



# SAFETY DATA SHEET

Revision date 28-Jun-2023

Revision Number 1

## 1. Identification

### Product identifier

Product Name Brox M

### Other means of identification

Product Code(s) 000184

UN number or ID number 3082

Synonyms None

Registration Number(s) 32472

### Recommended use of the chemical and restrictions on use

Recommended use Herbicide

Restrictions on use Follow label instructions

### Details of the supplier of the safety data sheet

#### Initial supplier identifier

ALBAUGH LLC  
1525 NE 36th St,  
Ankeny, IA 50021 USA

#### Emergency telephone number

CANUTEC (613) 996-6666

## 2. Hazard(s) identification

### Classification

|   |            |
|---|------------|
| Acute toxicity - Oral                     | Category 4 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 |
| Reproductive toxicity                     | Category 2 |
| Aspiration hazard                         | Category 1 |

### Label elements

#### **Danger**

#### **Hazard statements**

Harmful if swallowed  
Harmful if inhaled  
Suspected of damaging fertility or the unborn child  
May be fatal if swallowed and enters airways

**Precautionary Statements - Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Wear protective gloves, protective clothing, eye protection and face protection  
 Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Avoid breathing dust, fume, gas, mist, vapors and spray  
 Use only outdoors or in a well-ventilated area

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

**Ingestion**

Rinse mouth

IF SWALLOWED: Immediately call a POISON CENTER or doctor

Do NOT induce vomiting

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents and container to an approved waste disposal plant

**Other information**

Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

### 3. Composition/information on ingredients

**Substance**

Not applicable.

**Mixture**

| Chemical name                               | CAS No      | Weight-%    | Hazardous Material Information Review Act registry number (HMIRA registry #) | Date HMIRA filed and date exemption granted (if applicable) |
|---|-------------|-------------|--|---|
| Solvent Naphtha (Petroleum), Heavy Aromatic | 64742-94-5  | 30.99-33.93 | -  |   |
| MCPA Ethylhexyl Ester                       | 29450-45-1  | 23.54-28.32 | -  |   |
| Bromoxynil octanoate                        | 1689-99-2   | 23.54-28.32 | -  |   |
| Other Ingredients                           | PROPRIETARY | >5.0        | -  |   |
| Naphthalene                                 | 91-20-3     | 4.0-5.0     | -  |   |

### 4. First-aid measures

**Description of first aid measures****General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

|   |   |
|---|---|
| <b>Inhalation</b>                         | Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical attention. Delayed pulmonary edema may occur. |
| <b>Eye contact</b>                        | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.  |
| <b>Skin contact</b>                       | Wash skin with soap and water.  |
| <b>Ingestion</b>                          | Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get immediate medical advice/attention.  |
| <b>Self-protection of the first aider</b> | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Avoid breathing vapors or mists. See section 8 for more information.  |

#### **Most important symptoms and effects, both acute and delayed**

**Symptoms** Difficulty in breathing. Coughing and/ or wheezing. Dizziness.

#### **Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances.

### **5. Fire-fighting measures**

|   |  |
|---|--|
| <b>Suitable Extinguishing Media</b>                                   | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.                            |
| <b>Large Fire</b>   | CAUTION: Use of water spray when fighting fire may be inefficient.   |
| <b>Unsuitable extinguishing media</b>                                 | Do not scatter spilled material with high pressure water streams.  |
| <b>Specific hazards arising from the chemical</b>                     | No information available.  |
| <b>Explosion data</b>   |  |
| <b>Sensitivity to mechanical impact</b>                               | None.  |
| <b>Sensitivity to static discharge</b>                                | None.  |
| <b>Special protective equipment and precautions for fire-fighters</b> | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |

### **6. Accidental release measures**

#### **Personal precautions, protective equipment and emergency procedures**

|                             |  |
|-----------------------------|--|
| <b>Personal precautions</b> | Ensure adequate ventilation. Use personal protective equipment as required. Avoid breathing vapors or mists. |
| <b>Other information</b>    | Refer to protective measures listed in Sections 7 and 8.   |

**Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

**7. Handling and storage****Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Avoid breathing vapors or mists. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Store away from other materials.

