 23-2: Quantity Limits for Hazardous Substances' for the relevant zone.
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23.3 CONTROLLED ACTIVITIES

23.3.1 The following activities shall be Controlled Activities:

- (a) The retail sale of fuel, up to a storage of 100,000 litres of petrol and up to 50,000 litres of diesel in all zones in underground storage tanks, provided it can be demonstrated that the following Codes of Practice are adhered to:
 - Below Ground Stationary Container Systems for Petroleum - Design and Installation HSNOCOP 44, EPA, 2012.
 - Below Ground Stationary Container Systems for Petroleum - Operation HSNOCOP 45, EPA, 2012.
- (b) The retail sale of LPG, with a storage of up to six tonnes (in either single vessel storage or in an exchange facility for portable LPG cylinders), provided it can be demonstrated that the following standard is adhered to:

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- Australian and New Zealand Standard 1596:2008 Storage and Handling of LP Gas.
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23.4 RESTRICTED DISCRETIONARY ACTIVITIES

23.4.1 The following activities shall be Restricted Discretionary Activities:

- (a) Any activity listed as a permitted activity in the relevant zone and does not comply with any of the conditions for permitted activities in Rule 23.6.
 - (b) Any activity listed as a permitted activity in the relevant zone and involves the storage of hazardous substances in quantities exceeding those specified in the permitted column but not exceeding those specified in the discretionary column identified in Chapter 23: Hazardous Substances Appendix 1 - 'Table 23-2: Quantity Limits for Hazardous Substances' for the relevant zone.
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23.5 DISCRETIONARY ACTIVITIES

23.5.1 The following activities shall be a Discretionary Activity:

- (a) Any activity listed as a permitted activity in the relevant zone and involves the storage of hazardous substances in quantities exceeding those specified in the discretionary column identified in Chapter 23: Hazardous Substances Appendix 1 - 'Table 23-2: Quantity Limits for Hazardous Substances' for the relevant zone.
 - (b) The retail sale of fuel in all zones where the storage of petrol in underground storage tanks exceeds 100,000 litres or the storage of diesel in underground storage tanks exceeds 50,000 litres of diesel.
 - (c) The retail sale of LPG where the storage of LPG exceeds six tonnes (involving either single or multi vessel storage).
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23.6 CONDITIONS FOR PERMITTED ACTIVITIES

23.6.1 Site Design

- (a) Any part of a hazardous facility which is involved in the manufacture, mixing, packaging, storage, loading, unloading, transfer, use or handling of hazardous substances must be designed, constructed and operated in a manner which prevents:
 - (i) The occurrence of any off-site adverse effects from the above listed activities on people, ecosystems, physical structures and/or other parts of the environment unless permitted by a resource consent; and

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- (ii) The contamination of air, land and/or water (including groundwater, potable water supplies and surface waters) in the event of a spill or other type of release of hazardous substances.

23.6.2 Site Layout

- (a) The hazardous facility must be designed in a manner to ensure that separation between on-site facilities and the property boundary is sufficient for the adequate protection of neighbouring facilities, land uses and sensitive environments.

23.6.3 Storage of Hazardous Substances

- (a) The storage of any hazardous substances must be carried out in a manner that prevents:
 - (i) The unintentional release of the hazardous substance; and
 - (ii) The accumulation of any liquid or solid spills or fugitive vapours and gases in enclosed off-site areas.
- (b) There shall be no storage of hazardous substances within 20 metres of the landward edge of the beds Waipunahau (Lake Horowhenua) and the Hokio Stream.

23.6.4 Site Drainage Systems

- (a) Site drainage systems for any hazardous facility must be designed, constructed and operated in a manner that prevents the entry or discharge of hazardous substances into the stormwater and/or wastewater systems unless permitted by the network utility operator.

Note: Suitable means of compliance includes clearly identified stormwater grates and access holes, roofing, sloped pavements, interceptor drains, containment and diversion valves, oil-water separators, sumps and similar systems.

23.6.5 Spill Containment Systems

- (a) Any parts of the hazardous facility site where a hazardous substance spill may occur must be serviced by suitable spill containment systems that are:
 - (i) constructed from impervious materials resistant to the hazardous substances used, stored, manufactured, mixed, packaged, loaded, unloaded or otherwise handled on the site and for liquid hazardous substances:
 - able to contain the maximum volume of the largest tank present plus an allowance for stormwater or fire water; or
 - for drums or other smaller containers, able to contain 50 percent of the maximum volume of substances stored plus an allowance for stormwater or fire water; and

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- (ii) able to prevent the entry of any spill or other unintentional release of hazardous substances, or any contaminated stormwater and/or fire water into site drainage systems unless permitted by a network utility operator.

Note: Suitable means of compliance include graded floors and surfaces, bunding, roofing, sumps, fire water catchments, overflow protection and alarms, and similar systems.

23.6.6 Stormwater

- (a) All stormwater grates on the site of any hazardous facility shall be clearly labelled "stormwater only".

23.6.7 Washdown Areas

Any part of the hazardous facility site where vehicles, equipment or containers that are or may have become contaminated with hazardous substances are washed, must be designed, constructed and managed to prevent any contaminated wash water from:

- (i) Entry or discharge into the stormwater drainage or the wastewater systems unless permitted by the relevant network utility operator; and
- (ii) Discharge into or onto land and/or water (including groundwater and potable water supplies) unless specifically provided for in a resource consent for the discharge of contaminants.

Note: Suitable means of compliance include roofing, sloped pavements, interceptor drains, containment and diversion valves, oil-water separators, sumps and similar systems.

23.6.8 Underground Storage Tanks

- (a) Underground storage tanks shall be designed, constructed and managed to prevent any leakage and spills.
- (b) The design, construction and procedures to ensure ongoing management of underground tanks for the storage of petroleum products shall be certified by suitably qualified professional.

Note: The following may assist in complying with Rule 23.6.8:

- (i) Using materials that are resistant to the hazardous substances concerned
- (ii) Using secondary containment facilities in areas of environmental sensitivity
- (iii) Providing leak detection or monitoring system which capable of detecting a failure or breach in the structural integrity of the primary containment vessel
- (iv) Adherence to the Codes of Practice for 'Below Ground Stationary Container Systems for Petroleum - Design and Installation: HSNOCOP 44, EPA, 2012' and 'Below Ground Stationary Container Systems for Petroleum – Operation: HSNOCOP 45, EPA, 2012'.

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23.6.9 Signage

- (a) Any hazardous facility shall install signs and labels to communicate the nature of the substances stored, used or otherwise handled.

23.6.10 Waste Management

- (a) Any process waste or waste containing hazardous substances shall be managed to prevent:
 - (i) The waste entering or discharging into the stormwater drainage system
 - (ii) The waste entering or discharging into the wastewater system unless permitted by the utility operator
 - (iii) The waste discharging into or onto land and/or water (including groundwater and potable water supplies) unless specifically provided for in a resource consent for the discharge of contaminants.
 - (b) The storage and management of any process waste or waste containing hazardous substance on the site shall at all times comply with the performance standards specified for hazardous substances.
 - (c) All waste containing hazardous substances shall be disposed of to facilities holding the necessary consents, or be serviced by a registered waste disposal contractor.
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23.7 MATTERS OF CONTROL FOR CONTROLLED ACTIVITIES

The matters over which Council has reserved its control for each controlled activity are listed below.

