



SAFETY DATA SHEET

ABZOL® EG Cleaner

Preparation Date : 10-Mar-2015

Revision Date: 23-Dec-2015

Revision Number: 2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Name ABZOL® EG Cleaner

Other means of identification

Chemical Family Alkyl Bromide

CAS-No Mixture

Recommended use of the chemical and restrictions on use

General function Cleaners containing n-propyl bromide are for use in confined systems or into applications where human exposure is controlled.

Uses advised against No information available

Details of the supplier of the safety data sheet

Company Albemarle Corporation
451 Florida Street
Baton Rouge, LA 70801

For Non-Emergency 800-535-3030

'Competent Body for SDS' HSE@Albemarle.com

Emergency telephone number

Emergency Telephone Numbers +1-225-344-7147

2. HAZARDS IDENTIFICATION

Classification

Skin Corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3 - (H335,H336)
Specific target organ toxicity (repeated exposure)	Category 2
Acute aquatic toxicity	Category 3
Chronic aquatic toxicity	Category 3

Label elements

Emergency Overview

Danger

Hazard Statements

Causes skin irritation
Causes serious eye damage
May cause cancer
May damage fertility or the unborn child
May cause respiratory irritation. May cause drowsiness or dizziness
May cause damage to organs through prolonged or repeated exposure
Harmful to aquatic life with long lasting effects

**Physical state** Liquid.**Color** Clear, Colourless.**Odor** Characteristic**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 breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Avoid release to the environment

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
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Rinse mouth Drink plenty of water

Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture

Mixture

Component	CAS-No	Weight %
1-bromopropane; n-propyl bromide	106-94-5	93.4-94.6
propan-1-ol; n-propanol	71-23-8	2.8-3.2
1,3-dioxolane	646-06-0	1.8-2.2
nitroethane	79-24-3	<1
1,2-epoxybutane	106-88-7	0.4-0.6

Note: The exact concentrations of the above listed chemicals are being withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures****Eye contact**

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact

After contact with skin, wash immediately with plenty of water. Remove contaminated clothing and shoes. Seek medical advice.

Inhalation

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.

Ingestion

Rinse mouth with water. Give 500 ml water to drink. Do not induce vomiting. Seek medical advice.

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

No information available.

Indication of any immediate medical attention and special treatment needed**Notes to Physician**

Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Extinguishing media**

Suitable extinguishing media Carbon dioxide, dry chemicals, foam, water spray (mist).

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical

Combustion/explosion hazards No information available.

Hazardous Combustion Products

High temperatures may liberate toxic or corrosive gases. Do not breathe smoke or vapours.

Explosion Data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

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.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures****Personal precautions**

Wear suitable protective equipment.

Environmental Precautions**Environmental precautions**

Prevent product from entering drains. Contain any spill with dikes or absorbents to prevent migration and entry into sewers or streams.

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

Take up small spills with dry chemical absorbent. Large spills may be taken up with pump or vacuum and finished off with dry chemical absorbent. May require excavation of contaminated soil.

7. HANDLING AND STORAGE

Precautions for safe handling**Handling**

Avoid contact with skin, eyes and clothing. Avoid exposure to moisture.

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

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Mechanical ventilation is recommended.

Incompatible Materials

None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure Guidelines**

Component	CAS-No	ACGIH TLV (TWA)	OSHA PEL (TWA)	NIOSH IDLH
1-bromopropane; n-propyl bromide	106-94-5	TWA: 0.1 ppm	-	-
propan-1-ol; n-propanol	71-23-8	TWA: 100 ppm	TWA: 200 ppm TWA: 500 mg/m ³ (vacated) TWA: 200 ppm (vacated) TWA: 500 mg/m ³ (vacated) STEL: 250 ppm (vacated) STEL: 625 mg/m ³	IDLH: 800 ppm TWA: 200 ppm TWA: 500 mg/m ³ STEL: 250 ppm STEL: 625 mg/m ³
1,3-dioxolane	646-06-0	TWA: 20 ppm	-	-
nitroethane	79-24-3	TWA: 100 ppm	TWA: 100 ppm TWA: 310 mg/m ³ (vacated) TWA: 100 ppm (vacated) TWA: 310 mg/m ³	IDLH: 1000 ppm TWA: 100 ppm TWA: 310 mg/m ³
1,2-epoxybutane	106-88-7	-	-	-

Appropriate engineering controls**Engineering Controls**

Showers.
Eyewash stations.
Ventilation systems.

