

SAFETY DATA SHEET**Product Trade Name:** BE-7™**Revision Date:** 27-Apr-2015**Revision Number:** 6**1. Identification****1.1. Product Identifier**

Product Trade Name: BE-7™
Synonyms: None
Chemical Family: Inorganic
Internal ID Code HM006370

1.2 Recommended use and restrictions on use

Application: Biocide
Uses Advised Against No information available

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier Halliburton Energy Services, Inc.
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000

Prepared By Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number

Emergency Telephone Number (281) 575-5000

2. Hazard(s) Identification**2.1 Classification in accordance with paragraph (d) of §1910.1200**

Skin Corrosion / Irritation	Category 1 B - H314
Serious Eye Damage / Eye Irritation	Category 1 - H318
Acute Aquatic Toxicity	Category 1 - H400
Chronic Aquatic Toxicity	Category 2 - H411
Substances/mixtures corrosive to metal	Category 1 - H290

2.2. Label Elements**Hazard Pictograms****Signal Word**

Danger

Hazard Statements

H290 - May be corrosive to metals
 H314 - Causes severe skin burns and eye damage
 H318 - Causes serious eye damage
 H400 - Very toxic to aquatic life
 H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements**Prevention**

P234 - Keep only in original container
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray
 P264 - Wash face, hands and any exposed skin thoroughly after handling
 P273 - Avoid release to the environment
 P280 - Wear protective gloves/eye protection/face protection

Response

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 P363 - Wash contaminated clothing before reuse
 P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 P310 - Immediately call a POISON CENTER or doctor/physician
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P390 - Absorb spillage to prevent material damage
 P391 - Collect spillage

Storage

P405 - Store locked up
 P406 - Store in corrosive resistant container with a resistant inner liner.

Disposal

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains**Substances**

Sodium hypochlorite
 Sodium hydroxide

CAS Number

7681-52-9
 1310-73-2

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Sodium hypochlorite	7681-52-9	10 - 30%	Skin Corr. 1B (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Ox. Liq. 2 (H272) Met. Corr. 1 (H290)
Sodium hydroxide	1310-73-2	1 - 5%	Skin Corr. 1A (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Met. Corr. 1 (H290)

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First-Aid Measures

4.1. Description of first aid measures

Inhalation	If inhaled, move victim to fresh air and seek medical attention.
Eyes	Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.
Skin	In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.
Ingestion	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treatment based on sound judgment of physician and individual reactions of patient.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture

Special Exposure Hazards

Decomposition in fire may produce toxic gases. Reacts with metals to generate flammable hydrogen gas.

5.3 Special protective equipment and precautions for fire-fighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation. Evacuate all persons from the area.

See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove. Hypochlorite can be broken down by covering it with a reducing agent such as sodium sulfite or sodium thiosulfate.

7. Handling and storage

7.1. Precautions for Safe Handling

Handling Precautions

Remove sources of ignition. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Ensure adequate ventilation. Launder contaminated clothing before reuse. Use appropriate protective equipment.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities**Storage Information**

Store away from acids. Store away from reducing agents. Store in a cool well ventilated area. Store away from direct sunlight. Keep container closed when not in use. Store between 59 F (15 C) and 84 F (29 C). Keep from freezing. Product has a shelf life of up to 6 months at 60F or lower.

8. Exposure Controls/Personal Protection**8.1 Occupational Exposure Limits**

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Sodium hypochlorite	7681-52-9	Not applicable	Not applicable
Sodium hydroxide	1310-73-2	2 mg/M3	2 mg/M3

8.2 Appropriate engineering controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

8.3 Individual protection measures, such as personal protective equipment

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Acid gas respirator with a dust/mist filter. In high concentrations, supplied air respirator or a self-contained breathing apparatus.

Hand Protection Impervious rubber gloves. Nitrile gloves. Neoprene gloves. Viton gloves Butyl rubber gloves.

Skin Protection Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

Eye Protection Splashproof chemical monogoggles or safety glasses with side shields in conjunction with a face shield.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. Physical and Chemical Properties**9.1. Information on basic physical and chemical properties**

Physical State: Liquid **Color:** Clear light yellow
Odor: Pungent **Odor** No information available
Threshold:

Property

Values

Remarks/ - Method

pH:

11-13

Freezing Point/Range

-13.6 °C / 7.5 °F

Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	No data available
Flammability (solid, gas)	No data available
upper flammability limit	No data available
lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	12 mmHg
Vapor Density	No data available
Specific Gravity	1.21
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%)	No data available
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10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions

Will Not Occur

10.4. Conditions to Avoid

Avoid contact with hydrochloric acid. Can react to release chlorine gas. Contact with certain metals produces hydrogen gas. Hazards increase greatly if material is allowed to dry.

10.5. Incompatible Materials

Strong acids. Contact with metals. Ammonium compounds. Organic matter. Cyanides. Alcohols. Nitrogen compounds. Cellulose. Ethyleneimine.

10.6. Hazardous Decomposition Products

Hydrogen chloride. Chlorine. Hypochlorous acid. Flammable hydrogen gas. Sodium oxides. Oxygen. Chlorine dioxide. Sodium chlorate

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics**Acute Toxicity**

Inhalation	May cause respiratory irritation.
Eye Contact	Causes severe eye burns.
Skin Contact	Causes severe burns.

