


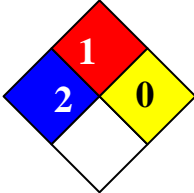




Material Safety Data Sheet

Protective Equipment	TDG	WHMIS
 See SECTION VIII for details	Shipping Name: CORROSIVE LIQUID, ACIDIC, ORGANIC, NOS (2,2-DIBROMO-3- NITRILPROPIONAMIDE) TDG Classification: 8 UN Number (PIN): 3082 Packing Group: III Emergency Response Guide Number: 153 Emergency Phone: (403) 266 6000 See SECTION XIV for details	 E See SECTION XV for details
	DOT	NFPA
	Shipping Name: Environmentally Hazardous substances, liquid NOS, (2,2-DIBROMO-3- NITRILPROPIONAMIDE) HAZMAT Classification: 9 UN Number (PIN): 3082 Packing Group: III Emergency Phone: (403) 266 6000	

SECTION I: Chemical Product and Company Identification

Common/Trade Name	DWP-944-3
Synonyms	Not Available
Chemical Name	Not Available
Chemical Formula	Not Available
Chemical Family	Not Available
Supplier	Calfrac Well Services Ltd. 411-8 th Avenue SW Calgary, Alberta T2P 1E3
Document Number	MSDS-DWP-944-2 Rev 0
Date of Preparation	June 10, 2009
Prepared By	Calfrac Well Services Ltd
Phone number of Preparer	(403) 266 6000
Material Uses	Biocide

SECTION II: Hazardous Ingredients

Name	Percent (%)	CAS#	LD ₅₀ (oral rat)	LC ₅₀ (dermal rabbit)	LC ₅₀ (inhalation rat)
POLYETHYLENE GLYCOL MIXTURE	40-70 %	25322-68-3	28 g/kg	>20 g/kg	Not determined
2,2-DIBROMO-3-NITRILPROPIONAMIDE	15-40 %	10222-01-2	50394 mg/kg	39215 mg/kg	Not determined

SECTION III: Hazards Identification

Routes of Entry	[XX] SKIN [XX] EYE CONTACT [XX] INHALATION [X] INGESTION
Threshold Limit Value	Not determined

Skin Contact	May cause skin irritation. Allergic reactions are possible. May cause skin sensitization, an allergic reaction which becomes evident on re-exposure to this material.
Eye Contact	Severe irritant. Can cause redness, tissue destruction and irritation.
Ingestion	Single dose oral toxicity is considered to be low moderate. Swallowing small amounts are not likely to cause injury. Large amounts however may cause injury, even death.
Inhalation	vapors may be present in unvented containers and may be irritating. Mist may cause irritation of upper respiratory tract.

SECTION IV: First Aid Measures

Skin Contact	Wash exposed area with soap and water. If irritation or abnormalities persist, call a physician.
Eye Contact	Immediately flush eyes with plenty of water for at least 30 minutes while holding eyelids open. Remove contacts if present. Get medical attention immediately.
Ingestion	Drink 1 or 2 glasses of water and rinse mouth. Do not induce vomiting without medical advice, . Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth utilizing a protective mask with an airway valve. If breathing is difficult, give oxygen. Call a physician

SECTION V: Fire Fighting Measures

Flash Point (method)	>359.6°F (TCC)
Flammable Limits	Not determined
Extinguishing Media	Water Spray, foam, dry chemical, and carbon dioxide. Water jet not recommended.
Special Fire Fighting Procedures	NIOSH approved self-contained respirators required for fire fighting personnel and full bunker gear
Unusual Fire and Explosion Hazards	May contain toxic, corrosive and irritating fumes in a fire.