**8. Exposure controls/personal protection****Control parameters****Exposure Limits**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical name          | Alberta  | British Columbia    | Ontario             | Quebec   |
|------------------------|--|---------------------|---------------------|--|
| Naphthalene<br>91-20-3 | TWA: 10 ppm<br>TWA: 52 mg/m <sup>3</sup><br>STEL: 15 ppm<br>STEL: 79 mg/m <sup>3</sup><br>Skin | TWA: 10 ppm<br>Skin | TWA: 10 ppm<br>Skin | TWA: 10 ppm<br>TWA: 52 mg/m <sup>3</sup><br>STEL: 15 ppm<br>STEL: 79 mg/m <sup>3</sup> |

**Appropriate engineering controls**

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** If splashes are likely to occur, wear safety glasses with side-shields.

**Hand protection** Wear suitable gloves.

**Skin and body protection** Wear suitable protective clothing.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**General hygiene considerations** Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

|                       |                          |
|-----------------------|--------------------------|
| <b>Physical state</b> | Liquid                   |
| <b>Appearance</b>     | Liquid                   |
| <b>Color</b>          | No information available |
| <b>Odor</b>           | Slight amine-like        |
| <b>Odor threshold</b> | No information available |

| <u>Property</u>                                | <u>Values</u>   | <u>Remarks • Method</u> |
|--|---|-------------------------|
| <b>pH</b>                                      | 2.7 - 3.7   | None known              |
| <b>Melting point / freezing point</b>          | No data available                                       | None known              |
| <b>Initial boiling point and boiling range</b> | No data available                                       | None known              |
| <b>Flash point</b>                             | > 100 °C / 212 °F                                       | None known              |
| <b>Evaporation rate</b>                        | No data available                                       | None known              |
| <b>Flammability</b>                            | No data available                                       | None known              |
| <b>Flammability Limit in Air</b>               |   | None known              |
| <b>Upper flammability or explosive limits</b>  | No data available                                       |                         |
| <b>Lower flammability or explosive limits</b>  | No data available                                       |                         |
| <b>Vapor pressure</b>                          | <1 x 10 <sup>-4</sup> mPa (40°C) (bromoxynil octanoate) | None known              |
| <b>Relative vapor density</b>                  | No data available                                       | None known              |
| <b>Relative density</b>                        | No data available                                       | None known              |
| <b>Water solubility</b>                        | No data available                                       | None known              |
| <b>Solubility in other solvents</b>            | No data available                                       | None known              |
| <b>Partition coefficient</b>                   | log Pow = 5.9 (pH 7) (25°C)<br>(bromoxynil octanoate)   | None known              |
| <b>Autoignition temperature</b>                | No data available                                       | None known              |
| <b>Decomposition temperature</b>               |   | None known              |
| <b>Kinematic viscosity</b>                     | 8.82 cSt  | None known              |
| <b>Dynamic viscosity</b>                       | No data available                                       | None known              |

### Other information

|                             |                                   |
|-----------------------------|-----------------------------------|
| <b>Explosive properties</b> | No information available.         |
| <b>Oxidizing properties</b> | No information available.         |
| <b>Softening point</b>      | No information available          |
| <b>Molecular weight</b>     | No information available          |
| <b>VOC content</b>          | No information available          |
| <b>Liquid Density</b>       | 1.12 – 1.16 g/mL (9.4-9.7 lb/gl)* |
| <b>Bulk density</b>         | No information available          |

\*Listed density is an approximate value and does not necessarily represent that of a specific batch

## 10. Stability and reactivity

### Reactivity

No information available.

### Chemical stability

Stable under normal conditions.

### Possibility of hazardous reactions

None under normal processing.

### Conditions to avoid

Excessive heat.

### Incompatible materials

None known based on information supplied.

**Hazardous decomposition products** None known based on information supplied.

## 11. Toxicological information

### Information on likely routes of exposure

#### Product Information

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Specific test data for the substance or mixture is not available. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause irritation of respiratory tract. Harmful by inhalation. (based on components). |
| <b>Eye contact</b>  | Specific test data for the substance or mixture is not available. May cause irritation.   |
| <b>Skin contact</b> | Repeated exposure may cause skin dryness or cracking.   |
| <b>Ingestion</b>    | Specific test data for the substance or mixture is not available. Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways. (based on components).   |

### Symptoms related to the physical, chemical and toxicological characteristics

|                 |  |
|-----------------|--|
| <b>Symptoms</b> | Difficulty in breathing. Coughing and/ or wheezing. Dizziness. |
|-----------------|--|

### Acute toxicity

#### Numerical measures of toxicity

|                        |              |
|------------------------|--------------|
| <b>Oral LD50</b>       | > 700 mg/kg  |
| <b>Dermal LD50</b>     | > 5050 mg/kg |
| <b>Inhalation LC50</b> | > 2.34 mg/l  |

