

MATERIAL SAFETY DATA SHEET



X-CIDE® 102

Drilling Fluids

1. Product and Company Identification

Material name X-CIDE® 102
Applications Biocide
Supplier Baker Hughes Drilling Fluids
2001 Rankin Rd.
Houston, TX 77073
Emergency telephone number 713-439-8900

2. Composition / Information on Ingredients

Components	CAS #	Percent
GLUTARALDEHYDE	111-30-8	10 - 30
Non-hazardous and other components below reportable levels		60 - 80

3. Hazards Identification

Emergency overview CORROSIVE
Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.

Potential health effects

Routes of exposure Inhalation. Skin contact. Eye contact.

Eyes Corrosive to the eyes and may cause severe damage including blindness.

Skin May cause burns. May cause sensitization by skin contact. Corrosive after repeated contact with skin and mucous membranes.

Inhalation Can cause severe respiratory irritation. Inhaled corrosive substances can lead to a toxic edema of the lungs.

Ingestion Do not ingest. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.

Target organs Eyes. Respiratory system. Skin.

Chronic effects May cause delayed lung damage. Repeated exposure may lead to respiratory sensitization reactions, producing an asthma-like condition.

4. First Aid Measures

First aid procedures

Eye contact Immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention immediately.

Skin contact Remove and isolate contaminated clothing and shoes. Wash off with soap and plenty of water. Immediately flush skin with running water for at least 20 minutes. Get medical attention if irritation develops or persists.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Call a physician if symptoms develop or persist.

Ingestion Have victim rinse mouth thoroughly with water. Do not induce vomiting without medical advice. If material is ingested, immediately contact a physician or poison control center.

General advice Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Hazardous combustion products Carbon monoxide and carbon dioxide.

Extinguishing media

Suitable extinguishing media Dry chemical, foam, carbon dioxide.

Protection of firefighters

Protective equipment for firefighters Move containers from fire area if you can do it without risk. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Cool containers with flooding quantities of water until well after fire is out. Water runoff can cause environmental damage.

6. Accidental Release Measures

Personal precautions	Ensure adequate ventilation. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Methods for containment	Prevent entry into waterways, sewers, basements or confined areas. Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
Methods for cleaning up	Large Spills: Dike far ahead of liquid spill for later disposal. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly. Never return spills in original containers for re-use.

7. Handling and Storage

Handling	Do not breathe gas/fumes/vapor/spray. Do not get this material in your eyes, on your skin, or on your clothing. Do not handle or store near an open flame, heat or other sources of ignition. Do not empty into drains.
Storage	Use care in handling/storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, and flame. Keep this material away from food, drink and animal feed.

8. Exposure Controls / Personal Protection

Exposure guidelines

ACGIH - Threshold Limits Values - Ceilings (TLV-C)

GLUTARALDEHYDE 111-30-8 0.05 Ppm Ceiling (activated and inactivated)

ACGIH - Threshold Limits Values - TLV Basis - Critical Effects

GLUTARALDEHYDE 111-30-8 irritation; sensitization (activated and inactivated)

Engineering controls	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Personal protective equipment	
Eye / face protection	Wear chemical goggles and face shield.
Skin protection	Use of protective coveralls and long sleeves is recommended. Use of an impervious apron is recommended. Use of impervious boots is recommended.
Hand protection	Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
General hygiene considerations	Keep away from food and drink. When using do not smoke. Avoid contact with the skin and the eyes. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance / Color / Form	Clear. Colorless. Liquid.
Odor	Fruity.
Clarity	Not available
Odor threshold	Not available
Physical state	Liquid
pH	3.1 - 4.5 Neat - without dilution
Melting point	Not available
Freezing point	Not available
Boiling point	Not available
Flash point	> 212 °F (> 100 °C) Closed Cup
Evaporation rate	Not available
Flammability limits in air, lower, % by volume	Not available
Flammability limits in air, upper, % by volume	Not available
Vapor pressure	27.9 - 34.1 Mm Hg @38°C
Vapor density	> 1
Specific gravity	1.05 - 1.062 @ 16°C

Relative density	8.75 - 8.85 lbs/gal @ 16°C
Solubility	Soluble in water.
Octanol/H2O coeff	Not available
Auto-ignition temperature	437 °F (225 °C) estimated
Decomposition temperature	Not available
Pour point	19.4 °F (-6.7 °C)

10. Chemical Stability and Reativity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	Direct sources of heat.
Incompatible materials	Strong acids, alkalies and oxidizing agents.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Acute effects	Acute LD50: 330 mg/kg, Rat, Oral Acute LC50: 4267 mg/l/4h, Rat, Inhalation
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Component analysis - LD50

Toxicology Data - Selected LD50s and LC50s

GLUTARALDEHYDE	111-30-8	Inhalation LC50 Rat: 0.1 mg/L/4H; Oral LD50 Rat: 66 mg/kg; Dermal LD50 Rat: >2000 mg/kg; Dermal LD50 Rabbit: 560 µL/kg
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Sensitization

ACGIH - Threshold Limits Values - Sensitization (SEN) Notations

GLUTARALDEHYDE	111-30-8	Sensitizer
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Local effects Risk of serious damage to eyes. Inhaled corrosive substances can lead to a toxic oedema of the lungs. May cause sensitization by skin contact.

Chronic effects Prolonged exposure may cause chronic effects.

Carcinogenicity

ACGIH - Threshold Limits Values - Carcinogens

GLUTARALDEHYDE	111-30-8	A4 - Not Classifiable as a Human Carcinogen (activated and inactivated)
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12. Ecological Information

Ecotoxicity Components of this product have been identified as having potential environmental concerns.

Environmental effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Ecotoxicity - Microtox Data

GLUTARALDEHYDE	111-30-8	5 Min EC50 Photobacterium phosphoreum: 76.0 mg/L
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13. Disposal Considerations

Disposal instructions Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

14. Transport Information

Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

FDA - Direct Food Additives

GLUTARALDEHYDE	111-30-8	21 CFR 172.230, 21 CFR 173.320, 21 CFR 173.357
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Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

CERCLA (Superfund) reportable quantity None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (CCS)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Japanese Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Korean Inventory of Chemicals (KICS)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

International regulations

The product is classified and labelled in accordance with EC directives or respective national laws.

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Massachusetts - Right To Know List

GLUTARALDEHYDE 111-30-8 Present

New Jersey - Right to Know Hazardous Substance List

GLUTARALDEHYDE 111-30-8 sn 0960

Pennsylvania - RTK (Right to Know) List

GLUTARALDEHYDE 111-30-8 Present

16. Other Information**HMIS ratings**

Health: 3*
Flammability: 1
Physical hazard: 0
Personal protection: H

NFPA ratings

Health: 3
Flammability: 1
Instability: 0

US preparer

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