

**IVORYCHEM PTE LIMITED**

15 Beach Road #02-09, Beach Centre  
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Email: [contact@ivorychem.com](mailto:contact@ivorychem.com)  
Web: [www.ivorychem.com](http://www.ivorychem.com)  
Co. Registration No. 200405572W  
GST Registration No. 200405572W

**MATERIAL SAFETY DATA SHEET****RETROZIN 480 EC HERBICIDE**

**Version:** Global  
**Date Approved:** 29/06/2006  
**Revision No:** 1

**CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** RETROZIN 480 EC HERBICIDE  
**ACTIVE INGREDIENT:** Metribuzin  
**CHEMICAL FAMILY:** Triazine Herbicide  
**CHEMICAL NAME OF ACTIVE INGREDIENT(S):** 4-Amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one  
**MOLECULAR FORMULA:** NA  
**SYNONYMS:** NA

**MANUFACTURER**

IVORYCHEM PTE LTD  
15 Beach Road, #02-09  
Beach Centre  
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Tel: +65 63377765  
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**Emergency Telephone Numbers:**

**Emergency Phone** [contact@ivorychem.com](mailto:contact@ivorychem.com) (Please refer local label for Emergency Numbers in your region).

**COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	CAS #	Wt.%	PEL/TLV	EC No.	EC Class
Metribuzin	21087-64-9	48	None	None	None
Other ingredients	-	52	None	None	None

**HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW**

Caution! Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes and clothing.

**ROUTES OF EXPOSURE:** Eye contact, skin contact, skin absorption

**IMMEDIATE EFFECTS**

**EYE:** Avoid contact with eyes. Mild eye irritation.

**SKIN:** Slight irritation. Do not get in eyes, on skin or on clothing.

**PHYSICAL PROPERTIES**

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Appearance: White liquid  
Odor: Slight, specific odour  
Ingestion: Harmful if swallowed. Do not take internally.

### FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling a poison control center or doctor, or going for treatment.

**INGESTION:** If swallowed: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling a poison control center or doctor. Do not give anything by mouth to an unconscious person.

**EYE CONTACT:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**SKIN CONTACT:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**INHALATION:** If inhaled: Move person to fresh air. If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

**NOTES TO PHYSICIAN:** There is no specific antidote if this product is ingested. Treat symptomatically.

### MEDICAL CONDITION LIKELY TO BE AGGRAVATED BY EXPOSURE

None known.

### FIRE FIGHTING MEASURES

#### FIRE AND EXPLOSION

Flash Point: > 100°C (212°F)

No flash point. Determination conducted up to the boiling point.

#### FIRE AND EXPLOSION HAZARDS

During a fire, the following gases may be released:

- Hydrogen cyanide (hydrocyanic acid)
- Carbon monoxide (CO)
- Sulphur dioxide (SO<sub>2</sub>)
- Nitrogen oxide (NO<sub>x</sub>)

#### IN CASE OF FIRE

Use dry chemical, foam, water, sand or CO<sub>2</sub> extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.



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### **ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS:** Avoid contact with spilled product or contaminated surfaces. Wear personal protective equipment. Unprotected persons must be kept away.

#### **IN CASE OF SPILL OR LEAK**

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately. Cover entire spill with absorbing material (e.g. Sand, earth or a proprietary absorbent material) and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

#### **ADDITIONAL ADVICE**

Remove all sources of ignition. Avoid breathing vapors and avoid skin contact. Do not allow material to enter streams, sewers or other waterways or contact vegetation.

### **HANDLING AND STORAGE**

Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Store the material in a well-ventilated, cool, dry, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Avoid contact with skin, eyes and clothing. Keep working clothes separately. Remove soiled or soaked clothing immediately and clean thoroughly before using again. Garment that cannot be cleaned must be destroyed (burnt).

Wash hands always before eating, drinking, smoking or using the toilet.

Before removing gloves, clean them with soap and water. Remove Personal Protective Equipment (PPE) immediately after handling this product. As soon as practical, wash thoroughly and change into clean clothing.

#### **Min/Max Storage temperatures**

Do not transport or store below 50°C (122°F).

Do not transport or store above -10°C (14°F).

30 day average not to exceed 100°F (37.8°C).

### **EXPOSURE CONTROLS / PERSONAL PROTECTION**

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.**

Keep and wash PPE separately from other laundry. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid



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water. Train employees in safe use of the product. Follow all label instructions.

**INGESTION:** Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

**EYE CONTACT:** Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**SKIN CONTACT:** Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

**INHALATION:** A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

### EXPOSURE LIMITS

ACGIH	TWA
NOSH	REL
OSHA Z1A	TWA
US CA OEL	TWA PEL

### PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** Metribuzin is a white, crystalline solid with a slightly sharp, sulfurous odor [6].

