

ALBEMARLE®

SAFETY DATA SHEET

Clarifect

Preparation Date : 24-Apr-2015

Revision Date: 20-Dec-2018

Revision Number 2

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

Product Identifier

Product Name Clarifect

Other means of identification

Chemical Family Stabilized bromine biocide, aqueous solution
CAS-No Mixture

Recommended use of the chemical and restrictions on use

General function Water treatment chemical.
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 In case of emergency, call Albemarle emergency response at +1 225 344 7147

2. HAZARDS IDENTIFICATION

Classification

Skin Corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Acute aquatic toxicity	Category 2
Corrosive to metals	Category 1

Label elements

Emergency Overview

Danger

Hazard Statements

Causes severe skin burns and eye damage
Toxic to aquatic life
May be corrosive to metals



Physical state Liquid	Color Yellow. Orange.	Odor Mild.
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Prevention

Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection
 Avoid release to the environment
 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
 Immediately call a POISON CENTER or doctor/physician
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 Wash contaminated clothing before reuse
 IF INHALED: Remove person to fresh air and keep comfortable for breathing Immediately call a POISON CENTER or doctor/physician
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
 Absorb spillage to prevent material damage

Storage

Store locked up
 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

May be harmful if swallowed. May be harmful in contact with skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture Mixture

Component	CAS-No	Weight %
Water	7732-18-5	60-70
Halogenated Complex	Proprietary.	18-20
Unreacted alkali metal base	Proprietary.	<10

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

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison control center or doctor for treatment advice.

Skin contact

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.

Inhalation

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

Symptoms

Causes severe skin burns and eye damage.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical

Combustion/explosion hazards No information available.

Hazardous Combustion Products Bromine, Chlorine.

Explosion Data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Protective Equipment and Precautions for Firefighters

In the event of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Do not breathe dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling Use personal protective equipment. Keep only in original container

Environmental Precautions

Environmental precautions Contain any spill with dikes or absorbents to prevent migration and entry into sewers or streams. Large spills should be collected mechanically (remove by pumping) for disposal. May require excavation of contaminated soil. Take up small spills by first diluting with water and then using a dehalogenating agent such as sodium thiosulfate solution.

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 Soak up with inert absorbent material (e.g. sand, silica gel, universal binder, sawdust)

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Avoid contact with skin, eyes and clothing. Do not breathe dust/fume/gas/mist/vapors/spray Wash face, hands and any exposed skin thoroughly after handling Use personal protective equipment as required

Conditions for safe storage, including any incompatibilities

Storage Avoid freezing, excessive heat or exposure to light, especially direct sunlight. If heating is necessary to prevent freezing, care must be taken to prevent overheating. Precautions should be taken to ensure that the average product temperature is maintained below 43 °C. Temperature monitoring is recommended. At elevated temperatures, self-heating can lead to vigorous gas generation and over-pressurization of storage containers if appropriate controls are not in place. Avoid exposure of this product to incompatible materials/chemicals (see Stability and Reactivity section). Use of incompatible materials can promote the exothermic decomposition of the product. In extreme cases, this could result in vigorous gas formation and over-pressurization of the storage container. STORAGE CONTAINER: Vented and opaque containers: As the product ages, activity is gradually lost and pressure can build-up in the headspace

(nitrogen); therefore, the product should be stored in vented containers. Product should also be stored in opaque containers to prevent exposure to light. To maximize product shelf life, store the product in an opaque container, in a cool, dry, well-ventilated area. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Incompatible Materials

This product is strongly basic and an oxidizing agent. Avoid contact with alcohols, aldehydes, strong reducing agents, strong oxidizers, acids, ammonia-containing products, and common metals such as steel, aluminum, iron and copper. Use of incompatible materials can promote the exothermic decomposition of the product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure Guidelines**

Component	CAS-No	ACGIH TLV (TWA)	OSHA PEL (TWA)	NIOSH IDLH
Water	7732-18-5	-	-	-
Halogenated Complex	-	-	-	-
Unreacted alkali metal base	-	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³

Component	CAS-No	Alberta	British Columbia	Ontario	Quebec
Water	7732-18-5	-	-	-	-
Halogenated Complex	-	-	-	-	-
Unreacted alkali metal base	-	Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³	CEV: 2 mg/m ³	Ceiling: 2 mg/m ³

Other information

Wear suitable protective clothing.

Appropriate engineering controls**Engineering Controls**

Use only in well-ventilated areas.

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

Chemical goggles or face shield with safety glasses.

Skin Protection

Wear protective gloves/clothing.

Hand protection

Gloves resistant to chemical permeation.

