HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

EZ-SPOT PILL

Revision Date: 19-Nov-2014 **Revision Number:** 12

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

1.1. Product Identifier

Product Name EZ-SPOT PILL

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

Recommended Use Spotting fluid

1.3. Details of the supplier of the safety data sheet

Halliburton Energy Services
Halliburton House, Howemoss Place
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

Acute Inhalation Toxicity - Vapors	Category 4 - H332
Skin Corrosion / irritation	Category 2 - H315
Serious Eye Damage / Eye Irritation	Category 2 - H319
Carcinogenicity	Category 2 - H351
Specific Target Organ Toxicity - (Repeated Exposure)	Category 2 - H373
Chronic Aquatic Toxicity	Chronic 2 - H411

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 Xn - Harmful.

Risk Phrases
R20 Harmful by inhalation.
R40 Limited evidence of a carcinogenic effect.
R36/38 Irritating to eyes and skin.
R48/21 Harmful: danger of serious damage to health by prolonged exposure in contact with skin.

2.2. Label Elements

Hazard Pictograms

Signal Word **Warning**

Hazard Statements
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H351 - Suspected of causing cancer
H373 - May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
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
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P308 + P313 - IF exposed or concerned: Get medical advice/attention

Contains

Substances	CAS Number
Diesel	68476-34-6
Barium sulfate	7727-43-7
Hydrotreated light petroleum distillate	64742-47-8
Isobutanol	78-83-1
Crystalline silica, quartz	14808-60-7

2.3. Other Hazards
None known

SECTION 3: Composition/information on Ingredients

3.2. Mixtures
Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.

Diesel	270-676-1	68476-34-6	30 - 60%	Xn; R20 R48/21 R65 Carc.Cat.3; R40 Xi; R38 R53	Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Carc. 2 (H351) STOT-RE 2 (H373) Asp. Tox. 1 (H304) Aquatic Chronic 2 (H411)	No data available
Barium sulfate	231-784-4	7727-43-7	10 - 30%	Not applicable	Not applicable	No data available
Hydrotreated light petroleum distillate	265-149-8	64742-47-8	1 - 5%	Xn; R65 R67	STOT-SE 3 (H336) Asp. Tox. 1 (H304)	01-2119484819-18
Isobutanol	201-148-0	78-83-1	1 - 5%	R10 Xi; R37/38-41 R67	Skin Irrit. 2 (H315) Eye Dam. 1 (H318) STOT SE 3 (H335) STOT SE 3 (H336) Flam. Liq. 3 (H226)	01-2119484609-23
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 to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

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. Remove contaminated clothing and launder before reuse.

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 and skin irritation. May be harmful if inhaled May cause headache, dizziness, and other central nervous system effects. 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

Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. 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. Wear self-contained breathing apparatus in enclosed areas.
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
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. Keep from heat, sparks, and open flames. Keep container closed 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
Diesel	68476-34-6	Not applicable	Not applicable	Not applicable	Not applicable
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
Hydrotreated light petroleum distillate	64742-47-8	Not applicable	Not applicable	Not applicable	Not applicable
Isobutanol	78-83-1	Not applicable	TWA: 50 ppm TWA: 154 mg/m³ STEL: 75 ppm STEL: 231 mg/m³	50 ppm	50 ppm
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
Diesel	68476-34-6	Not applicable	Not applicable	TWA: 100 mg/m³	Not applicable
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
Hydrotreated light petroleum distillate	64742-47-8	TWA: 20 ppm TWA: 140 mg/m³	Not applicable	Not applicable	Not applicable
Isobutanol	78-83-1	TWA: 100 ppm TWA: 310 mg/m³	TWA: 50 ppm TWA: 154 mg/m³	TWA: 50 ppm	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
Diesel	68476-34-6	Not applicable	Not applicable	Not applicable	Not applicable
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
Hydrotreated light petroleum distillate	64742-47-8	Not applicable	Not applicable	Not applicable	Not applicable