**CHEMICAL NAME:** 4-amino-6-tert-butyl-4,5-dihydro-3-methylthio-1,2,4-triazin-5-one [6]

**CAS NUMBER:** 21087-64-9

**MOLECULAR WEIGHT:** 214.29

**WATER SOLUBILITY:** 1050 mg/L [6]

**SOLUBILITY IN OTHER SOLVENTS:** s. in aromatic and chlorinated hydrocarbon solvents, including dimethyl formamide, cyclohexane, methanol, benzene, ethanol, xylene, and kerosene [6]

**MELTING POINT:** 125-126.5 C [6]

**VAPOR PRESSURE:** 0.058 mPa @ 20 C [6]

**PARTITION COEFFICIENT:** 1.6021 [6]

**ADSORPTION COEFFICIENT:** 60 (estimated) [20]

### STABILITY AND REACTIVITY

**STABILITY:** Stable under recommended storage conditions.

**CONDITIONS TO AVOID:** Sustained temperatures above 100°F

**MATERIALS TO AVOID:** Alkalines, aldehydes, ketones

**HAZARDOUS DECOMPOSITION PRODUCTS:** Thermal decomposition, amine, sulfur dioxide, carbon dioxide, mercaptans

### TOXICOLOGICAL INFORMATION



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#### ACUTE TOXICITY/IRRITATION STUDIES (FINISHED PRODUCT)

Ingestion:	Slightly Toxic Oral (LD50 Rat) :	1078 mg/kg
Dermal:	Slightly Toxic Dermal (LD50 Rabbit) :	> 2,000 mg/kg
Inhalation:	Practically Non-Toxic Inhalation (LC50 Rat) :	3.055 mg/l air - 4 hours
Eye Contact: Skin Contact: Skin Sensitization:	Minimally Irritating (Rabbit) Mildly Irritating (Rabbit) Not a Sensitizer (Guinea Pig)	

**REPRODUCTIVE/DEVELOPMENTAL EFFECTS:** None observed.

**SUBCHRONIC TOXICITY STUDIES:** Metribuzin caused increased cholesterol levels, liver enzyme induction and secondary effects on thyroxin levels in a subacute dermal toxicity study in rabbits. In subacute inhalation studies, rats exposed to aerosol concentrations of metribuzin exhibited behavioral changes, liver enzyme induction and secondary effects on organ weights associated with decreased body weight gains.

**CHRONIC TOXICITY:** Major effects in rats and dogs from long-term exposure to metribuzin included decreased body weight gains, decreased food consumption, anemia, mortality and/or organ effects (liver, kidney, thyroid, testis).

**CARCINOGENICITY:** Not considered carcinogenic

#### ECOLOGICAL INFORMATION

- **Effects on birds:** Data indicate that metribuzin is moderately to slightly toxic to birds. The acute oral LD50 values are about 100 to 200 mg/kg in bobwhite quail, mallard ducks, and Japanese quail [6,15]. The reported 5- to 8-day dietary LC50 values for these species are all greater than 4000 ppm [6,15].
- **Effects on aquatic organisms:** Metribuzin is slightly toxic to fish. The 96-hour LC50 is 64 to 76 mg/L in rainbow trout, 80 mg/L in bluegill sunfish, and greater than 10 mg/L in goldfish [6,15]. The reported 48-hour LC50 in *Daphnia magna* is 4.5 mg/L, indicating similar toxicity [15]. The 96-hour LC50 in marine/estuarine shrimp is 48.3 mg/L [34].
- **Effects on other organisms:** It is nontoxic to bees [6]. Metribuzin may be phytotoxic to non-target plant species [6,15].

#### DISPOSAL CONSIDERATIONS

**PESTICIDE DISPOSAL:** Open dumping is prohibited. Wastes resulting from the use of this product are acutely toxic. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of federal law. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to Federal, State, or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency or the

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Hazardous Waste representative at the nearest EPA Regional Office.

**CONTAINER DISPOSAL:** Triple rinse (or equivalent) and offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke. For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedure and disposal of wastes.

**TRANSPORT INFORMATION**

**DOT CLASSIFICATION**

Not regulated for domestic surface transportation

**B/L FREIGHT CLASSIFICATION**

Compounds, tree or weekilling. N.O.I, other than poison, having a density of 20 lbs or greater per cubic foot.

**REGULATORY INFORMATION**

**EPA REGISTRATION NUMBER. 264-735**

**OTHER INFORMATION**

Section(s) Revised : New Format