



SAFETY DATA SHEET

Hydroflex T

1. Identification of the substance/preparation and of the company/undertaking

Identification of the substance or mixture

Product name : Hydroflex T

Use of the substance/mixture : Fertiliser.

Company/undertaking identification

Manufacturer / Supplier : Yara Australia Pty Ltd
201 Miller Street, Mezzanine Level
North Sydney
NSW 2060 Australia

Tel: +61 2 9959 4266

Fax: +61 2 9959 4050

e-mail address of person responsible for this SDS : yaraasiapacific@yara.com

Emergency telephone number : +61 4 1722 3075 (24h)

2. Hazards identification

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : O; R8

Physical/chemical hazards : Contact with combustible material may cause fire.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Substance/preparation : Preparation

Ingredient name	CAS number	%	EC number	Classification
Potassium nitrate	7757-79-1	61.2	231-818-8	O; R8
manganese sulphate	10034-96-5	0.188	232-089-9	Xn; [1] [2] R48/20/22 N; R51/53
boric acid	10043-35-3	0.157	233-139-2	Repr. Cat. 2; [1] [2] R60, R61
See Section 16 for the full text of the R-phrases declared above.				

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

Contains some or all of the following in addition to ammonium nitrate and/or potassium nitrate:- mono and di ammonium phosphate, potassium sulphate, potassium phosphate, ammonium sulphate, urea, secondary nutrients and micro nutrients.

Total: potassium nitrate < 65%

4. First-aid measures

- Inhalation** : Avoid breathing dust. If inhaled, remove to fresh air.
- Ingestion** : If large quantities of this material are swallowed, call a physician immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
- Skin contact** : Avoid prolonged or repeated contact with skin. After handling, always wash hands thoroughly with soap and water. Get medical attention if irritation develops.
- Eye contact** : In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if irritation occurs.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See Section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

- Extinguishing media** : In case of fire, use water spray (fog), foam or dry chemical.
- Hazardous thermal decomposition products** : These products are
nitrogen oxides
sulfur oxides
phosphorus oxides
metal oxide/oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- Remark** : The product itself is not combustible but it can support combustion, even in absence of air. On heating it melts and further heating can cause decomposition, releasing toxic fumes containing nitrogen oxides and ammonia. It has high resistance to detonation. Heating under strong confinement can lead to explosive behaviour.

6. Accidental release measures

- Personal precautions** : If released in large quantities: Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Follow all fire-fighting procedures (section 5). Do not touch or walk through spilt material.
- Environmental precautions and clean-up methods** : Avoid contact of spilt material and runoff with soil and surface waterways.
- : Use a tool to scoop up solid or absorbed material and place into appropriate labelled waste container. Avoid all possible sources of ignition (spark or flame). Avoid creating dusty conditions and prevent wind dispersal.

Note: see section 8 for personal protective equipment and section 13 for waste disposal.

7. Handling and storage

- Handling** : Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Avoid contamination by any source including metals, dust and organic materials.
- Storage** : Store and use away from heat, sparks, open flame, or any other ignition source. Avoid contact with combustible materials. Prevent moisture pick-up in handling and storage.
- Packaging materials**
- Recommended** : Use original container.

8. Exposure controls/personal protection

Ingredient name

manganese sulphate

boric acid

Occupational exposure limits

ACGIH TLV (United States, 2/2010). Notes: as Mn

TWA: 0,2 mg/m³, (as Mn) 8 hour(s).

ACGIH TLV (United States, 2/2010).

STEL: 6 mg/m³ 15 minute(s). Form: Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.

TWA: 2 mg/m³ 8 hour(s). Form: Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.

Exposure controls

Respiratory protection

: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: If dust is generated and ventilation is inadequate, use respirator that will protect against dust/mist.

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.: PVC , butyl rubber , nitrile rubber , natural rubber (latex)

Eye protection

: Recommended: Use dust goggles if high dust concentration is generated.

Skin protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

9. Physical and chemical properties

General information

Appearance

Physical state : Solid. [Crystalline solid.]

Important health, safety and environmental information

pH : 3 to 6 [Conc. (% w/w): 1%]

Melting/freezing point : 170°C

Density (g/cm³) : 0,8 to 1,3 g/cm³

Solubility : Easily soluble in the following materials: cold water, hot water

10. Stability and reactivity

Stability : Stable under recommended storage and handling conditions (see section 7).

Materials to avoid

: Extremely reactive or incompatible with the following materials: alkalis.
Reactive or incompatible with the following materials: reducing materials, combustible materials, organic materials and acids.

Hazardous decomposition products

: These products are
nitrogen oxides
sulfur oxides
phosphorus oxides
metal oxide/oxides

11. Toxicological information

Potential acute health effects

Adverse health effects are considered unlikely, when the product is used according to directions.

Product/ingredient name	Result	Species	Dose	Exposure	References
Potassium nitrate	LD50 Dermal	Rat	>5000 mg/kg	-	potassium nitrate
	LD50 Oral	Rat	>2000 mg/kg	-	
Manganese sulphate	TDL _o Intravenous	Rat	4,5 mg/kg	-	manganese sulphate

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Potassium nitrate	Chronic NOAEL Oral	Rat	>1500 mg/kg Repeated dose	-

Product/ingredient name	gggbbh	Experiment	Result
Potassium nitrate	-	Experiment: In vitro Subject: Mammalian- Animal Cell: Germ	Negative

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
Potassium nitrate	Negative	Negative	Negative	Rat	Oral: ≥1500 mg/kg Repeated dose	28 days

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

Target organs : Contains material which may cause damage to the following organs: upper respiratory tract, eyes.

12. Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	gggbbh	Result	Species	Exposure	References
Potassium nitrate		EC50 >1700 mg/l Marine water	Algae	10 days	Admiraal W. (1977)
		Acute LC50 490 mg/L Fresh water	Daphnia - Daphnia magna	48 hours	J.Water Pollut.Control Fed. 37(9):1308-1316
		Acute LC50 1378 mg/L Fresh water	Fish - Poecilia reticulata	96 hours	Rubin, A.J. and Elmaraghy, G.A.
Manganese sulphate		Acute LC50 0,15 mg/l Fresh water	Crustaceans - Canthocamptus sp. - Larvae	48 hours	Int.J.Envirion.Stud. 21(3/4):271-275
		Acute LC50 30,6 to 38,9 mg/l Fresh water	Fish - Pimephales promelas - Juvenile	96 hours	Manuscript, Dep.of Entomol., Fish.and Wildl., Univ.of Minnesota, Minneapolis, MN :88 p.

12. Ecological information

		(Fledgling, Hatchling, Weanling) - 8 weeks - 12 to 16 mm		
Boric acid	Acute EC50 133 to 153 ppm Fresh water	Daphnia - Daphnia magna - <24 hours	48 hours	Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.
	Acute LC50 89,07 to 100,7 mg/L Marine water	Crustaceans - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling) - <24 hours	48 hours	Lab.Proj.ID No.3903004000-0215-3140, ESE, Gainesville, FL :44 p.
	Acute LC50 50 to 100 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours	Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.

Other ecological information

Bioaccumulative potential

Product/ingredient name

Potassium nitrate

LogP_{ow}

<1

BCF

-

Potential

low

Conclusion/Summary : Most inorganic compounds are not biodegradable. The product does not show any bioaccumulation phenomena.

Other adverse effects : No known significant effects or critical hazards.




13. Disposal considerations

Methods of disposal : Empty containers or liners may retain some product residues. Do not empty into drains; dispose of this material and its container in a safe way. Dispose of in accordance with all applicable local and national regulations


Hazardous waste : This material and its container must be disposed of as hazardous waste.

14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
ADR/RID Class	UN1479	<input checked="" type="checkbox"/> OXIDIZING SOLID, N.O.S. (Potassium nitrate)	5.1	III		Hazard identification number 50 Limited quantity LQ12 Special provisions 274 Tunnel code (E)
ADN/ADNR Class	UN1479	<input checked="" type="checkbox"/> OXIDIZING SOLID, N.O.S. (Potassium nitrate)	5.1	III		-
IMDG Class	UN1479	<input checked="" type="checkbox"/> OXIDIZING SOLID, N.O.S. (Potassium Nitrate)	5.1	III		Emergency schedules (EmS) F-A,S-Q

14. Transport information

IATA-DGR Class	UN1479	<input checked="" type="checkbox"/> OXIDIZING SOLID, N.O.S. (Potassium Nitrate)	5.1	III		Passenger and Cargo Aircraft Quantity limitation: 25 kg Packaging instructions: 516 Cargo Aircraft Only Quantity limitation: 100 kg Packaging instructions: 518 Limited Quantities - Passenger Aircraft Quantity limitation: 10 kg Packaging instructions: Y516
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15. Regulatory information

EU regulations

Hazard symbol or symbols



Oxidising

Risk phrases

: R8- Contact with combustible material may cause fire.

Safety phrases

: S17- Keep away from combustible material.
S41- In case of fire and/or explosion do not breathe fumes.

Product use

: Industrial applications.

Classification and labelling have been performed according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and the intended use.

16. Other information

Full text of R-phrases referred to in sections 2 and 3 - Europe

: R8- Contact with combustible material may cause fire.
R60- May impair fertility.
R61- May cause harm to the unborn child.
R48/20/22- Also harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications referred to in sections 2 and 3 - Europe

: - Oxidising
Repr. Cat. 2 - Toxic to reproduction category 2
Xn - Harmful
N - Dangerous for the environment

References

: Regulation (EC) No 1272/2008 Annex VI
EU REACH IUCLID5 CSR
National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda
Registry of Toxic Effects of Chemical Substances
Atrion International Inc. 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada

History

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Version : 2

Prepared by : Yara Product Classification and Regulations

Indicates information that has changed from previously issued version.

Notice to reader

16. Other information

To the best of our knowledge, the information provided in this Safety Data Sheet is accurate as at the date of its issue. The information it contains is being given for safety guidance purposes and relates only to the specific material and uses described in it. This information does not necessarily apply to that material when combined with other material(s) or when used otherwise than as described herein. Final determination of the suitability of any material is the sole responsibility of the user. All materials may represent unknown hazards and should be used with caution. Yara International ASA disclaims any liability for loss or damage resulting from the use of any data, information or recommendations set out in this Safety Data Sheet.

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