

Safety Data Sheet (SDS)

Issue Date: 20-Nov-2020

Version 3

1. IDENTIFICATION

Product	identifier
Product	Name

Bromotril[®] 240 EC

Other means of identification SDS #

ADAMA-316 BROMOXYNIL 240 EC (C9 Version)

Registration Number(s) UN/ID No

28276 (Pest Control Products Act) UN1993

Recommended use of the chemical and restrictions on use **Recommended Use** Herbicide

Details of the supplier of the safety data sheet

Registrant ADAMA Agricultural Solutions Canada Ltd. 300-191 Lombard Avenue Winnipeg, Manitoba R3B 0X1 1-855-264-6262

Emergency telephone number **Emergency Telephone**

For fire, spill and/or leak contact INFOTRAC: 1-800-535-5053 (North America) 1-352-323-3500 (International) For medical emergencies and health/safety inquiries, contact ProPharma Group: 1-877-250-9291

2. HAZARD IDENTIFICATION

This chemical is a product registered under the Pest Control Products Act (PCPA) of Canada and is subject to certain labeling requirements under federal law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-PCPA registered chemicals. Please see Section 15 for additional information. This product has been classified according to Canada's Hazardous Product Regulations (WHMIS 2015).

Appearance: Amber liquid

Physical state: Liquid

Odor: Phenolic and hydrocarbon

Classification	
Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 2
Aspiration toxicity	Category 1
Flammable Liquids	Category 3





Signal Word DANGER

Hazard statement(s) Harmful if swallowed

Toxic if inhaled Causes serious eye irritation Causes skin irritation May cause an allergic skin irritation Suspected of causing cancer May be fatal if swallowed and enters airways Flammable liquid and vapour

Precautionary Statements - Prevention

Obtain special instructions before use Do not handle until all safety precautions have been read and understood Use personal protective equipment as required 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/spray Use only outdoors or in a well-ventilated area Contaminated work clothing must not be allowed out of the workplace Keep away from heat/sparks/open flames/hot surfaces. — No smoking

Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention IF ON SKIN: Wash with plenty of soap and water Take off contaminated clothing and wash before reuse If skin irritation or rash occurs: Get medical advice/attention Wash contaminated clothing before reuse IF INHALED: Remove person to fresh air and keep comfortable for breathing Call a POISON CENTER or doctor/physician IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell Rinse mouth Do NOT induce vomiting

In case of fire: Use CO₂, dry chemical, alcohol-resistant foam, and water spray for extinction

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up Keep out of reach of children

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight %
Solvent naphtha (petroleum), light aromatic	64742-95-6	50-60
Bromoxynil octanoate (octanoic acid,2,6-dibromo-	1689-99-2	33-36
4-cyanophenyl ester)		
Naphthalene	91-20-3	<1

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Description of first aid measures

General Advice	When possible, have the product label or product name and Pest Control Product Registration Number with you when calling a poison control center or doctor or going for treatment.
Eye Contact	Hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre 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 centre or doctor for treatment advice.
Inhalation	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.
Ingestion	Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
Most important symptoms a	and effects, both acute and delayed
Symptoms	Harmful if swallowed. Toxic if inhaled. Causes skin irritation. Causes serious eye irritation.

Indication of any immediate medical attention and special treatment needed

and enters airways.

Notes to Physician	This product contains petroleum distillates at greater than 10%, vomiting may cause		
	aspiration pneumonia. This product may cause serious eye irritation. Treat symptomatically.		

May cause an allergic skin reaction. Suspected of causing cancer. May be fatal if swallowed

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Foam (alcohol resistant preferred). Carbon dioxide (CO₂). Dry chemical. Water spray (fog).

Unsuitable Extinguishing Not determined. Media

Specific Hazards Arising from the Chemical

When heated above the flash point, this material emits vapors which, when mixed with air, can burn or be explosive. Heavier than air, vapors may travel to an ignition source.

Hazardous combustion products	Hydrogen bromide, other bromine compounds, carbon dioxide, carbon monoxide, oxides of nitrogen, oxides of sulfur and other potentially toxic combustion products may be present.
Explosion Data	
Sensitivity to Mechanical Impact	No sensitivity expected based on similar products.
Sensitivity to Static Discharge	Sensitivity possible based on solvent data.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Evacuate area of unprotected personnel. Remain upwind of fire to avoid hazardous vapors and decomposition products. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Wear protective clothing as described in Section 8 of this safety data sheet. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Environmental precautions

Environmental precautions	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: Disposal Considerations.