23.7.1 Retail Sale of Fuel and LPG

- (a) Controlled Matters

The Council reserves control over the following matters:

- (i) Location, site layout, and siting and design of structures, including materials, floors and yard surfaces.
 - (ii) Installation and operation of the facility.
 - (iii) Spill contingency and emergency management.
 - (iv) Non-structural measures to be taken to minimise the risk of adverse effects on the environment.
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23.8 MATTERS OF DISCRETION FOR RESTRICTED DISCRETIONARY ACTIVITIES

The matters over which Council has restricted its discretion for each restricted discretionary activity are detailed below:

23.8.1 Non-compliance with Permitted Activity Conditions (Rule 23.6) or Exceeding Permitted Activity Quantities set out in Rule 23.2.1(b):

- (a) Matters of Discretion
 - (i) Avoiding, remedying or mitigating of any effects deriving from the non-compliance with the particular condition(s) that is not met.
 - (ii) Effects and risks to the surrounding environment, including consideration of the pattern of subdivision, land use (particular sensitive activities), roading or infrastructure services in the locality.
 - (iii) Conditions relating to the hazardous substance that the application relates to.
 - (iv) Spill contingency and emergency management.
 - (v) Adherence to health and safety and/or environmental management systems, including relevant Codes of Practice.

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Appendix 1: Hazardous Substances Classification and Quantity

The full description of HSNO classes, sub-classes and categories as well as explanations of terms used are contained in the Hazardous Substances Regulations. Detailed information on the application of the HSNO classification system to individual substances is available from the Environmental Protection Authority (EPA).

The Tables in this Appendix are intended only for defining the status of a proposed land use activity under the RMA, and not for any purpose under HSNO or other legislation.

It is important to note that:

- A number of HSNO classes or sub-classes that do not have a significant hazard rating in the land-use planning context are omitted from the Tables.
- Where a substance has more than one HSNO subclass applied the quantity limit for storage as a permitted activity will be based on the most restrictive threshold for that substance in Table 23-2.
- Examples of common substances are given only as an indication of substances with hazardous characteristics that may be associated with land use in the District.

Table 23-1 below sets out a description of the classification of hazardous substances, whilst Table 23-2 sets out the quantity limits for each type of hazardous substance in the different zones.

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Table 23-1: Classification of Hazardous Substances

Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
Explosive Substances	Nitrate mixtures, nitro compounds, chlorate mixtures, gunpowder, or nitro compound adapted and exclusively used in the preparation or manufacture of cartridges for small arms, or for flares; ammunition/detonators (excluding those purchased for personal sporting or recreational small arms use)	1.1	Substances and articles that have a mass explosion hazard.	Fire/explosion (High hazard)
		1.2	Substances and articles that have a projection hazard but not a mass explosion hazard.	Fire/explosion (Medium hazard)
		1.3	Substances and articles that have a fire hazard and either a minor blast hazard or a minor projection hazard or both.	Fire/explosion (Low hazard)
		1.5	Very insensitive substances that have a mass explosion hazard.	Fire/explosion (Low hazard)
Flammable gases	LPG, acetylene, hydrogen, methane	2.1.1A	a) Ignitable when in a mixture of 13% or less by volume with air; or b) Has a flammable range with air of at least 12%, regardless of	Fire/explosion (High hazard)
		2.1.2A Flammable Aerosols	An aerosol comprising 45% or more by mass of flammable ingredients.	Fire/explosion (High hazard)
		LPG		Fire/explosion (Medium hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
Flammable liquids	Liquid fuels, solvents, adhesives etc: Petrol, ethyl alcohol, methyl alcohol, Isopropyl alcohol, acetone, benzene, toluene, butylamine, MIBK Kerosene, styrene monomer, cyclohexanene, turpentine, butyl methacrylate, chlorobenzene, ethoxyethanol Diesel, petroleum oils	3.1A	A flash point of less than 23°C and an initial boiling point of less than or equal to 35°C.	Fire/explosion (Very high hazard)
		3.1B	A flash point of less than 23°C and an initial boiling point of greater than 35°C.	Fire/explosion (Medium hazard)
		3.1C	A flash point of greater than or equal to 23°C but less than or equal to 60°C.	Fire/explosion (Medium hazard)
		3.1D	A flash point of greater than 60°C but less than or equal to 93°C.	Fire/explosion (Low hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
Liquid desensitised explosives	Nitroglycerine mixture/Solution Nitrocellulose solution	3.2A 3.2B 3.2C	a) A substance that: (i) is listed as a liquid desensitized explosive and is assigned Packing Group I, II or III in the UN Model Regulations; or b) A liquid desensitised explosive that: (i) is formed from an explosive of Class I by adding a desensitizing agent to form a liquid that no longer meets the threshold for Class I; and (ii) is not listed in the UN Model Regulations and is not assigned a Packing Group.	Fire/explosion (High hazard)
Flammable solids – readily combustible solids and solids that may cause fire through friction	Red phosphorus, ammonium picrate, picric acid, monomethylamine nitrate, nitrocellulose, trinitrobenzene, magnesium and aluminium powders Alkali metals e.g. sodium, potassium, lithium, calcium, magnesium, metal hydrides, metal carbides	4.1.1A	A substance that burns rapidly or the reaction spreads rapidly or may cause fire through low friction in the relevant tests of the UN Manual of Tests and Criteria.	Fire/explosion (Medium hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
		4.1.1B	A substance that has lower ratings than 4.1.1A in the relevant tests of the UN Manual of Tests and Criteria.	Fire/explosion (Low hazard)
Self-reactive substances	Azocarbamides, benzene sulphohydrazine, diazonium salts	4.1.2A 4.1.2B	A thermally unstable substance that propagates a detonation or rapid deflagration or violent effect or thermal explosion in the relevant tests of the UN Manual of Tests and Criteria.	Fire/explosion (High hazard)
		4.1.2C 4.1.2D	A substance with lower ratings than the above two categories in the relevant tests.	Fire/explosion (Medium hazard)
		4.1.2E 4.1.2F 4.1.2G	A substance with even lower ratings than the above two categories in the relevant tests.	Fire/explosion (Low hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
Solid desensitised explosives	Nitroglycerine – solid, desensitised	4.1.3A 4.1.3B 4.1.3C	a) A substance with one of the specified UN serial numbers listed in the UN Model Regulations; or b) A solid desensitised explosive that is formed from an explosive of Class I by adding a desensitising agent to form a solid substance that no longer meets the threshold for Class I.	Fire/explosion (High hazard)
Spontaneously combustible substances	A variety of metallic, organic and inorganic compounds and mixtures	4.2A Spontaneously combustible and pyrophoric substances	a) A solid substance that does not meet the criteria for subclass 4.1.2, but ignites within 5 minutes on contact with air under the relevant test conditions in the UN Manual of Tests and Criteria; or b) A substance that does not meet the criteria for subclass 4.1.2, but is a liquid which ignites or chars the filter paper under the relevant test conditions.	Fire/explosion (High hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
		4.2B Spontaneously combustible and self- heating substances	A substance that does not meet the criteria for subclass 4.1.2 but meets specified criteria under the relevant test conditions.	Fire/explosion (High hazard)
		4.2C Spontaneously combustible and self- heating substances	A substance that does not meet the criteria for subclass 4.1.2, which, depending on quantity, meets specified criteria under the relevant test conditions.	Fire/explosion (Medium hazard)
Solids that emit flammable gas when in contact with water	Compounds derived from reactive metals e.g. compounds of aluminium, calcium, lithium, magnesium, potassium, phosphorus, sodium	4.3A	a) A substance that emits a gas that ignites when a small quantity of the substance is brought into contact with water; or b) A substance that reacts readily with water at ambient temperatures such that the rate of evolution of flammable gas is 10 litres/kg over any 1 minute.	Fire/explosion (High hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
		4.3B	A substance that reacts readily with water at ambient temperatures such that the maximum rate of evolution is 20 litres/kg per hour.	Fire/explosion (High hazard)
		4.3C	A substance that reacts slowly with water at ambient temperatures so that the maximum rate of evolution of flammable gas is 1 litre/kg per hour.	Fire/explosion (Medium hazard)
Oxidising substances – liquids or solids	Water treatment chemicals e.g. pool chlorine granules	5.1.1A	a) A substance listed as 5.1 in the UN Model Regulations and assigned Packing Group I; or b) A solid that when mixed with dry cellulose either spontaneously ignites or exhibits a mean burning time less than that of a specified reference material; or c) A liquid that when mixed with dry cellulose forms a mixture that either spontaneously ignites or exhibits a mean pressure rise time less than that of a specified reference material.	Fire/explosion (High hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
	Chromates, bromates, chlorates, chlorites, nitrates, permanganates	5.1.1B	<p>a) A substance listed as 5.1 in the UN Model Regulations and assigned Packing Group II; or</p> <p>b) A solid that does not meet the criteria of 5.1.1A and that when mixed with dry cellulose forms a mixture that exhibits a mean burning time equal to or less than a specified reference material; or</p> <p>c) A liquid that does not meet the criteria of 5.1.1A and that when mixed with dry cellulose forms a mixture that exhibits a mean pressure rise time less than or equal to that of a specified reference material.</p>	Fire/explosion (High hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
		5.1.1C	<p>a) A substance listed as 5.1 in the UN Model Regulations and assigned Packing Group III; or</p> <p>b) A solid that does not meet the criteria of 5.1.1A or B and that when mixed with dry cellulose forms a mixture that exhibits a mean burning time equal to or less than that of a specific reference material; or</p> <p>c) A liquid that does not meet the criteria of 5.1.1A or B and that when mixed with dry cellulose forms a mixture that exhibits a mean pressure rise time less than or equal to that of a specified reference material.</p>	Fire/explosion (Medium hazard)
Oxidising substances – gases	Oxygen gas	5.1.2A	<p>a) A gas that is listed as 5.1 in the UN Model Regulations; or</p> <p>b) A gas that causes or contributes to combustion of other material at a faster rate than air.</p>	Fire/explosion (High hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
Organic Peroxides	Any organic peroxide	5.2A 5.2B	A substance that propagates a detonation or rapid deflagration or violent effect or thermal explosion in the relevant tests of the UN Manual of Tests and Criteria.	Fire/explosion (High hazard)
		5.2C 5.2D	A substance with lower ratings than 5.2A or B in the relevant tests.	Fire/explosion (Medium hazard)
Toxic substances	A wide range of industrial and commercial chemicals including compounds derived from arsenic, cadmium, copper, chromium, lead, nickel, mercury (including amalgams), zinc. Cyanides, methyl bromide, acrylamide, phenols, chlorophenols, aniline, oxalates	6.1A	Oral toxicity: LD50 of less than or equal to 5 mg/kg Dermal toxicity: LD50 of less than or equal to 50 mg/kg Inhalation toxicity (gas): LC50 of less than or equal to 100 ppm Inhalation toxicity (vapour): LC50 of less than or equal to 0.5 mg/l Inhalation toxicity (dust/mist): LC50 of less than or equal to 0.05 mg/l	Human health (High hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
		6.1B	Oral toxicity: LD50 of greater than 5 mg/kg but less than or equal to 50 mg/kg Dermal toxicity: LD50 of greater than 50 mg/kg but less than or equal to 200 mg/kg Inhalation toxicity (gas): LC50 of greater than 100 ppm but less than or equal to 500 ppm Inhalation toxicity (vapour) LC50 of greater than 0.5 mg/l but less than or equal to 2.0 mg/l Inhalation toxicity (dust/mist) LC50 of greater than 0.05 mg/l but less than or equal to 0.5 mg/l	Human health (High hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
		6.1C	Oral toxicity: LD50 of greater than 50 mg/kg but less than or equal to 300 mg/kg Dermal toxicity: LD50 of greater than 200 mg/kg but less than or equal to 1000 mg/kg Inhalation toxicity (gas): LC50 of greater than 500 ppm but less than or equal to 2500 ppm Inhalation toxicity (vapour) LC50 of greater than 2.0 mg/l but less than or equal to 10.0 mg/l Inhalation toxicity (dust/mist) LC50 of greater than 0.5 mg/l but less than or equal to 1.0 mg/l	Human health (Medium hazard)
Radioactive material		N/A ²		

