

Safety Data Sheet

HiFlow 4

SECTION 1: Identification

1.1 Product identifier

Product name HiFlow 4
Product number HF4

1.3 Recommended use of the chemical and restrictions on use

Friction Reducer

1.4 Supplier's details

Name Downhole Chemical Solutions
Address 7274 Elm Street
Frisco, Texas 75034

Telephone 469-466-1100

1.5 Emergency phone number(s)

1-888-255-3924 US (ChemTel)
1-813-248-0585 International (ChemTel)

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200)
- Causes serious eye irritation, Cat. 2

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H319 Causes serious eye irritation

Precautionary statement(s)

P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Safety Data Sheet

HiFlow 4

P305+P351+P338

P337+P313

P310

P332+P313

P362+364

P501

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Immediately call a POISON CENTER/doctor.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Dispose of contents/container in accordance with national regulations.

2.3 Other hazards which do not result in classification

Slip hazard from spills

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components	Concentration
Distillates, petroleum, hydrotreated light (CAS no.: 64742-47-8; EC no.: 265-149-8)	20 - 23 % (weight)

Trade secret statement (OSHA 1910.1200(i))

*The specific chemical identities and/or actual concentrations or actual concentration ranges for one or more listed components are being withheld as trade secrets under the US regulation 29 CFR 1910.1200(i). This is not intended to be a complete compositional disclosure.

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.

In case of skin contact

Wash with plenty of water for at least 15 minutes. Call a poison center or doctor if irritation develops or persists. Take off contaminated clothing and wash it before reuse.

In case of eye contact

Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.

If swallowed

Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have the victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms/effects, acute and delayed

No information available.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

No data available.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Safety Data Sheet

HiFlow 4

5.2 Specific hazards arising from the substance or mixture

No information is available.

5.3 Special protective actions for fire-fighters

Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

Further information

Use water spray to cool unopened containers. Spills produce extremely slippery surfaces.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures

Where the exposure level is not known, wear approved, positive pressure, self-contained respirator. Where the exposure level is known, wear an approved respirator suitable for the level of exposure. For personal protection see section 8. Chemical resistant boots.

6.2 Environmental precautions

Do not contaminate water. Prevent product from entering drains.

6.3 Methods and materials for containment and cleaning up

Stop leak if you can do it without risk. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. Use detergent if needed.

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Store at room temperature. To avoid product degradation and equipment corrosion, do not use iron, copper, or aluminum containers or equipment. Flashpoint determination was performed using a Pensky Martens type closed cup method. The method indicates a flash point greater than 93.3C (200F). Although there was no flashpoint detected below 93.3C (200F) some flammable vapors were evolved during the test as evidenced by the enlargement of the flame. Therefore caution should be exercised during storage and handling.

7.2 Conditions for safe storage, including any incompatibilities

Freezing will adversely affect the quality of the product. Store locked up. Keep away from heat and sources of ignition. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Specific end use(s)

Storage Temperatures C/F

20 - 35C (68 - 95F)

Reason:

Integrity

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

CAS: 64742-47-8 (EC: 265-149-8)

Distillates, petroleum, hydrotreated light

ACGIH: 1200 mg/m³ TLV® inhalation (197 ppm)

Safety Data Sheet

HiFlow 4

8.2 Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side shields or goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear protective gloves, such as PVC or other plastic material. Consult manufacturer specifications for further information.

Body protection

Wear protective clothing. Clothing with full-length sleeves and pants should be worn. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with a multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied-air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal hazards

No data is available.

Environmental exposure controls

Do not let the product enter drains.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Viscous Opaque Liquid
Odor	Mild Petroleum
Odor threshold	No data available.
pH	6 - 8
Melting point/freezing point	No data available.
Initial boiling point and boiling range	> 347°F Oil Phase : >212°F Aqueous Phase
Flash point	> 201 °F
Evaporation rate	< 1 (n-butyl acetate = 1)
Flammability (solid, gas)	No data available.
Upper/lower flammability limits	No data available.
Upper/lower explosive limits	No data available.
Vapor pressure	No data available.
Vapor density	No data available.
Relative density	1.04 - 1.09 g/cm ³ (8.6 - 8.85 lbs/gal)
Solubility(ies)	Limited by viscosity
Partition coefficient: n-octanol/water	No data available.
Auto-ignition temperature	302°F
Decomposition temperature	> 392°F
Viscosity	1,000 - 2,200 mPa.s (Brookfield)
Explosive properties	No data available.
Oxidizing properties	Not expected to be oxidizing based on the chemical structure

Safety Data Sheet

HiFlow 4

Other safety information
No data is available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable.

