HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

XP-07 SYSTEM with BAROID®

Revision Date: 19-Nov-2014 **Revision Number:** 17

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product Identifier

Product Name XP-07 SYSTEM with BAROID®

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Mud System

1.3. Details of the supplier of the safety data sheet

Halliburton Manufacturing Services, Ltd.
Halliburton House, Howemoss Crescent
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

Emergency Phone Number: +44 1224 795277 or +1 281 575 5000

www.halliburton.com

For further information, please contact

E-Mail address: fdunexchem@halliburton.com

1.4. Emergency telephone number

+44 1224 795277 or +1 281 575 5000

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO):+ 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Serious Eye Damage / Eye Irritation	Category 2 - H319
Skin Sensitization	Category 1 - H317

Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R/H-phrases mentioned in this Section, see Section 16

Classification Xi - Irritant.

Risk Phrases R36 Irritating to eyes.
R43 May cause sensitization by skin contact.

2.2. Label Elements

Hazard Pictograms

Signal Word **Warning**

Hazard Statements
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation

Precautionary Statements - EU (§28, 1272/2008)
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

Contains

Substances	**CAS Number**
Barium sulfate	7727-43-7
Paraffin, petroleum, normal C5-C20	64771-72-8
Calcium chloride	10043-52-4
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6
Crystalline silica, quartz	14808-60-7

2.3. Other Hazards
None known

SECTION 3: Composition/information on Ingredients

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.
Barium sulfate	231-784-4	7727-43-7	30 - 60%	Not applicable	Not applicable	No data available
Paraffin, petroleum, normal C5-C20	265-233-4	64771-72-8	30 - 60%	Xn; R65-66	Asp. Tox. 1 (H304) (EUH066)	No data available
Calcium chloride	233-140-8	10043-52-4	5 - 10%	Xi; R36	Eye Irrit. 2 (H319)	01-2119494219-28
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	273-601-0	68990-47-6	1 - 5%	Xi; R43	Skin Sens. 1 (H317)	01-2119496070-42
Crystalline silica, quartz	238-878-4	14808-60-7	0.1 - 1%	T; R49 R48/23	Carc. 1A (H350i) STOT RE 1 (H372)	No data available

For the full text of the R/H-phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Get medical attention if irritation persists.

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

4.2. Most Important symptoms and effects, both acute and delayed

May cause eye irritation May cause allergic skin reaction. Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

SECTION 5: Firefighting Measures

5.1. Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

5.2. Special hazards arising from the substance or mixture

Special Exposure Hazards

Decomposition in fire may produce toxic gases.

5.3. Advice for firefighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment.
See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

6.4. Reference to other sections

See Section 8 and 13 for additional information.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

7.2. Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use.

7.3. Specific End Use(s)

Exposure Scenario No information available
Other Guidelines No information available

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
Barium sulfate	7727-43-7	Not applicable	TWA: 10 mg/m³ TWA: 4 mg/m³ STEL: 30 mg/m³ STEL: 12 mg/m³	Not applicable	Not applicable
Paraffin, petroleum, normal C5-C20	64771-72-8	Not applicable	Not applicable	Not applicable	Not applicable
Calcium chloride	10043-52-4	Not applicable	10 mg/m³	Not applicable	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable	Not applicable	Not applicable	Not applicable
Crystalline silica, quartz	14808-60-7	Not applicable	TWA: 0.1 mg/m³	TWA: 0.075 mg/m³	TWA: 0.1 mg/m³

