ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

Metribuzin

Revision Date:2025-02-01 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name	: Metribuzin
CBnumber	: CB6690573
CAS	: 21087-64-9
EINECS Number	: 244-209-7
Synonyms	: METRIBUZIN,Metribuzine

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	: For R&D use only. Not for medicinal, household or other use.
Uses advised against	: none

Company Identification

Company	: Chemicalbook
Address	: Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone	: 010-86108875

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

Label elements

Pictogram(s)

Signal word	Danger

Hazard statement(s)

H225 Highly Flammable liquid and vapour

H302 Harmful if swallowed

H319 Causes serious eye irritation

H331 Toxic if inhaled

H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P311 Call a POISON CENTER or doctor/physician.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.

P370+P378 In case of fire: Use … for extinction.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container to.....

Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P391 Collect spillage.

Storage

none

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards

no data available

SECTION 3: Composition/information on ingredients

Substance

Product name	: Metribuzin
Synonyms	: METRIBUZIN,Metribuzine
CAS	: 21087-64-9
EC number	: 244-209-7
MF	: C8H14N4OS
MW	: 214.29

SECTION 4: First aid measures

Description of first aid measures

If inhaled

Fresh air, rest.

Following skin contact

Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Rest.

Most important symptoms and effects, both acute and delayed

Exposure Routes: inhalation, ingestion, skin and/or eye contact Target Organs: central nervous system, thyroid, liver (NIOSH, 2016)

Indication of any immediate medical attention and special treatment needed

Skin decontamination: Skin contamination should he treated promptly by washing with soap and water. Contamination of the eyes should be treated immediately by prolonged flushing of the eyes with large amounts of clean water. If dermal or ocular irritation persists, medical attention should be, obtained without delay.

SECTION 5: Firefighting measures

Extinguishing media

Use water spray, powder.

Specific Hazards Arising from the Chemical

Combustible.

Advice for firefighters

Use water spray, powder.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Then store and dispose of according to local regulations.

Environmental precautions

Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Store in an area without drain or sewer access.Estimated shelf life in excess of 2 yr under normal storage conditions.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 5 mg/m3, as TWA; A4 (not classifiable as a human carcinogen)

Biological limit values

no data available

Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures

Eye/face protection

Wear safety spectacles.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation (not if powder), local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Physical state	Solid
Colour	White
Odour	Weak characteristic odor
Melting point/freezing point	125°C
Boiling point or initial boiling point and boiling range	312.4°C at 760 mmHg
Flammability	Noncombustible Solid

Lower and upper explosion limit/flammability limit	no data available
Flash point	142.7°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	0.1 % (NIOSH, 2016)
Partition coefficient n-octanol/water	log Kow= 1.7
Vapour pressure	0.000531mmHg at 25°C
Density and/or relative density	1.28
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on burning. This produces toxic fumes including nitrogen oxides and sulfur oxides.

Chemical stability

no data available

Possibility of hazardous reactions

NonflammableA triazine derivative. Amines are chemical bases. They neutralize acids to form salts plus water. These acid-base reactions are exothermic. The amount of heat that is evolved per mole of amine in a neutralization is largely independent of the strength of the amine as a base. Amines may be incompatible with isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides. Flammable gaseous hydrogen is generated by amines in combination with strong reducing agents, such as hydrides.

Conditions to avoid

no data available

Incompatible materials

This compound is incompatible with the following:None reported (NIOSH, 1997)

Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /nitrogen oxides and sulfur oxides/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 1100 mg/kg
- Inhalation: no data available

- Dermal: LD50 Rat percutaneous >20,000 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Cancer Classification: Group D Not Classifiable as to Human Carcinogenicity

Reproductive toxicity

no data available

STOT-single exposure

Exposure at high levels could cause depression of the central nervous system.

STOT-repeated exposure

no data available

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 Rainbow trout 64 mg/l/96 hr and bluegill sunfish 80 mg/l/96 hr

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

In mineral and muck soils, metribuzin metabolism via deamination and thiodealkylation produced: 6-(1,1-dimethylethyl)-3-methylthio-1,2,4-triazin-5- (4H)-one metribuzin; 4-amino-6-(1,1-dimethylethyl)-1,2,4-triazin-3,5-(2H,4H)- dione 3,5-diketo; and 6-(1,1-dimethylethyl)-1,2,4-triazin-3,5-(2H,4H)-dione deaminated diketo. Over a pH range of 4.5 to 6.9 in sandy clay loam, microbial degradation gave (14)CO2 from (14)C ring-labeled metribuzin. It was also observed that metribuzin degradation by soil microoganisms decreased with increasing soil pH.

Bioaccumulative potential

The bioconcentration factor (BCF) of metribuzin in the Golden ide fish (Leuciscus idus melanotus) was experimentally determined to be 10 in a

3 day static test(1). According to a classification scheme(2) and this BCF value, metribuzin is not expected to bioconcentrate in aquatic organisms(SRC).

Mobility in soil

The average Koc of metribuzin is 60(1). Parent metribuzin was very mobile in sandy (0.58% OC), sandy loam (0.64% OC), silt loam (1.7% OC), and clay loam (1.3% OC) soils with adsorption(1). Freundlich constant values of 0.25, 0.02, 0.22, and 0.20, respectively desorption Freundlich values were 0.56, 0.14, 0.51, and 0.41, respectively(1). Adsorption Koc were 47, 3, 15, and 17 and desorption Koc values were 106, 24, 33, and 36, respectively(1). The Koc values for metribuzin in Alaskan subarctic agricultural silt loam soils ranges from 34-56(2). Experimental Koc values have been measured for sand (Koc=47; 1% OM, pH 4.3), sandy loam (Koc=3; 1.1% OM, pH 6.6), silt loam (Koc=14; 3% OM, pH 5.9), and clay loam (Koc=17; 2.2% OM, pH 6.4) soils(1). Metribuzin has high affinity for soil organic matter, but is less tightly adsorbed to clay(1). Adsorption of metribuzin decreases as soil pH increases(1). According to a classification scheme(4), these Koc values suggest that metribuzin is expected to have high mobility in soil(SRC).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN3077 (For reference only, please check.)

IMDG: UN3077 (For reference only, please check.)

IATA: UN3077 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 9 (For reference only, please check.)

IMDG: 9 (For reference only, please check.)

IATA: 9 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Not Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

PICCS

Not Listed.

Vietnam National Chemical Inventory

Listed.

IECSC

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/