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1. Identification

Product identifier used on the label

MARKSMAN HERBICIDE

Recommended use of the chemical and restriction on use

Recommended use*: crop protection product, herbicide

Recommended use*: herbicide

Details of the supplier of the safety data sheet

Company: BASF Canada Inc. 100 Milverton Drive Mississauga, ON L5R 4H1, CANADA 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: 57521 EPA Registration number: 7969-136

Chemical family: substituted, aromatic, carboxylic acid Synonyms: dicamba potassium salt; atrazine

2. Hazards Identification

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

Classification of the product

STOT RE 2 Specific target organ toxicity — repeated

exposure

2 Aquatic Acute Hazardous to the aquatic environment - acute

^{*} 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.

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Aquatic Chronic 2 Hazardous to the aquatic environment - chronic

Carc. 1A (by inhalation) Carcinogenicity

Label elements

Pictogram:



Signal Word:

Danger

Hazard Statement:

H373 May cause damage to organs through prolonged or repeated exposure.

H350 May cause cancer by inhalation.

H401 Toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

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

protection.

P201 Obtain special instructions before use. P273 Avoid release to the environment.

P202 Do not handle until all safety precautions have been read and

understood.

P260 Do not breathe dust/gas/mist/vapours.

Precautionary Statements (Response):

P308 + P311 IF exposed or concerned: Call a POISON CENTER or doctor/physician.

P314 Get medical advice/attention if you feel unwell.

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):

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 1 - 3% dermal

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 0 - 1 % Inhalation - vapour

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 0 - 1 % Inhalation - mist

3. Composition / Information on Ingredients

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

CAS NumberWeight %Chemical name1912-24-922.23 %atrazine

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10007-85-9 107-21-1 577-11-7 64741-88-4 64742-65-0 14808-60-7	13.42 % 7.0 - 10.0% < 1.0% 0.1 - 1.0% 0.1 - 1.0% 0.1 - 1.0%	potassium salt of dicamba ethylene glycol sodium-di-ethyl-hexyl-sulfosuccinate Distillates (petroleum), solvent-refined heavy paraffinic Distillates (petroleum), solvent-dewaxed heavy paraffinic Quartz (SiO2)

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

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

If on skin:

Wash thoroughly with soap and water.

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

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

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, Hydrogen chloride, nitrogen oxide, nitrogen dioxide, 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 if the product is involved in a fire.

Advice for fire-fighters

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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.

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.

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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 above: 40 °C

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.

Components with occupational exposure limits

ethylene glycol

ACGIH TLV TWA value 25 ppm Vapor fraction; STEL value

50 ppm Vapor fraction; STEL value 10 mg/m3

Aerosol, inhalable.;

Potassium hydroxide OSHA PEL CLV 2 mg/m3;

ACGIH TLV CLV 2 mg/m3;

atrazine OSHA PEL TWA value 5 mg/m3;

ACGIH TLV TWA value 2 mg/m3 Inhalable fraction;

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) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. 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:

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

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.

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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. mild

Odour threshold: Not determined due to potential health hazard by inhalation.

Colour: brown 8.5 - 10pH value: approx. 0 °C Melting point:

Information based on the main

components.

Boiling point: approx. 100 °C

Information based on the main

components.

Flash point: A flash point determination is

unnecessary due to the high water

content.

Flammability: not applicable

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.

As a result of our experience with this Upper explosion limit:

> 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: not applicable Vapour pressure: approx. 23 hPa

(20°C)

Information applies to the solvent.

Density: approx. 1.17 g/cm3

(20°C)

approx. 9.686 lb/USq

(68°F)

Partitioning coefficient n-The statements are based on the octanol/water (log Pow):

properties of the individual

components.

Information on: dicamb

(OECD Guideline Partitioning coefficient n--1.8

octanol/water (log Pow): (25°C) 107)

Self-ignition Based on its structural properties the

temperature: product is not classified as selfigniting.

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Thermal decomposition: carbon monoxide, carbon dioxide, Hydrogen chloride,

halogenated hydrocarbons, nitrogen dioxide, nitrogen oxide, To

be archived: Hydrocarbons

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

fumes may be released.

Viscosity, dynamic: approx. 380 mPa.s

(20°C)

Solubility in water: miscible Evaporation rate: moscible 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.

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 prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

Incompatible materials

strong bases, strong acids, strong oxidizing agents

Hazardous decomposition products

Decomposition products:

Hazardous 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, Hydrogen chloride, halogenated hydrocarbons, nitrogen dioxide, nitrogen oxide, To be archived: Hydrocarbons

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

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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: Relatively nontoxic after single ingestion. Slightly toxic after short-term skin contact. Relatively nontoxic after short-term inhalation.

Oral

Type of value: LD50

Species: rat

Value: 5,897 mg/kg

<u>Inhalatio</u>n

Type of value: LC50 Species: rat (male/female)

Value: > 3.38 mg/l Exposure time: 4 h

Dermal

Type of value: LD50

Species: rat

Value: > 2,000 mg/kg

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.

<u>Skin</u>

Species: rabbit

Method: FHSA Guideline

May cause slight irritation to the skin.

