

ALBEMARLE®

SAFETY DATA SHEET

PORCIBROM™

Preparation Date : 14-Apr-2016

Revision Date: 20-Dec-2018

Revision Number 2

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

Product Identifier

Product Name PORCIBROM™

Other means of identification

CAS-No 77-48-5

Formula C5H6Br2N2O2

Recommended use of the chemical and restrictions on use

General function Pork carcass antimicrobial.

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 Albemarle Corporation
451 Florida Street
Baton Rouge, LA 70801

Albemarle Chemical Canada
1600, 421-7th Avenue, SW
Calgary, Alberta
Canada T2P 4K9

For Non-Emergency 800-535-3030

'Competent Body for SDS' HSE@Albemarle.com

Emergency telephone number

Emergency Telephone Numbers In case of emergency, call Albemarle emergency response at +1 225 344 7147

2. HAZARDS IDENTIFICATION

Classification

Acute Toxicity - Oral	Category 4
Skin Corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Acute aquatic toxicity	Category 1
Oxidizing solids	Category 3
Corrosive to metals	Category 1

Label elements

Emergency Overview

Danger

Hazard Statements

Harmful if swallowed

Causes skin irritation

Causes serious eye irritation

Very toxic to aquatic life
 May intensify fire; oxidizer
 May be corrosive to metals



Physical state Solid

Color White, Off-white.

Odor Halogen.

Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Wear protective gloves/protective clothing/eye protection/face protection
 Avoid release to the environment
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 Keep/Store away from clothing/combustible materials
 Take any precaution to avoid mixing with combustibles
 Keep only in original container

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

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

IF INHALED: Move to fresh air.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell Rinse mouth

In case of fire: Use CO₂, dry chemical, or foam for extinction

Collect spillage

Absorb spillage to prevent material damage

Storage

Store in corrosive resistant container with a resistant inner liner

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture

Substance

Component	CAS-No	Weight %
1,3-Dibromo-5,5-dimethyl hydantoin	77-48-5	100

4. FIRST AID MEASURES

First aid measures

Eye contact	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.
Skin contact	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.
Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Ingestion	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.

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 (fog).

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical

Combustion/explosion hazards May intensify fire; oxidizer.

Hazardous Combustion Products Oxides of carbon, Bromine.

Explosion Data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Protective Equipment and Precautions for Firefighters

Toxic fumes may be present; use of respirator suggested.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with the skin and the eyes. Ventilate the area. Do not breathe dust. Wash thoroughly after handling Do not eat, drink or smoke when using this product Use personal protective equipment. Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Environmental Precautions

Environmental precautions Prevent spilled substance from entering water supplies or water courses. Do not discharge into drains or the environment, dispose to an authorised waste collection point.

Methods and material for containment and cleaning up

Methods for Containment Collect spillage. Absorb spillage to prevent material damage.

Methods for Cleaning up Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid dust formation. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Keep away

from heat, sparks and open flame. - No smoking. Keep away from clothing and other combustible materials. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities

Storage

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid exposure to moisture. Mechanical ventilation is recommended. Keep only in original container. Store in corrosive resistant container with a resistant inner liner. Local exhaust is needed at source of dust.

Incompatible Materials

This product is a strong oxidizing and brominating agent. Avoid contact with reducing agents, acids, ammonia-containing products, organic materials (such as aldehydes and alcohols) and other oxidizing agents (such as calcium hypochlorite). Avoid contact with common metals such as aluminum, iron, copper, brass and steel. Contact with incompatible materials can promote the exothermic decomposition of the product. Take any precaution to avoid mixing with combustibles.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Component	CAS-No	ACGIH TLV (TWA)	OSHA PEL (TWA)	NIOSH IDLH
1,3-Dibromo-5,5-dimethyl hydantoin	77-48-5	-	-	-

Component	CAS-No	Alberta	British Columbia	Ontario	Quebec
1,3-Dibromo-5,5-dimethyl hydantoin	77-48-5	-	-	-	-

Other information Wear suitable protective clothing.

Appropriate engineering controls

Engineering Controls Use in closed system.

Individual protection measures, such as personal protective equipment

Eye/face Protection Chemical goggles and face shield.

Skin Protection Wear suitable protective equipment.

Hand protection Gloves resistant to chemical permeation.

Respiratory protection Whenever workplace conditions warrant, wear properly fitted, approved respirator with high-efficiency (dust/fume/mist) filter cartridges.