Individual protection measures, such as personal protective equipment**Eye/face Protection**

Safety glasses, chemical goggles, or face shield, depending on potential exposure.

Skin Protection

If skin contact or contamination of clothing is likely, protective clothing should be worn.

Hand protection

Gloves resistant to chemical permeation.

Respiratory protection

Full facepiece approved respirator fitted with an organic vapour canister.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid.
Color	Clear, Colourless.
Odor	Characteristic
Odor Threshold	No information available
Molecular Weight	No information available
pH	Not available
Melting point/freezing point	No data available
Boiling Point/Range	70.3 °C / 159 °F
Flash Point	None (TCC)
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	8vol%
Lower flammability limit:	4vol%
Vapor Pressure	17998.47 Pa (25°C)
Vapor Density	No data available
Relative density	1.304
Solubility(ies)	
Water Solubility	Slightly soluble.
Solubility in other solvents	No information available
Partition coefficient :	
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Dynamic viscosity	No information available
Explosive Properties	No information available
Oxidizing Properties	No information available

10. STABILITY AND REACTIVITY

Reactivity Hazard	No data available.
Stability	Stable under normal conditions.
Hazardous Reactions	No hazardous reaction expected under normal handling.
Conditions to Avoid	Vapors can be ignitable within a narrow concentration range of 3% to 9% by volume in air. Avoid contact with high energy spark, flame or high intensity source of heat.
Materials to avoid	Strong alkalies, oxidizers and reactive metals (i.e. potassium sodium etc.). Prolonged contact with free water may result in corrosion and diminished stabilizer levels.
Hazardous decomposition products	Oxides of carbon and nitrogen, Bromine, Hydrogen bromide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Irritating to respiratory system.
Eye contact	Irritating to eyes.
Skin Contact	Irritating to skin.

Ingestion Not expected to be acutely toxic.

Potential Health Effects

Acute Effects

Skin Corrosion/irritation May cause skin irritation.

Serious eye damage/eye irritation Irritating to eyes.

Respiratory irritation : No data available

Sensitization Not sensitizing.

STOT - single exposure May cause respiratory irritation. May cause drowsiness or dizziness.

Chronic Effects

Mutagenic Effects No information available.

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

Component	CAS-No	ACGIH Carcinogens	IARC	NTP	OSHA Carcinogens
1-bromopropane; n-propyl bromide	106-94-5	A3	-	Reasonably Anticipated	X
propan-1-ol; n-propanol	71-23-8	-	-	-	-
1,3-dioxolane	646-06-0	-	-	-	-
nitroethane	79-24-3	-	-	-	-
1,2-epoxybutane	106-88-7	-	Group 2B	-	X

Reproductive Effects Suspected of damaging fertility or the unborn child.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Chronic Effects Longterm overexposure may cause adverse effects in the liver, respiratory system, kidney, reproductive system, and central nervous system.

Target Organ Effects Central nervous system (CNS), Liver, Respiratory system, Kidney, Reproductive System.

Aspiration hazard No information available.

Numerical measures of toxicity

Product Information

No information available.

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (dermal) 102304 mg/kg

Component Information No information available.

Component	Rat Oral LD50:	Rabbit Dermal LD50:	Rat Dermal LD50 :	Rat Inhalation LC50:
1-bromopropane; n-propyl bromide 106-94-5	> 2000 mg/kg bw	-	> 2000 mg/kg bw	= 253 g/m ³ (Rat) 30 min
propan-1-ol; n-propanol 71-23-8	> 2000 mg/kg	4049 mg/kg		> 13548 ppm (Rat) 4 h
1,3-dioxolane 646-06-0	> 2000 mg/kg	8480 µL/kg		= 20650 mg/m ³ (Rat) 4 h
nitroethane 79-24-3	1083 mg/kg	> 2000 mg/kg		-
1,2-epoxybutane 106-88-7	> 1000 - < 2000 mg/kg	1757 mg/kg		6300 mg/m ³ (4 h)

