Material Safety Data Sheet

1. Product and company identification

Product name: ALPHA 544
Supplier: Baker Hughes, Inc.
12645 W. Airport Blvd.
Sugar Land, TX 77478
For Product Information/MSDSs Call: 281-351-8131
Material Uses: Special: Industrial Bactericide.
Code: 488647
Validation date: 10/29/2013.
Print date: 10/29/2013.
Version: 1.03
Responsible name: Global Regulatory Affairs - Telephone 281-276-5400 or 800-231-3606
In case of emergency: CHEMTREC 800-424-9300 (U.S. 24 hour)
(001)281-276-5400
CANUTEC 613-996-6666 (Canada 24 hours)CHEMTREC Int'l 01-703-527-3887
(International 24 hour)

2. Hazards identification

Physical state: Liquid.
Odor: Odorless to Mild. [Slight]
Color: Colorless to brown.
OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview: DANGER!
CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF SWALLOWED. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.
Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry: Dermal contact. Eye contact. Inhalation.

Potential acute health effects
Inhalation: Corrosive to the respiratory system.
Ingestion: Harmful if swallowed. May cause burns to mouth, throat and stomach.
Skin: Corrosive to the skin. Causes burns. May cause sensitization by skin contact.
Eyes: Corrosive to eyes. Causes burns.

Potential chronic health effects
Chronic effects: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity: Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Over-exposure signs/symptoms
Inhalation: respiratory tract irritation, coughing
Ingestion: stomach pains
Skin: pain or irritation, redness, blistering may occur
2. Hazards identification

**Eyes**
- pain, watering, redness

**Medical conditions aggravated by over-exposure**
- Pre-existing skin disorders may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

Additional information
- Corrosive to aluminum and steel.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol</td>
<td>Trade secret.</td>
<td>30 - 60</td>
</tr>
<tr>
<td>2,2-Dibromo-3-nitrilopropionamide</td>
<td>10222-01-2</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Sodium Bromide (NaBr)</td>
<td>7647-15-6</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Dibromoacetonitrile</td>
<td>3252-43-5</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

4. First aid measures

**Eye contact**
- Get medical attention immediately. Immediately flush the eye(s) continuously with lukewarm, gently flowing water for at least 20-60 minutes while holding the eyelid(s) open.

**Skin contact**
- Wash affected area with soap and mild detergent for at least 20 - 60 minutes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

**Inhalation**
- Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

**Ingestion**
- Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Protection of first-aiders**
- No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wear suitable protective clothing and gloves. Remove contaminated clothing and shoes.

5. Fire-fighting measures

**Flammability of the product**
- In a fire or if heated, a pressure increase will occur and the container may burst.

**Extinguishing media**
- Suitable: Use an extinguishing agent suitable for the surrounding fire.
- Not suitable: None known.

**Special exposure hazards**
- Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products**
- carbon dioxide, carbon monoxide, nitrogen oxides, halogenated compounds, metal oxide/oxides

**Special protective equipment for fire-fighters**
- Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Special remarks on explosion hazards**
- Avoid temperatures above 70 degC (158 degF). Product may decompose and cause pressure in closed systems.
6. Accidental release measures

**Personal precautions**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

**Environmental precautions**: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Water polluting material. May be harmful to the environment if released in large quantities.

**Methods for cleaning up**

**Small spill**: Stop leak if without risk. Move containers from spill area. Absorb with an inert material. Dispose of via a licensed waste disposal contractor.

**Large spill**: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Dike spill area and do not allow product to reach sewage system or surface or ground water. Notify any reportable spill to authorities. (See section 12 for environmental risks and 13 for disposal information.) Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. Handling and storage

**Handling**: Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Storage**: Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Occupational exposure limits</th>
<th>TWA (8 hours)</th>
<th>STEL (15 mins)</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredients:</td>
<td>List name</td>
<td>ppm</td>
<td>mg/m³</td>
</tr>
<tr>
<td>No exposure limit value known.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If OSHA permissible exposure levels are shown above they are the OSHA 1989 levels or are from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Hughes recommends that these lower exposure levels be observed as reasonable worker protection.

**Recommended monitoring procedures**: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Engineering measures**: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
8. Exposure controls/personal protection

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Take off contaminated clothing and wash before reuse.

Personal protection

Respiratory: If a risk assessment indicates it is necessary, use a properly fitted, air purifying or supplied air respirator complying with an approved standard. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands: Chemical-resistant gloves: Nitrile or Neoprene gloves. Butyl rubber gloves.

Eyes: Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.

Skin: Wear long sleeves and chemical resistant apron to prevent repeated or prolonged skin contact.