<u>Eye</u>

Species: rabbit Result: non-irritant

Sensitization

Assessment of sensitization: There is no evidence of a skin-sensitizing potential.

Skin sensitization test Species: guinea pig

Skin sensitizing effects were not observed in animal studies.

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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: Atrazine

Assessment of repeated dose toxicity: Repeated oral exposure may affect certain organs.

Information on: ethylene glycol

Assessment of repeated dose toxicity: The substance may cause damage to the kidney after repeated ingestion. The substance may cause damage to the kidney after repeated skin contact with high doses.

Information on: crystalline silica

Assessment of repeated dose toxicity: The substance may cause increase in lung mass and lung tissue changes after repeated inhalation.

This product may contain greater than 0.1% crystalline silica. Repeated exposure to high concentrations results in silicosis, a lung disease characterized by coughing, difficult breathing, wheezing, scarring of the lungs, and repeated, non-specific chest illnesses.

OSHA (Occupational Safety and Health Administration) has classified this substance as harmful to the lung, kidney and immune system following repeated inhalation exposure.

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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: Dicamba

Assessment of carcinogenicity: In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.

Information on: atrazine

Assessment of carcinogenicity: The substance is not considered to pose a carcinogenic risk at low human exposure levels. In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.

In long-term animal studies in which the substance was given in high concentrations by feed, a carcinogenic effect was observed.

IARC Group 3 (not classifiable as to human carcinogenicity).

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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.

<u>Teratogenicity</u>

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

Information on: ethylene glycol

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Assessment of teratogenicity: Developmental toxicity was observed after oral ingestion of high doses in studies with rats and mice, but this effect was not seen in a study with rabbits. Mechanistic studies show that the rabbit is the relevant species for the classification for human health. As such, and since ethylene glycol is not a developmental toxicant in the rabbit, no classification is warranted. However, the relevance of this result for humans is unclear.

Other Information

Misuse can be harmful to health.

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

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely toxic for fish. Acutely toxic for aquatic invertebrates. Very toxic (acute effect) to aquatic plants.

Toxicity to fish

Information on: Dicamba

LC50 (96 h) > 41 mg/l, Oncorhynchus mykiss

Information on: atrazine

LC50 (96 h) 5.3 mg/l, Oncorhynchus mykiss LC50 (96 h) 42 mg/l, Lepomis macrochirus

Aquatic invertebrates

Information on: Dicamba

EC50 (48 h) > 41 mg/l, Daphnia magna

Information on: atrazine

LC50 (96 h) 1.0 mg/l, Mysidopsis bahia LC50 (96 h) 5.7 mg/l, Gammarus fasciatus LC50 (24 h) 87 mg/l, Daphnia magna

Assessment of terrestrial toxicity

With high probability not acutely harmful to honeybees. Acutely toxic to terrestrial organisms.

Other terrestrial non-mammals

Information on: Dicamba LD50 216 mg/kg, Colinus virginianus LD50 1,373 mg/kg, Anas platyrhynchos LC50, Colinus virginianus LC50, Anas platyrhynchos LD50 100 ug/bee, Apis mellifera

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Information on: atrazine LD50, Colinus virginianus LD50, Apis mellifera LC50, Anas platyrhynchos

Persistence and degradability

Elimination information

Not readily biodegradable (by OECD criteria).

Elimination information

Information on: dicamb

Information on: Atrazine

7 - 14 % CO2 formation relative to the theoretical value (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic, domestic sewage) Non-biodegradable.

Bioaccumulative potential

Assessment bioaccumulation potential

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

Assessment bioaccumulation potential

Information on: dicamb

Information on: Atrazine

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.

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.

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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.

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, EHSM Marine pollutant: YES

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (contains DICAMBA)

Air transport

IATA/ICAO

Hazard class: 9 Packing group: III

ID number: UN 3082 Hazard label: 9, EHSM

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (contains DICAMBA)

Further information

DOT: This product is regulated if the amount in a single receptacle exceeds the Reportable Quantity (RQ). Please refer to Section 15 of this MSDS for the RQ for this product.

15. Regulatory Information

Federal Regulations

Registration status:

Crop Protection TSCA, US released / exempt

Chemical TSCA, US blocked / not listed

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

EPCRA 313:

CAS Number Chemical name

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107-21-1 ethylene glycol 1912-24-9 atrazine 1918-00-9 dicamba

CERCLA RQ
5000 LBSCAS Number
107-21-1Chemical name
ethylene glycol
dicamba1000 LBS1918-00-9dicamba

State regulations

State RTK
NJCAS Number
1912-24-9Chemical name
atrazine

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

WARNING: This product can expose you to chemicals including ETHYLENE OXIDE, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

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:

KEEP OUT OF REACH OF CHILDREN.

HARMFUL IF INHALED.

HARMFUL IF SWALLOWED.

HARMFUL IF ABSORBED THROUGH SKIN.

May cause moderate but temporary irritation to the eyes.

Avoid prolonged and/or repeated contact with the skin.

Avoid inhalation of mists/vapours.

16. Other Information

SDS Prepared by:

BASF NA Product Regulations SDS Prepared on: 2019/04/26

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.