SECTION VI: Accidental Release Measures

Steps to be taken in case the Material is Spilled or Released	(Use appropriate safety equipment.) Eliminate ignition sources. Absorb spill with inert material (e.g. dry sand or earth), then place into a vermiculite chemical waste container. (See exposure controls / personal protection section) Spilled material should be disposed of according to applicable regulations.
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SECTION VII: Handling and Storage

Precautions to be taken in Handling and Storing	<p>HANDLING: Handle all chemicals with care. Wear appropriate personnel protective equipment as outlined in section 8. Wash thoroughly after handling. Avoid contact with vapors from head space of containers. Wash thoroughly after handling.</p> <p>STORAGE: Keep container closed when not in use. Store in a cool, dry, well ventilated place away from incompatible materials. Store below 95F/35C. Storage must be in original container. Keep container tightly closed. This product can accumulate a static charge which may cause ignition, use common handling and grounding when transferring product.</p>
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SECTION VIII: Exposure Control/Personal Protection

Special Protection Information	
Respiratory Protection	Use NIOSH approved organic vapor respirators when ventilation is inadequate.
Ventilation	General mechanical
Protective Gloves	Chemically resistant
Eye Protection	Chemical goggles, face shield
Other Protective Equipment (Specify)	None known

SECTION IX: Physical and Chemical Properties

Appearance	Clear, light Yellow liquid
Odor	Mild, odorless
Specific Gravity	1.18-1.24 mg/l
Boiling Point (°C)	35.35 °C (estimated)
Melting Point (°C)	-0.22 °C (estimated)
Solubility in Water	Not Available
Percent Volatile by Volume	Not Determined
Evaporation Rate	Not Determined
Vapor Pressure (mm Hg)	Not Available
Vapor Density (Air = 1)	Not Available
pH	3-4

SECTION X: Stability and Reactivity

Stability	<input checked="" type="checkbox"/> STABLE <input type="checkbox"/> UNSTABLE
Incompatibility (Conditions to Avoid)	Avoid contact with strong bases, strong acids, FE powder, heat, flame, sparks
Conditions of Reactivity	Not known
Hazardous Decomposition Products	may include Bromine, Cyanogen bromide, dibromoacetonitrile, or CO ₂
Hazardous Polymerization	<input checked="" type="checkbox"/> WILL NOT OCCUR <input type="checkbox"/> MAY OCCUR

SECTION XI: Toxicological Information

Sensitization to Product	Not Determined
Carcinogenicity	Not Determined
Irritancy to Product	Not Determined
Reproductive Toxicity	Not Determined
Teratogenicity	Not Determined
Mutagenicity	Not Determined
Chronic Exposure	Not Determined
Name of Toxicological Synergistic Products	Not Determined

SECTION XII: Ecological Information

Ecological Information	<p>ECOTOXICITY: Based on information for DBNPA, material is highly toxic to aquatic organisms on an acute basis (LC50 between 0.1 and 1.0 mg/L in most sensitive species). Based on information for tetraethylene glycol. Material is practically non-toxic to fish on an acute basis (LC 50 greater than 100 mg/L. Based on information for this product, growth inhibition EC50 for marine diatom <i>Skeletonema costatum</i> is 0.53 mg/L. Acute LC50 for marine copepod <i>Acartia tonsa</i> is 1.78 mg/L.</p> <p>CHEMICAL FATE INFORMATION: Based on the stringent test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.</p>
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SECTION XIII: Disposal Considerations

Waste Disposal Method	Do not allow this material into sewers/water supplies. Absorb spilled material with absorbent compound, incinerate/dispose to conform to local disposal regulations.
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SECTION XIV: Transportation Information

Proper Shipping Name	CORROSIVE LIQUID, ACEDIC, ORGANIC, NOS (2,2-DIBROMO-3-NITRILPROPIONAMIDE)
Class	8
TDG Label	Corrosive
UN Number (PIN)	3082
TDG Placard	Corrosive
Packing Group	III
Emergency Response Guide Number	153
Emergency Telephone	(403) 266 6000

SECTION XV: Regulatory Information

WHMIS Classification	Class	E	Division	Subdivision
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR				

SECTION XVI: Other

Other Information	06/10/09 This an update to reflect the changes identified by the supplier to the product.
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The information contained herein is offered only as a guide to the handling of this specific product and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied. Calfrac Well Services Ltd. will not be liable for any damages, losses, injuries, or consequential damages, which may result from the use of or reliance on any information contained herein.