



# Safety Data Sheet

## HiFlow 5

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### SECTION 1: Identification

#### 1.1 Product identifier

Product name HiFlow 5  
Product number HF5

#### 1.3 Recommended use of the chemical and restrictions on use

Friction reducing.

#### 1.4 Supplier's details

Name Downhole Chemical Solutions  
Address 1 Cowboys Way #572  
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)**

- Skin corrosion/irritation, Cat. 2

#### 2.2 GHS label elements, including precautionary statements

##### Pictogram



##### Signal word

**Warning**

##### Hazard statement(s)

H315

Causes skin irritation

##### Precautionary statement(s)

P264

P280

P302+P352

P332+P313

P362+P364

Wash hands thoroughly after handling.

Wear protective gloves.

IF ON SKIN: Wash with plenty of water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

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### 2.3 Other hazards which do not result in classification

Slip hazard from spills

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## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Hazardous components	
Distillates, petroleum, hydrotreated light (CAS no.: 64742-47-8; EC no.: 265-149-8)	16 - 18 % (weight) *
Ammonium chloride (CAS no.: 12125-02-9; EC no.: 235-186-4; Index no.: 017-014-00-8)	1 - 1.5 % (weight) *
Acrylamide (CAS no.: 79-06-1; EC no.: 201-173-7; Index no.: 616-003-00-0)	< 0.1 % (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).

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## 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.  Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.
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.  Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
In case of eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.  Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
If swallowed	Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have 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.  Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

### 4.2 Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

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- 4.3 Indication of immediate medical attention and special treatment needed, if necessary**  
No data available.

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### SECTION 5: Fire-fighting measures

- 5.1 Suitable extinguishing media**  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 5.2 Specific hazards arising from the chemical**  
Carbon oxides, Nitrogen oxides (NOx), Hydrogen chloride gas
- 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.

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### SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Warning: Do not touch or walk through spilled material. Spills can create very slippery surfaces. Wear respiratory protection if necessary. Avoid breathing gas, mist, vapors, or spray. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.
- 6.2 Environmental precautions**  
Do not contaminate water
- 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.

#### Reference to other sections

For disposal see section 13.

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### SECTION 7: Handling and storage

- 7.1 Precautions for safe handling**  
Surfaces are very slippery from this product. Do not swallow. Do not breathe mist, vapors, or spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. See Section 8 for information on Personal Protective Equipment.
- 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)

Apart from the uses mentioned in section 1 no other specific uses are stipulated.

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### SECTION 8: Exposure controls/personal protection

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### 8.1 Control parameters

**CAS: 12125-02-9 (EC: 235-186-4)**

Ammonium chloride

ACGIH: 20 mg/m<sup>3</sup> STEL inhalation; 10 mg/m<sup>3</sup> TWA inhalation; Cal/OSHA: 20 mg/m<sup>3</sup> PEL-ST inhalation; 10 mg/m<sup>3</sup> PEL-TWA inhalation; NIOSH: 20 mg/m<sup>3</sup> REL-ST inhalation; 10 mg/m<sup>3</sup> REL-TWA inhalation

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

Distillates, petroleum, hydrotreated light

ACGIH: 200 mg/m<sup>3</sup> TLV<sup>®</sup> inhalation

**CAS: 79-06-1**

Acrylamide

Cal/OSHA: 0.03 mg/m<sup>3</sup> PEL inhalation; NIOSH: Ca, 0.03 mg/m<sup>3</sup>, See Appendix A REL inhalation; OSHA: 0.3 mg/m<sup>3</sup> PEL inhalation

### 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 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 available.

#### Environmental exposure controls

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)

Odor

Odor threshold

pH

Milky Emulsion

Mild petroleum odor

No data available.

6.0-8.0

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Melting point/freezing point	< 20 °F
Initial boiling point and boiling range	> 201 °F
Flash point	>200 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	10 (< 77 °F)
Vapor density	No data available.
Density	8.9-9.1
Relative density	1.06-1.08 (77 °F)
Solubility(ies)	Water: dispersible
Partition coefficient: n-octanol/water	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity	>20.5 mm <sup>2</sup> /s @ 40 C
Explosive properties	No data available.
Charge	Anionic
Oxidizing properties	The substance or mixture is not classified as oxidizing

### Other safety information

No data available.

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Contact with incompatible materials. Sources of ignition. Exposure to heat.

### 10.2 Chemical stability

Stable under normal storage conditions.

### 10.3 Possibility of hazardous reactions

No data available.