#### Component Information

| Chemical name   | Oral LD50                                   | Dermal LD50   | Inhalation LC50                     |
|---|---|---|-------------------------------------|
| Solvent Naphtha (Petroleum), Heavy Aromatic<br>64742-94-5 | > 5000 mg/kg ( Rat )                        | > 2 mL/kg ( Rabbit )  | > 590 mg/m <sup>3</sup> ( Rat ) 4 h |
| MCPA Ethylhexyl Ester<br>29450-45-1                       | = 1300 mg/kg ( Rat )                        | -   | -                                   |
| Bromoxynil octanoate<br>1689-99-2                         | = 238 mg/kg ( Rat )<br>= 250 mg/kg ( Rat )  | = 1310 mg/kg ( Rabbit ) = 1675 mg/kg ( Rabbit ) > 2 mg/kg ( Rat ) | -                                   |
| Naphthalene<br>91-20-3                                    | = 1110 mg/kg ( Rat )<br>= 490 mg/kg ( Rat ) | = 1120 mg/kg ( Rabbit ) > 20 g/kg ( Rabbit )                      | > 340 mg/m <sup>3</sup> ( Rat ) 1 h |

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

|  |  |
|--|--|
| <b>Skin corrosion/irritation</b>         | Slightly irritating to the skin.                   |
| <b>Serious eye damage/eye irritation</b> | Moderately irritating to the eyes.                 |
| <b>Respiratory or skin sensitization</b> | Did not cause sensitization on laboratory animals. |
| <b>Germ cell mutagenicity</b>            | No information available.                          |
| <b>Carcinogenicity</b>                   | No information available.                          |

| Chemical name          | ACGIH | IARC     | NTP                    | OSHA |
|------------------------|-------|----------|------------------------|------|
| Naphthalene<br>91-20-3 | A3    | Group 2B | Reasonably Anticipated | X    |

**IARC (International Agency for Research on Cancer)**  
Group 2B - Possibly Carcinogenic to Humans

Group 2B\*: Not carcinogenic in rats or mice. Listed as Category 2B by the International Agency for Research on Cancer (IARC) but expert opinion based on weight of evidence is that classification as a carcinogen is not warranted.

**Reproductive toxicity** Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. Suspected of damaging fertility or the unborn child.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** May be fatal if swallowed and enters airways.

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

| Chemical name  | Algae/aquatic plants  | Fish  | Toxicity to microorganisms | Crustacea   |
|--|---|---|----------------------------|---|
| Solvent Naphtha (Petroleum), Heavy Aromatic 64742-94-5 | EC50: =2.5mg/L (72h, Skeletonema costatum)  | LC50: =19mg/L (96h, Pimephales promelas)<br>LC50: =2.34mg/L (96h, Oncorhynchus mykiss)<br>LC50: =1740mg/L (96h, Lepomis macrochirus)<br>LC50: =45mg/L (96h, Pimephales promelas)<br>LC50: =41mg/L (96h, Pimephales promelas)            | -                          | EC50: =0.95mg/L (48h, Daphnia magna)  |
| MCPA Ethylhexyl Ester 29450-45-1                       | EC50: =0.46mg/L (72h, Pseudokirchneriella subcapitata) EC50: =0.43mg/L (96h, Pseudokirchneriella subcapitata) | LC50: 3.2 - 4.6mg/L (96h, Lepomis macrochirus)<br>LC50: =3.2mg/L (96h, Oncorhynchus mykiss)<br>LC50: >0.55mg/L (96h, Lepomis macrochirus)   | -                          | EC50: =0.29mg/L (48h, Daphnia magna)  |
| Naphthalene 91-20-3                                    | EC50: =0.4mg/L (72h, Skeletonema costatum)  | LC50: 5.74 - 6.44mg/L (96h, Pimephales promelas) LC50: =1.6mg/L (96h, Oncorhynchus mykiss)<br>LC50: 0.91 - 2.82mg/L (96h, Oncorhynchus mykiss) LC50: =1.99mg/L (96h, Pimephales promelas) LC50: =31.0265mg/L (96h, Lepomis macrochirus) | -                          | LC50: =2.16mg/L (48h, Daphnia magna) EC50: =1.96mg/L (48h, Daphnia magna) EC50: 1.09 - 3.4mg/L (48h, Daphnia magna) |

**Persistence and degradability** No information available.

**Bioaccumulation** No information available.

### Component Information

| Chemical name  | Partition coefficient |
|--|-----------------------|
| Solvent Naphtha (Petroleum), Heavy Aromatic 64742-94-5 | 6.1                   |
| Naphthalene 91-20-3                                    | 3.6                   |

