SAFETY DATA SHEET

BROMAC

SDS REVISIONS: Section 3 Section 14 **DATE OF ISSUE: 03/28/2019** **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**

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

4. FIRST AID MEASURES

Description of first aid measures

General advice Get medical attention if symptoms occur.

Eye contact 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.

Skin contact 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.

Inhalation 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.

Ingestion 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.

Self-protection of the first aider 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_2), 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.

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.

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.

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

Property	**Values (Remarks - Method)**
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.

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.

11. TOXICOLOGICAL INFORMATION

Acute toxicity of the formulated product:

Chemical Name	Oral LD_{50}	Dermal LD_{50}	Inhalation LC_{50}
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/m³ (Rat) 4 h
Naphthalene	= 1110 mg/kg (Rat) = 490 mg/kg (Rat)	= 1120 mg/kg (Rabbit) > 20 g/kg (Rabbit)	> 340 mg/m³ (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.

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

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

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

15. REGULATORY INFORMATION

NFPA	**Health hazards** 2	**Flammability** 2	**Instability** 0	**Physical and Chemical Properties** -
HMIS	**Health hazards** 2	**Flammability** 2	**Physical hazards** 0	**Personal protection** X

0 - Least **1 - Slight** **2 - Moderate** **3 - High** **4 - Severe**

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

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	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:

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

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