



## SAFETY DATA SHEET

SDS REVISIONS: Section 3  
Section 14

DATE OF ISSUE: 03/28/2019

**BROMAC**  
SUPERSEDES: 03/22/2018

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### Product identifier

**Product Name** BROMAC

#### Other means of identification

**Product Code** PST-0047  
**UN/ID no** UN3082  
**Document** 0886-2019  
**Synonyms** None  
**Registration Number(s)** 34704-886

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

**Recommended Use** Herbicide.  
**Uses advised against** No information available

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

**Manufacturer Address**  
LOVELAND PRODUCTS, INC.  
P.O. Box 1286  
Greeley, CO 80632-1286

#### Emergency telephone number

**Company Phone Number** 1-888-LPI-CUST (574-2878)  
**Emergency Telephone** Chemtrec 1-800-424-9300  
Medical Emergencies: 1-866-944-8565  
US regulations require reporting spills of this material that could reach any surface waters.  
The toll-free phone number for the US Coast Guard National Response Center is 1-800-424-8802

### 2. HAZARDS IDENTIFICATION

#### Classification

#### **OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4 - (H302)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin sensitization	Category 1 - (H317)
Carcinogenicity	Category 1B - (H350)
Reproductive toxicity	Category 2 - (H361)
Aspiration toxicity	Category 1 - (H304)
Flammable liquids	Category 4 - (H227)

#### Label elements



**Signal word**

**DANGER**



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### Hazard statements

H304 - May be fatal if swallowed and enters airways  
 H317 - May cause an allergic skin reaction  
 H350 - May cause cancer  
 H361 - Suspected of damaging fertility or the unborn child  
 H227 - Combustible liquid

### Precautionary Statements - Prevention

P201 - Obtain special instructions before use  
 P202 - Do not handle until all safety precautions have been read and understood  
 P281 - Use personal protective equipment as required  
 P264 - Wash face, hands and any exposed skin thoroughly after handling  
 P270 - Do not eat, drink or smoke when using this product  
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
 P271 - Use only outdoors or in a well-ventilated area  
 P272 - Contaminated work clothing should not be allowed out of the workplace  
 P280 - Wear protective gloves

### Precautionary Statements - Response

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
 P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 P330 - Rinse mouth  
 P331 - Do NOT induce vomiting  
 P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention  
 P363 - Wash contaminated clothing before reuse

### Precautionary Statements - Storage

P405 - Store locked up

### Precautionary Statements - Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

### Hazards not otherwise classified (HNOC)

Not applicable

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Mixture

Chemical Name	CAS No	Weight-%	GHS Classification	Trade Secret
Bromoxynil Octanoate	1689-99-2	15 - 40	Acute Tox. 4 (H302) Acute Tox. 3 (H331) Skin Sens. 1 (H317) Repr. 2 (H361d) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	*
Solvent naphtha (petroleum), heavy aromatic	64742-94-5	10 - 30	Asp. Tox. 1 (H304)	*
Naphthalene	91-20-3	1 - 5	Acute Tox. 4 (H302) Carc. 2 (H351) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	*

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.  
 OSHA Hazard Communication 29 CFR 1910.1200



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### 4. FIRST AID MEASURES

#### Description of first aid measures

<b>General advice</b>	Get medical attention if symptoms occur.
<b>Eye contact</b>	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
<b>Skin contact</b>	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
<b>Inhalation</b>	Remove to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable by mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
<b>Ingestion</b>	Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

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

**Symptoms** No information available.

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

**Treatment:** Treat symptomatically. Symptoms may be delayed. Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also call 1-866-944-8565 for emergency medical treatment information.

**Note to physicians** No specific antidote. Treat symptomatically.

**Antidotes** No data available

### 5. FIRE-FIGHTING MEASURES

#### Suitable extinguishing media

Use, Dry chemical, Carbon dioxide (CO<sub>2</sub>), Water spray (fog), Alcohol resistant foam

**Unsuitable extinguishing media** Do not use a solid water stream as it may scatter and spread fire.

#### Specific hazards arising from the chemical

In the event of fire and/or explosion do not breathe fumes. May cause sensitization in susceptible persons. Thermal decomposition can lead to release of irritating and toxic gases and vapors. Keep product and empty container away from heat and sources of ignition. Risk of ignition.

#### Explosion data

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

#### Protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.



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### 6. ACCIDENTAL RELEASE MEASURES

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

**Personal precautions** Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Evacuate personnel to safe areas. Pay attention to flashback. Take precautionary measures against static discharges.