Methods and material for containment and cleaning up

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

Methods for Clean-Up Surround and absorb spills with inert material such as perlite, clay granules, vermiculite, sand or dirt. Contain all affect material in a closed, labeled container for proper disposal. Isolate from other waste materials. Clean contaminated area such as hard surfaces with detergent and water, collecting cleaning solution for proper disposal. Large spills to soil or similar surfaces may necessitate removal of top soil.

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. Use personal protection recommended in Section 8. Avoid breathing vapors or mists. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not contaminate water, food or feed by storage, disposal or by cleaning equipment. Open and handle container with care. Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
	with care. Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Protect from freezing. Keep containers tightly closed in a dry, cool and well-ventilated place, but ideally not below 0°C/ 32°F (This BROMOTRIL formulation will solidify at temperatures below -20°C but will become usable at temperatures above 0°C). Store locked up. Keep out of the reach of children. Keep/store only in original container. Do not use food or drink containers for mixing or storage. Keep away from food, drink an animal feeding stuffs.	
Packaging Materials	Do not reuse container.	
Incompatible Materials	Avoid contact with strong acidic, basic or oxidizing agents.	

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Naphthalene	TWA: 10 ppm	TWA: 10 ppm	IDLH: 250 ppm
	S*	TWA: 50 mg/m ³	TWA: 10 ppm
		(vacated) TWA: 10 ppm	TWA: 50 mg/m ³
		(vacated) TWA: 50 mg/m ³	STEL: 15 ppm
		(vacated) STEL: 15 ppm	STEL: 75 mg/m ³
		(vacated) STEL: 75 mg/m ³	-

Appropriate engineering controls

Engineering Controls Please refer to the product label. Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Use splash goggles or face shield when contact may occur.

Skin and Body Protection Chemical-resistant gloves such as nitrile. Long sleeved shirt, long pants, socks and shoes suggested as minimum work clothing. Coveralls or a chemical-resistant apron should also be worn when open pouring from containers greater than 5L. Use other equipment appropriate

to specific situations.

Respiratory Protection	Ensure adequate ventilation, especially in confined areas. Wear an appropriate NIOSH/MSHA approved respirator if ventilation is inadequate.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Characteristic phenolic and hydrocarbon
Appearance	Amber Liquid	Odor Threshold	Not determined
<u>Property</u> pH Melting Point/Freezing Poir Boiling Point/Boiling Range		<u>Values</u> Approximately 4-5 (1% aqueous) Approx20°C/-4°F NA	<u>Remarks • Method</u>
Flash Point Evaporation Rate Flammability (Solid, Gas) Flammability Limits in Air Upper Flammability Limit Lower Flammability Limit Vapor Pressure Vapor Density	s	43.3°C/ 109.9°F NA Liquid-Not applicable NA NA NA	Pensky-Martens Closed Cup
Relative Density Water Solubility Solubility in other solvents Partition Coefficient Auto-ignition Temperature Decomposition Temperature Kinematic Viscosity Dynamic Viscosity Explosive Properties Oxidizing Properties		Approx. 1.042 g/mL Product is emulsifiable in water NA Not determined NA Not determined Not determined Not determined Not determined Not determined Not determined	(Water = 1)

Other information

NA

NA

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to Avoid

See Sec. 7 Handling & Storage.

Incompatible materials

Avoid contact with strong acidic, basic or oxidizing agents.

Hazardous decomposition products

Hydrogen bromide. Other bromine compounds. Hydrogen chloride. Other chlorine compounds. Carbon dioxide (CO₂). Carbon

monoxide. Oxides of nitrogen. Oxides of sulfur and other potentially toxic combustion products may be present.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye Contact	Causes serious eye irritation.
Skin Contact	Causes skin irritation.
Inhalation	Toxic if inhaled.
Ingestion	Harmful if swallowed.

Component Information

Chemical name	Oral LD₅₀	Dermal LD ₅₀	Inhalation LC ₅₀
Solvent naphtha (petroleum), light	3492 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	> 6193 mg/m³ (Rat) 4 h
aromatic			
Bromoxynil octanoate (octanoic	= 250 mg/kg (Rat) = 238 mg/kg	= 1675 mg/kg (Rabbit) > 2 mg/kg	-
acid,2,6-dibromo-4-cyanophenyl	(Rat)	(Rat)	
ester)			
Naphthalene	= 1110 mg/kg (Rat) = 490 mg/kg	= 1120 mg/kg (Rabbit) > 20 g/kg	> 340 mg/m³ (Rat) 1 h
	(Rat)	(Rabbit)	

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms

Please see section 4 of this SDS for symptoms.