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
Corrosive substances	Acids e.g. nitric, sulphuric, hydrochloric, hydrofluoric acids; trichloro acetic acid. Alkalis e.g. sodium, potassium and lithium hydroxides, zinc chloride, zirconium tetrachloride, sulphur chlorides, silicon tetrachloride, phosphorus pentoxide, ferric chloride, phenolsuphanic acid, hydroxylamine sulphate, hexyltrichlorosilane, ethanolamine	8.2A	Data indicate irreversible destruction of dermal tissue following brief exposure.	Human health (High hazard)
		8.2B	Data indicate irreversible destruction of dermal tissue following moderate exposure.	Human health (Medium hazard)
		8.2C	Data indicate irreversible destruction of dermal tissue following lengthy exposure (up to four hours).	Human health (Low hazard)
Ecotoxic substances	Variety of organic and inorganic compounds, mixtures and materials that may or may not be classified in other HSNO categories	9.1A	Substances that are very ecotoxic in the aquatic environment Acute aquatic toxicity value ³ of less than or equal to 1 mg/l	Environment (High hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
		9.1B	Substances that are ecotoxic in the aquatic environment Chronic aquatic toxicity ⁴ of less than or equal to 1 mg/l and a) acute aquatic toxicity value of greater than 1 mg/l but less than 10 mg/l; and b) not rapidly degradable or is bioaccumulative, or is not rapidly degradable and is bioaccumulative.	Environment (Medium hazard)
		9.1C	Substances that are harmful in the aquatic environment Chronic aquatic toxicity of less than or equal to 1 mg/l and: a) acute aquatic toxicity value of greater than 10 mg/l but less than 100 mg/l; and b) not rapidly degradable or is bioaccumulative or, is not rapidly degradable and is bioaccumulative.	Environment (Medium hazard)

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Hazardous Substance Type	Examples (included but not limited to)	HSNO Class/Category	Characteristics	Health and Safety Hazard ¹
		9.1D	Substances that are slightly harmful in the aquatic environment or are otherwise designed for biocidal action a) Acute aquatic toxicity value of greater than 1 mg/l but less than 100 mg/l, but does not meet classification criteria for 9.1A, 9.1B or 9.1C; or b) Chronic aquatic toxicity value is less than or equal to 1 mg/l but does not meet classification criteria for 9.1B or 9.1C; or c) Not rapidly degradable and is bioaccumulative but does not meet classification criteria for 9.1A, 9.1B or 9.1C.	Environment (Low hazard)

¹ Source: Land Use Planning Guide for Hazardous Facilities Appendix A: HFSP Rating Criteria for Hazardous Substances, Ministry for the Environment.

² Radioactive substances are controlled under the Radiation Protection Act by the National Radiation Laboratory of the Ministry of Health.

³ 'Acute aquatic toxicity value' means the lowest value expressed in units of milligrams of a substance per

(a) fish LC50 data after a 96-hour exposure period; or

(b) crustacean EC50 data after a 48-hour exposure period; or

(c) algal, or other aquatic plant EC50 data after a 72-hour exposure period.

⁴ 'Chronic aquatic toxicity' means the lowest value expressed in units of milligrams of a substances per litre of water from chronic fish, crustacean, algal, or other aquatic plant NOEC (no observed effect concentration) data.

