

MATERIAL SAFETY DATA SHEET



Date of Issue: May 16, 2007

1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name **Totril[®] Selective Herbicide**

Other names None

Product codes and pack sizes 4207229 (5 L)

Chemical group Hydroxybenzotrile

Recommended use Agricultural herbicide

Formulation Emulsifiable concentrate

Supplier Bayer CropScience Pty Ltd ABN 87 000 226 022

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Emergency

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2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HAZARDOUS SUBSTANCE (see Risk phrases below) - NON-DANGEROUS GOOD (road/rail)
Combustible liquid. Very toxic to aquatic organisms.

Hazard classification Hazardous (National Occupational Health and Safety Commission - NOHSC)

Risk phrases R22 - Harmful if swallowed
R36 - Irritating to eyes
R43 - May cause sensitisation by skin contact
R63 - Possible risk of harm to the unborn child
R65 - Harmful: May cause lung damage if swallowed

Safety phrases See Sections 4, 5, 6, 7, 8, 9, 13

ADG classification Not "dangerous goods" for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. Class 9 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, Marine Pollutant, for transport over water - See Section 14.

SUSDP classification (Poison Schedule) Schedule 6 (Standard for the Uniform Scheduling of Drugs and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
ioxynil octanoate	[3861-47-0]	335 (≡ 250 g/L ioxynil)
Hydrocarbon solvent	[64742-94-5]	642
Naphthalene (in hydrocarbon solvent)	[91-20-3]	(< 64)
Other ingredients	(non hazardous)	97

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4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Material Safety Data Sheet to the doctor.

Inhalation	Remove to fresh air and keep at rest. Obtain medical advice if symptoms persist. If breathing stops or shows signs of failing, start artificial respiration. Call for prompt medical attention.
Skin contact	Carefully remove contaminated clothing. Wash affected areas with soap and water. Seek medical aid if symptoms persist.
Eye contact	Rinse eyes immediately with lukewarm water for at least 15 minutes and obtain medical aid.
Ingestion	Wash out mouth with water. DO NOT induce vomiting. Give a glass of water. Keep patient at rest and seek medical advice as above immediately. DO NOT attempt to give anything by mouth to a semi-conscious or unconscious person.
First Aid Facilities	Provide eyewash and safety shower facilities in the workplace.
Medical attention	<p><u>Symptoms:</u> <i>Local:</i> Irritation of skin, eyes and mucous membranes; sensitisation. <i>Systemic:</i> Nausea, vomiting, sweating, salivation, hyperthermia, convulsions.</p> <p><u>Treatment:</u> <i>Local:</i> Initial treatment should be symptomatic and supportive. <i>Systemic:</i> If a large amount (more than one mouthful) was ingested, the following measures should be considered: - Monitor respiratory function and cardiac function and observe body temperature. Keep airway clear; administer artificial respiration if necessary. Carry out gastric lavage and charcoal administration. As this product contains a hydrocarbon solvent, care should be taken to prevent pulmonary aspiration. Give anticonvulsant therapy, as appropriate, using diazepam 5-10 mg i.v. for adults; 2.5 mg i.v. for children, repeated as necessary until fully sedated. There is no specific antidote. Antipyretics, e.g. Aspirin, are contraindicated and could even increase hyperthermia. It is essential to cool the person down and maintain complete rest and quiet. Ioxynil is a phosphorylation uncoupler.</p>

5. FIRE FIGHTING MEASURES

Extinguishing media	Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Hazards from combustion products	In a fire, oxides of carbon and nitrogen and compounds of iodine may be generated.
Precautions for fire fighters	The product is a Class C1 Combustible liquid. Fire fighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715/1716). If possible and without risk, remove intact containers from exposure to fire. Otherwise, spray unopened containers with water to keep cool. Contain fire-fighting water by bunding area with sand or earth to prevent it entering any bodies of water. Dispose of fire control water or other extinguishing agent and spillage safely later.
Hazchem code	3Z

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6. ACCIDENTAL RELEASE MEASURES

Avoid contact with the spilled material or contaminated surfaces. Extinguish all possible sources of ignition. When dealing with spills do not eat, drink or smoke and wear personal protective clothing and equipment as described in Section 9 - PERSONAL PROTECTION. Prevent spilled material from entering drains or watercourses. Contain spill and absorb with earth, sand, clay, or other absorbent material. Collect and store in properly labelled, sealed drums for safe disposal. Thoroughly ventilate the area after cleanup. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

7. HANDLING AND STORAGE

Handling Keep out of reach of children. Poisonous if swallowed. May irritate the eyes. Avoid contact with eyes and skin. Do not inhale vapour or spray mist. After handling and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield and contaminated clothing.

Storage Store in the closed, original container in a dry, cool, well-ventilated area, out of direct sunlight. Keep away from all ignition sources and protect from extreme heat and cold.

Flammability Combustible liquid, Class C1 - flashpoint between 61° C and 150° C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards The manufacturer of the solvent recommends an Occupational Exposure Limit for solvent naphtha (petroleum), heavy aromatic:
TWA: 100 mg/m³ (17 ppm).
For the small amount of naphthalene present in the solvent the NOHSC Occupational Exposure Limits are:
TWA: 10 ppm (52 mg/m³, STEL: 15 ppm (79 mg/m³).

Exposure standard – Time Weighted Average (TWA) means the average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.