Other data May cause Central Nervous System (CNS) depression at high doses; this may cause dizziness, loss of balance, slurred speech and unconsciousness. Toxic effects on the liver and lung may be exerted at doses causing anesthesia.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects

Component	Freshwater Algae EC50/72h :	Freshwater Fish LC50/96h :	Water Flea EC50/48h :
1-bromopropane; n-propyl bromide (CAS #: 106-94-5)	72.3 mg/l	24.3 mg/L	99.3 mg/l
propan-1-ol; n-propanol (CAS #: 71-23-8)	-	4480 mg/L	3339 mg/L
1,3-dioxolane (CAS #: 646-06-0)	> 877 mg/l	-	> 772 mg/l
1,2-epoxybutane (CAS #: 106-88-7)	> 500 mg/L	> 100 mg/L	69.8 mg/L

Persistence/Degradability No information available.

Bioaccumulation/ Accumulation No information available.

Mobility in Environmental Media No information available.

Component	Partition coefficient :
1-bromopropane; n-propyl bromide 106-94-5	2.1
propan-1-ol; n-propanol 71-23-8	0.25 - 0.34
1,3-dioxolane 646-06-0	-0.37
1,2-epoxybutane 106-88-7	0.416

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Method Dispose in a safe manner in accordance with local/national regulations.

Contaminated Packaging Do not reuse container.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	NOT REGULATED FOR TRANSPORTATION
Hazard Class	Not regulated
UN No.	Not regulated
Packing Group	Not regulated
Description	Not regulated

IMDG/IMO

IMO Class	Not regulated
UN-No	Not regulated
IMO Labelling and Marking	Not regulated
Proper Shipping Name	Not regulated
Marpol - Annex II	Not regulated
Marpol - Annex III	Not regulated
Transport Description	Not regulated

IATA/ICAO

IATA/ICAO Class	Not regulated
Packing Group	Not regulated
UN-No	Not regulated
IATA/ICAO Labelling/Marking	Not regulated
Passenger Aircraft	Not regulated
Cargo aircraft only	Not regulated
Proper shipping name	Not regulated
Transport Description	Not regulated

15. REGULATORY INFORMATION

International Inventories	TSCA	DSL	NDSL	AICS	EINECS	ENCS	KECL	PICCS	IECSC	NZIoC	TCSI
ABZOL® EG Cleaner	X	X	-	-	X	X	X	X	X	X	X

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:

Component	Weight %	SARA 313 - De minimis
1-bromopropane; n-propyl bromide (CAS #: 106-94-5)	93.4-94.6	0.1
1,2-epoxybutane (CAS #: 106-88-7)	0.4-0.6	0.1

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Reportable and Threshold Planning Quantities

The following components have RQs and/or TPQs under SARA and/or CERCLA

Component	CERCLA RQ, lbs	SARA 302 RQ, lbs	SARA 302 TPQ, lbs
1,2-epoxybutane (CAS #: 106-88-7)	100 lb	-	-

State Right-to-Know

This product contains the following chemicals regulated in the states listed below.

Component	California Prop. 65	New Jersey	Massachusetts	Pennsylvania

1-bromopropane; n-propyl bromide (CAS #: 106-94-5)	Developmental Female Reproductive Male Reproductive	X	X	X
propan-1-ol; n-propanol (CAS #: 71-23-8)	-	X	X	X
1,3-dioxolane (CAS #: 646-06-0)	-	X	X	X
nitroethane (CAS #: 79-24-3)	-	X	X	X
1,2-epoxybutane (CAS #: 106-88-7)	-	X	X	X

16. OTHER INFORMATION

NFPA	Health 2	Flammability 1	Instability 0	Physical Hazards -
HMIS	Health 2	Flammability 1	Physical Hazards 0	

Prepared By Health & Environment Department Albemarle Corporation

FOR ADDITIONAL NONEMERGENCY PRODUCT INFORMATION, CONTACT:

HEALTH AND ENVIRONMENT DEPARTMENT
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451 FLORIDA ST.
BATON ROUGE, LA. 70801
(800) 535-3030

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Disclaimer:

The information contained herein is accurate to the best of our knowledge. The Company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances.

End of Safety Data Sheet