

## 1 . Product and company identification

<b>Product name</b>	: SCALETROL 720
<b>Supplier</b>	: Baker Hughes, Inc. 12645 W. Airport Blvd. Sugar Land, TX 77478 For Product Information/MSDSs Call: 281-351-8131
<b>Material Uses</b>	: Special: Scale Inhibitor
<b>Code</b>	: 488265
<b>Validation date</b>	: 12/13/2011.
<b>Print date</b>	: 12/13/2011.
<b>Version</b>	: 1
<b>Responsible name</b>	: Global Regulatory Affairs - Telephone 281-276-5400 or 800-231-3606
<b>In case of emergency</b>	: 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

<b>Physical state</b>	: Liquid. [Clear.]
<b>Odor</b>	: Mild.
<b>Color</b>	: Colorless to light yellow.
<b>OSHA/HCS status</b>	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Emergency overview</b>	: CAUTION!  MAY BE HARMFUL IF SWALLOWED. MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.  Do not ingest. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
<b>Routes of entry</b>	: Dermal contact. Inhalation.
<b>Potential acute health effects</b>	
<b>Inhalation</b>	: Slightly irritating to the respiratory system.
<b>Ingestion</b>	: Harmful if swallowed.
<b>Skin</b>	: Moderately irritating to the skin.
<b>Eyes</b>	: Moderately irritating to eyes.
<b>Potential chronic health effects</b>	
<b>Chronic effects</b>	: Contains material that may cause target organ damage, based on animal data.
<b>Target organs</b>	: Contains material which may cause damage to the following organs: kidneys, the nervous system, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.
<b>Over-exposure signs/symptoms</b>	
<b>Inhalation</b>	: respiratory tract irritation, coughing
<b>Ingestion</b>	: None known.
<b>Skin</b>	: irritation, redness
<b>Eyes</b>	: irritation, watering, redness
<b>Medical conditions aggravated by over-exposure</b>	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

### 3 . Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Ethylene glycol	107-21-1	10 - 30
Calcium chloride (CaCl <sub>2</sub> )	10043-52-4	1 - 5

### 4 . First aid measures

- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

### 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.
- Hazardous thermal decomposition products** : carbon dioxide,carbon monoxide,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.

### 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. Avoid breathing 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.
- 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.

If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

## 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling			
Ingredients:	List name	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	ppm	mg/m <sup>3</sup>	Other	Notations
Ethylene glycol	US ACGIH OSHA PEL 1989	-	-	-	-	-	-	-	100 125	-	[a]

Form: [a]Aerosol

**Consult local authorities for acceptable exposure limits.**

**Only components of this product with established exposure limits appear in the box above.**

**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.
- 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.
- 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.
- Eyes** : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles.
- Skin** : Wear long sleeves and other protective clothing to prevent repeated or prolonged skin contact.

## 9. Physical and chemical properties

- Physical state** : Liquid. [Clear.]
- Flash point** : Closed cup: >93.4 °C (>200.1 °F) [TCC]
- Auto-ignition temperature** : Not available.
- Flammable limits** : Not available.
- Color** : Colorless to light yellow.
- Odor** : Mild.

## 9 . Physical and chemical properties

<b>pH</b>	: 6 to 8
<b>Boiling/condensation point</b>	: Not available.
<b>Initial Boiling Point</b>	: Not available.
<b>Melting/freezing point</b>	: Not available.
<b>Relative density</b>	: 1.19
<b>Density</b>	: 9.91 (lbs/gal)
<b>Vapor density</b>	: Not available.
<b>Odor threshold</b>	: Not available.
<b>Evaporation rate</b>	: Not available.
<b>VOC</b>	: Not available.
<b>Viscosity</b>	: Not available.
<b>Solubility (Water)</b>	: Complete.
<b>Vapor pressure</b>	: Not available.
<b>Pour Point</b>	: Not available.
<b>Partition coefficient (LogKow)</b>	: Not available.

## 10 . Stability and Reactivity

<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Hazardous polymerization</b>	: Under normal conditions of storage and use, hazardous polymerization will not occur.
<b>Conditions to avoid</b>	: No specific data.
<b>Materials to avoid</b>	: Reactive or incompatible with the following materials: oxidizing materials and alkalis. Slightly reactive or incompatible with the following materials: acids.
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
<b>Conditions of reactivity</b>	: Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

## 11 . Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Ethylene glycol	LD50 Dermal	Rabbit	9530 uL/kg	-
	LD50 Oral	Rat	4700 mg/kg	-
	LD50 Oral	Female rat	4000 mg/kg	-
Calcium chloride (CaCl <sub>2</sub> )	LD50 Oral	Rat	1 g/kg	-
	LD50 Oral	Rabbit	1384 mg/kg	-

### Carcinogenicity

#### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Ethylene glycol	A4	-	-	-	-	-

### Chronic toxicity Remarks

1) Ethylene glycol

Ethylene glycol (EG) is a component of this product. Chronic ingestion has shown to cause adverse kidney, liver, bladder, and blood effects in laboratory animals (NTP Technical Report, 1993; Fund. Appl. Toxicol. 7:547-65; FD Cosmet Toxicol. Vol. 3:229-34; Drug and Chem Toxicol 13(1):43-70). Also, chronic ingestion has caused adverse effect on the sperm (decreased motility and increased percentage of abnormal sperm) in laboratory animals. [Morrissey, R.E. et al, 1988, Fund Appl Toxicol, 11(2), pp 359-71]