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Table 23-2: Quantity Limits for Hazardous Substances

Residential Zone

Hazardous Substance Type	HSNO category	Permitted ¹	Discretionary ¹
Explosive substances (liquids, powders or solids)	1.1	1 kg	1 kg
	1.2	10 kg	10 kg
	1.3	35 kg	35 kg
	1.5	35 kg	35 kg
Flammable gases	2.1.1A	10 kg	10 kg
	2.1.1A	12 m ³	12 m ³
	2.1.2A	10 kg	0.01 10 kg
	2.1.2A	12 m ³	12 m ³
	LPG	300 kg	300kg
Flammable liquids ²	3.1A (above ground)	120 kg	120 kg
	3.1.A (underground)	1.2 tonnes	1.2 tonnes
	3.1B (above ground)	120 kg	120 kg
	3.1B (underground)	1.2 tonnes	1.2 tonnes
	3.1C (above ground)	360 kg	360 kg
	3.1C (underground)	3.6 tonnes	3.6 tonnes
	3.1D (above ground)	1.2 tonnes	1.2 tonnes
	3.1D (underground)	11.8 tonnes	11.8 tonnes
Liquid desensitised explosives	3.2A, 3.2B and 3.2C	10 kg	10 kg
Flammable solids	4.1.1A	100 kg	100 kg
	4.1.1B	350 kg	350 kg
Self-reactive solid substances	4.1.2A	10 kg	10 kg
	4.1.2B	10 kg	10 kg
	4.1.2C	100 kg	100 kg
	4.1.2D	100 kg	100 kg
	4.1.2E	350 kg	350 kg
	4.1.2F	350 kg	350 kg
	4.1.2G	350 kg	350 kg
Solid desensitised explosives	4.1.3A, 4.1.3B and 4.1.3C	10 kg	10 kg
Spontaneously combustible substances	4.2A	10 kg	10 kg
	4.2B	10 kg	10 kg
	4.2C	100 kg	100 kg
Solids that emit flammable gases in contact with water	4.3A	10 kg	10 kg
	4.3B	10 kg	10 kg
	4.3C	100 kg	100 kg
Oxidising substances (solids, liquids)	5.1.1A (solid)	35 kg	35 kg
	5.1.1A (liquid, powder)	10 kg	10 kg
	5.1.1B (solid)	35 kg	35 kg
	5.1.1B (liquid, powder)	10 kg	10 kg
	5.1.1C (solid)	350 kg	350 kg
	5.1.1C (liquid, powder)	100 kg	100 kg
Oxidising gases	5.1.2A	10kg	10kg
	5.1.2A	12m ³	12m ³
Organic peroxides	5.2A (solid)	30 kg	30 kg

23 RULES: Hazardous Substances

Hazardous Substance Type	HSNO category	Permitted ¹	Discretionary ¹
	5.2A (liquid or powder)	10 kg	10 kg
	5.2B (solid)	35 kg	35 kg
	5.2B (liquid, powder)	10 kg	10 kg
	5.2C (solid)	360 kg	360 kg
	5.2C (liquid, powder)	120 kg	120 kg
	5.2D (solid)	360 kg	360 kg
	5.2D (liquid, powder)	120 kg	120 kg
	5.2E (solid)	1.1 tonnes	1.1 tonnes
	5.2E (liquid, powder)	350 kg	350 kg
	5.2F (solid)	1.1 tonnes	1.1 tonnes
	5.2F (liquid, powder)	350 kg	350 kg
	5.2G (solid)	1.1 tonnes	1.1 tonnes
	5.2G (liquid, powder)	350 kg	350 kg
	Toxic substances	6.1A (solid)	35 kg
6.1A (liquid, powder)		10 kg	10 kg
6.1A (gas)		0.06m ³	0.06m ³
6.1B (solid)		35 kg	35 kg
6.1B (liquid, powder)		10 kg	10 kg
6.1B (gas)		0.06m ³	0.06m ³
6.1C (solid)		360 kg	360 kg
6.1C (liquid, powder)		120 kg	120 kg
6.1C (gas)		0.18m ³	0.18m ³
6.1D (solid)		1.1 tonnes	1.1 tonnes
6.1D (liquid, powder)		360 kg	360 kg
6.1D (gas)		0.6m ³	0.6m ³
6.3A and 6.3B (solid)		180 kg	180 kg
6.3A and 6.3B (liquid, powder)		60 kg	60 kg
6.4A (solid)		180 kg	180 kg
6.4A (liquid, powder)		60 kg	60 kg
6.5 – 6.9 (solid)		35 kg	35 kg
6.5 – 6.9 (liquid, powder)		10 kg	10 kg
Corrosive substances	8.1 (solid)	35 kg	35 kg
	8.1 (liquid, powder)	10 kg	10 kg
	8.2A (solid)	35 kg	35 kg
	8.2A (liquid, powder)	10 kg	10 kg
	8.2B (solid)	360 kg	360 kg
	8.2B (liquid, powder)	120 kg	120 kg
	8.2C (solid)	1.1 tonnes	1.1 tonnes
	8.2C (liquid, powder)	360 kg	360 kg
	8.3 (solid)	35 kg	35 kg
	8.3 (liquid, powder)	10 kg	10 kg
Ecotoxic substances	9.1A (solid) (further than 30m from watercourse)	100 kg	100 kg
	9.1A (solid) (within 30m of watercourse)	35 kg	35 kg
	9.2A, 9.3A and 9.4A	35kg	35kg

23 RULES: Hazardous Substances

Hazardous Substance Type	HSNO category	Permitted ¹	Discretionary ¹
	(solid)		
	9.1A (liquid, powder) (further than 30m from watercourse)	35kg	35kg
	9.1A (liquid, powder) (within 30m of watercourse)	10 kg	10 kg
	9.2A, 9.3A and 9.4A (liquid, powder)	10 kg	10 kg
	9.1B (solid) (further than 30m from watercourse)	1.1 tonnes	1.1 tonnes
	9.1B (solid) (within 30m of watercourse)	350 kg	350 kg
	9.2B, 9.3B, 9.4B (solid)	350 kg	350 kg
	9.1B (liquid, powder) (further than 30m from watercourse)	350 kg	350 kg
	9.1B (liquid, powder) (within 30m of watercourse)	100 kg	100 kg
	9.2B, 9.3B, 9.4B (liquid, powder)	100 kg	100 kg
	9.1C (solid) (further than 30m from watercourse)	3.6 tonnes	3.6 tonnes
	9.1C (solid) (within 30m of watercourse)	1.2 tonnes	1.2 tonnes
	9.2C, 9.3C, 9.4C (solid)	1.2 tonnes	1.2 tonnes
	9.1C (liquid, powder) (further than 30m from watercourse)	1.2 tonnes	1.2 tonnes
	9.1C (liquid, powder) (within 30m of watercourse)	400 kg	400 kg
	9.2C, 9.3C, 9.4C (liquid, powder)	400 kg	400 kg
	9.1D (solid) (further than 30m from watercourse)	3.6 tonnes	3.6 tonnes
	9.1D (solid) (within 30m of watercourse)	1.2 tonnes	1.2 tonnes
	9.2D, 9.3D, 9.4D (solid)	1.2 tonnes	1.2 tonnes
	9.1D (liquid, powder) (further than 30m from watercourse)	1.2 tonnes	1.2 tonnes
	9.1D (liquid, powder) (within 30m of watercourse)	400 kg	400 kg
	9.2D, 9.3D, 9.4D (liquid, powder)	400 kg	400 kg

