

Safety Data Sheet

Frequency Herbicide

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Version: 5.0

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1. Identification

Product identifier used on the label

Frequency Herbicide

Recommended use of the chemical and restriction on use

Recommended use*: crop protection product, herbicide
Recommended use*: herbicide

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY

Contact address:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932
USA
Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Substance number: 104631
EPA Registration number: 7969-281
Molecular formula: C16 H17 N3 O5 S
Chemical family: phenyl pyrazole, derivative
Synonyms: topramezone (active ingredient)

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Repr.	1B (unborn child)	Reproductive toxicity
Aquatic Acute	1	Hazardous to the aquatic environment - acute

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Aquatic Chronic

1

Hazardous to the aquatic environment - chronic

Label elements

Pictogram:



Signal Word:

Danger

Hazard Statement:

H360

May damage the unborn child.

H400

Very toxic to aquatic life.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P273

Avoid release to the environment.

P280

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

P201

Obtain special instructions before use.

P202

Do not handle until all safety precautions have been read and understood.

Precautionary Statements (Response):

P308 + P311

IF exposed or concerned: Call a POISON CENTER or doctor/physician.

P391

Collect spillage.

Precautionary Statements (Storage):

P405

Store locked up.

Precautionary Statements (Disposal):

P501

Dispose of contents/container to hazardous or special waste collection point.

Hazards not otherwise classified

Labeling of special preparations (GHS):

May produce an allergic reaction. Contains: 1,2-benzisothiazol-3(2H)-one

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 12 % Inhalation - vapour

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 12 % Inhalation - mist

Product contains the following components and may cause an allergic skin reaction: Acticide MBS

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 5 % dermal

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

CAS Number

210631-68-8

Weight %

29.7 %

Chemical name

Topramezone

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4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

If on skin:

Immediately wash thoroughly with soap and water, seek medical attention.

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

If swallowed:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., (Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
foam, dry powder, carbon dioxide, water spray

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Sulphur dioxide, Hydrogen chloride, hydrogen fluoride, halogenated hydrocarbons, To be archived: Hydrocarbons,
If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

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6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Methods and material for containment and cleaning up

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. Handling and Storage

Precautions for safe handling

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

Conditions for safe storage, including any incompatibilities

Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed. Protect from temperatures below: 0 °C
The product can crystallize below the limit temperature.
Protect from temperatures above: 40 °C

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Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

No occupational exposure limits known.

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form:	suspension
Odour:	aromatic
Odour threshold:	Not determined due to potential health hazard by inhalation.
Colour:	off-white

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pH value:	approx. 2.5 - 4.5 (1 %(m), 20 °C)	
Boiling point:	approx. 100 °C	
Flash point:	No flash point - Measurement made up to the boiling point.	(Directive 92/69/EEC, A.9)
Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Upper explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Autoignition:	425 °C	(Directive 92/69/EEC, A.15)
SADT:	> 75 °C	
Vapour pressure:	approx. 23.3 hPa (20 °C)	
Density:	Information applies to the solvent. approx. 1.12 g/cm3 (20 °C) approx. 9.4303 Lb/USg (68 °F)	
Vapour density:	not applicable	
Partitioning coefficient n-octanol/water (log Pow):	not applicable	
Thermal decomposition:	carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Sulphur dioxide, To be archived: Hydrocarbons Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released. 210 °C, 330 kJ/kg	
Viscosity, dynamic:	approx. 78 mPa.s (20 °C)	
Solubility in water:	dispersible	
Molar mass:	363.4 g/mol	
Evaporation rate:	not applicable	
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.	

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

Corrosive effects to metal are not anticipated.

Oxidizing properties:

Not an oxidizer.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

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Possibility of hazardous reactions

The product is chemically stable.

Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. Avoid electro-static charge. Avoid prolonged storage. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

Incompatible materials

strong acids, strong bases, strong oxidizing agents

Hazardous decomposition products

Decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off.

Thermal decomposition:

Possible thermal decomposition products:

carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Sulphur dioxide, To be archived: Hydrocarbons

Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

210 °C, 3 K/min

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Slightly toxic after single ingestion. Slightly toxic after short-term skin contact. Slightly toxic after short-term inhalation.

Oral

Type of value: LD50

Species: rat (male/female)

Value: > 2,000 mg/kg (OECD Guideline 423)

No mortality was observed.