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	Solid
Color	White, Off-white.
Odor	Halogen.
Odor Threshold	No data available
Molecular Weight	286
pH	6.0 - 7.0 (1% slurry in pH 7 water)
Melting point/freezing point	188 °C / 370 - °F
Boiling Point/Range	No data available
Flash Point	Not applicable
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
Density	1.0 (bulk)
Solubility(ies)	
Water Solubility	approx 0.1%
Solubility in other solvents	No data available
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity, kinematic	No data available
Dynamic viscosity	No data available
Explosive Properties	No data available
Oxidizing Properties	Oxidizer

10. STABILITY AND REACTIVITY

Reactivity Hazard	No data available.
Stability	Stable.
Hazardous Reactions	No hazardous reaction expected under normal handling.
Hazardous Polymerization	None under normal processing.
Conditions to Avoid	Avoid extremely high heat. Avoid high temperatures and open flames. Keep away from humidity.
Materials to avoid	This product is a strong oxidizing and brominating agent. Avoid contact with reducing agents, acids, ammonia-containing products, organic materials (such as aldehydes and alcohols) and other oxidizing agents (such as calcium hypochlorite). Avoid contact with common metals such as aluminum, iron, copper, brass and steel. Contact with incompatible materials can promote the exothermic decomposition of the product.
Hazardous decomposition products	Carbon oxides, Bromine.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Not expected to be acutely toxic.
Eye contact	Causes serious eye irritation.
Skin contact	Causes skin irritation.
Ingestion	Harmful if swallowed.

Potential Health Effects

Acute Effects

Skin Corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory irritation	No information available
Sensitization:	Not sensitizing. (guinea pig).

STOT - single exposure No information available.

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
1,3-Dibromo-5,5-dimethyl hydantoin	77-48-5	-	-	-	-

Reproductive Effects No information available.

STOT - repeated exposure No information available.

Chronic Effects No information available

Aspiration hazard No information available.

Numerical measures of toxicity

Product Information

LD50 Oral: Rat Oral LD50: 760 mg/kg bw
LD50 Dermal: Rabbit Dermal LD50: > 2000 mg/kg bw
Inhalation LC50: Rat Inhalation LC50: 29.4 mg/L (1h) (dust)

Component Information

Component	Rat Oral LD50:	Rabbit Dermal LD50:	Rat Dermal LD50 :	Rat Inhalation LC50:
1,3-Dibromo-5,5-dimethyl hydantoin 77-48-5	760 mg/kg bw	> 2000 mg/kg	-	29.4 mg/l (1h)

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life

LC50/48h/Fish : 0.53 mg/L
EC50/48h/Daphnia : 0.7 mg/L

Component	Freshwater Algae EC50/72h :	Freshwater Fish LC50/96h :	Water Flea EC50/48h :
1,3-Dibromo-5,5-dimethyl hydantoin (CAS #: 77-48-5)	-	0.53 mg/l	0.7 mg/l

Persistence/Degradability No information available.

Bioaccumulation/ Accumulation No information available.

Mobility in Environmental Media No information available.

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 Oxidizing solid, corrosive, n.o.s. (1,3-Dibromo-5,5-dimethyl hydantoin)
Hazard Class 5.1
UN No. 3085
Packing Group II
Marine Pollutant: Yes
Description UN 3085 Oxidizing solid, corrosive, n.o.s. (1,3-Dibromo-5,5-dimethyl hydantoin), 5.1 (8), II

TDG

This material is considered as Dangerous Goods per regulations of Transport Canada. The use of the above US DOT information from US 49 CDR regulations is allowed for shipments that originate in the United States.

IMDG/IMO

IMO Class 5.1
Packing Group II
UN-No 3085
IMO Labelling and Marking 5.1 + 8 + Marine Pollutant Marking
Proper Shipping Name Oxidizing solid, corrosive, n.o.s. (1,3-Dibromo-5,5-dimethyl hydantoin)
EmS F-A, S-Q
Marpol - Annex II Not applicable
Marpol - Annex III Marine pollutant
Transport Description UN 3085 Oxidizing solid, corrosive, n.o.s. (1,3-Dibromo-5,5-dimethyl hydantoin), 5.1 (8), II, Marine pollutant

IATA/ICAO

IATA/ICAO Class 5.1
Packing Group II
UN-No 3085
IATA/ICAO Labelling/Marking 5.1 + 8 + 'Environmentally hazardous substance' mark
Passenger Aircraft Maximum net quantity per package: 5 kg
Cargo aircraft only Maximum net quantity per package: 25 kg
Proper shipping name Oxidizing solid, corrosive, n.o.s. (1,3-Dibromo-5,5-dimethyl hydantoin)
Transport Description UN 3085 Oxidizing solid, corrosive, n.o.s. (1,3-Dibromo-5,5-dimethyl hydantoin), 5.1 (8), II, Environmentally hazardous substance

15. REGULATORY INFORMATION											
International Inventories	TSCA	DSL	NDSL	AICS	EINECS	ENCS	KECL	PICCS	IECSC	NZIoC	TCSI
PORCIBROM™	X	X	-	X	X	X	X	X	X	X	X

(X) Complies (-) Does not Comply

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazardous Categorization

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

Reportable and Threshold Planning Quantities

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

State Right-to-Know

No components subject to "Right-To-Know" legislation in the following States; California, Massachusetts, New Jersey, and Pennsylvania.

16. OTHER INFORMATION

NFPA	Health 3	Flammability 1	Instability 1	Physical Hazards OX
HMIS	Health 3	Flammability 1		Physical Hazards 1

Prepared By Health & Environment Department Albemarle Corporation

FOR ADDITIONAL NONEMERGENCY PRODUCT INFORMATION, CONTACT:

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

Preparation Date : 14-Apr-2016

Revision Date: 20-Dec-2018

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