#### Environmental precautions

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

#### Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up** Cover liquid spill with sand, earth or other non-combustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Sweep up and shovel into suitable containers for disposal. Soak up with inert absorbent material. Dam up. Pick up and transfer to properly labeled containers. Take precautionary measures against static discharges.

### 7. HANDLING AND STORAGE

#### Precautions for safe handling

**Advice on safe handling** Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. Use with local exhaust ventilation. All equipment used when handling the product must be grounded. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).

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

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat. Keep in properly labeled containers.

**Incompatible materials** Strong oxidizing agents. Acids. Bases.



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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

Exposure Guidelines

#### Appropriate engineering controls

Engineering Controls            Showers  
   Eyewash stations  
   Ventilation systems.

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

**Eye/face protection**            Tight sealing safety goggles.

**Skin and body protection**        Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Respiratory protection**            Dependent on job function. If vapors or dusts exceed acceptable levels, wear a MSHA/NIOSH approved air-purifying respirator with any cartridges/filters approved for pesticides. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection Standard. Wear a supplied air respirator if exposure concentrations are unknown.

**General Hygiene Considerations**    When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wash hands thoroughly after handling. Keep away from food, drink and animal feeding stuffs.



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### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Liquid
Color	Amber
Odor	Hydrocarbons
Odor threshold	No data available

<u>Property</u>	<u>Values (Remarks - Method)</u>
pH	3.6 - 3.7 (NEAT)
Melting point / freezing point	No data available
Boiling point	No data available
Flash point	74 °C / 165 °F (Tag Closed Cup)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Flammability Limit in Air	
Upper flammability limit:	No data available
Lower flammability limit:	No data available
Vapor pressure	No data available
Vapor density	No data available
Specific Gravity	1.108 - 1.12 g/ml
Water solubility	Emulsifies
Solubility in other solvents	No data available
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Kinematic viscosity	No data available
Dynamic viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

#### Other Information

VOC Content (%)	No data available
Density	9.25 - 9.35lbs/gal

**Note:** These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.



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### 10. STABILITY AND REACTIVITY

#### **Reactivity**

No data available

#### **Chemical stability**

Stable under recommended storage conditions.

#### **Possibility of Hazardous Reactions**

None under normal processing.

#### **Conditions to avoid**

Heat, flames and sparks.

#### **Incompatible materials**

Strong oxidizing agents. Acids. Bases.

#### **Hazardous Decomposition Products**

Carbon oxides. Nitrogen oxides (NOx). Hydrogen chloride. Hydrogen bromide.



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### 11. TOXICOLOGICAL INFORMATION

**Acute toxicity of the formulated product:**

Chemical Name	Oral LD <sub>50</sub>	Dermal LD <sub>50</sub>	Inhalation LC <sub>50</sub>
Bromoxynil Octanoate	= 238 mg/kg ( Rat ) = 250 mg/kg ( Rat )	= 1675 mg/kg ( Rabbit ) > 2 mg/kg ( Rat )	
Solvent naphtha (petroleum), heavy aromatic	> 5000 mg/kg ( Rat )	> 2 mL/kg ( Rabbit )	> 590 mg/m <sup>3</sup> ( Rat ) 4 h
Naphthalene	= 1110 mg/kg ( Rat ) = 490 mg/kg ( Rat )	(= 1120 mg/kg ( Rabbit ) > 20 g/kg ( Rabbit )	> 340 mg/m <sup>3</sup> ( Rat ) 1 h

Chemical Name	Skin corrosion/irritation	Eye damage/irritation	Respiratory sensitization	Skin sensitization
Bromoxynil Octanoate 1689-99-2				Category 1

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

**Germ cell mutagenicity**

No information available.

**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Naphthalene 91-20-3	A3	Group 2B	Reasonably Anticipated	X

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*A3 - Animal Carcinogen*

*IARC (International Agency for Research on Cancer)*

*Group 2B - Possibly Carcinogenic to Humans*

*NTP (National Toxicology Program)*

*Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

*X - Present*

**Reproductive toxicity**

No information available.

**STOT - single exposure**

No information available.

**STOT - repeated exposure**

No information available.

**Chronic toxicity**

Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.

Target Organ Effects blood, Central nervous system, Eye damage/irritation, kidney, liver, Skin.

**Aspiration hazard**

No information available.

**Information on likely routes of exposure**

**Product Information**

No data available

**Inhalation**

No data available.

**Eye contact**

No data available.

**Skin contact**

No data available.

**Ingestion**

No data available.