Substances	CAS Number	Germany	Spain	Portugal	Finland
Barium sulfate	7727-43-7	TWA: 4 mg/m³ TWA: 1.5 mg/m³ TWA: 0.5 mg/m³	TWA: 10 mg/m³	TWA: 10 mg/m³	Not applicable
Paraffin, petroleum, normal C5-C20	64771-72-8	Not applicable	Not applicable	Not applicable	Not applicable
Calcium chloride	10043-52-4	Not applicable	Not applicable	Not applicable	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable	Not applicable	Not applicable	Not applicable
Crystalline silica, quartz	14808-60-7	Not applicable	TWA: 0.1 mg/m³	TWA: 0.025 mg/m³	TWA: 0.05 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Barium sulfate	7727-43-7	Not applicable	2 mg/m³ TWA (respirable dust) 6 mg/m³ STEL (calculated, respirable dust)	Not applicable	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³
Paraffin, petroleum, normal C5-C20	64771-72-8	Not applicable	Not applicable	Not applicable	Not applicable
Calcium chloride	10043-52-4	Not applicable	Not applicable	Not applicable	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable	Not applicable	Not applicable	Not applicable
Crystalline silica, quartz	14808-60-7	TWA: 0.15 mg/m³	0.1 mg/m³ TWA (respirable dust) 0.3 mg/m³ STEL (calculated, respirable dust)	TWA: 0.15 mg/m³	TWA: 0.3 mg/m³ TWA: 0.1 mg/m³ STEL: 0.9 mg/m³ STEL: 0.3 mg/m³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Barium sulfate	7727-43-7	Not applicable	Not applicable	TWA: 0.5 mg/m³	Not applicable
Paraffin, petroleum, normal C5-C20	64771-72-8	Not applicable	Not applicable	Not applicable	Not applicable
Calcium chloride	10043-52-4	Not applicable	Not applicable	Not applicable	TWA: 5 mg/m³

Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable	Not applicable	Not applicable	Not applicable
Crystalline silica, quartz	14808-60-7	Not applicable	TWA: 2 mg/m³ TWA: 0.3 mg/m³ TWA: 4.0 mg/m³ TWA: 1.0 mg/m³	TWA: 0.15 mg/m³	TWA: 0.1 mg/m³

Substances	CAS Number	Denmark
Barium sulfate	7727-43-7	Not applicable
Paraffin, petroleum, normal C5-C20	64771-72-8	Not applicable
Calcium chloride	10043-52-4	Not applicable
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable
Crystalline silica, quartz	14808-60-7	TWA: 0.3 mg/m³ TWA: 0.1 mg/m³

Derived No Effect Level (DNEL) No information available.

Worker

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Hazards for the eyes - local effects
Calcium chloride	Not available	Not available	5 mg/m³	10 mg/m³	Not available	Not available	Not available	Not available	Not available
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	14693 µg/m³	29386 µg/m³	14693 µg/m³	14693 µg/m³	16666 µg/kg bw/day	33332 µg/kg bw/day	1388 µg/cm²	1388 µg/cm²	Not available

General Population

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Long-term exposure - systemic effects, Oral	Acute / short term exposure - local effects, Oral	Hazards for the eyes - local effects
Calcium chloride	Not available	Not available	2.5 mg/m³	5 mg/m³	Not available	Not available	Not available	Not available	Not available	Not available	Not available
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	3623 µg/m³	7246 µg/m³	3623 µg/m³	3623 µg/m³	8333 µg/kg bw/day	16666 µg/kg bw/day	694 µg/cm²	694 µg/cm²	8333 µg/kg bw/day	16666 µg/kg bw/day	Not available

Predicted No Effect Concentration (PNEC) No information available.

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning

Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	0.00217 mg/L	0.000217 mg/L	0.0217 mg/L	1 mg/L	180 mg/kg sediment dw	18 mg/kg sediment dw	Not available	146 mg/kg soil dw	33.34 mg/kg food

8.2. Exposure controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
Organic vapor respirator with a dust/mist filter. (A2P2/P3)

Hand Protection Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.4 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

Skin Protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls No information available

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid **Color:** Brown
Odor: Mild hydrocarbon **Odor Threshold:** No information available

Property	Values	Remarks/ - Method
pH:	No data available	
Freezing Point/Range	No data available	
Melting Point/Range	No data available	
Boiling Point/Range	238 °C	
Flash Point	88 °C PMCC	
Evaporation rate	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	
Specific Gravity	1.39	
Water Solubility	Insoluble in water	
Solubility in other solvents	No data available	
Partition coefficient: n-octanol/water	No data available	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	No data available	
Explosive Properties	No information available	
Oxidizing Properties	No information available	

9.2. Other information

VOC Content (%) No data available

SECTION 10: Stability and Reactivity

10.1. Reactivity

Not applicable

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions

Will Not Occur

10.4. Conditions to Avoid

None anticipated

10.5. Incompatible Materials

Strong oxidizers.

10.6. Hazardous Decomposition Products

Carbon monoxide and carbon dioxide. Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation

May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

Eye Contact

May cause eye irritation

Skin Contact

May cause mild skin irritation. May cause an allergic skin reaction.