**Other adverse effects** No information available.

## 13. Disposal considerations

**Disposal methods**

|  |   |
|--|---|
| <b>Waste from residues/unused products</b> | Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. |
| <b>Contaminated packaging</b>              | Do not reuse empty containers.  |

**14. Transport information****TDG**

|                                   |  |
|-----------------------------------|--|
| <b>Notes</b>                      | <b>Section 1.45.1 of the TDG Regulations provides an exemption from documentation and safety marks only for this product and only when transported by a road or railway vehicle.</b> |
| <b>UN number or ID number</b>     | 3082   |
| <b>UN proper shipping name</b>    | Environmentally hazardous substance, liquid, n.o.s.  |
| <b>Transport hazard class(es)</b> | 9  |
| <b>Packing group</b>              | III  |
| <b>Description</b>                | UN3082 Environmentally hazardous substance, liquid, n.o.s., (MCPA Ester, bromoxynil), Class 9, PG III, Marine Pollutant  |

**IATA**

|                                   |  |
|-----------------------------------|--|
| <b>UN number or ID number</b>     | 3082   |
| <b>UN proper shipping name</b>    | Environmentally hazardous substance, liquid, n.o.s.  |
| <b>Transport hazard class(es)</b> | 9  |
| <b>Packing group</b>              | III  |
| <b>Technical Name</b>             | Bromoxynil octanoate, MCPA Ethylhexyl Ester  |
| <b>Description</b>                | UN3082 Environmentally hazardous substance, liquid, n.o.s., (MCPA Ester, bromoxynil), 9, III, Marine Pollutant |

**IMDG**

|                                   |   |
|-----------------------------------|---|
| <b>UN number or ID number</b>     | 3082  |
| <b>UN proper shipping name</b>    | Environmentally hazardous substance, liquid, n.o.s.   |
| <b>Transport hazard class(es)</b> | 9   |
| <b>Packing group</b>              | III   |
| <b>Marine pollutant</b>           | P   |
| <b>Description</b>                | UN3082, Environmentally hazardous substance, liquid, n.o.s., (MCPA Ester, bromoxynil), 9, III, Marine Pollutant |

**15. Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****International Regulations**

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

The Rotterdam Convention Not applicable

#### International Inventories

|                      |   |
|----------------------|---|
| <b>TSCA</b>          | Contact supplier for inventory compliance status. |
| <b>DSL/NDL</b>       | Contact supplier for inventory compliance status. |
| <b>EINECS/ELINCS</b> | Contact supplier for inventory compliance status. |
| <b>ENCS</b>          | Contact supplier for inventory compliance status. |
| <b>IECSC</b>         | Contact supplier for inventory compliance status. |
| <b>KECL</b>          | Contact supplier for inventory compliance status. |
| <b>PICCS</b>         | Contact supplier for inventory compliance status. |
| <b>AIIC</b>          | Contact supplier for inventory compliance status. |

#### **Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AIIC** - Australian Inventory of Industrial Chemicals

### 16. Other information

|             |                           |                       |                           |                              |
|-------------|---------------------------|-----------------------|---------------------------|------------------------------|
| <b>NFPA</b> | <b>Health hazards</b> 2   | <b>Flammability</b> 1 | <b>Instability</b> 0      | <b>Special hazards</b> -     |
| <b>HMIS</b> | <b>Health hazards</b> 2 * | <b>Flammability</b> 1 | <b>Physical hazards</b> 0 | <b>Personal protection</b> X |

#### Key or legend to abbreviations and acronyms used in the safety data sheet

#### **Legend Section 8: Exposure controls/personal protection**

|         |                             |      |                                  |
|---------|-----------------------------|------|----------------------------------|
| TWA     | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value         | *    | Skin designation                 |

#### **Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
 U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)  
 EPA (Environmental Protection Agency)  
 Acute Exposure Guideline Level(s) (AEGL(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)  
 Japan GHS Classification  
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
 NIOSH (National Institute for Occupational Safety and Health)  
 National Library of Medicine's ChemID Plus (NLM CIP)  
 National Library of Medicine's PubMed database (NLM PUBMED)  
 National Toxicology Program (NTP)  
 New Zealand's Chemical Classification and Information Database (CCID)  
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
 Organization for Economic Co-operation and Development Screening Information Data Set  
 World Health Organization

**Revision date** 28-Jun-2023

**Revision Note** No information available.

#### **Disclaimer**

**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage,**

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transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**