9. Physical and chemical properties

Physical state: Liquid.
Flash point: Closed cup: >93.4°C (>200.1°F) [SFCC]
Open cup: >182°C (>359.6°F) [Cleveland.]

Auto-ignition temperature: Not available.
Flammable limits: Not available.
Color: Colorless to brown.
Odor: Odorless to Mild. [Slight]
pH: 2.6 to 2.9
   - Neat - without dilution.

Boiling/condensation point: Decomposition temperature: >70°C (>158°F)
Initial Boiling Point: Not available.
Melting/freezing point: -4°C (24.8°F)
Relative density: 1.2496 (15.6°C)
Density: 10.41 (lbs/gal)

Vapor density: >1 [Air = 1]
Odor threshold: Not available.
Evaporation rate: Not available.
VOC: Not available.
Viscosity: Dynamic (20°C): 185 cP

Solubility (Water): Soluble
Vapor pressure: 1.9 kPa (14.4 mm Hg) at 21.1°C (Calculated Value for all Components.)
Pour Point: Not available.

Partition coefficient (LogKow): Not available.

10. Stability and Reactivity

Chemical stability: The product is stable.
Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid: No specific data.
Materials to avoid: 
10. Stability and Reactivity

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Conditions of reactivity: Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. Avoid temperatures above 70 degC (158 degF). Product may decompose and cause pressure in closed systems.

11. Toxicological information

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;20000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation</td>
<td>Rat - Female</td>
<td>0.24 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td>2,2-Dibromo-3-nitrilopropionamide</td>
<td>LC50 Inhalation</td>
<td>Rat - Male</td>
<td>0.32 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td>Sodium Bromide (NaBr)</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Dibromoacetonitrile</td>
<td>LD50 Oral</td>
<td>Female rat</td>
<td>178 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Male rat</td>
<td>235 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Mouse</td>
<td>7000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2500 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3500 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>ALPHA 544</td>
<td>LC50 Inhalation</td>
<td>Rat - Female</td>
<td>1.25 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation</td>
<td>Rat - Male</td>
<td>1.4 mg/l</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

Carcinogenicity

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>EPA</th>
<th>NIOSH</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibromoacetonitrile</td>
<td>-</td>
<td>2B</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Chronic toxicity Remarks

1) Polyethylene glycol

Polyethylene glycol is a component of this product. Polyethylene glycol toxicity is related to the molecular weight (MW). Liquids with MW's of 200-400 have produced toxicity; solids with MW's of >3000 are not well absorbed following ingestion. Occupational exposure is almost entirely limited to dermal contact (Clayton & Clayton, 1994). Polyethylene glycol has produced cell fusion, resulting in malignant cell hybrids in vitro (Pontecervo, 1975). Experimental animal studies reported lung lymphosarcomas (malignant tumors of the lymphatic system) in rats, vaginal tumors in mice, and a weak tumor initiator effect in mice (Smyth et al., 1947; Boyland et al., 1961; Field & Roe, 1965). The observed carcinogenicity may be contributed to or accounted for contaminants in early commercial preparations (Reprotox).

2) 2,2-Dibromo-3-nitrilopropionamide

Observations in animals include kidney effects following repeated ingestion of active ingredient, but no evidence of systemic toxicity following repeated dermal exposure at maximum attainable doses.

3) Sodium Bromide (NaBr)

Sodium bromide is a component of this product. Bromide poisoning following acute ingestion is rare. Chronic ingestion may produce a toxic syndrome known as "bromism", characterized by behavior changes, irritability, headache, confusion, appetite loss, slurred speech, eye effects and unconsciousness. Sodium bromide has cause reproductive effects in rats.
11. Toxicological information

fed 720 - 3600 mg/kg during pregnancy. Reproductive effects were also noted to the fertility or offspring of male rats exposed orally to 47,520 mg/kg sodium bromide prior to mating. Endocrine, blood, nutritional/metabolic and behavioral changes were observed in rats dosed orally with sodium bromide.

4) Dibromoacetonitrile

Dibromoacetonitrile which is a brominated haloacetonitrile (HAN) produced DNA strand breaks cultured human lymphoblastic cells at 5µmol/L, duration and frequency of dose not given (RTECS). Female rats given an oral dose of 750mg/Kg on days 7-12 of pregnancy resulted in effects on newborn in the form of reduced weight gain. Tumorigenic effects of the skin and appendages have been produced in mice dosed at 2400 mg/Kg/2wks intermittent (RTECS).

Additional information

Eye Irritation Score = 4 (Extreme Irritant/Corrosive). Skin Irritation Score = 3 (Strong Irritant).