Ingestion

May produce nervous system effects such as feeling of weakness, unsteady walk, and dilation of blood vessels. May affect the heart and cardiovascular system. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

Chronic Effects/Carcinogenicity

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Barium sulfate	7727-43-7	> 307,000 mg/kg (Rat) > 2000mg/kg (Rat) (similar substance - barium dichloride)	> 2,000 mg/kg (Rabbit)	No data available
Paraffin, petroleum, normal C5-C20	64771-72-8	No data available	No data available	No data available
Calcium chloride	10043-52-4	> 1000 mg/kg (Rat) 2301 mg/kg (Rat)	2630 mg/kg (Rat) > 5000 mg/kg (Rabbit)	No data available
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	> 2020 mg/kg (Rat)	> 2000 mg/kg (Rat)	No data available
Crystalline silica, quartz	14808-60-7	> 5000 mg/kg (Rat)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Barium sulfate	7727-43-7	Non-irritating to the skin (similar substances) (rabbit)
Calcium chloride	10043-52-4	Causes mild skin irritation (rabbit)
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Non-irritating to the skin
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin

Substances	CAS Number	Eye damage/irritation
Barium sulfate	7727-43-7	Non-irritating to the eye (rabbit)
Calcium chloride	10043-52-4	Irritating to eyes. (rabbit)
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Non-irritating to the eye
Crystalline silica, quartz	14808-60-7	Mechanical irritation of the eyes is possible.

Substances	CAS Number	Skin Sensitization
Barium sulfate	7727-43-7	Did not cause sensitization on laboratory animals (mouse) (similar substances)
Calcium chloride	10043-52-4	No data of sufficient quality are available.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Skin sensitizer in guinea pig.
Crystalline silica, quartz	14808-60-7	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Barium sulfate	7727-43-7	No information available
Calcium chloride	10043-52-4	No information available
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	No information available
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	Mutagenic Effects

Barium sulfate	7727-43-7	In vitro tests did not show mutagenic effects (similar substances)
Calcium chloride	10043-52-4	In vitro tests did not show mutagenic effects
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	In vivo tests did not show mutagenic effects.
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.

Substances	**CAS Number**	**Carcinogenic Effects**
Barium sulfate	7727-43-7	Did not show carcinogenic effects in animal experiments (similar substances)
Calcium chloride	10043-52-4	No information available.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Did not show carcinogenic effects in animal experiments
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.

Substances	**CAS Number**	**Reproductive toxicity**
Barium sulfate	7727-43-7	No information available
Calcium chloride	10043-52-4	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Animal testing did not show any effects on fertility.
Crystalline silica, quartz	14808-60-7	No information available

Substances	**CAS Number**	**STOT - single exposure**
Barium sulfate	7727-43-7	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Calcium chloride	10043-52-4	No significant toxicity observed in animal studies at concentration requiring classification.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	**CAS Number**	**STOT - repeated exposure**
Barium sulfate	7727-43-7	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Calcium chloride	10043-52-4	No significant toxicity observed in animal studies at concentration requiring classification.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled Lungs

Substances	**CAS Number**	**Aspiration hazard**
Barium sulfate	7727-43-7	Not applicable
Calcium chloride	10043-52-4	Not applicable

Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Not applicable
Crystalline silica, quartz	14808-60-7	Not applicable