23 RULES: Hazardous Substances

Industrial Zone

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
Explosive substances (liquids, powders or solids)	1.1	60 kg	120 kg
	1.2	60 kg	120 kg
	1.3	1.8 tonnes	3.6 tonnes
	1.5	1.8 tonnes	3.6 tonnes
Flammable gases	2.1.1A	600 kg	1200 kg
	2.1.1A	600 m ³	1200 m ³
	2.1.2A	600 kg	1200 kg
	2.1.2A	600 m ³	1200 m ³
	LPG	15 tonnes	30 tonnes
Flammable liquids ²	3.1A (above ground)	6 tonnes	12 tonnes
	3.1.A (underground)	60 tonnes	120 tonnes
	3.1B (above ground)	6 tonnes	12 tonnes
	3.1B (underground)	60 tonnes	120 tonnes
	3.1C (above ground)	18 tonnes	36 tonnes
	3.1C (underground)	180 tonnes	360 tonnes
	3.1D (above ground)	60 tonnes	120 tonnes
	3.1D (underground)	600 tonnes	1200 tonnes
Liquid desensitised explosives	3.2A, 3.2B and 3.2C	600 kg	1.2 tonnes
Flammable solids	4.1.1A	6 tonnes	12 tonnes
	4.1.1B	18 tonnes	36 tonnes
Self-reactive solid substances	4.1.2A	600 kg	1.2 tonnes
	4.1.2B	600 kg	1.2 tonnes
	4.1.2C	6 tonnes	12 tonnes
	4.1.2D	6 tonnes	12 tonnes
	4.1.2E	18 tonnes	36 tonnes
	4.1.2F	18 tonnes	36 tonnes
	4.1.2G	18 tonnes	36 tonnes
Solid desensitised explosives	4.1.3A, 4.1.3B and 4.1.3C	600 kg	1.2 tonnes
Spontaneously combustible substances	4.2A	600 kg	1.2 tonnes
	4.2B	600 kg	1.2 tonnes
	4.2C	6 tonnes	12 tonnes
Solids that emit flammable gases in contact with water	4.3A	600 kg	1.2 tonnes
	4.3B	600 kg	1.2 tonnes
	4.3C	6 tonnes	12 tonnes
Oxidising substances (solids, liquids)	5.1.1A (solid)	1.8 tonnes	3.6 tonnes
	5.1.1A (liquid, powder)	600 kg	1.2 tonnes
	5.1.1B (solid)	1.8 tonnes	3.6 tonnes
	5.1.1B (liquid, powder)	600 kg	1.2 tonnes
	5.1.1C (solid)	6 tonnes	12 tonnes
Oxidising gases	5.1.2A (tonnes)	0.6	1.2
	5.1.2A (m ³)	600	1200
Organic peroxides	5.2A (solid)	1.8 tonnes	3.6 tonnes
	5.2A (liquid or powder)	600 kg	1.2 tonnes
	5.2B (solid)	1.8 tonnes	3.6 tonnes

23 RULES: Hazardous Substances

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
	5.2B (liquid, powder)	600 kg	1.2 tonnes
	5.2C (solid)	18 tonnes	36 tonnes
	5.2C (liquid, powder)	6 tonnes	12 tonnes
	5.2D (solid)	18 tonnes	36 tonnes
	5.2D (liquid, powder)	6 tonnes	12 tonnes
	5.2E (solid)	54 tonnes	108 tonnes
	5.2E (liquid, powder)	18 tonnes	36 tonnes
	5.2F (solid)	54 tonnes	108 tonnes
	5.2F (liquid, powder)	18 tonnes	36 tonnes
	5.2G (solid)	54 tonnes	108 tonnes
	5.2G (liquid, powder)	18 tonnes	36 tonnes
Toxic substances	6.1A (solid)	1.8 tonnes	3.6 tonnes
	6.1A (liquid, powder)	600 kg	1.2 tonnes
	6.1A (gas)	3 m ³	6 m ³
	6.1B (solid)	1.8 tonnes	3.6 tonnes
	6.1B (liquid, powder)	600 kg	1.2 tonnes
	6.1B (gas)	3 m ³	6 m ³
	6.1C (solid)	18 tonnes	36 tonnes
	6.1C (liquid, powder)	6 tonnes	12 tonnes
	6.1C (gas)	9 m ³	18 m ³
	6.1D (solid)	54 tonnes	108 tonnes
	6.1D (liquid, powder)	18 tonnes	36 tonnes
	6.1D (gas)	30 m ³	60 m ³
	6.3A and 6.3B (solid)	9 tonnes	18 tonnes
	6.3A and 6.3B (liquid, powder)	3 tonnes	6 tonnes
	6.4A (solid)	9 tonnes	18 tonnes
	6.4A (liquid, powder)	3 tonnes	6 tonnes
	6.5 – 6.9 (solid)	1.8 tonnes	3.6 tonnes
6.5 – 6.9 (liquid, powder)	600 kg	1.2 tonnes	
Corrosive substances	8.1 (solid)	1.8 tonnes	3.6 tonnes
	8.1 (liquid, powder)	600 kg	1.2 tonnes
	8.2A (solid)	1.8 tonnes	3.6 tonnes
	8.2A (liquid, powder)	600 kg	1.2 tonnes
	8.2B (solid)	18 tonnes	36 tonnes
	8.2B (liquid, powder)	6 tonnes	12 tonnes
	8.2C (solid)	54 tonnes	108 tonnes
	8.2C (liquid, powder)	18 tonnes	36 tonnes
	8.3 (solid)	1.8 tonnes	3.6 tonnes
8.3 (liquid, powder)	600 kg	1.2 tonnes	
Ecotoxic substances	9.1A (solid) (further than 30m from watercourse)	5.4 tonnes	10.8 tonnes
	9.1A (solid) (within 30m of watercourse)	1.8 tonnes	3.6 tonnes
	9.2A, 9.3A and 9.4A (solid)	1.8 tonnes	3.6 tonnes
	9.1A (liquid, powder)	1.8 tonnes	3.6 tonnes

23 RULES: Hazardous Substances

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
	(further than 30m from watercourse)		
	9.1A (liquid, powder) (within 30m of watercourse)	600 kg	1.2 tonnes
	9.2A, 9.3A and 9.4A (liquid, powder)	600 kg	1.2 tonnes
	9.1B (solid) (further than 30m from watercourse)	54 tonnes	108 tonnes
	9.1B (solid) (within 30m of watercourse)	18 tonnes	36 tonnes
	9.2B, 9.3B, 9.4B (solid)	18 tonnes	36 tonnes
	9.1B (liquid, powder) (further than 30m from watercourse)	6 tonnes	12 tonnes
	9.1B (liquid, powder) (within 30m of watercourse)	2 tonnes	4 tonnes
	9.2B, 9.3B, 9.4B (liquid, powder)	2 tonnes	4 tonnes
	9.1C (solid) (further than 30m from watercourse)	180 tonnes	360 tonnes
	9.1C (solid) (within 30m of watercourse)	60 tonnes	120 tonnes
	9.2C, 9.3C, 9.4C (solid)	60 tonnes	120 tonnes
	9.1C (liquid, powder) (further than 30m from watercourse)	60 tonnes	120 tonnes
	9.1C (liquid, powder) (within 30m of watercourse)	20 tonnes	40 tonnes
	9.2C, 9.3C, 9.4C (liquid, powder)	20 tonnes	40 tonnes
	9.1D (solid) (further than 30m from watercourse)	180 tonnes	360 tonnes
	9.1D (solid) (within 30m of watercourse)	60 tonnes	120 tonnes
	9.2D, 9.3D, 9.4D (solid)	60 tonnes	120 tonnes
	9.1D (liquid, powder) (further than 30m from watercourse)	60 tonnes	120 tonnes
	9.1D (liquid, powder) (within 30m of watercourse)	20 tonnes	40 tonnes
	9.2D, 9.3D, 9.4D (liquid, powder)	20 tonnes	40 tonnes