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

Reproductive toxicity	Suspected of damaging fertility or the unborn child.
Carcinogenicity	Suspected of causing cancer.
Sensitization	May cause an allergic skin reaction.
Aspiration hazard	May be fatal if swallowed and enter airways

Chemical Name	ACGIH	IARC	NTP	OSHA
Naphthalene	A3	Group 2B	Reasonably Anticipated	Х

Legend

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

Numerical measures of toxicity

Acute Inhalation LC₅₀ (Rat): >500 mg/L (4-hr) Acute Oral LD₅₀ (Rat): >2000 mg/Kg (female) Acute Dermal LD₅₀ (Rat): 1 mg/Kg **Eye Irritation**: Severely irritating **Dermal Irritation**: Moderately irritating **Dermal Sensitization**: Skin sensitizing

12. ECOLOGICAL INFORMATION

Ecotoxicity

This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning equipment.

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Solvent naphtha (petroleum), light	72 h EC ₅₀ : <i>Pseudokirchneriella</i>	96 h LC ₅₀ : Oncorhynchus mykiss	48 h EC ₅₀ : <i>Daphnia magna</i>
aromatic	<i>subcapitata</i> (green algae) 2.9 mg/L	(rainbow trout) 9.2 mg/L	(water flea) 3.2 mg/L
Naphthalene	72 h EC ₅₀ : Skeletonema costatum	96 h LC ₅₀ : Pimephales promelas	48 h LC ₅₀ : Daphnia magna 2.16
	(phytoplankton) 0.4 mg/L	5.74 - 6.44 mg/L flow-through	mg/L
		96 h LC ₅₀ : Pimephales promelas	48 h EC ₅₀ : Daphnia magna 1.09

1.99 mg/L static - 3.4 mg/L static
96 h LC ₅₀ : Pimephales promelas 48 h EC ₅₀ : Daphnia magna 1.96
45 mg/L flow-through mg/L flow-through
96 h LC ₅₀ : <i>Lepomis macrochirus</i>
31.0265 mg/L static
96 h LC ₅₀ : Oncorhynchus mykiss
0.91 - 2.82 mg/L static
96 h LC ₅₀ : Oncorhynchus mykiss
1.6 mg/L flow-through

Persistence/Degradability Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical name	Partition coefficient
Solvent naphtha (petroleum), light aromatic	2.9 - 6.1
Naphthalene	3.6

<u>Other Adverse Effects</u> No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected.

	13. DISPOSAL CONSIDERATIONS
Waste Treatment Methods	
Disposal of Wastes	Follow container label instructions for disposal of wastes generated during use in compliance with the product label. Dispose in accordance with all local, state/provincial and federal regulations.
Contaminated Packaging	Follow advice on product label. Do not re-use empty containers. Triple rinse containers. Puncture container to avoid re-use. Consult state and local regulations regarding the proper disposal of container.
	14. TRANSPORT INFORMATION
<u>Note</u>	The transport classification(s) and information provided in this section are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by mode of transportation, container volume and package sizes. The transportation of materials and related activities are subject to all applicable laws, rules and requirements of regional and/or country regulations. Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.
<u>DOT</u> UN/ID No	UN1993
Proper Shipping Name	Flammable liquid, N.O.S. (contains aromatic hydrocarbons, Bromoxynil), 3, PGIII, Marine Pollutant
Hazard class	3
Packing Group Marine Pollutant	III Yes This product has a flash point above 38 °C (100 °F) therefore it is a combustible liquid and a marine pollutant . Refer to CFR 49 Section 173.150 - Exceptions for Class 3 (flammable and combustible liquids).
IATA UN number	UN1993

Proper Shipping Name Transport hazard class(es) Packing Group Marine Pollutant	Flammable liquid, N.O.S. (contains aromatic hydrocarbons, Bromoxynil), 3, PGIII, Marine Pollutant 3 III Yes
IMDG UN number Proper Shipping Name Transport hazard class(es) Packing Group Marine Pollutant	UN1993 Flammable liquid, N.O.S. (contains aromatic hydrocarbons, Bromoxynil), 3, PGIII, Marine Pollutant 3 III Yes
TDG UN/ID No Proper Shipping Name Hazard class Packing Group Marine Pollutant	UN1993 Flammable liquid, N.O.S. (contains aromatic hydrocarbons, Bromoxynil), 3, PGIII, Marine Pollutant 3 III Yes As per section 1.33 of the TDG Regulations, a partial exemption from TDG documentation and safety marks is permitted for amounts ≤450 L of this product and only when transported by road or railway vehicle.