Ingestion

Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

11.3 Toxicity data**Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hypochlorite	7681-52-9	8200 mg/kg (Rat) 1110 mg/kg (Rat)	> 10000 mg/kg (Rabbit)	>5.25 mg/L (Rat)
Sodium hydroxide	1310-73-2	No data available	1350 mg/kg (Rabbit)	No data available

Substances	CAS Number	Skin corrosion/irritation
Sodium hypochlorite	7681-52-9	Skin, rabbit: May cause severe skin irritation.
Sodium hydroxide	1310-73-2	Causes severe burns

Substances	CAS Number	Eye damage/irritation
Sodium hypochlorite	7681-52-9	Eye, rabbit: May cause moderate eye irritation.
Sodium hydroxide	1310-73-2	Causes severe eye burns (Rabbit)

Substances	CAS Number	Skin Sensitization
Sodium hypochlorite	7681-52-9	Did not cause sensitization on laboratory animals (guinea pig)
Sodium hydroxide	1310-73-2	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Sodium hypochlorite	7681-52-9	No information available
Sodium hydroxide	1310-73-2	No information available

Substances	CAS Number	Mutagenic Effects
Sodium hypochlorite	7681-52-9	In vivo tests did not show mutagenic effects.
Sodium hydroxide	1310-73-2	Did not show mutagenic effects in animal experiments In vitro tests did not show mutagenic effects

Substances	CAS Number	Carcinogenic Effects
Sodium hypochlorite	7681-52-9	Did not show carcinogenic effects in animal experiments
Sodium hydroxide	1310-73-2	No data of sufficient quality are available.

Substances	CAS Number	Reproductive toxicity
Sodium hypochlorite	7681-52-9	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Sodium hydroxide	1310-73-2	No information available

Substances	CAS Number	STOT - single exposure
Sodium hypochlorite	7681-52-9	May cause disorder and damage to the Respiratory system. Mucous Membrane Gastrointestinal tract (GI)
Sodium hydroxide	1310-73-2	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Sodium hypochlorite	7681-52-9	No significant toxicity observed in animal studies at concentration requiring classification.
Sodium hydroxide	1310-73-2	No significant toxicity observed in animal studies at concentration requiring classification. Not applicable due to corrosivity of the substance.

Substances	CAS Number	Aspiration hazard
Sodium hypochlorite	7681-52-9	Not applicable
Sodium hydroxide	1310-73-2	Not applicable

12. Ecological Information**12.1. Toxicity**

Ecotoxicity Effects

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Sodium hypochlorite	7681-52-9	EC50 0.095 mg/L (Skeletonema costatum) EC50 (72h) 0.03565 mg/L (Pseudokirchnerella subcapitata)	LC50 0.06 - 0.11 mg/L (Pimephales promelas) LC50 (96h) 0.2 mg/L (Salmo gairdneri) NOEC (28d) 0.04 mg CPO/L (Menidia peninsulae)	EC50 (3h) 563 mg/L (Activated sludge, domestic)	No information available
Sodium hydroxide	1310-73-2	No information available	LC50 (96h) 125 mg/L (Gambusia affinis) LC50 (48h) 189 mg/L (Leuciscus melanotus) LC50 (24h) 145 mg/L (Poecilia reticulata)	No information available	EC50 (48h) 40.4 mg/L (Ceriodaphnia sp.)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Sodium hypochlorite	7681-52-9	The methods for determining biodegradability are not applicable to inorganic substances.
Sodium hydroxide	1310-73-2	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Sodium hypochlorite	7681-52-9	Log Kow = -3.42
Sodium hydroxide	1310-73-2	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Sodium hypochlorite	7681-52-9	No information available
Sodium hydroxide	1310-73-2	No information available

12.5 Other adverse effects

No information available

13. Disposal Considerations**13.1. Waste treatment methods****Disposal Method****Contaminated Packaging**

Disposal should be made in accordance with federal, state, and local regulations.
Follow all applicable national or local regulations.

14. Transport Information**US DOT**

UN Number: UN1791
UN Proper Shipping Name: Hypochlorite Solution
Transport Hazard Class(es): 8

Packing Group:	III
Environmental Hazards:	Marine Pollutant
Reportable Quantity:	RQ (Sodium Hypochlorite - 45.4 kg.)
NAERG:	NAERG 154

US DOT Bulk	
DOT (Bulk)	Not applicable

Canadian TDG	
UN Number:	UN1791
UN Proper Shipping Name:	Hypochlorite Solution
Transport Hazard Class(es):	8
Packing Group:	III
Environmental Hazards:	Marine Pollutant

IMDG/IMO	
UN Number:	UN1791
UN Proper Shipping Name:	Hypochlorite Solution
Transport Hazard Class(es):	8
Packing Group:	III
Environmental Hazards:	Marine Pollutant
Reportable Quantity:	RQ (Sodium Hypochlorite - 45.4 kg.)
EMS:	EmS F-A, S-B

IATA/ICAO	
UN Number:	UN1791
UN Proper Shipping Name:	Hypochlorite Solution
Transport Hazard Class(es):	8
Packing Group:	III
Environmental Hazards:	Marine Pollutant
Reportable Quantity:	RQ (Sodium Hypochlorite - 45.4 kg.)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable
Special Precautions for User:	None

15. Regulatory Information

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	EPA Reportable Spill Quantity is 80 Gallons based on Sodium hypochlorite (CAS: 7681-52-9).

EPA RCRA Hazardous Waste Classification If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:

Corrosivity D002

California Proposition 65 All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law One or more components listed.

NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

FIFRA Information

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:

Signal Word DANGER

CORROSIVE

Hazard Statements Causes irreversible eye damage.

Causes skin irritation.

This product is toxic to fish, aquatic invertebrates, shrimp, clams, and oysters.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory or are exempt.

16. Other information

Preparation Information

Prepared By Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

Revision Date: 27-Apr-2015

Reason for Revision SDS sections updated:
2

Additional information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
h - hour
mg/m³ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data

www.ChemADVISOR.com/

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End of Safety Data Sheet