

# MATERIAL SAFETY DATA SHEET



Date of Issue: May 18<sup>th</sup>, 2009

## 1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name **Actril® DS Selective Herbicide**  
Other names None  
Product codes and pack sizes 4207407 (10 L)  
Chemical group Phenoxy-carboxylic acid ester + hydroxybenzotrile  
Recommended use Agricultural herbicide  
Formulation Emulsifiable concentrate  
Supplier Bayer CropScience Pty Ltd ABN 87 000 226 022  
Address 391 - 393 Tooronga Road, East Hawthorn  
Victoria 3123, Australia  
Telephone (03) 9248 6888  
Facsimile (03) 9248 6800  
Website [www.bayercropscience.com.au](http://www.bayercropscience.com.au)  
Contact Development Manager (03) 9248 6888  
Emergency  
Telephone Number 1800 033 111 – Orica SH&E Shared Services

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

HAZARDOUS SUBSTANCE (see Risk phrases below) - DANGEROUS GOOD  
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  
Safety phrases See Sections 4, 5, 6, 7, 8, 9, 13  
ADG classification See Section 14.  
SUSDP classification Schedule 6 (Standard for the Uniform Scheduling of Drugs and Poisons)  
(Poison Schedule)

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
2,4-D-2-ethyl hexyl ester	[1928-43-4]	870 (≡ 577 g/L 2,4-D)
ioxynil octanoate	[3861-47-0]	134 (≡ 100 g/L ioxynil)
Calcium dodecylbenzene sulfonate	[26264-06-2]	30-40
Other ingredients	(non hazardous)	136-146

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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	If inhaled, remove to fresh air and keep at rest. Obtain medical advice if symptoms persist.
Skin contact	Carefully remove contaminated clothing. Wash affected areas with soap and water. Seek medical aid if symptoms persist or if at all worried.
Eye contact	Rinse eyes thoroughly with clean water and obtain medical advice immediately.
Ingestion	Wash out mouth with water. Do not induce vomiting. Keep patient at rest and seek medical advice as above.
First Aid Facilities	Provide eyewash and safety shower facilities in the workplace.
Medical attention	<p><u>Symptoms</u> <i>Local:</i> Skin and eye irritation <i>Systemic:</i> Headache, vomiting, lethargy, muscle twitching, nausea, high blood pressure, low blood pressure, hyperventilation, salivation, sweating, hyperthermia, convulsions. If large amounts are ingested, the following symptoms may occur: CNS depression, stupor, coma, respiratory failure.</p> <p><u>Treatment</u> <i>Local:</i> treat as above under First Aid Measures <i>Systemic:</i> There is no antidote. Treatment should be symptomatic and supportive. Keep patient at rest</p> <p><u>Note for physicians</u> Monitor respiratory, cardiac, kidney, liver and central nervous system functions. Observe specific parameters; blood pressure, levels of 2,4-D in plasma and urine, pH of urine. Endotracheal intubation should be done and gastric lavage performed, followed by administration of charcoal. Keep airway clear; administer artificial respiration if necessary. Elimination by dialysis (forced alkaline diuresis). For convulsions: Give diazepam i.v. 5-10 mg for adults (2.5 mg i.v. for children), repeated as necessary until fully sedated. Contraindications: Antipyretics In case of fever it is essential to cool the victim down. Recovery: Spontaneous.</p>

## 5. FIRE FIGHTING MEASURES

Extinguishing media	Water spray, carbon dioxide, foam, sand.
Hazards from combustion products	In a fire hydrogen chloride, hydrogen iodide, hydrogen cyanide, and oxides of carbon and nitrogen 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. Keep unnecessary people away. 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.

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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 8 - PERSONAL PROTECTION. Keep people and animals away and upwind. 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	Poisonous if inhaled or swallowed. Will irritate the eyes. May irritate the skin. Avoid contact with eyes and skin. Do not inhale spray mist. When preparing the spray wear cotton overalls buttoned to the neck and wrist and a washable hat, PVC or rubber apron, elbow-length PVC gloves and face shield or goggles. When using the prepared spray wear face shield. If product on skin, immediately wash area with soap and water. If product is in the eyes, wash it out immediately with water. After use 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 or goggles and contaminated clothing.
Storage	Store in the closed original container in a dry, well ventilated area, as cool as possible. Do not store for prolonged periods in direct sunlight.
Flammability	Combustible liquid, Class C1 - flashpoint between 61° C and 150° C.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards	The NOHSC exposure standard for 2,4-D is TWA 10 mg/m <sup>3</sup> .  <i>Exposure standard – Time Weighted Average (TWA)</i> means the average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.
Biological limit values	None allocated.
Engineering controls	Control process conditions to avoid contact. Use local exhaust ventilation during manufacture. Use in a well-ventilated area only.
Personal Protective Equipment	<ul style="list-style-type: none"><li>• Face-shield or goggles.</li><li>• Cotton overalls buttoned to the neck and wrist and a washable hat. When preparing spray wear a PVC or rubber apron as well.</li><li>• Elbow-length PVC gloves</li><li>• If airborne concentrations are likely to exceed the exposure standard above, an AS/NZS 1715/1716 approved respirator should be worn.</li></ul>