Exposure standard – Short term exposure limit (STEL) means a 15 minute TWA exposure which should not be exceeded at any time during the working day.

Biological limit values None allocated

Engineering controls Control process conditions to avoid contact. Use local exhaust ventilation during manufacture and spark proof equipment. Use in a well-ventilated area only.

Personal Protective Equipment

- Face shield.
- Cotton overalls buttoned to the neck and wrist and a washable hat.
- Elbow-length PVC gloves
- If airborne concentrations are likely to exceed the exposure standards above, an AS/NZS 1715/1716 approved respirator should be worn.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear brown liquid
Odour:	Aromatic hydrocarbon
pH:	Not available
Vapour pressure:	0.3 kPa (at 38° C) (hydrocarbon solvent)
Vapour density:	> 1.00 (hydrocarbon solvent)
Boiling point:	179 - 213° C (boiling point range of solvent)
Freezing/melting point:	Not available
Solubility:	Emulsifies in water
Specific Gravity:	1.074 at 20° C
Flash Point:	66° C (closed cup)
Flammability (explosive) limits:	LEL: 0.6; UEL: 7.0 Vol. % in air (hydrocarbon solvent)
Auto-ignition temperature:	> 400° C (hydrocarbon solvent)
Partition coefficient (octanol/water):	<i>loxynil octanoate</i> : LogP _{ow} = 6.0

10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of use.
Conditions to avoid	Avoid sources of ignition and extreme heat.
Incompatible materials	loxynil octanoate is readily hydrolysed by alkalies. Avoid strong oxidising and reducing agents.
Hazardous decomposition products	None known
Hazardous reactions	None known

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Inhalation	Inhalation of product vapour may be irritating to respiratory tract, may cause headaches, drowsiness and dizziness, could be anaesthetic, and may have other central nervous system effects.
Skin contact	May irritate the skin. May cause skin sensitisation reactions. Repeated exposure may cause skin dryness or cracking.
Eye contact	May irritate the eyes.
Ingestion	Poisonous if swallowed. Symptoms include nausea, vomiting, sweating, salivation, hyperthermia, convulsions. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.

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11. TOXICOLOGICAL INFORMATION - continued

ANIMAL TOXICITY DATA – PRODUCT

Acute:

Oral toxicity	LD ₅₀ rat: 602 mg/kg
Dermal toxicity	LD ₅₀ rat: > 2000 mg/kg
Inhalation toxicity	<i>Technical ioxynil</i> : LC ₅₀ (6 h) rat: > 3 mg/L air
Skin irritation	Slightly irritating – rabbit
Eye irritation	Irritating – rabbit
Sensitisation	Sensitising - guinea pig

Chronic:

ioxynil octanoate is not mutagenic and was not carcinogenic in animal studies. Ioxynil octanoate is classified as a category 3 teratogen: - substances which cause concern for man owing to possible teratogenic effects but in respect of which the information is not adequate for making a satisfactory assessment.

This product contains naphthalene. The International Agency for Research on Cancer evaluated naphthalene and concluded that there was sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. Accordingly, IARC classified naphthalene as a possible human carcinogen (Group 2B). Frequent or prolonged contact with the hydrocarbon solvent in this product may defat and dry the skin, leading to discomfort and dermatitis.

12. ECOLOGICAL INFORMATION

Very toxic to aquatic organisms. Low toxicity to bees.
DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

Ecotoxicity

ioxynil octanoate:

Fish toxicity:

LC₅₀ (96 h) bluegill sunfish 0.024 mg/L

Daphnia toxicity:

EC₅₀ (48 h) 0.011 mg/L

Algal toxicity:

EC₅₀ (72h) algae (*Navicula pelliculosa*) 0.24 mg/L

Bird toxicity:

Acute oral LD₅₀ for Japanese quail 677 mg/kg

Acute oral LD₅₀ for pheasants 1000 mg/kg

Acute oral LD₅₀ for mallard duck 1200 mg/kg

Environmental fate, persistence and degradability, mobility

ioxynil octanoate:

Bioaccumulation:

Bioconcentration factor (BCF) in rainbow trout (*Oncorhynchus mykiss*): 209 (combination of ioxynil phenol and ioxynil octanoate)

In soil DT₅₀ is approximately 10 days. Degraded by hydrolysis and de-iodination to less toxic substances such as hydroxybenzoic acid. Low mobility; the majority of ioxynil and its metabolites remained in the top 8 cm of all soil types studied.

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13. DISPOSAL CONSIDERATIONS

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt. Dispose of waste product through a reputable waste contractor.

14. TRANSPORT INFORMATION

UN number	Not applicable (road/rail)
Proper shipping name	Not applicable (road/rail)
Class and Subsidiary Risk	Not applicable (road/rail)
Packing Group	Not applicable (road/rail)
EPG	Not applicable (road/rail)
Hazchem code	3Z
Marine Pollutant	Yes. By sea, this product is a Class 9, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains ioxynil octanoate), UN 3082, Packing Group III, Marine Pollutant.

15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988
Australian Pesticides and Veterinary Medicines Authority approval number: 31729
See also Section 2.

16. OTHER INFORMATION

Trademark information Totril® is a Registered Trademark of Bayer.

Preparation information Replaces September 23, 2002 MSDS.
Reasons for revision: Product codes and pack sizes, MSDS headings, First Aid Measures, Exposure standards, Partition co-efficient, Toxicological Information, Ecological Information, Transport Information.

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

END OF MSDS