

# SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

## DFS-XFL

Revision Date: 23-Sep-2015

Revision Number: 2

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

#### 1.1. Product Identifier

Product Name DFS-XFL  
Internal ID Code HM008124

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

Recommended Use	Additive
Sector of use	SU2 - Mining, (including offshore industries)
Product category	PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents, other unspecific
Process categories	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises

#### 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](http://www.halliburton.com)

For further information, please contact

E-Mail address: [fdunexchem@halliburton.com](mailto: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

Serious Eye Damage / Eye Irritation

Category 2 - H319

## 2.2. Label Elements

### Hazard Pictograms



### Signal Word

### Warning

### Hazard Statements

H319 - Causes serious eye irritation

### Precautionary Statements - EU (§28, 1272/2008)

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear protective gloves/protective clothing/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

### Contains

### Substances

Sodium persulfate  
Calcium chloride, dihydrate  
Sodium thiosulfate

### CAS Number

7775-27-1  
10035-04-8  
7772-98-7

## 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.
Sodium persulfate	231-892-1	7775-27-1	0.1 - 1%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) STOT SE 3 (H335) Ox. Sol. 3 (H272)	01-2119495975-15
Calcium chloride, dihydrate	233-140-8	10035-04-8	30 - 60%	Eye Irrit. 2A (H319)	01-2119494219-28
Sodium thiosulfate	231-867-5	7772-98-7	1 - 5%	STOT SE 3 (H335)	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

<b>Inhalation</b>	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
<b>Eyes</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
<b>Skin</b>	Wash with soap and water.
<b>Ingestion</b>	Under normal conditions, first aid procedures are not required.

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

Causes eye irritation.

**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**

All standard fire fighting media

**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 contact with skin, eyes and clothing. Ensure adequate ventilation.

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. Ensure adequate ventilation. Use appropriate protective equipment. Wash hands after use. Launder contaminated clothing before reuse.

**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. 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
Sodium persulfate	7775-27-1	Not applicable	2 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	Not applicable
Calcium chloride, dihydrate	10035-04-8	Not applicable	10 mg/m <sup>3</sup>	Not applicable	Not applicable
Sodium thiosulfate	7772-98-7	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Germany	Spain	Portugal	Finland
Sodium persulfate	7775-27-1	Not applicable	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	Not applicable
Calcium chloride, dihydrate	10035-04-8	Not applicable	Not applicable	Not applicable	Not applicable
Sodium thiosulfate	7772-98-7	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Sodium persulfate	7775-27-1	Not applicable	0.1 mg/m <sup>3</sup> TWA 0.3 mg/m <sup>3</sup> STEL (calculated)	Not applicable	TWA: 2 mg/m <sup>3</sup> STEL: 4 mg/m <sup>3</sup>
Calcium chloride, dihydrate	10035-04-8	Not applicable	Not applicable	Not applicable	Not applicable
Sodium thiosulfate	7772-98-7	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Sodium persulfate	7775-27-1	Not applicable	Not applicable	Not applicable	Not applicable
Calcium chloride, dihydrate	10035-04-8	Not applicable	Not applicable	Not applicable	TWA: 5 mg/m <sup>3</sup>
Sodium thiosulfate	7772-98-7	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Sodium persulfate	7775-27-1	TWA: 2 mg/m <sup>3</sup>	Not applicable	Not applicable	Not applicable
Calcium chloride, dihydrate	10035-04-8	Not applicable	Not applicable	Not applicable	Not applicable
Sodium thiosulfate	7772-98-7	Not applicable	Not applicable	Not applicable	Not applicable

### Derived No Effect Level (DNEL)

#### 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
Sodium persulfate	2.06 mg/m <sup>3</sup>	590 mg/m <sup>3</sup>	2.06 mg/m <sup>3</sup>	Not available	18.2 mg/kg bw/day	400 mg/kg bw/day	0.102 mg/cm <sup>2</sup>	2.248 mg/cm <sup>2</sup>	Not available
Calcium chloride, dihydrate	Not available	Not available	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	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	Hazards for the eyes - local effects
Sodium persulfate	1.03 mg/m <sup>3</sup>	295 mg/m <sup>3</sup>	1.03 mg/m <sup>3</sup>	295 mg/m <sup>3</sup>	9.1 mg/kg bw/day	200 mg/kg bw/day	0.051 mg/cm <sup>2</sup>	1.124 mg/cm <sup>2</sup>	9.1 mg/kg bw/day
Calcium chloride, dihydrate	Not available	Not available	2.5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	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
Sodium persulfate	0.0763 mg/L	0.011 mg/L	0.763 mg/L	3.6 mg/L	0.275 mg/kg sediment dw	0.0396 mg/kg sediment dw	Not available	0.015 mg/kg soil dw	No potential for bio-accumulation

### 8.2. Exposure controls

#### Engineering Controls

Use in a well ventilated area.