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear dark brown liquid
Odour:	Sweet ester odour
pH:	Not available
Vapour pressure:	Not available
Vapour density:	Not available
Boiling point:	Not available
Freezing/melting point:	Not available
Solubility:	Emulsifies in water
Specific Gravity:	Approximately 1.18 at 20 °C
Flash Point:	66°C (closed cup)
Flammability (explosive) limits:	Not available
Auto-ignition temperature:	Not available
Partition coefficient (octanol/water):	<i>loxynil octanoate</i> : $K_{ow} \log P = 6.0$ <i>2,4-D-2-ethyl hexyl ester</i> : $K_{ow} \log P = 5.78$ (25°C)

## 10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of use.
Conditions to avoid	Avoid sources of ignition and extreme heat.
Incompatible materials	<i>loxynil octanoate</i> is readily hydrolysed by alkalies. 2,4-D is incompatible with acids, bases and oxidising agents. May corrode unlined metal containers after prolonged storage.
Hazardous decomposition products	In a fire oxides of carbon and nitrogen and compounds of chlorine and iodine may be generated.

## 11. TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

Inhalation	Poisonous if inhaled.
Skin contact	May irritate the skin. May cause skin sensitisation reactions.
Eye contact	Will irritate the eyes.
Ingestion	Poisonous if swallowed.

### ANIMAL TOXICITY DATA – PRODUCT

<u>Acute:</u>	
Oral toxicity	LD <sub>50</sub> rat: 968 mg/kg
Dermal toxicity	LD <sub>50</sub> rat: > 2360 mg/kg

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## 12. TOXICOLOGICAL INFORMATION - continued

Inhalation toxicity	LC <sub>50</sub> (4 h) rat: > 5.05 mg/L (respirable aerosol)
Skin irritation	Slightly irritating – rabbit
Eye irritation	Irritating – rabbit
Sensitisation	Sensitising - guinea pig

### Chronic:

loxylin octanoate was not carcinogenic and not mutagenic in animal studies. loxylin octanoate is classified as a category 3 teratogen: - substances which cause concern for humans owing to possible teratogenic effects but in respect of which the information is not adequate for making a satisfactory assessment. In most tests 2,4-D was shown to be non-mutagenic. However, a positive result was obtained in one mutagenicity test which suggests that 2,4-D is either non-mutagenic or has low mutagenic potential. Although 2,4-D caused birth defects and reproductive effects at high doses in animal studies, it is unlikely to be teratogenic or cause reproductive problems in humans at expected exposure levels. Many animal studies and epidemiology studies in human populations have been done to assess the carcinogenic potential of 2,4-D. There were more negative than positive results, but the carcinogenic status of 2,4-D is still unclear.

## 12. ECOLOGICAL INFORMATION

Very toxic to aquatic organisms. Harmful to bird life. Vapours may harm plants. Low hazard to bees and worms. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

### Ecotoxicity

#### 2,4-D-2-ethyl hexyl ester:

<i>Fish toxicity:</i>	LC <sub>50</sub> (96 h) <i>menidia beryllina</i> > 1.9 mg/L
<i>Bird toxicity:</i>	LD <sub>50</sub> mallard duck 663 mg/kg
<i>Daphnia toxicity:</i>	EC <sub>50</sub> (48 h) 5.2 mg/L
<i>Algae toxicity:</i>	EC <sub>50</sub> (96 h) <i>Selenastrum capricornutum</i> > 30 mg/L
<i>Other:</i>	EC <sub>50</sub> (14 d) for <i>Lemna gibba</i> 0.5 mg/L

#### loxylin octanoate:

<i>Fish toxicity:</i>	LC <sub>50</sub> (96 h) bluegill sunfish 0.024 mg/L
<i>Bird toxicity:</i>	LD <sub>50</sub> Japanese quail 677 mg/kg
<i>Daphnia toxicity:</i>	EC <sub>50</sub> (48 h) 0.068 mg/L
<i>Algae toxicity:</i>	EC <sub>50</sub> (73 h) <i>Navicula pelliculosa</i> 0.24 mg/L

### Environmental fate, persistence and degradability, mobility

*2,4-D-ethyl hexyl ester* is rapidly hydrolysed in soil and water to the parent acid; DT<sub>50</sub> < 1 day. For 2, 4-D in soil DT<sub>50</sub> < 7 days and K<sub>oc</sub> is approximately 60. Rapid degradation in the soil prevents significant downward movement under normal conditions.

*loxylin*: In soil, DT<sub>50</sub> approx. 10 days. 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 the spray tank. Do not dispose of undiluted chemicals on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. 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	UN 3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (contains ioxynil octanoate)
Class and Subsidiary Risk	Class 9
Packing Group	Packing Group III
Hazchem code	•3Z
Note for Road and Rail Transport	According to AU01, Environmentally Hazardous Substances in packagings, IBCs or any other receptacle not exceeding 500 kg or 500 L are not subject to the ADG Code

## 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988  
Australian Pesticides and veterinary Medicines Authority approval number: 42091  
See also Section 2.

## 16. OTHER INFORMATION

**Trademark information** Actril® is a Registered Trademark of Bayer.

**Preparation information** Replaces January 9, 2006 MSDS.  
Reasons for revision: Formulation Composition, Medical Attention, Handling, Transport Information, Ecological 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