23 RULES: Hazardous Substances

Commercial Zone

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
Explosive substances (liquids, powders or solids)	1.1	10 kg	20 kg
	1.2	100 kg	200 kg
	1.3	350 kg	700 kg
	1.5	350 kg	700 kg
Flammable gases	2.1.1A	100 kg	200 kg
	2.1.1A	120 m ³	240 m ³
	2.1.2A	100 kg	200 kg
	2.1.2A	120 m ³	240 m ³
	LPG	3 tonnes	6 tonnes
Flammable liquids ²	3.1A (above ground)	1.2 tonnes	2.4 tonnes
	3.1.A (underground)	12 tonnes	24 tonnes
	3.1B (above ground)	1.2 tonnes	2.4 tonnes
	3.1B (underground)	12 tonnes	24 tonnes
	3.1C (above ground)	3.6 tonnes	7.2 tonnes
	3.1C (underground)	36 tonnes	72 tonnes
	3.1D (above ground)	12 tonnes	24 tonnes
	3.1D (underground)	120 tonnes	240 tonnes
Liquid desensitised explosives	3.2A, 3.2B and 3.2C	100 kg	200 kg
Flammable solids	4.1.1A	1.2 tonnes	2.4 tonnes
	4.1.1B	3.6 tonnes	7.2 tonnes
Self-reactive solid substances	4.1.2A	100 kg	200 kg
	4.1.2B	100 kg	200 kg
	4.1.2C	1.2 tonnes	2.4 tonnes
	4.1.2D	1.2 tonnes	2.4 tonnes
	4.1.2E	3.6 tonnes	7.2 tonnes
	4.1.2F	3.6 tonnes	7.2 tonnes
	4.1.2G	3.6 tonnes	7.2 tonnes
Solid desensitised explosives	4.1.3A, 4.1.3B and 4.1.3C	100 kg	200 kg
Spontaneously combustible substances	4.2A	100 kg	200 kg
	4.2B	100 kg	200 kg
	4.2C	1.2 tonnes	2.4 tonnes
Solids that emit flammable gases in contact with water	4.3A	100 kg	200 kg
	4.3B	100 kg	200 kg
	4.3C	1.2 tonnes	2.4 tonnes
Oxidising substances (solids, liquids)	5.1.1A (solid)	350 kg	700 kg
	5.1.1A (liquid, powder)	100 kg	200 kg
	5.1.1B (solid)	350 kg	700 kg
	5.1.1B (liquid, powder)	100 kg	200 kg
	5.1.1C (solid)	3.6 tonnes	7.2 tonnes
Oxidising gases	5.1.2A (tonnes)	0.1	0.2
	5.1.2A	120 m ³	240 m ³
Organic peroxides	5.2A (solid)	300 kg	600 kg
	5.2A (liquid or powder)	100 kg	200 kg
	5.2B (solid)	350 kg	700 kg

23 RULES: Hazardous Substances

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
	5.2B (liquid, powder)	100 kg	200 kg
	5.2C (solid)	3.6 tonnes	7.2 tonnes
	5.2C (liquid, powder)	1.2 tonnes	2.4 tonnes
	5.2D (solid)	3.6 tonnes	7.2 tonnes
	5.2D (liquid, powder)	1.2 tonnes	2.4 tonnes
	5.2E (solid)	10 tonnes	20 tonnes
	5.2E (liquid, powder)	3.6 tonnes	7.2 tonnes
	5.2F (solid)	10 tonnes	20 tonnes
	5.2F (liquid, powder)	3.6 tonnes	7.2 tonnes
	5.2G (solid)	10 tonnes	20 tonnes
	5.2G (liquid, powder)	3.6 tonnes	7.2 tonnes
Toxic substances	6.1A (solid)	350 kg	700 kg
	6.1A (liquid, powder)	100 kg	200 kg
	6.1A (gas)	0.6 m ³	1.2 m ³
	6.1B (solid)	350 kg	700 kg
	6.1B (liquid, powder)	100 kg	200 kg
	6.1B (gas)	0.6 m ³	1.2 m ³
	6.1C (solid)	3.6 tonnes	7.2 tonnes
	6.1C (liquid, powder)	1.2 tonnes	2.4 tonnes
	6.1C (gas)	1.8 m ³	3.6 m ³
	6.1D (solid)	11000 kg	22 tonnes
	6.1D (liquid, powder)	3.6 tonnes	7.2 tonnes
	6.1D (gas)	6 m ³	12 m ³
	6.3A and 6.3B (solid)	1.8 tonnes	3.6 tonnes
	6.3A and 6.3B (liquid, powder)	600 kg	1.2 tonnes
	6.4A (solid)	18 tonnes	36 tonnes
	6.4A (liquid, powder)	600 kg	1.2 tonnes
	6.5 – 6.9 (solid)	350 kg	700 kg
6.5 – 6.9 (liquid, powder)	100 kg	200 kg	
Corrosive substances	8.1 (solid)	350 kg	700 kg
	8.1 (liquid, powder)	100 kg	200 kg
	8.2A (solid)	350 kg	700 kg
	8.2A (liquid, powder)	100 kg	200 kg
	8.2B (solid)	3.6 tonnes	7.2 tonnes
	8.2B (liquid, powder)	1.2 tonnes	2.4 tonnes
	8.2C (solid)	11 tonnes	22 tonnes
	8.2C (liquid, powder)	3.6 tonnes	7.2 tonnes
	8.3 (solid)	350 kg	700 kg
8.3 (liquid, powder)	100 kg	200 kg	
Ecotoxic substances	9.1A (solid) (further than 30m from watercourse)	1.1 tonnes	2.2 tonnes
	9.1A (solid) (within 30m of watercourse)	350 kg	700 kg
	9.2A, 9.3A and 9.4A (solid)	350 kg	700 kg
	9.1A (liquid, powder)	350 kg	700 kg

23 RULES: Hazardous Substances

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
	(further than 30m from watercourse)		
	9.1A (liquid, powder) (within 30m of watercourse)	100 kg	200 kg
	9.2A, 9.3A and 9.4A (liquid, powder)	100 kg	200 kg
	9.1B (solid) (further than 30m from watercourse)	11 tonnes	22 tonnes
	9.1B (solid) (within 30m of watercourse)	3.6 tonnes	7.2 tonnes
	9.2B, 9.3B, 9.4B (solid)	3.6 tonnes	7.2 tonnes
	9.1B (liquid, powder) (further than 30m from watercourse)	3.6 tonnes	7.2 tonnes
	9.1B (liquid, powder) (within 30m of watercourse)	1.2 tonnes	2.4 tonnes
	9.2B, 9.3B, 9.4B (liquid, powder)	1.2 tonnes	2.4 tonnes
	9.1C (solid) (further than 30m from watercourse)	36 tonnes	7.2 tonnes
	9.1C (solid) (within 30m of watercourse)	12 tonnes	2.4 tonnes
	9.2C, 9.3C, 9.4C (solid)	12 tonnes	24 tonnes
	9.1C (liquid, powder) (further than 30m from watercourse)	12 tonnes	24 tonnes
	9.1C (liquid, powder) (within 30m of watercourse)	4 tonnes	8 tonnes
	9.2C, 9.3C, 9.4C (liquid, powder)	4 tonnes	8 tonnes
	9.1D (solid) (further than 30m from watercourse)	36 tonnes	72 tonnes
	9.1D (solid) (within 30m of watercourse)	12 tonnes	24 tonnes
	9.2D, 9.3D, 9.4D (solid)	12 tonnes	24 tonnes
	9.1D (liquid, powder) (further than 30m from watercourse)	12 tonnes	24 tonnes
	9.1D (liquid, powder) (within 30m of watercourse)	4 tonnes	8 tonnes
	9.2D, 9.3D, 9.4D (liquid, powder)	4 tonnes	8 tonnes