#### 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** Not normally necessary.

**Hand Protection** Nitrile gloves.

**Skin Protection** Not normally necessary.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**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:	Liquid	Color:	White to light straw
Odor:	Characteristic	Odor Threshold:	No information available
<u>Property</u>		<u>Values</u>	
<u>Remarks/ - Method</u>			
<u>pH:</u>			9
<u>Freezing Point/Range</u>			No data available
<u>Melting Point/Range</u>			No data available
<u>Boiling Point/Range</u>			No data available
<u>Flash Point</u>			No data available
<u>Flammability (solid, gas)</u>			No data available
upper flammability limit			No data available
lower flammability limit			No data available
<u>Evaporation rate</u>			No data available
<u>Vapor Pressure</u>			No data available
<u>Vapor Density</u>			No data available
<u>Specific Gravity</u>			1
<u>Water Solubility</u>			Soluble in water
<u>Solubility in other solvents</u>			No data available
<u>Partition coefficient: n-octanol/water</u>			No data available
<u>Autoignition Temperature</u>			No data available
<u>Decomposition Temperature</u>			No data available
<u>Viscosity</u>			No data available
<u>Explosive Properties</u>			No information available
<u>Oxidizing Properties</u>			No information available

### 9.2. Other information

<u>VOC Content (%)</u>	No data available
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## 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

None anticipated

### 10.5. Incompatible Materials

Strong oxidizers.

### 10.6. Hazardous Decomposition Products

Oxides of nitrogen. Oxides of phosphorus. Carbon monoxide and carbon dioxide.

## SECTION 11: Toxicological Information

### 11.1. Information on Toxicological Effects

#### Acute Toxicity

<u>Inhalation</u>	May cause respiratory irritation.
<u>Eye Contact</u>	Causes eye irritation.
<u>Skin Contact</u>	May cause mild skin irritation.
<u>Ingestion</u>	Irritation of the mouth, throat, and stomach.

#### Chronic Effects/Carcinogenicity

No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

### Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium persulfate	7775-27-1	895 mg/kg (Rat) 1200 mg/kg 930 mg/kg 1000 mg/kg	> 10000 mg/kg (Rat)	19.0 mg/L (Rat) 4h > 5.1 mg/L (Rat) 4h

		920 mg/kg		
Calcium chloride, dihydrate	10035-04-8	2301 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	No data available
Sodium thiosulfate	7772-98-7	> 2000 mg/kg (Rat) (similar substance)	> 2000 mg/kg (Rat) (similar substance)	> 2.6 mg/L (Rat) 4h (similar substance)

Substances	CAS Number	Skin corrosion/irritation
Sodium persulfate	7775-27-1	Causes skin irritation. (Rabbit)
Calcium chloride, dihydrate	10035-04-8	Causes mild skin irritation (Rabbit)
Sodium thiosulfate	7772-98-7	Non-irritating to the skin (Rabbit) (similar substances)

Substances	CAS Number	Eye damage/irritation
Sodium persulfate	7775-27-1	Causes severe eye irritation. (Rabbit)
Calcium chloride, dihydrate	10035-04-8	May cause moderate to severe eye irritation. (Rabbit)
Sodium thiosulfate	7772-98-7	Non-irritating to the eye (Rabbit) (similar substances)

Substances	CAS Number	Skin Sensitization
Sodium persulfate	7775-27-1	Skin sensitizer in guinea pig.
Calcium chloride, dihydrate	10035-04-8	No data of sufficient quality are available.
Sodium thiosulfate	7772-98-7	Did not cause sensitization on laboratory animals (mouse) (similar substances)

Substances	CAS Number	Respiratory Sensitization
Sodium persulfate	7775-27-1	May cause sensitization by inhalation
Calcium chloride, dihydrate	10035-04-8	No information available
Sodium thiosulfate	7772-98-7	No information available