Isobutanol	78-83-1	TWA: 50 ppm TWA: 150 mg/m³ STEL" 200 ppm STEL" 600 mg/m³	50 ppm TWA; 150 mg/m³ TWA 75 ppm STEL; 225 mg/m³ STEL	TWA: 50 ppm TWA: 150 mg/m³ STEL: 50 ppm STEL: 150 mg/m³	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**
Diesel	68476-34-6	Not applicable	Not applicable	Not applicable	Not applicable
Barium sulfate	7727-43-7	Not applicable	Not applicable	TWA: 0.5 mg/m³	Not applicable
Hydrotreated light petroleum distillate	64742-47-8	Not applicable	Not applicable	Not applicable	Not applicable
Isobutanol	78-83-1	Not applicable	TWA: 100 mg/m³ STEL: 200 mg/m³	Not applicable	TWA: 300 mg/m³
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**
Diesel	68476-34-6	Not applicable
Barium sulfate	7727-43-7	Not applicable
Hydrotreated light petroleum distillate	64742-47-8	Not applicable
Isobutanol	78-83-1	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
Isobutanol	Not available	Not available	310 mg/m³	Not available	Not available	Not available	Not available	Not available	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
Isobutanol	Not available	Not available	55 mg/m³	Not available	Not available	Not available	Not available	Not available	Not available	Not available	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
Isobutanol	0.4 mg/L	0.04 mg/L	11 mg/L	10 mg/L	1.52 mg/kg sediment dw	0.152 mg/kg sediment dw	Not available	0.0699 mg/kg soil dw	Not available

8.2. Exposure controls

Engineering Controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

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	Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product. Positive pressure self-contained breathing apparatus in enclosed areas.
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	Rubber apron. 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:	Diesel	**Odor Threshold:**	No information available

Property Remarks/ - Method	Values
pH:	No data available
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	> 65 °C PMCC
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	No data available
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
Keep away from heat, sparks and flame.
10.5. Incompatible Materials
Strong oxidizers.
10.6. Hazardous Decomposition Products
Oxides of nitrogen. Carbon monoxide and carbon dioxide.

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 skin irritation.

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

Prolonged or repeated application of a similar product to the skin of laboratory mice without washing between applications resulted in increased incidence of skin tumors. It is suspected that tumors may be due in part to severely irritated conditions from continous contact with the product. Limited studies on oils that are very active carcinogens have shown washing the animals' skin with soap and water between applications greatly decreases the incidence of tumors. In light of these studies, good personal hygiene is essential with the use of this product. 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
Diesel	68476-34-6	7,600 mg/kg (Rat)	> 4300 mg/kg (Rabbit)	4.1 mg/L (Rat, vapour, 4h)
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
Hydrotreated light petroleum distillate	64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	5.28 mg/L (Rat) 4h

Isobutanol	78-83-1	2460 mg/kg (Rat) 3350 mg/kg (Rat) > 2830 mg/kg (Rat)	> 2000 mg/kg (Rabbit) 3392 mg/kg (Rabbit)	6.5 mg/L (Rat) 4h 24.6 mg/L (Rat) 4h 19.6 mg/L (Rat) 4h
Crystalline silica, quartz	14808-60-7	> 5000 mg/kg (Rat)	No data available	No data available

Substances	**CAS Number**	**Skin corrosion/irritation**
Diesel	68476-34-6	Irritating to skin. (rabbit)
Barium sulfate	7727-43-7	Non-irritating to the skin (similar substances) (rabbit)
Hydrotreated light petroleum distillate	64742-47-8	Non-irritating to the skin
Isobutanol	78-83-1	Irritating to skin. (rabbit)
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin

Substances	**CAS Number**	**Eye damage/irritation**
Diesel	68476-34-6	Non-irritating to the eye (rabbit)
Barium sulfate	7727-43-7	Non-irritating to the eye (rabbit)
Hydrotreated light petroleum distillate	64742-47-8	Non-irritating to the eye
Isobutanol	78-83-1	Causes severe eye irritation. (rabbit)
Crystalline silica, quartz	14808-60-7	Mechanical irritation of the eyes is possible.

Substances	**CAS Number**	**Skin Sensitization**
Diesel	68476-34-6	Did not cause sensitization on laboratory animals (guinea pig)
Barium sulfate	7727-43-7	Did not cause sensitization on laboratory animals (mouse) (similar substances)
Hydrotreated light petroleum distillate	64742-47-8	Did not cause sensitization on laboratory animals (guinea pig)
Isobutanol	78-83-1	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Crystalline silica, quartz	14808-60-7	Not regarded as a sensitizer.

Substances	**CAS Number**	**Respiratory Sensitization**
Diesel	68476-34-6	No information available
Barium sulfate	7727-43-7	No information available
Hydrotreated light petroleum distillate	64742-47-8	No information available
Isobutanol	78-83-1	No information available
Crystalline silica, quartz	14808-60-7	No information available

Substances	**CAS Number**	**Mutagenic Effects**
Diesel	68476-34-6	Some in vitro tests have shown mutagenic effects. In vivo tests did not show mutagenic effects.
Barium sulfate	7727-43-7	In vitro tests did not show mutagenic effects (similar substances)
Hydrotreated light petroleum distillate	64742-47-8	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects
Isobutanol	78-83-1	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.