12. Ecological information

**Aquatic ecotoxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol</td>
<td>Acute LC50 &gt;1000000 µg/l Fresh water</td>
<td>Fish - Atlantic salmon - Salmo salar - Parr</td>
<td>96 hours</td>
</tr>
<tr>
<td>Sodium Bromide (NaBr)</td>
<td>Acute EC50 8000000 µg/l Fresh water</td>
<td>Algae - Green algae - Scenedesmus subspicatus - Exponential growth phase</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 6000000 µg/l Fresh water</td>
<td>Algae - Green algae - Scenedesmus subspicatus - Exponential growth phase</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 1000 ppm Fresh water</td>
<td>Daphnia - Water flea - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 44000 µg/l Fresh water</td>
<td>Fish - Guppy - Poecilia reticulata</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 2500000 µg/l Fresh water</td>
<td>Algae - Green algae - Scenedesmus pannonicus - Exponential growth phase</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 7.5 mg/l Fresh water</td>
<td>Daphnia - Water flea - Daphnia magna - Neonate</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 10000 µg/l Fresh water</td>
<td>Fish - Guppy - Poecilia reticulata - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>4 weeks</td>
</tr>
<tr>
<td>ALPHA 544</td>
<td>Acute EC50 0.86 mg/l</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1.78 mg/l</td>
<td>Daphnia - Acartia tonsa</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.72 mg/l</td>
<td>Daphnia - Mysis shrimp</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 3.6 mg/l</td>
<td>Fish - Rainbow trout</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1.1 mg/l</td>
<td>Fish - Sheepshead minnow</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**

Toxic to aquatic organisms.

**Biodegradability**

2,2-Dibromo-3-nitrolpropionamide is rapidly biodegradable by abiotic means.

**Additional information**

This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) Permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.
13. Disposal considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSOMAL PROTECTION for additional handling information and protection of employees.

14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>UN3265</td>
<td>CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Contains: 2, 2-Dibromo-3-nitriopropionamide)</td>
<td>8</td>
<td>III</td>
<td></td>
<td><strong>Remarks</strong> DOT Marine Pollutant if shipped in bulk or by vessel.</td>
</tr>
<tr>
<td>TDG Classification</td>
<td>UN3265</td>
<td>CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Contains: 2, 2-Dibromo-3-nitriopropionamide)</td>
<td>8</td>
<td>III</td>
<td></td>
<td><strong>Remarks</strong> TDG Marine Pollutant if transported on a ship in Canadian waters.</td>
</tr>
<tr>
<td>IMDG Class</td>
<td>UN3265</td>
<td>CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Contains: 2, 2-Dibromo-3-nitriopropionamide)</td>
<td>8</td>
<td>III</td>
<td></td>
<td><strong>Emergency schedules (EmS)</strong> F-A S-B</td>
</tr>
<tr>
<td>IATA-DGR Class</td>
<td>UN3265</td>
<td>CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Contains: 2, 2-Dibromo-3-nitriopropionamide)</td>
<td>8</td>
<td>III</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

PG*: Packing group

DOT Reportable Quantity: Not applicable.

Marine pollutant: 2, 2-Dibromo-3-nitriopropionamide.

North-America NAERG: 153
15. Regulatory information

**HCS Classification**
- Corrosive material
- Sensitizing material
- Carcinogen

**U.S. Federal regulations**
- **United States inventory (TSCA 8b):** All components are listed or exempted.
- CERCLA: Hazardous substances: No products were found.
- **Clean Water Act (CWA) 307:** No products were found.
- **Clean Water Act (CWA) 311:** No products were found.
- **Clean Air Act (CAA) 112 regulated flammable substances:** No products were found.
- **Clean Air Act (CAA) 112 regulated toxic substances:** No products were found.
- **Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs):** Not listed

**SARA 302/304**
- No products were found.

**SARA 311/312 Classification**
- Immediate (acute) health hazard
- Delayed (chronic) health hazard

**United States inventory (TSCA 8b)**
- All components are listed or exempted.

**Canada**
- **WHMIS (Canada):** Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
  - Class D-2B: Material causing other toxic effects (Toxic).
  - Class E: Corrosive material
- **Canada (CEPA DSL):** At least one component is not listed in DSL but all such components are listed in NDSL.

**Additional information**
This product is subject to regulation under the US Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and is therefore exempt from US Toxic Substance Control Act (TSCA) Inventory listing requirements. EPA Registration No. 10707-51

16. Other information

**Label requirements**
- **CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF SWALLOWED. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.**

**HMIS**
- **Health:** 3
- **Flammability:** 1
- **Physical hazards:** 1
- **Personal protection:**

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

**National Fire Protection Association (U.S.A.)**
Date of printing: 10/29/2013.

Indicates information that has changed from previously issued version.

Notice to reader

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Hughes, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.