23 RULES: Hazardous Substances

Open Space Zone

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
Explosive substances (liquids, powders or solids)	1.1	6 kg	12 kg
	1.2	60 kg	120 kg
	1.3	180 kg	360 kg
	1.5	180 kg	360 kg
Flammable gases	2.1.1A	60 kg	120 kg
	2.1.1A	60 m ³	120 m ³
	2.1.2A	60 kg	120 kg
	2.1.2A	60 m ³	120 m ³
	LPG	1.5 tonnes	3 tonnes
Flammable liquids ²	3.1A (above ground)	600 kg	1.2 tonnes
	3.1.A (underground)	6 tonnes	12 tonnes
	3.1B (above ground)	600 kg	1.2 tonnes
	3.1B (underground)	6 tonnes	12 tonnes
	3.1C (above ground)	1.8 tonnes	3.6 tonnes
	3.1C (underground)	18 tonnes	36 tonnes
	3.1D (above ground)	6 tonnes	12 tonnes
	3.1D (underground)	60 tonnes	120 tonnes
Liquid desensitised explosives	3.2A, 3.2B and 3.2C	60 kg	120 kg
Flammable solids	4.1.1A	600 kg	1.2 tonnes
	4.1.1B	1.8 tonnes	3.6 tonnes
Self-reactive solid substances	4.1.2A	60 kg	120 kg
	4.1.2B	60 kg	120 kg
	4.1.2C	600 kg	1.2 tonnes
	4.1.2D	600 kg	1.2 tonnes
	4.1.2E	1.8 tonnes	3.6 tonnes
	4.1.2F	1.8 tonnes	3.6 tonnes
	4.1.2G	1.8 tonnes	3.6 tonnes
Solid desensitised explosives	4.1.3A, 4.1.3B and 4.1.3C	60 kg	120 kg
Spontaneously combustible substances	4.2A	60 kg	120 kg
	4.2B	60 kg	120 kg
	4.2C	600 kg	1.2 tonnes
Solids that emit flammable gases in contact with water	4.3A	60 kg	120 kg
	4.3B	60 kg	120 kg
	4.3C	600 kg	1.2 tonnes
Oxidising substances (solids, liquids)	5.1.1A (solid)	180 kg	360 kg
	5.1.1A (liquid, powder)	60 kg	120 kg
	5.1.1B (solid)	180 kg	360 kg
	5.1.1B (liquid, powder)	60 kg	120 kg
	5.1.1C (solid)	1.8 tonnes	3.6 tonnes
Oxidising gases	5.1.1C (liquid, powder)	600 kg	1.2 tonnes
	5.1.2A	60 kg	120 kg
Organic peroxides	5.1.2A	60 m ³	120 m ³
	5.2A (solid)	180 kg	360 kg
	5.2A (liquid or powder)	60 kg	120 kg
	5.2B (solid)	180 kg	360 kg

23 RULES: Hazardous Substances

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
	5.2B (liquid, powder)	60 kg	120 kg
	5.2C (solid)	1.8 tonnes	3.6 tonnes
	5.2C (liquid, powder)	600 kg	1.2 tonnes
	5.2D (solid)	1.8 tonnes	3.6 tonnes
	5.2D (liquid, powder)	600 kg	1.2 tonnes
	5.2E (solid)	5.4 tonnes	108 tonnes
	5.2E (liquid, powder)	1.8 tonnes	3.6 tonnes
	5.2F (solid)	5.4 tonnes	108 tonnes
	5.2F (liquid, powder)	1.8 tonnes	3.6 tonnes
	5.2G (solid)	5.4 tonnes	108 tonnes
	5.2G (liquid, powder)	1.8 tonnes	3.6 tonnes
Toxic substances	6.1A (solid)	180 kg	360 kg
	6.1A (liquid, powder)	60 kg	120 kg
	6.1A (gas)	0.3 m ³	0.6 m ³
	6.1B (solid)	180 kg	360 kg
	6.1B (liquid, powder)	60 kg	120 kg
	6.1B (gas)	0.3 m ³	0.6 m ³
	6.1C (solid)	1.8 tonnes	3.6 tonnes
	6.1C (liquid, powder)	600 kg	1.2 tonnes
	6.1C (gas)	0.9 m ³	1.8 m ³
	6.1D (solid)	5.4 tonnes	108 tonnes
	6.1D (liquid, powder)	1.8 tonnes	3.6 tonnes
	6.1D (gas)	3 m ³	6 m ³
	6.3A and 6.3B (solid)	900 kg	1.8 tonnes
	6.3A and 6.3B (liquid, powder)	300 kg	600 kg
	6.4A (solid)	900 kg	1.8 tonnes
	6.4A (liquid, powder)	300 kg	600 kg
	6.5 – 6.9 (solid)	180 kg	360 kg
6.5 – 6.9 (liquid, powder)	60 kg	120 kg	
Corrosive substances	8.1 (solid)	180 kg	360 kg
	8.1 (liquid, powder)	60 kg	120 kg
	8.2A (solid)	180 kg	360 kg
	8.2A (liquid, powder)	60 kg	120 kg
	8.2B (solid)	1.8 tonnes	3.6 tonnes
	8.2B (liquid, powder)	600 kg	1.2 tonnes
	8.2C (solid)	5.4 tonnes	108 tonnes
	8.2C (liquid, powder)	1.8 tonnes	3.6 tonnes
	8.3 (solid)	180 kg	360 kg
8.3 (liquid, powder)	60 kg	120 kg	
Ecotoxic substances	9.1A (solid) (further than 30m from watercourse)	600 kg	1.2 tonnes
	9.1A (solid) (within 30m of watercourse)	200 kg	400 kg
	9.2A, 9.3A and 9.4A (solid)	200 kg	400 kg
	9.1A (liquid, powder)	200 kg	400 kg

23 RULES: Hazardous Substances

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
	(further than 30m from watercourse)		
	9.1A (liquid, powder) (within 30m of watercourse)	70 kg	150 kg
	9.2A, 9.3A and 9.4A (liquid, powder)	70 kg	150 kg
	9.1B (solid) (further than 30m from watercourse)	5.4 tonnes	108 tonnes
	9.1B (solid) (within 30m of watercourse)	1.8 tonnes	3.6 tonnes
	9.2B, 9.3B, 9.4B (solid)	1.8 tonnes	3.6 tonnes
	9.1B (liquid, powder) (further than 30m from watercourse)	1.8 tonnes	3.6 tonnes
	9.1B (liquid, powder) (within 30m of watercourse)	600 kg	1.2 tonnes
	9.2B, 9.3B, 9.4B (liquid, powder)	600 kg	1.2 tonnes
	9.1C (solid) (further than 30m from watercourse)	18 tonnes	36 tonnes
	9.1C (solid) (within 30m of watercourse)	6 tonnes	12 tonnes
	9.2C, 9.3C, 9.4C (solid)	6 tonnes	12 tonnes
	9.1C (liquid, powder) (further than 30m from watercourse)	6 tonnes	12 tonnes
	9.1C (liquid, powder) (within 30m of watercourse)	2 tonnes	4 tonnes
	9.2C, 9.3C, 9.4C (liquid, powder)	2 tonnes	4 tonnes
	9.1D (solid) (further than 30m from watercourse)	18 tonnes	36 tonnes
	9.1D (solid) (within 30m of watercourse)	6 tonnes	12 tonnes
	9.2D, 9.3D, 9.4D (solid)	6 tonnes	12 tonnes
	9.1D (liquid, powder) (further than 30m from watercourse)	6 tonnes	12 tonnes
	9.1D (liquid, powder) (within 30m of watercourse)	2 tonnes	4 tonnes
	9.2D, 9.3D, 9.4D (liquid, powder)	2 tonnes	4 tonnes