Substances	CAS Number	Mutagenic Effects
Sodium persulfate	7775-27-1	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Calcium chloride, dihydrate	10035-04-8	In vitro tests did not show mutagenic effects
Sodium thiosulfate	7772-98-7	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)

Substances	CAS Number	Carcinogenic Effects
Sodium persulfate	7775-27-1	Did not show carcinogenic effects in animal experiments (similar substances)
Calcium chloride, dihydrate	10035-04-8	No information available.
Sodium thiosulfate	7772-98-7	Did not show carcinogenic effects in animal experiments (similar substances)

Substances	CAS Number	Reproductive toxicity
Sodium persulfate	7775-27-1	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
Calcium chloride, dihydrate	10035-04-8	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Sodium thiosulfate	7772-98-7	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)

Substances	CAS Number	STOT - single exposure
Sodium persulfate	7775-27-1	May cause respiratory irritation.
Calcium chloride, dihydrate	10035-04-8	No significant toxicity observed in animal studies at concentration requiring classification.
Sodium thiosulfate	7772-98-7	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	STOT - repeated exposure
Sodium persulfate	7775-27-1	No significant toxicity observed in animal studies at concentration requiring classification.
Calcium chloride, dihydrate	10035-04-8	No significant toxicity observed in animal studies at concentration requiring classification.
Sodium thiosulfate	7772-98-7	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	Aspiration hazard
Sodium persulfate	7775-27-1	Not applicable
Calcium chloride, dihydrate	10035-04-8	Not applicable
Sodium thiosulfate	7772-98-7	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
Sodium persulfate	7775-27-1	EC50 (72h) 116 mg/L (biomass) (Pseudokirchnerella subcapitata)	LC50 (96h) 163 mg/L (Oncorhynchus mykiss)	EC10 (18h) 36 mg/L (Pseudomonas putida)	EC50 (48h) 133 mg/L (Daphnia magna)
Calcium chloride, dihydrate	10035-04-8	EC50 (72h) 2900 mg/L (Pseudokirchnerella subcapitata) EC50 (72h) >4000 mg/L (Pseudokirchnerella subcapitata)	LC50 (96h) 4630 mg/L (Pimephales promelas)	NOEC 2000 mg/L (Activated sludge, industrial)	EC50 (48h) 1285 mg/L (Daphnia magna) EC16 (21d) 320 mg/L (Daphnia magna) ErC50 (21d) 610 mg/L (Daphnia magna) LC50 (48h) 1285 mg/L (Daphnia magna) LC50 (48h) 2400 mg/L (Daphnia magna)
Sodium thiosulfate	7772-98-7	EC50 (72h) > 100 mg/L (Pseudokirchnerella subcapitata) (similar substance)	LC50 (96h) 770 mg/L (Oncorhynchus mykiss) (similar substance)	No information available	LC50 (72h) 77 mg/L (Americamysis bahia) (similar substance) EC50 (48h) 230 mg/L (Daphnia magna) (similar substance) NOEC (21d) > 10 mg/L (Daphnia magna) (similar substance)

### 12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Sodium persulfate	7775-27-1	The methods for determining biodegradability are not applicable to inorganic substances.
Calcium chloride, dihydrate	10035-04-8	The methods for determining biodegradability are not applicable to inorganic substances.
Sodium thiosulfate	7772-98-7	The methods for determining biodegradability are not applicable to inorganic substances.

### 12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Sodium persulfate	7775-27-1	No information available
Calcium chloride, dihydrate	10035-04-8	No information available
Sodium thiosulfate	7772-98-7	No information available

### 12.4. Mobility in soil

Substances	CAS Number	Mobility
Sodium persulfate	7775-27-1	No information available
Calcium chloride, dihydrate	10035-04-8	No information available
Sodium thiosulfate	7772-98-7	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
Sodium persulfate	Not applicable
Calcium chloride, dihydrate	Not applicable
Sodium thiosulfate	Not applicable

### 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 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 does not comply with EINECS  
**US TSCA Inventory** All components listed on inventory or are exempt.  
**Canadian DSL Inventory** Product contains one or more components not listed on the inventory.

#### 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)** Not determined.

**15.2. Chemical Safety Assessment**

No information available

**SECTION 16: Other Information****Full text of H-Statements referred to under sections 2 and 3**

H272 - May intensify fire; oxidizer

H302 - Harmful if swallowed

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 - May cause respiratory irritation

**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:** 23-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**