Respiratory protection

None under normal conditions.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES
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Information on basic physical and chemical properties

Physical state	Liquid
Color	Yellow. Orange.
Odor	Mild.
Odor Threshold	No data available
Molecular Weight	No data available
pH	12.4 (min.)
Melting point/freezing point	0 °C / 32 - °F
Boiling Point/Range	106 °C / 223 - °F
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	2533.118 Pa (25°C)
Vapor Density	No data available
Density	1.29 - 1.37 (25°C)
Solubility(ies)	
Water Solubility	Miscible.
Solubility in other solvents	No data available
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity, kinematic	~2 cSt (25°C)
Dynamic viscosity	~2.7 cPs (25°C)
Explosive Properties	No data available
Oxidizing Properties	Oxidizer

10. STABILITY AND REACTIVITY

Reactivity Hazard	No data available.
Stability	No information available
Hazardous Reactions	No hazardous reaction expected under normal handling.
Hazardous Polymerization	None under normal processing.
Conditions to Avoid	Extremes of temperature and direct sunlight. Keep away from heat. Freezing.
Materials to avoid	This product is strongly basic and an oxidizing agent. Avoid contact with alcohols, aldehydes, strong reducing agents, strong oxidizers, acids, ammonia-containing products, and common metals such as steel, aluminum, iron and copper. Use of incompatible materials can promote the exothermic decomposition of the product.
Hazardous decomposition products	Bromine, Chlorine.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Not expected to be acutely toxic.
Eye contact	Causes severe burns.
Skin contact	Causes severe burns.
Ingestion	May be harmful if swallowed.

Potential Health Effects

Acute Effects

Skin Corrosion/Irritation	Data obtained from tests on used product. Skin irritation. (rabbit). (4 hr): Causes severe burns.
Serious eye damage/eye irritation	Causes severe eye damage.
Respiratory irritation	No data available
Sensitization:	Data obtained from tests on used product: Buehler Test. (guinea pig): Not sensitizing.
STOT - single exposure	No information available.

Chronic Effects

Mutagenic Effects	No information available.
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Carcinogenicity There are no known carcinogenic chemicals in this product.

Component	CAS-No	ACGIH Carcinogens	IARC	NTP	OSHA Carcinogens
Water	7732-18-5	-	-	-	-
Halogenated Complex	-	-	-	-	-
Unreacted alkali metal base	-	-	-	-	-

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

Data obtained from tests on used product:

LD50 Oral:

Rat Oral LD50: 2491 mg/kg

LD50 Dermal:

Rat Dermal LD50: > 2000 mg/kg

Inhalation LC50:

Rat Inhalation LC50: > 20.37 mg/L (4h) (aerosol)

Component Information

No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life.

LC50/96h/fish: 3.8 mg whole material/L (Bluegill sunfish)

EC50/48h/Daphnia : 4.8 mg whole material/L (Waterflea Daphnia magna)

IC50/96-hour: 2.6 mg whole material/L (Unicellular Green Alga, Selenastrum capricornutum)

Persistence/Degradability Inorganic substance.

Bioaccumulation/ Accumulation Not likely to bioaccumulate.

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 Corrosive Liquids, Basic, Inorganic, N.O.S. (Halogenated Complex, Sodium Hydroxide)
Hazard Class 8
UN No. 3266
Packing Group III
Description UN 3266 Corrosive liquid, Basic, Inorganic, N.O.S. (Halogenated complex, Sodium hydroxide), 8, III

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 8
Packing Group III
UN-No 3266
IMO Labelling and Marking 8
Proper Shipping Name Corrosive liquid, Basic, Inorganic, N.O.S. (Halogenated complex, Sodium hydroxide)
EmS F-A, S-B
Marpol - Annex II Not determined
Marpol - Annex III Unregulated
Transport Description UN 3266 Corrosive liquid, Basic, Inorganic, N.O.S. (Halogenated complex, Sodium hydroxide), 8, III

IATA/ICAO

IATA/ICAO Class 8
Packing Group III
UN-No 3266
IATA/ICAO Labelling/Marking 8
Passenger Aircraft Forbidden (Product is shipped in containers with vented caps)
Cargo aircraft only Forbidden (Product is shipped in containers with vented caps)
Proper shipping name Corrosive liquid, Basic, Inorganic, N.O.S. (Halogenated complex, Sodium hydroxide)
Transport Description UN 3266 Corrosive liquid, Basic, Inorganic, N.O.S. (Halogenated complex, Sodium hydroxide), 8, III

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

(X) Complies (-) Does not Comply

THIS MATERIAL IS EXEMPT FROM THE TOXIC SUBSTANCES CONTROL ACT (15 USC 2601-2629)

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

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
Unreacted alkali metal base (CAS #:)	1000 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
Unreacted alkali metal base (CAS #.)	-	X	X	X

16. OTHER INFORMATION

NFPA	Health 3	Flammability 0	Instability 0	Physical Hazards -
HMIS	Health 3	Flammability 0	Physical Hazards 0	

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 : 24-Apr-2015

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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