HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

AbandaCem 665 Blend

Revision Date: 03-Sep-2015 **Revision Number:** 6

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

1.1. Product Identifier

Product Name AbandaCem 665 Blend
Internal ID Code HM007025

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

Recommended Use Cement

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

www.halliburton.com

For further information, please contact
E-Mail address: fdunexchem@halliburton.com

1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961

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)
Cyprus	+210 7793777
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
Romania	+40 21 318 36 06
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

Skin Corrosion / irritation	Category 2 - H315
Serious Eye Damage / Eye Irritation	Category 1 - H318
Skin Sensitization	Category 1 - H317
Carcinogenicity	Category 2 - H351
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H335
Specific Target Organ Toxicity - (Repeated Exposure)	Category 1 - H372

2.2. Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

Precautionary Statements - EU (§28, 1272/2008)
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Contains

Substances	**CAS Number**
Portland cement	65997-15-1
Aluminum silicate	1335-30-4
Crystalline silica, quartz	14808-60-7
Manganese tetraoxide	1317-35-7

2.3. Other Hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on Ingredients

3.2. Mixtures

Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Portland cement	266-043-4	65997-15-1	30 - 60%	Skin Irrit. 2 (H315) Eye Corr. 1 (H318) Skin Sens. 1 (H317) STOT SE 3 (H335)	No data available
Aluminum silicate	215-628-2	1335-30-4	30 - 60%	Eye Corr. 1 (H318)	No data available
Crystalline silica, quartz	238-878-4	14808-60-7	10 - 30%	Carc. 2 (H351) STOT RE 1 (H372)	No data available
Manganese tetraoxide	215-266-5	1317-35-7	5 - 10%	STOT RE 2 (H373)	No data available

For the full text of the 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 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Seek immediate medical attention/advice. Suitable emergency eye wash facility should be immediately available
Skin	Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Seek immediate medical attention/advice.
Ingestion	Under normal conditions, first aid procedures are not required.

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

Causes severe eye irritation which may damage tissue. Causes skin irritation. May cause allergic skin reaction. May cause respiratory irritation. 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

None - does not burn.

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

Not applicable.

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. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

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

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

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. 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 in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Product has a shelf life of 24 months.

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
Portland cement	65997-15-1	Not applicable	TWA: 10 mg/m³ TWA: 4 mg/m³ STEL: 30 mg/m³ STEL: 12 mg/m³	Not applicable	Not applicable
Aluminum silicate	1335-30-4	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
Manganese tetraoxide	1317-35-7	Not applicable	0.5 mg/m³	Not applicable	1 mg/m³

Substances	CAS Number	Germany	Spain	Portugal	Finland
Portland cement	65997-15-1	TWA:	TWA: 4 mg/m³	TWA: 10 mg/m³	TWA: 5 mg/m³ TWA: 1 mg/m³
Aluminum silicate	1335-30-4	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
Manganese tetraoxide	1317-35-7	TWA: 0.5 mg/m³ TWA: 0.2 mg/m³ TWA: 0.02 mg/m³	TWA: 0.2 mg/m³	TWA: 0.2 mg/m³	TWA: 0.2 mg/m³ TWA: 0.1 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Portland cement	65997-15-1	TWA: 5 mg/m³	1 mg/m³ TWA (respirable dust) 3 mg/m³ STEL (calculated, respirable dust)	TWA: 5 mg/m³	Not applicable
Aluminum silicate	1335-30-4	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
Manganese tetraoxide	1317-35-7	TWA: 0.5 mg/m³ STEL" 2 mg/m³	0.5 mg/m³ TWA 0.2 mg/m³ TWA (as Mn) 1.5 mg/m³ STEL (calculated)	Not applicable	TWA: 1 mg/m³ TWA: 0.1 mg/m³ STEL: 3 ppm STEL: 0.3 mg/m³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Portland cement	65997-15-1	Not applicable	TWA: 6.0 mg/m³ TWA: 2.0 mg/m³	TWA: 10 mg/m³	10.0 mg/m³
Aluminum silicate	1335-30-4	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
Manganese tetraoxide	1317-35-7	Not applicable	0.3 mg/m³	5 mg/m³	1 mg/m³

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Portland cement	65997-15-1	Not applicable	TWA: 10 mg/m³	TWA: 10 mg/m³ TWA: 4 mg/m³	Not applicable
Aluminum silicate	1335-30-4	Not applicable	Not applicable	Not applicable	Not applicable
Crystalline silica, quartz	14808-60-7	TWA: 0.3 mg/m³ TWA: 0.1 mg/m³	TWA: 0.1 mg/m³	TWA: 0.1 mg/m³	Not applicable
Manganese tetraoxide	1317-35-7	0.2 mg/m³	Not applicable	Not applicable	Not applicable

Derived No Effect Level (DNEL) No information available.

Worker

General Population

Predicted No Effect Concentration (PNEC) No information 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.
Hand Protection	Normal work gloves.
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	Wear safety glasses or goggles to protect against exposure.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls Do not allow material to contaminate ground water system

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Solid
Color: Gray
Odor: Odorless
Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	12.4
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	No data available
Flammability (solid, gas)	No data available
upper flammability limit	No data available
lower flammability limit	No data available
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 expected to be reactive.

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions

Will Not Occur

10.4. Conditions to Avoid

Keep away from any contact with water.

10.5. Incompatible Materials

Hydrofluoric acid.

10.6. Hazardous Decomposition Products

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

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 Causes severe eye irritation which may damage tissue.

