

## MATERIAL SAFETY DATA SHEET

**Product Trade Name:** BE-9W

**Revision Date:** 07-Jan-2015

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** BE-9W  
**Synonyms:** None  
**Chemical Family:** Blend  
**Application:** Biocide

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

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

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Tributyl tetradecyl phosphonium chloride	81741-28-8	5 - 10%	Not applicable	Not applicable

### 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye and skin burns. May cause respiratory irritation. May be harmful if swallowed. May be harmful if inhaled

### 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

**Skin** Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse. Remove contaminated shoes and discard.

**Eyes** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Ingestion** If swallowed, do NOT induce vomiting. Give victim two glasses of water, Call a physician immediately. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

**Fire Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Special Exposure Hazards** Decomposition in fire may produce toxic gases. Do not allow runoff to enter waterways. Use water spray to cool fire exposed surfaces.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**NFPA Ratings:** Health 3, Flammability 0, Reactivity 0  
**HMIS Ratings:** Health 3, Flammability 0, Physical Hazard 0 , PPE: F

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse. Do NOT consume food, drink, or tobacco in contaminated areas.

**Storage Information** Store in a cool well ventilated area. Keep container closed when not in use. Store away from direct sunlight. Store in a dry location. Store in a manner to prevent commingling with incompatible materials. Store away from alkalis. Store away from reducing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

**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.  
Dust/mist respirator. (N95, P2/P3)

<b>Hand Protection</b>	Impervious rubber gloves. Neoprene gloves. Polyvinylchloride gloves.
<b>Skin Protection</b>	Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.
<b>Eye Protection</b>	Chemical goggles; also wear a face shield if splashing hazard exists.
<b>Other Precautions</b>	Eyewash fountains and safety showers must be easily accessible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Liquid
<b>Color:</b>	Clear colorless
<b>Odor:</b>	Slight
<b>pH:</b>	6-8
<b>Specific Gravity @ 20 C (Water=1):</b>	0.98 - 1.02
<b>Density @ 20 C (lbs./gallon):</b>	8.16 - 8.46
<b>Bulk Density @ 20 C (lbs/ft3):</b>	Not Determined
<b>Boiling Point/Range (F):</b>	212
<b>Boiling Point/Range (C):</b>	100
<b>Freezing Point/Range (F):</b>	-4
<b>Freezing Point/Range (C):</b>	-20
<b>Vapor Pressure @ 20 C (mmHg):</b>	Not Determined
<b>Vapor Density (Air=1):</b>	Not Determined
<b>Percent Volatiles:</b>	Not Determined
<b>Evaporation Rate (Butyl Acetate=1):</b>	Not Determined
<b>Solubility in Water (g/100ml):</b>	Miscible
<b>Solubility in Solvents (g/100ml):</b>	Not Determined
<b>VOCs (lbs./gallon):</b>	Not Determined
<b>Viscosity, Dynamic @ 20 C (centipoise):</b>	Not Determined
<b>Viscosity, Kinematic @ 20 C (centistokes):</b>	Not Determined
<b>Partition Coefficient/n-Octanol/Water:</b>	< 3
<b>Molecular Weight (g/mole):</b>	Not Determined

## 10. STABILITY AND REACTIVITY

<b>Stability Data:</b>	Stable
<b>Hazardous Polymerization:</b>	Will Not Occur
<b>Conditions to Avoid</b>	None anticipated
<b>Incompatibility (Materials to Avoid)</b>	Reducing agents. Strong alkalis.
<b>Hazardous Decomposition Products</b>	Chlorine. Phosphorus acids. Carbon monoxide and carbon dioxide.
<b>Additional Guidelines</b>	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

<b>Principle Route of Exposure</b>	Eye or skin contact, inhalation.
<b>Symptoms related to exposure</b>	
<b>Acute Toxicity</b>	
<b>Inhalation</b>	May cause respiratory irritation. May be harmful if inhaled.

**Eye Contact**  
**Skin Contact**  
**Ingestion**

May cause eye burns.  
May cause skin burns. Harmful if absorbed through the skin.  
May be harmful if swallowed.

**Chronic Effects/Carcinogenicity**

No data available to indicate product or components present at greater than 1% are chronic health hazards.

**Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Tributyl tetradecyl phosphonium chloride	81741-28-8	< 2000 mg/kg (Rat)	No data available	0.9 mg/L (Rat)

**12. ECOLOGICAL INFORMATION**

**Ecotoxicological Information**

**Ecotoxicity Product**

**Acute Fish Toxicity:** LC50: (96 hour) 0.46 mg/L (Oncorhynchus mykiss)  
LC50: (96 hour) 0.06 mg/l (Lepomis macrochirus)  
LC50: (96 hour) 0.58 mg/l (fish)  
**Acute Crustaceans Toxicity:** TLM96: 1.6 mg/l (Crangon crangon) TLM48: 0.025 mg/l (Daphnia magna)  
**Acute Algae Toxicity:** Not determined

**Ecotoxicity Substance**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Tributyl tetradecyl phosphonium chloride	81741-28-8	No information available	LC50(96h): 0.46 mg/L (Oncorhynchus mykiss) LC50(96h): 0.06 mg/L (Lepomis macrochirus)	No information available	EC50(48h): 0.025 mg/L (Daphnia magna) TLM96: 1.6 mg/L (Crangon crangon)

**12.2. Persistence and degradability**

Substances	CAS Number	Persistence and Degradability
Tributyl tetradecyl phosphonium chloride	81741-28-8	(0% @ 28d)

**12.3. Bioaccumulative potential**

Substances	CAS Number	Log Pow
Tributyl tetradecyl phosphonium chloride	81741-28-8	< 3

**12.4. Mobility in soil**

No information available

**12.5. Results of PBT and vPvB assessment**

No information available.

**12.6. Other adverse effects**

**13. DISPOSAL CONSIDERATIONS**

**Disposal Method**

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations.

**Contaminated Packaging**

Follow all applicable national or local regulations.

**14. TRANSPORT INFORMATION**

**US DOT**

**UN Number:** UN2922  
**UN Proper Shipping Name:** Corrosive Liquid, Toxic, N.O.S. (contains Tributyl Tetradecyl Phosphonium Chloride)  
**Transport Hazard Class(es):** 8  
**Subsidiary Hazard:** (6.1)  
**Packing Group:** II  
**NAERG:** NAERG 154

**US DOT Bulk**

**DOT (Bulk)** Not applicable

**Canadian TDG ul0**

**UN Number:** UN2922  
**UN Proper Shipping Name:** Corrosive Liquid, Toxic, N.O.S. (contains Tributyl Tetradecyl Phosphonium Chloride)  
**Transport Hazard Class(es):** 8  
**Subsidiary Hazard:** (6.1)  
**Packing Group:** II

**IMDG/IMO**

**UN Number:** UN2922  
**UN Proper Shipping Name:** Corrosive Liquid, Toxic, N.O.S. (contains Tributyl Tetradecyl Phosphonium Chloride)  
**Transport Hazard Class(es):** 8  
**Subsidiary Hazard:** (6.1)  
**Packing Group:** II  
**EMS:** EmS F-A, S-B

**IATA/ICAO**

**UN Number:** UN2922  
**UN Proper Shipping Name:** Corrosive Liquid, Toxic, N.O.S. (contains Tributyl Tetradecyl Phosphonium Chloride)  
**Transport Hazard Class(es):** 8  
**Subsidiary Hazard:** (6.1)  
**Packing Group:** II

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

**Special Precautions for User:** None

**Labels:** Corrosive  
Toxic

**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).

<b>EPA CERCLA/Superfund Reportable Spill Quantity</b>	Not applicable.
<b>EPA RCRA Hazardous Waste Classification</b>	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
<b>California Proposition 65</b>	All components listed do not apply to the California Proposition 65 Regulation.
<b>MA Right-to-Know Law</b>	Does not apply.
<b>NJ Right-to-Know Law</b>	One or more components listed.
<b>PA Right-to-Know Law</b>	One or more components listed.
<b>Canadian Regulations</b>	
<b>Canadian DSL Inventory</b>	All components listed on inventory or are exempt.
<b>WHMIS Hazard Class</b>	E Corrosive Material D1A Very Toxic Materials

## 16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS

Section 9. Physical and Chemical Properties

<b>Additional information</b>	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 Compliance at 1-580-251-4335.
<b>Disclaimer Statement</b>	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

\*\*\*END OF MSDS\*\*\*