Substances	**CAS Number**	**Carcinogenic Effects**
Diesel	68476-34-6	Contains petroleum distillates which have been shown to cause skin cancer in laboratory animals.
Barium sulfate	7727-43-7	Did not show carcinogenic effects in animal experiments (similar substances)
Hydrotreated light petroleum distillate	64742-47-8	The full refining history is known and it can be shown that the production substance is not carcinogen, therefore the classification as a carcinogen need not apply.
Isobutanol	78-83-1	No information available.
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**
Diesel	68476-34-6	Animal testing did not show any effects on fertility. (fetotoxic and teratogenic effects).
Barium sulfate	7727-43-7	No information available
Hydrotreated light petroleum distillate	64742-47-8	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Isobutanol	78-83-1	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	STOT - single exposure
Diesel	68476-34-6	No significant toxicity observed in animal studies at concentration requiring classification.
Barium sulfate	7727-43-7	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Hydrotreated light petroleum distillate	64742-47-8	May cause headache, dizziness, and other central nervous system effects.
Isobutanol	78-83-1	May cause respiratory irritation. May cause headache, dizziness, and other central nervous system effects.
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Diesel	68476-34-6	Causes damage to organs through prolonged or repeated exposure in contact with skin (Liver) thymus bone marrow
Barium sulfate	7727-43-7	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Hydrotreated light petroleum distillate	64742-47-8	No significant toxicity observed in animal studies at concentration requiring classification.
Isobutanol	78-83-1	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
Diesel	68476-34-6	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
Barium sulfate	7727-43-7	Not applicable
Hydrotreated light petroleum distillate	64742-47-8	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
Isobutanol	78-83-1	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
Diesel	68476-34-6	EL50(72h): 10 mg/L (Pseudokirchnerella subcapitata) NOEL(72h): 1 mg/L (Pseudokirchnerella subcapitata)	LC50: 35 mg/l (Pimephales promelas) LL50(96h): 21 mg/L (Oncorhynchus mykiss)	No information available	EL50(48h): 210 mg/L (Daphnia magna) NOEL(48h): 46 mg/L (Daphnia magna)
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)
Hydrotreated light petroleum distillate	64742-47-8	EC50(72h): > 10,000 mg/L (Skeletonema costatum) (ISO 10253)	LC50(96h): > 10,000 mg/L (Scophthalmus maximus) (OSPARCOM 1995)	No information available	LC50(48h): > 10,000 mg/L (Acartia tonsa) (ISO 14669) EC50(48h): 1100 mg/L (mobility) (Daphnia pulex)

Isobutanol	78-83-1	ErC50(48h): 2300 mg/L (Desmodesmus subspicatus) ErC50(72h): 1799 mg/L (Pseudokirchnerella subcapitata)	LC50(96h): 1370 - 1670 mg/l (Pimephales promelas) LC50(96h): 1430 mg/L (Pimephales promelas)	TGK(16h): 280 mg/L (growth inhibition) (Pseudomonas putida) IC50(16h): > 1000 mg/L (growth inhibition) (Industrial sewage)	EC50(48h): 1100 mg/L (Daphnia pulex) NOEC(21d): 20 mg/L (reproduction) (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
Diesel	68476-34-6	(57.5% @ 28d)
Barium sulfate	7727-43-7	The methods for determining biodegradability are not applicable to inorganic substances.
Hydrotreated light petroleum distillate	64742-47-8	Readily biodegradable (87% @ 28d)
Isobutanol	78-83-1	Readily biodegradable (70-80% @ 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
Diesel	68476-34-6	No information available
Barium sulfate	7727-43-7	BCF: 1.2 - 74.4 L/kg (Lepomis macrochirus)
Hydrotreated light petroleum distillate	64742-47-8	7.5
Isobutanol	78-83-1	0.79 BCF: 3
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

R10 Flammable.
R20 Harmful by inhalation.
R37/38 Irritating to respiratory system and skin.
R38 Irritating to skin.
R40 Limited evidence of a carcinogenic effect.
R41 Risk of serious damage to eyes.
R48/21 Harmful: danger of serious damage to health by prolonged exposure in contact with skin.
R49 May cause cancer by inhalation.
R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R53 May cause long-term adverse effects in the aquatic environment.
R65 Harmful: may cause lung damage if swallowed.
R67 Vapours may cause drowsiness and dizziness.

Full text of H-Statements referred to under sections 2 and 3
H226 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

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/

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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