Skin Contact Causes skin irritation. Can dry skin. May cause alkali burns with confined contact. May cause an allergic skin reaction.

Ingestion Irritation of the mouth, throat, and stomach.

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
Portland cement	65997-15-1	> 2000 mg/kg (Rat)	> 2000 mg/kg	> 1 mg/L (Rat) 4h
Aluminum silicate	1335-30-4	> 2000 mg/kg (Rat)	> 5000 mg/kg (Rabbit) (similar substance)	3.8 mg/L (Rat) 4h (similar substance)
Crystalline silica, quartz	14808-60-7	>15,000 mg/kg (Human)	No data available	No data available
Manganese tetraoxide	1317-35-7	> 2000 mg/kg (Rat)	No data available	> 5.17 mg/L (Rat) 4h

Substances	CAS Number	Skin corrosion/irritation
Portland cement	65997-15-1	Irritating to skin. (Rabbit)
Aluminum silicate	1335-30-4	Non-irritating to the skin
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin
Manganese tetraoxide	1317-35-7	Non-irritating to the skin (Rabbit)

Substances	CAS Number	Eye damage/irritation
Portland cement	65997-15-1	Corrosive to eyes
Aluminum silicate	1335-30-4	Causes severe eye irritation which may damage tissue. (similar substances)
Crystalline silica, quartz	14808-60-7	Mechanical irritation of the eyes is possible.
Manganese tetraoxide	1317-35-7	Non-irritating to the eye (Rabbit)

Substances	CAS Number	Skin Sensitization
Portland cement	65997-15-1	May cause sensitization by skin contact
Aluminum silicate	1335-30-4	Did not cause sensitization on laboratory animals (mouse)
Crystalline silica, quartz	14808-60-7	No information available.

Manganese tetraoxide	1317-35-7	No information available

Substances	CAS Number	Respiratory Sensitization
Portland cement	65997-15-1	No information available
Aluminum silicate	1335-30-4	No information available
Crystalline silica, quartz	14808-60-7	No information available
Manganese tetraoxide	1317-35-7	No information available

Substances	CAS Number	Mutagenic Effects
Portland cement	65997-15-1	No data of sufficient quality are available.
Aluminum silicate	1335-30-4	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.
Manganese tetraoxide	1317-35-7	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar substances)

Substances	CAS Number	Carcinogenic Effects
Portland cement	65997-15-1	No data of sufficient quality are available.
Aluminum silicate	1335-30-4	Did not show carcinogenic effects in animal experiments (similar substances)
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.
Manganese tetraoxide	1317-35-7	Not regarded as carcinogenic.

Substances	CAS Number	Reproductive toxicity
Portland cement	65997-15-1	No data of sufficient quality are available.
Aluminum silicate	1335-30-4	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Crystalline silica, quartz	14808-60-7	No information available
Manganese tetraoxide	1317-35-7	No data of sufficient quality are available.

Substances	CAS Number	STOT - single exposure
Portland cement	65997-15-1	May cause respiratory irritation.
Aluminum silicate	1335-30-4	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.
Manganese tetraoxide	1317-35-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Portland cement	65997-15-1	No data of sufficient quality are available.
Aluminum silicate	1335-30-4	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)
Manganese tetraoxide	1317-35-7	Causes damage to organs through prolonged or repeated exposure if inhaled: Central Nervous System (CNS)

Substances	CAS Number	Aspiration hazard
Portland cement	65997-15-1	Not applicable
Aluminum silicate	1335-30-4	No information available
Crystalline silica, quartz	14808-60-7	Not applicable
Manganese tetraoxide	1317-35-7	No information available

SECTION 12: Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Portland cement	65997-15-1	No information available	No information available	No information available	No information available
Aluminum silicate	1335-30-4	EC50 (72h) 410 mg/L (Desmodesmus	LC50 (96h) > 1.4 mg/L (Danio rerio)	No information available	EC50 (48h) 10000 mg/L (Daphnia magna)

		subspicatus)			
Crystalline silica, quartz	14808-60-7	No information available	LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)
Manganese tetraoxide	1317-35-7	EC50 (72h) > 10000 mg/L (Skeletonema costatum) EC50 (72h) > 100 mg/L (Desmodesmus subspicatus)	LC50 (96h) > 100 mg/L (orhynchus mykiss)	No information available	EC50 (48h) > 100 mg/L (Daphnia magna) LOEC (8d) 100 mg/L (Ceriodaphnia dubia)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Portland cement	65997-15-1	The methods for determining biodegradability are not applicable to inorganic substances.
Aluminum silicate	1335-30-4	No information available
Crystalline silica, quartz	14808-60-7	No information available
Manganese tetraoxide	1317-35-7	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Portland cement	65997-15-1	No information available
Aluminum silicate	1335-30-4	No information available
Crystalline silica, quartz	14808-60-7	No information available
Manganese tetraoxide	1317-35-7	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Portland cement	65997-15-1	No information available
Aluminum silicate	1335-30-4	No information available
Crystalline silica, quartz	14808-60-7	No information available
Manganese tetraoxide	1317-35-7	No information available

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Portland cement	Not PBT/vPvB
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 Bury in a licensed landfill according to 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 Hazards:	Not applicable

ADR

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	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 Hazards:	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 0: Generally not water endangering.

15.2. Chemical Safety Assessment
No information available

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H373 - May cause damage to organs 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/
OSHA
ECHA C&L

Revision Date: 03-Sep-2015
Revision Note
SDS sections updated: 1

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

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End of Safety Data Sheet