23 RULES: Hazardous Substances

Rural Zone

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
Explosive substances (liquids, powders or solids)	1.1	30 kg	60 kg
	1.2	300 kg	600 kg
	1.3	900 kg	1.8 tonnes
	1.5	900 kg	1.8 tonnes
Flammable gases	2.1.1A	300 kg	600 kg
	2.1.1A	300 m ³	600 m ³
	2.1.2A	300 kg	600 kg
	2.1.2A	300 m ³	600 m ³
	LPG	7.5 tonnes	15 tonnes
Flammable liquids ²	3.1A (above ground)	3 tonnes	6 tonnes
	3.1.A (underground)	30 tonnes	60 tonnes
	3.1B (above ground)	3 tonnes	6 tonnes
	3.1B (underground)	30 tonnes	60 tonnes
	3.1C (above ground)	9 tonnes	18 tonnes
	3.1C (underground)	90 tonnes	180 tonnes
	3.1D (above ground)	100 tonnes	200 tonnes
	3.1D (underground)	300 tonnes	600 tonnes
Liquid desensitised explosives	3.2A, 3.2B and 3.2C	300 kg	600 kg
Flammable solids	4.1.1A	3 tonnes	6 tonnes
	4.1.1B	9 tonnes	18 tonnes
Self-reactive solid substances	4.1.2A	300 kg	600 kg
	4.1.2B	300 kg	600 kg
	4.1.2C	3 tonnes	6 tonnes
	4.1.2D	3 tonnes	6 tonnes
	4.1.2E	9 tonnes	18 tonnes
	4.1.2F	9 tonnes	18 tonnes
	4.1.2G	9 tonnes	18 tonnes
Solid desensitised explosives	4.1.3A, 4.1.3B and 4.1.3C	300 kg	600 kg
Spontaneously combustible substances	4.2A	300 kg	600 kg
	4.2B	300 kg	600 kg
	4.2C	3 tonnes	6 tonnes
Solids that emit flammable gases in contact with water	4.3A	300 kg	600 kg
	4.3B	300 kg	600 kg
	4.3C	3 tonnes	6 tonnes
Oxidising substances (solids, liquids)	5.1.1A (solid)	900 kg	1.8 tonnes
	5.1.1A (liquid, powder)	300 kg	600 kg
	5.1.1B (solid)	900 kg	1.8 tonnes
	5.1.1B (liquid, powder)	300 kg	600 kg
	5.1.1C (solid)	9 tonnes	18 tonnes
Oxidising gases	5.1.2A	300 kg	600 kg
	5.1.2A	300 m ³	600 m ³
Organic peroxides	5.2A (solid)	900 kg	1.8 tonnes
	5.2A (liquid or powder)	300 kg	600 kg
	5.2B (solid)	900 kg	1.8 tonnes

23 RULES: Hazardous Substances

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
	5.2B (liquid, powder)	300 kg	600 kg
	5.2C (solid)	9 tonnes	18 tonnes
	5.2C (liquid, powder)	3 tonnes	6 tonnes
	5.2D (solid)	9 tonnes	18 tonnes
	5.2D (liquid, powder)	3 tonnes	6 tonnes
	5.2E (solid)	27 tonnes	54 tonnes
	5.2E (liquid, powder)	9 tonnes	18 tonnes
	5.2F (solid)	27 tonnes	54 tonnes
	5.2F (liquid, powder)	9 tonnes	18 tonnes
	5.2G (solid)	27 tonnes	54 tonnes
	5.2G (liquid, powder)	9 tonnes	18 tonnes
Toxic substances	6.1A (solid)	900 kg	1.8 tonnes
	6.1A (liquid, powder)	300 kg	600 kg
	6.1A (gas)	1.5 m ³	3 m ³
	6.1B (solid)	900 kg	1.8 tonnes
	6.1B (liquid, powder)	300 kg	600 kg
	6.1B (gas)	1.5 m ³	3 m ³
	6.1C (solid)	9 tonnes	18 tonnes
	6.1C (liquid, powder)	3 tonnes	6 tonnes
	6.1C (gas)	4.5 m ³	9 m ³
	6.1D (solid)	27 tonnes	54 tonnes
	6.1D (liquid, powder)	9 tonnes	18 tonnes
	6.1D (gas)	14.8 m ³	29.6 m ³
	6.3A and 6.3B (solid)	4.5 tonnes	9 tonnes
	6.3A and 6.3B (liquid, powder)	1.5 tonnes	3 tonnes
	6.4A (solid)	4.5 tonnes	9 tonnes
	6.4A (liquid, powder)	1.5 tonnes	3 tonnes
	6.5 – 6.9 (solid)	900 kg	1.8
	6.5 – 6.9 (liquid, powder)	0.3	600 kg
Corrosive substances	8.1 (solid)	900 kg	1.8 tonnes
	8.1 (liquid, powder)	300 kg	600 kg
	8.2A (solid)	900 kg	1.8 tonnes
	8.2A (liquid, powder)	300 kg	600 kg
	8.2B (solid)	9 tonnes	18 tonnes
	8.2B (liquid, powder)	3 tonnes	6 tonnes
	8.2C (solid)	27 tonnes	54 tonnes
	8.2C (liquid, powder)	9 tonnes	18 tonnes
	8.3 (solid)	900 kg	1.8 tonnes
	8.3 (liquid, powder)	300 kg	600 kg
Ecotoxic substances	9.1A (solid) (further than 30m from watercourse)	2.7 tonnes	5.4 tonnes
	9.1A (solid) (within 30m of watercourse)	900 kg	1.8 tonnes
	9.2A, 9.3A and 9.4A (solid)	900 kg	1.8 tonnes
	9.1A (liquid, powder)	900 kg	1.8 tonnes

23 RULES: Hazardous Substances

Hazardous substance type	HSNO category	Permitted ¹	Discretionary ¹
	(further than 30m from watercourse)		
	9.1A (liquid, powder) (within 30m of watercourse)	300 kg	600 kg
	9.2A, 9.3A and 9.4A (liquid, powder)	300 kg	600 kg
	9.1B (solid) (further than 30m from watercourse)	27 tonnes	54 tonnes
	9.1B (solid) (within 30m of watercourse)	9 tonnes	18 tonnes
	9.2B, 9.3B, 9.4B (solid)	9 tonnes	18 tonnes
	9.1B (liquid, powder) (further than 30m from watercourse)	9 tonnes	18 tonnes
	9.1B (liquid, powder) (within 30m of watercourse)	3 tonnes	6 tonnes
	9.2B, 9.3B, 9.4B (liquid, powder)	3 tonnes	6 tonnes
	9.1C (solid) (further than 30m from watercourse)	90 tonnes	180 tonnes
	9.1C (solid) (within 30m of watercourse)	30 tonnes	60 tonnes
	9.2C, 9.3C, 9.4C (solid)	30 tonnes	60 tonnes
	9.1C (liquid, powder) (further than 30m from watercourse)	30 tonnes	60 tonnes
	9.1C (liquid, powder) (within 30m of watercourse)	10 tonnes	20 tonnes
	9.2C, 9.3C, 9.4C (liquid, powder)	10 tonnes	20 tonnes
	9.1D (solid) (further than 30m from watercourse)	90 tonnes	180 tonnes
	9.1D (solid) (within 30m of watercourse)	30 tonnes	60 tonnes
	9.2D, 9.3D, 9.4D (solid)	30 tonnes	60 tonnes
	9.1D (liquid, powder) (further than 30m from watercourse)	30 tonnes	60 tonnes
	9.1D (liquid, powder) (within 30m of watercourse)	10 tonnes	20 tonnes
	9.2D, 9.3D, 9.4D (liquid, powder)	10 tonnes	20 tonnes