SECTION 12: Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Barium sulfate	7727-43-7	EC50(72h): (growth rate) > 61.1 mg/L (Pseudokirchnerella subcapitata) EC50(72h): > 34.31 mg/L (Pseudokirchnerella subcapitata) (elemental Barium)	TLM96: 7500 ppm (Oncorhynchus mykiss) LC50(96h): > 174 mg/L (Danio rerio) LC50(96h): > 97.5 mg/L (Danio rerio) (elemental Barium) LC50(28d): 42700 ug/L (Oncorhynchus mykiss) (elemental Barium)	EC50(3h): (respiration rate) >1000 mg/L (activated sludge)	TLM96: > 1,000,000 ppm (Mysidopsis bahia) LC50(48h): 14500 ug/L (Daphnia magna) (elemental Barium) EC16(3wk): 5800 ug/L (Daphnia magna) (elemental Barium) EC16(3wk): 4800 ug/L (Daphnia magna)
Paraffin, petroleum, normal C5-C20	64771-72-8	No information available	No information available	No information available	No information available
Calcium chloride	10043-52-4	EC50(72h): 2900 mg/L (Pseudokirchnerella subcapitata)	LC50(96h): 4630 mg/L (Pimephales promelas)	No information available	EC50(48h): 2400 mg/L (Daphnia magna) EC50(21d) 610 mg/L (reproduction) (Daphnia magna)
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	EC50(72h): > 100 mg/L (growth rate) (Pseudokirchnerella subcapitata)	LC50(96h): > 100 mg/L (Danio rerio)	EC50(3h): > 100 mg/L (respiration rate) (Activated sludge)	IC50(48h): > 100 mg/L (Daphnia magna)
Crystalline silica, quartz	14808-60-7	No information available	LL0(96h): 10000 mg/L(Danio rerio) (similar substance)	No information available	LL50(24h): > 10000 mg/L (Daphnia magna) (similar substance)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Barium sulfate	7727-43-7	The methods for determining biodegradability are not applicable to inorganic substances.
Paraffin, petroleum, normal C5-C20	64771-72-8	No information available
Calcium chloride	10043-52-4	The methods for determining biodegradability are not applicable to inorganic substances.
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	Readily biodegradable (71% @ 28d)
Crystalline silica, quartz	14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Barium sulfate	7727-43-7	BCF: 1.2 - 74.4 L/kg (Lepomis macrochirus)
Paraffin, petroleum, normal C5-C20	64771-72-8	No information available
Calcium chloride	10043-52-4	No information available
Fatty acid, tall-oil, reaction product with diethylenetriamine, maleic anhydride, tetraethylenepentamine, and triethylenetetramine	68990-47-6	2.4
Crystalline silica, quartz	14808-60-7	No information available

12.4. Mobility in soil
No information available

12.5. Results of PBT and vPvB assessment

Substances	PBT and vPvB assessment
Crystalline silica, quartz	Not PBT/vPvB

12.6. Other adverse effects
Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors

SECTION 13: Disposal Considerations

13.1. Waste treatment methods
Disposal Method Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging Follow all applicable national or local regulations.

SECTION 14: Transport Information

IMDG/IMO
- **UN Number:** Not restricted
- **UN Proper Shipping Name:** Not restricted
- **Transport Hazard Class(es):** Not applicable
- **Packing Group:** Not applicable
- **Environmental Hazards:** Not applicable

RID
- **UN Number:** Not restricted
- **UN Proper Shipping Name:** Not restricted
- **Transport Hazard Class(es):** Not applicable
- **Packing Group:** Not applicable
- **Environmental hazard:** Not applicable

ADR
- **UN Number:** Not restricted
- **UN Proper Shipping Name:** Not restricted
- **Transport Hazard Class(es):** Not applicable
- **Packing Group:** Not applicable
- **Environmental hazard:** Not applicable

IATA/ICAO
- **UN Number:** Not restricted
- **UN Proper Shipping Name:** Not restricted
- **Transport Hazard Class(es):** Not applicable
- **Packing Group:** Not applicable
- **Environmental hazard:** Not applicable

14.1. UN Number: Not restricted

14.2. UN Proper Shipping Name: Not restricted

14.3. Transport Hazard Class(es): Not applicable

14.4. Packing Group: Not applicable

14.5. Environmental Hazards: Not applicable

14.6. Special Precautions for User: None

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

EINECS Inventory	This product, and all its components, complies with EINECS
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian DSL Inventory	All components listed on inventory or are exempt.

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK)	WGK 1: Low hazard to waters.

15.2. Chemical Safety Assessment
No information available

SECTION 16: Other Information

Full text of R-phrases referred to under Sections 2 and 3
R36 - Irritating to eyes
R43 May cause sensitization by skin contact.
R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R49 May cause cancer by inhalation.
R65 Harmful: may cause lung damage if swallowed.
R66 Repeated exposure may cause skin dryness or cracking.

Full text of H-Statements referred to under sections 2 and 3
H304 - May be fatal if swallowed and enters airways
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H350i - May cause cancer by inhalation
H372 - Causes damage to organs (a,b,c) through prolonged or repeated exposure if inhaled

Key or legend to abbreviations and acronyms
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL – Short Term Exposure Limit
SU – Sector of Use category

Key literature references and sources for data
www.ChemADVISOR.com/

Revision Date: 19-Nov-2014
Revision Note
Update to Format SECTION: 8

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

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End of Safety Data Sheet