### 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 agent

### 10.6 Hazardous decomposition products

Thermal decomposition may produce: carbon oxides, ammonia, nitrogen oxides

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Information on the product as supplied:

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LD50 Oral - Rat - > 5000 mg/kg (Estimated)  
LD50 Skin - Rabbit - > 5000 mg/kg (Estimated)  
LC50 Inhalation - The product is not expected to be toxic by inhalation

Components:  
Ammonium chloride  
LD50 Oral - Rat - 1,650 mg/kg

Distillates, petroleum, hydrotreated light:  
LD50 Oral - Rat - > 5000 mg/kg  
LD50 Skin - Rabbit - > 5,000 mg/kg  
LC0 Inhalation - Rat - 4951 mg/m<sup>3</sup> - 4 h. Result: Based on results obtained from tests on analogous products

Symptoms (including delayed and immediate effects):  
Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.  
Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

#### **Skin corrosion/irritation**

Information on the product as supplied:  
Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Components:  
Ammonium chloride  
Rabbit/ Non irritating

Distillates, petroleum, hydrotreated light  
Irritating

#### **Serious eye damage/irritation**

Information on the product as supplied:  
May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Components:  
Ammonium chloride  
Rabbit/ Irritating to eyes

Distillates, petroleum, hydrotreated light  
Not irritating to eyes

#### **Respiratory or skin sensitization**

Information on the product as supplied:  
Not sensitizing

Components:  
Ammonium chloride  
Not sensitizing

Distillates, petroleum, hydrotreated light  
The product is not expected to be sensitizing

#### **Germ cell mutagenicity**

Information on the product as supplied:  
Not mutagenic.

Components:  
Ammonium chloride  
No data available

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Distillates, petroleum, hydrotreated light  
Not mutagenic.

### **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### **Reproductive toxicity**

Information on the product as supplied:  
Not toxic for reproduction

### **STOT-single exposure**

Information on the product as supplied:  
No data available

Components:

Ammonium chloride  
No data available

Distillates, petroleum, hydrotreated light  
May cause drowsiness or dizziness. - Central nervous system

### **STOT-repeated exposure**

Information on the product as supplied:  
No known effects

Components:

Ammonium chloride  
No data available

Distillates, petroleum, hydrotreated light  
No data available

### **Aspiration hazard**

Information on the product as supplied:  
Due to viscosity, this product does not present an aspiration hazard

Components:

Distillates, petroleum, hydrotreated light  
May be fatal if swallowed and enters airways.

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## **SECTION 12: Ecological information**

### **Toxicity**

Information on the product as supplied:

LC50 - Pimephales promelas (fathead minnow) - 10-100 mg/l - 96 h (Estimated from similar product)

EC50 - Ceriodaphnia dubia (Water flea) - 10-100 mg/l - 48 h (Estimated from similar product)

Components:

Ammonium chloride

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LC50 - Oncorhynchus mykiss (rainbow trout) - 3.98 mg/l - 96 h  
NOEC - Oncorhynchus mykiss (rainbow trout) - 57 mg/l - 96 h  
EC50 - Daphnia magna (water flea) - 161 mg/l - 48 h  
NOEC - Daphnia magna (water flea) - 0.1 mg/l - 216 h

Distillates, petroleum, hydrotreated light

LC0 - Oncorhynchus mykiss (rainbow trout) - >1000 mg/l - 96 h  
EC0 - Daphnia magna (water flea) - >1000 mg/l - 48 h  
IC0 - Pseudokirchneriella subcapitata (green algae) - >1000 mg/l - 72 h

NOEC - Oncorhynchus mykiss (rainbow trout) - >1000 mg/l - 28 d  
EC50 - Tetrahymena pyriformis - >1000 mg/l - 48 h  
NOEC - Daphnia magna (water flea) - >1000 mg/l - 21 d

#### Persistence and degradability

Information on the product as supplied  
Not readily biodegradable. Does not hydrolyze.

Components:

Ammonium chloride  
No data available

Distillates, petroleum, hydrotreated light

Readily biodegradable. Does not hydrolyze

The polymeric ingredient is not readily biodegradable.

#### Bioaccumulative potential

Information on the product as supplied:  
Because of the high molecular weight of the polymer diffusion through biological membranes is very small. Bioaccumulation is unlikely.

Components:

Ammonium chloride  
No data available

Distillates, petroleum, hydrotreated light

Bioconcentration factor (BCF): no data available. Partition co-efficient (Log Pow): 3-6

#### Mobility in soil

Information on the product as supplied  
No data available on product

#### Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

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## SECTION 13: Disposal considerations

#### Disposal of the product

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.

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## SECTION 14: Transport information

DOT (US)



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Not dangerous goods

### IMDG

Not dangerous goods

### IATA

Not dangerous goods

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## SECTION 15: Regulatory information

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

#### SARA 302 Components

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

#### Massachusetts Right To Know Components

Distillates, petroleum, hydrotreated light  
CAS-No. 64742-47-8

Chemical name: Ammonium chloride

CAS number: 12125-02-9

#### Pennsylvania Right To Know Components

Distillates, petroleum, hydrotreated light  
CAS-No. 64742-47-8

Chemical name: Ammonium chloride

CAS number: 12125-02-9

#### New Jersey Right To Know Components

Distillates, petroleum, hydrotreated light  
CAS-No. 64742-47-8

Common name: Ammonium chloride

CAS number: 12125-02-9

#### 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

WARNING! This product contains a chemical known to the State of California to cause cancer.

Chemical name: Acrylamide

CAS number: 79-06-1

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### HMIS Rating

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

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## 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.