Inhalation

Type of value: LC50

Species: rat (male/female)

Value: > 5.8 mg/l (OECD Guideline 403)

Exposure time: 4 h

An aerosol was tested.

No mortality was observed.

Dermal

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Type of value: LD50
Species: rat (male/female)
Value: > 4,000 mg/kg (OECD Guideline 402)
No mortality was observed.

Assessment other acute effects

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

The product has not been tested. The statement has been derived from the properties of the individual components.

Irritation / corrosion

Assessment of irritating effects: May cause slight irritation to the skin. May cause moderate but temporary irritation to the eyes.

Skin

May cause slight irritation to the skin.

Eye

May cause moderate but temporary irritation to the eyes.

Sensitization

Assessment of sensitization: The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. There is no evidence of a skin-sensitizing potential.

Mouse Local Lymph Node Assay (LLNA)

Species: mouse

Result: Skin sensitizing effects were not observed in animal studies.

Method: OECD Guideline 429

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Topramezone technical

Assessment of repeated dose toxicity: Adaptive effects were observed after repeated exposure in animal studies.

Genetic toxicity

Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity

Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Topramezone technical

Assessment of carcinogenicity: When given in high doses, the substance was carcinogenic in animal studies. Based on its mechanism of action, a carcinogenic potential is not expected after exposure to low doses.

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Reproductive toxicity

Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity

Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Topramezone

Assessment of teratogenicity: The results of animal studies gave indication of a developmental toxic/teratogenic effects with high doses.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., (Further) symptoms and / or effects are not known so far

Medical conditions aggravated by overexposure

Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to fish. There is a high probability that the product is not acutely harmful to aquatic invertebrates. Very toxic (acute effect) to aquatic plants.

Toxicity to fish

LC50 (96 h) 8.71 mg/l, *Oncorhynchus mykiss*

Aquatic invertebrates

EC50 (48 h) 12.1 mg/l, *Daphnia magna*

Aquatic plants

EC50 (7 d) 0.0008 mg/l (growth rate), *Lemna gibba* (OECD guideline 221)

Chronic toxicity to aquatic invertebrates

No observed effect concentration (35 d) 0.12 mg/l, *Mysidopsis bahia*

Toxicity to fish

Information on: Topramezone

*LC50 (96 h) > 100 mg/l, *Oncorhynchus mykiss* (OECD 203; ISO 7346; 84/449/EEC, C.1, static) Nominal concentration.*

Aquatic invertebrates

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Information on: Topramezone
EC50 (48 h) > 100 mg/l, Daphnia magna

Aquatic plants

Information on: Topramezone
EC50 (96 h) 67.7 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201)

Assessment of terrestrial toxicity

With high probability not acutely harmful to terrestrial organisms.

Bioaccumulative potential

Bioaccumulation potential

Information on: Topramezone technical

Bioconcentration factor: 0.69 (42 d), Lepomis macrochirus (OPPTS 850.1730 (EPA Guideline))
Does not significantly accumulate in organisms.

Mobility in soil

Assessment transport between environmental compartments

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Topramezone technical

Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.

Additional information

Other ecotoxicological advice:

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

13. Disposal considerations

Waste disposal of substance:

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:

This product is not regulated by RCRA.

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14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHS
Marine pollutant: YES
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TOPRAMEZONE)

Air transport

IATA/ICAO

Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHS
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TOPRAMEZONE)

Further information

The following provisions may apply for product in packages containing a net quantity of 5 L or less
ADR, RID, ADN: Special Provision 375;
IMDG: 2.10.2.7;
IATA: A197;
TDG: Special Provision 99(2);
49CFR: §171.4 (c) (2).

15. Regulatory Information

Federal Regulations

Registration status:

Crop Protection TSCA, US released / listed

Chemical TSCA, US blocked / not listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

BASF Risk Assessment, CA Prop. 65:

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Based on an evaluation of the product's composition and the use(s), this product does not require a California Proposition 65 Warning.

NFPA Hazard codes:

Health: 1 Fire: 1 Reactivity: 1 Special:

Labeling requirements under FIFRA

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

CAUTION:

May cause moderate but temporary irritation to the eyes.

HARMFUL IF SWALLOWED.

HARMFUL IF ABSORBED THROUGH SKIN.

KEEP OUT OF REACH OF CHILDREN.

Avoid contact with the skin, eyes and clothing.

16. Other Information

SDS Prepared by:

BASF NA Product Regulations

SDS Prepared on: 2019/04/30

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

END OF DATA SHEET