Ingestion of ethylene glycol has produced Central Nervous System depression, effects on the cardiopulmonary system, and neurological impairment. [Gosselin, R.E., Smith, R.P., and Hodge, H.C., 1984, Clinical Toxicology of Commercial Products;

## 11 . Toxicological information

NTP Technical Report 413, 1993; CCOHS CHEMINFO, 2003, Record No. 41 for ethylene glycol; Mallya, K.B. et al, 1986, J Neurol Sce, 13(4) pp 340-41; Anderson, B. , 1990, Am J. Med, 88, pp 87-88]

EG is an animal teratogen at doses which produced mild toxicity to the mother. EG given at doses up to 5,000 mg/kg/day to pregnant rats or up to 3,000 mg/kg/day to mice induced a wide variety of fetal malformations, including those of the musculoskeletal, bone marrow, and spleen (RTECS, 1996). It was also a teratogen and an embryotoxin at doses producing no toxicity to the mother in laboratory animals. (Lamb, J.C. et al, 1985, Toxicol Appl Pharmacol, 81, p 100 and Price, C.J. et al, 1985, Appl Pharmacol, 81, pp113-27)

Ethylene glycol is used to cryopreserve embryos of many mammalian species, including pigs, goats, cows and horses (Otoi et al, 1995; Fieni et al, 1995; Hochi et al, 1994). This makes it unlikely that ethylene glycol itself is the active teratogen in whole animal studies. The EG metabolite, glycolic acid, was active in contrast to EG itself for inducing developmental defects in whole rat embryos in culture (Carney et al, 1996). EG inhibited metabolic cooperation of Chinese hamster cells in vitro, a finding which may have implications for its mechanism of teratogenicity (Loch-Carusio et al, 1984).

### 2) Calcium chloride (CaCl<sub>2</sub>)

Calcium chloride is a component of this product. Calcium chloride has been found to cause mutagenic effects, and tumors in tests on laboratory animals (Vendor MSDS). Prolonged inhalation has resulted in perforation of the nasal septum (HSDB, 1998). Prolonged inhalation has resulted in perforation of the nasal septum (HSD, 1998).

## 12 . Ecological information

### Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure	
Ethylene glycol	Acute LC50 >100000 ug/L Marine water	Crustaceans - Common shrimp, sand shrimp - Crangon crangon - Adult	48 hours	
	Acute LC50 6900000 to 8800000 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - Neonate	48 hours	
	Acute LC50 8050000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - <=7 days	96 hours	
	Chronic NOEC 11610000 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - <=24 hours	48 hours	
	Chronic NOEC 6090000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - <=7 days	96 hours	
	Calcium chloride (CaCl <sub>2</sub> )	Acute EC50 52000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - 12 hours	48 hours
		Acute LC50 270 mg/L Marine water	Crustaceans - Opossum shrimp - Americamysis bahia - 4 to 5 days	48 hours
		Acute LC50 2110 mg/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
		Chronic NOEC 260.12 mg/L Marine water	Crustaceans - Opossum shrimp - Americamysis bahia - 4 to 5 days	48 hours
		Chronic NOEC 0.75 g/L Fresh water	Daphnia - Water flea - Daphnia magna - 5 days	48 hours

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.

## 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.

## 13. Disposal considerations

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/PERSONAL PROTECTION for additional handling information and protection of employees.

## 14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
<b>DOT Classification</b>	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains: Ethylene glycol)	9	III		<b>Remarks</b> This material is Not Regulated if transported in a package that does not meet or exceed the Reportable Quantity (RQ).
<b>TDG Classification</b>	Not regulated.	-	-	-		-
<b>IMDG Class</b>	Not regulated.	-	-	-		-
<b>IATA-DGR Class</b>	Not regulated.	-	-	-		-

PG\* : Packing group

**DOT Reportable Quantity** Ethylene glycol, 1682 gal of this product.

**Marine pollutant** Not applicable.

**North-America NAERG** : 171

## 15 . Regulatory information

**HCS Classification** : Irritating material  
Target organ effects

**U.S. Federal regulations** : **United States inventory (TSCA 8b)**: All components are listed or exempted.

**SARA 302/304/311/312 extremely hazardous substances**: No products were found.

**SARA 302/304 emergency planning and notification**: No products were found.

**SARA 302/304/311/312 hazardous chemicals**: Ethylene glycol; CALCIUM CHLORIDE

**SARA 311/312 MSDS distribution - chemical inventory - hazard identification**:

SCALETROL 720: Immediate (acute) health hazard, Delayed (chronic) health hazard

CERCLA: Hazardous substances.: Ethylene glycol: 5000 lbs. (2270 kg);

**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)** :

Listed

### SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
<b>Supplier notification</b>	: Ethylene glycol	107-21-1	10 - 30

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

### Canada



## 15 . Regulatory information

- WHMIS (Canada)** : Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).
- Canada (CEPA DSL):** : At least one component is not listed.

## 16 . Other information

- Label requirements** : MAY BE HARMFUL IF SWALLOWED. MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

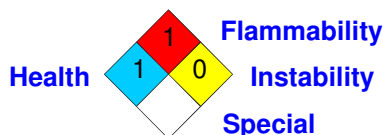
- Hazardous Material Information System (U.S.A.)** :

Health	1
Flammability	1
Physical hazards	0
Personal protection	b

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** : 12/13/2011.

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.

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