10.2 Chemical stability

Stable under normal storage conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Heat, flames, and sparks. Incompatible products. Keep away from open flames, hot surfaces, and sources of ignition.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Carbon oxides, Ammonia, Nitrogen Oxides

SECTION 11: Toxicological information

Information on toxicological effects

Acute oral toxicity

Information on the product as supplied:

LD50 Oral - Rat - > 5,000 mg/kg (Estimated)

LD50 Dermal - Rabbit - > 2,000 mg/kg (Estimated)

LC50/4 h/>20 mg/ Remarks : estimated

Skin corrosion/irritations - The toxicological data has been taken from products of similar composition. Irritating to skin.

Serious eye damage/eye irritation - The toxicological data has been taken from products of similar composition. No eye irritation.

Skin Sensitisation - Based on available data, the classification criteria are not met.

Components:

Distillates, petroleum, hydrotreated light:

LD50 Oral - Rat - > 5,000 mg/kg

LC50 Inhalation - Rat - > 5.2 mg/m / 4 h.

LD50 Rabbit - 2,000 mg/kg

Skin sensitisation - Not classified as a sensitizer

Genotoxicity in vitro - No known effect

Genotoxicity in vivo - Not mutagenic

Carcinogenicity - Not classified by IARC or NTP

Toxicity for reproduction - Did not show teratogenic effects in animal experiments

SECTION 12: Ecological information

Aquatic Toxicity

LC50/96 h/Pimephales promelas (fathead minnow)/Acute Fish Toxicity/EPA Whole Effluent Toxicity Method 600/4-90/027F: 10.02 mg/l

LC50/48 h/Ceriodaphnia dubia (water flea)/EPA Whole Effluent Toxicity Method 600/4-90/027F: 11.31 mg/l

Safety Data Sheet

HiFlow 4

IC50/72 h/Green algae (*Selenastrum capricornutum*)/Growth inhibition/OECD Test Guideline 201; > 100 mg/L

Persistence and degradability

Information on the product as supplied

The polymeric ingredient is not readily biodegradable.

Seawater Shake Flask Method/OECD Test Guideline 306/28 d: 13%

Ecotoxicological information provided is based on a structurally or compositionally similar product.

Bioaccumulative potential

Information on the product as supplied:

Partial coefficient: n-octanol/water: No data available.

Mobility in soil

Vapor Pressure:

No data available

Water Solubility

Limited by viscosity

Surface Tension

No data available

SECTION 13: Disposal considerations

Disposal of the product

The disposal should be in accordance with applicable Federal, State, and local laws and regulations. Local regulations may be more stringent than State or Federal requirements.

Disposal of contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

Not classified as dangerous in the meaning of transport regulations.

Store between 5-30°C.

Protect from frost.

Keep away from direct sunlight.

IMDG

Not classified as dangerous in the meaning of transport regulations.

Store between 5-30°C.

Protect from frost.

Keep away from direct sunlight.

IATA

Not classified as dangerous in the meaning of transport regulations.

Store between 5-30°C.

Protect from frost.

Keep away from direct sunlight.

SECTION 15: Regulatory information

15.1 Safety, health, and environmental regulations specific to the product in question

SARA 302 Components

Safety Data Sheet

HiFlow 4

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard: YES

Eye Irritation, Cat 2

Massachusetts Right To Know Components

Distillates, petroleum, hydrotreated light

CAS-No. 64742-47-8

New Jersey Right To Know Components

Distillates, petroleum, hydrotreated light

CAS-No. 64742-47-8

Pennsylvania Right To Know Components

Distillates, petroleum, hydrotreated light

CAS-No. 64742-47-8

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Chemical name: Acrylamide

CAS number: 79-06-1 (< 0.1 %)

Chemical name: Ethylene Oxide

CAS number: 75-21-8 (< 0.2 ppm)

HMIS Rating

HMIS RATINGS (Hazardous Materials Identification System)	
HEALTH	2
FLAMMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	B

SECTION 16: Other information

16.1 Further information/disclaimer

DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their particular purposes. In no event shall Downhole Chemical Solutions be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if Downhole Chemical Solutions has been advised of the possibility of such damages.

Revision History

V3: Company address updated - no other content changes