Section 1.33 of the TDG Regulations provides an exemption (Class 3, Flammable Liquids General Exemption) from Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment), Part 6 (Training), Part 7 (Emergency Response Assistance Plan), Part 9 (Road) and Part 10 (Rail) for the handling, offering for transport or transporting of dangerous goods included in Class 3, Flammable Liquids, on a road vehicle, a railway vehicle or a vessel on a domestic voyage.

NB. Many of the substances assigned to hazard Classes 1 to 9 are deemed, without additional labelling, as being environmentally hazardous.

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Naphtha (petroleum), light aromatic	х	х	Х		х	Present	х	Х
Bromoxynil octanoate (octanoic acid,2,6-dibromo-4-cyanophenyl ester)		X	Х					Х
Naphthalene	Х	Х	Х	Present	Х	Present	Х	Х

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - 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

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

CERCLA

Chemical Name	Hazardous Substances RQs	Reportable Quantity (RQ)
Naphthalene	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

<u>SARA 313</u>

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold
			Values %
Bromoxynil octanoate (octanoic acid,2,6-dibromo-4-	1689-99-2	33-36	1.0
cyanophenyl ester)			
Naphthalene	91-20-3	<1	0.1

CWA (Clean Water Act)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Naphthalene	100 lb	X	Х	Х

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	California Proposition 65
Bromoxynil octanoate (octanoic acid,2,6-dibromo-4-cyanophenyl ester)	Developmental
Naphthalene	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Bromoxynil octanoate (octanoic	Х		
acid,2,6-dibromo-4-cyanophenyl			
ester)			
Naphthalene	Х	X	Х

CANADIAN REGULATIONS

There are Canada-specific environmental requirements for handling, use and disposal of this pest control product that are indicated on the product label.

Hazardous Products Regulations Information:

This product has been classified in accordance with the amended *Hazardous Products Act* (HPA) and the Hazard Criteria of the *Hazardous Products Regulations* (HPR), and the SDS contains all the information required by the HPR.

Hazardous Products Act Information:

Pest control products, as defined in subsection 2(1) of the *Pest Control Products Act* (PCPA), are excluded from the application of the *Hazardous Products Act* (that is, pest control products are exempt from the supplier labelling and SDS requirements of the *Hazardous Products Act and Regulations*). This product is exempt under WHMIS 2015 but has voluntarily been classified according to the WHMIS 2015 standard.

Pest Control Products Act Registration Number: 28276

Read the approved label, authorized under the Pest Control Products Act, prior to using or handling the pest control product.

Product Statement

This chemical is a pest control product registered and regulated by Health Canada's Pest Management Regulatory Agency (PMRA) and is subject to certain labelling requirements under the *Pest Control Products Act*. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets, and for workplace labels of non-PCPA registered chemicals. Read the approved label, authorized under the *Pest Control Products Act*, prior to using or handling the pest control product. The following is the hazard information required on the pest control product label:

PCPA Label Hazard Communications

WARNING POISON WARNING EYE IRRITANT KEEP OUT OF THE REACH OF CHILDREN

Causes eye irritation, DO NOT get in eyes. Avoid contact with skin and clothing. Harmful or fatal if swallowed.

Difference between SDS and Pest Control Products Act label

PCPA	SDS

Signal Word	Warning Poison	Danger
Acute toxicity - Oral	Harmful or fatal if swallowed	Harmful if swallowed
Acute toxicity - Inhalation	NA	Toxic if inhaled
Acute toxicity - Dermal	Avoid contact with skin and clothing	N/A
Serious Eye Damage/Eye Irritation	Causes eye irritation	Causes serious eye irritation
Skin Corrosion/Irritation	N/A	Causes skin irritation
Skin sensitization	N/A	May cause an allergic skin reaction
Carcinogenicity	N/A	Suspected of causing cancer
Aspiration	N/A	May be fatal if swallowed and enters airways

16. OTHER INFORMATION

<u>NFPA</u> HMIS	Health Hazards 2 Health Hazards Not determined	Flammability 2 Flammability Not determined	Instability 0 Physical hazards Not determined	Special Hazards Not determined Personal Protection See Section 8
Issue Date:	20-Nov-2020			

Revision Date:20-N00-2020Revision Date:26-Feb-2021Revision Note:Corrections to section 14.

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, 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