1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY
Supplier: SHANGHAI MINGDOU AGROCHEMICAL CO., LTD
Address: Rm. 1210, Zhenyuan Building, No. 2052 North Zhongshan Rd, Shanghai, China
FAX: +86 21 52912097, 61638378
TEL: +86 21 52912919, 52045380, 52045370
Product name: Metribuzin 95% TC

2. COMPOSITION/INFORMATION ON INGREDIENTS
Formulation Type: Technical material (TC)
Active Ingredients: Metribuzin
Chemical Abstracts Name: 4-amino-6-tert-butyl-4,5-dihydro-3-methylthio-1,2,4-triazin-5-one; 4-amino-6-tert-butyl-3-methylthio-1,2,4-triazin-5(4H)-one
CAS NO.: 99129-21-2
Molecular Formula: C₈H₁₄N₄OS
Molecular Weight: 214.3

3. HAZARDS IDENTIFICATION
EMERGENCY OVERVIEW:
Caution. Keep out of children. Harmful if swallowed. Environmental hazardous substance. Repeated exposure may cause skin irritation. Routes of Exposure: Inhalation, ingestion, eye and skin
Health effects from likely routes of exposure:
Inhalation: Available data shows that this product is not harmful. Ingestion: Harmful if swallowed. Eye: Available data shows that this product is not harmful. Skin: Available data shows that this product is not harmful. Effects of Overexposure: No information available.
4. FIRST AID MEASURES

IF SWALLOWED:
Call a poison control center or doctor immediately for treatment advice.
Have person drink a glass of water or two if able to swallow.
Do not induce vomiting unless told to do so by a poison control center or doctor.
Do not give anything by mouth to an unconscious person.

IF IN EYES:
Hold eye open and rinse slowly and gently with water for 15-20 minutes.
Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING:
Take off contaminated clothing.
Rinse skin immediately with plenty of soap and water for 15-20 minutes.
Call a poison control center or doctor for treatment advice if irritation persists.

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.

5. FIRE FIGHTING MEASURES

Specified hazards: Combustion may release carbon dioxide, and/or nitrogen oxides.
Fire and Explosion Hazards: Product is not flammable. If involved in fire, there is no risk of an explosion. This product, if scattered, may form flammable or explosive dust clouds in air.
Fire decomposition products: Some components will burn after heating. Treat fire as appropriate to other flammables present. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

EXTINGUISHING MEDIA: Foam, CO₂, dry chemical or water fog. Alcohol resistant foams are preferred if available.

FIRE-FIGHTING PROCEDURES: Use positive -pressure, self-contained breathing apparatus and full protective clothing. Evacuate non-essential personnel from area to prevent human exposure to fire, smoke, fumes or products of combustion.

6. ACCIDENT RELEASE MEASURES

In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection.
Sweep up and shovel or collect recoverable product into labeled containers for recycling or salvage, and dispose of promptly. Launder protective clothing before storage or re-use.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Keep container closed when not in use. Handle and open container in a manner as to prevent spillage. Do not contaminate water, food or feed by storage, disposal or by cleaning equipment. Do not reuse empty container.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in a tightly closed container in a cool, dry place. Do not contaminate water, food or feed by storage or disposal.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION: Protective eyewear (e.g., goggles or full-face shield).

SKIN PROTECTION: Coveralls over long- or short-sleeved shirt and long or shot pants, chemical-resistant footwear plus socks and head covering (for overhead exposure). Chemical-resistant apron when cleaning equipment, mixing or loading.

HAND PROTECTION: Chemical-resistant gloves, such as barrier laminate or butyl rubber ≥ 14 mils.

RESPIRATOR REQUIREMENTS: In areas with inadequate ventilation an approved chemical cartridge respirator with organic vapor cartridges and pesticide pre-cartridges or a self-contained breathing apparatus may be required when working with this product.

ADDITIONAL PROTECTIVE MEASURES: Discarded clothing and other absorbent materials that have been drenched or heavily contaminated with this product’s concentrate. Do not reuse them. Follow manufacturer’s instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS:
Users should: Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White powder.

Odour: Slight sulphurous odour.

Melting point: 126°C

Specific gravity: 1.29

Water Solubility: 1050mg/L

Autoignition: >340°C

Vapour pressure: 0.057mPa

10. STABILITY AND REACTIVITY

Stability: Stable under normal use and storage conditions.

Hazardous polymerization: Not likely.

Incompatibility: Avoid contact with strong acids, strong bases, and strong oxidising agents.

Hazardous decomposition products: Oxides of nitrogen and chlorine. Burning with limited oxygen may produce carbon monoxide.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES

Acute oral LD₅₀: Rat 320-510 mg/kg, mice: 700 mg/kg;

Acute dermal LD₅₀: Rabbit >20000 mg/kg;

Inhalation: LC₅₀: Rat >0.65mg/l(4h, dust);

Reproductive effects: No reproductive toxicity;

Teratogenic effects: No teratogenic effects;

Mutagenic effects: No evidence of mutagenicity;

Carcinogenic effects: No carcinogenic effects.

Carcinogenicity: No (ASCC, IARC, NTP)
12. ECOLOGICAL INFORMATION
The following information are for active ingredient: metribuzin.

**Environmental Fate:** Metribuzin is moderately persistent in soils. Metribuzin is poorly bound to most soils and soluble in water, giving it a potential for leaching in many soil types. The residue half-life is from 30-120 days.

**Effects on Birds:** Metribuzin is moderately to slightly toxic to birds.

**Effects on Aquatic Organisms:** Metribuzin is slightly toxic to fish. LC₅₀ (96 hrs) 64 – 76 mg/L in rainbow trout; 80 mg/L in bluegill sunfish. Metribuzin is moderately toxic to freshwater invertebrates.

**Effects on Other Animals (Non-target species):** Non-toxic to bees; Very low toxicity to earthworms

**Environmental caution:** For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do Not apply when weather conditions favor drift from treated areas. Do Not contaminate water when disposing of equipment wash water or rinsate. Metribuzin can leach through soil and can contaminate groundwater which may be used for drinking water. Metribuzin has been found in groundwater as a result of agricultural use. Refer to product label for additional Ground Water Advisories.

13. DISPOSAL CONSIDERATION

**PRODUCT DISPOSAL:** Product spray mixture or rinsate that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticides. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal law. Ensure that the disposal is in compliance with federal requirements and state or local regulations.

**CONTAINER DISPOSAL:** Do not reuse product containers. Dispose of product containers, waste containers and residues according to local health and environmental regulations.

14. TRANSPORT INFORMATION

**UN Number:** 3077

**Dangerous Goods Class:** 9

**Packing Group:** III (minor danger)

**Special Precautions:** Not applicable

15. REGULATORY INFORMATION

**General:** [Not explosive]. [IMDG Transport Code is usually 9]

**EC Risk Classification:** [Xn - Harmful: R22], [N - Dangerous for the environment: R50, R53]

**EC Safety Classification:** S2, S60, S61

16. OTHER INFORMATION

This MSDS summarizes 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 the 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 the company.

END OF MSDS