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**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Solvent naphtha (petroleum), heavy aromatic 64742-94-5	EC50 2.5 mg/L 72 h Skeletonema costatum	LC50 19 mg/L 96 h Pimephales promelas LC50 2.34 mg/L 96 h Oncorhynchus mykiss LC50 1740 mg/L 96 h Lepomis macrochirus LC50 45 mg/L 96 h Pimephales promelas LC50 41 mg/L 96 h Pimephales promelas	EC50 0.95 mg/L 48 h Daphnia magna
Naphthalene 91-20-3	EC50 0.4 mg/L 72 h Skeletonema costatum	LC50 5.74 - 6.44 mg/L 96 h Pimephales promelas LC50 1.6 mg/L 96 h Oncorhynchus mykiss LC50 0.91 - 2.82 mg/L 96 h Oncorhynchus mykiss LC50 1.99 mg/L 96 h Pimephales promelas LC50 31.0265 mg/L 96 h Lepomis macrochirus	LC50 2.16 mg/L 48 h Daphnia magna EC50 1.96 mg/L 48 h Daphnia magna EC50 1.09 - 3.4 mg/L 48 h Daphnia magna

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

**Other adverse effects**

No information available



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**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of wastes**

Wastes may be disposed of on site or at an approved waste disposal facility. Triple rinse (or equivalent), adding rinse water to spray tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at <http://www.acrecycle.org/>. Do not contaminate water, food or feed by storage or disposal.

**Contaminated packaging**

Do not reuse container.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Naphthalene 91-20-3	U165	Included in waste streams: F024, F025, F034, F039, K001, K035, K060, K087, K145	-	U165

Chemical Name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Naphthalene 91-20-3	-	-	Toxic waste waste number F025 Waste description: Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	-

**14. TRANSPORT INFORMATION**

**Note:**

119 GALLONS OR LESS: NOT REGULATED

**DOT**

<b>UN/ID no</b>	UN3082
<b>Proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>U.S. Surface Freight Classification:</b>	COMPOUND, TREE OR WEED KILLING, NOI (NMFC 50320, SUB 2: CLASS: 60)
<b>Hazard Class</b>	9
<b>Packing Group</b>	III
<b>Reportable Quantity (RQ)</b>	Naphthalene: RQ kg= 1816.00
<b>Special Provisions</b>	8, 146, 173, 335, IB3, T4, TP1, TP29
<b>Emergency Response Guide Number</b>	171



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**15. REGULATORY INFORMATION**

<u><b>NFPA</b></u>	<b>Health hazards</b> 2	<b>Flammability</b> 2	<b>Instability</b> 0	<b>Physical and Chemical Properties</b> -
<u><b>HMIS</b></u>	<b>Health hazards</b> 2	<b>Flammability</b> 2	<b>Physical hazards</b> 0	<b>Personal protection</b> X
	<b>0 - Least</b>	<b>1 - Slight</b>	<b>2 - Moderate</b>	<b>3 - High</b>
			<b>3 - High</b>	<b>4 - Severe</b>

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Bromoxynil Octanoate - 1689-99-2	1.0
Naphthalene - 91-20-3	0.1

**SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire hazard</b>	Yes
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Naphthalene 91-20-3	100 lb	X	X	X

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Naphthalene 91-20-3	100 lb 1 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ RQ 1 lb final RQ RQ 0.454 kg final RQ

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Bromoxynil Octanoate - 1689-99-2	Developmental
Naphthalene - 91-20-3	Carcinogen

**US EPA Waste Number** U165

**U.S. EPA Label Information**

**EPA Registration Number** 34704-886

**EPA Statement**

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 for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:



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**CAUTION**

**Difference between SDS and EPA Pesticide label**

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing.

**16. OTHER INFORMATION**

**Prepared By** Product Stewardship and Regulatory Affairs

**Reviewed By** Safety, Health and Environment

**Issue Date** 03/28/2019

**Revision Date** 03/28/2019

**Revision Note**  
2 SDS sections updated

**BROMAC** is a registered trademark of Loveland Products, Inc.

**Disclaimer**

This safety data sheet was developed from information on the constituent materials identified herein and does not relate to the use of such materials in combination with any other material or process. No warranty is expressed or implied with respect to the completeness or ongoing accuracy of the information contained in this data sheet, and LOVELAND PRODUCTS, INC. disclaims all liability for reliance on such information. This data sheet is not a guarantee of safety. Users are responsible for ensuring that they have all current information necessary to safely use the product described by this data sheet for their specific purpose.

**End of Safety Data Sheet**