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

Product information

Product Name: Diacel® WBS-200, Powder
Material: 1078407

Use: Cement Additive

Company: Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)

Transport:
CHEMTREC 800.424.9300 or 703.527.3887 (int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431

Responsible Department: Product Safety and Toxicology Group
E-mail address: SDS@CPChem.com
Website: www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR
1910.1200; the SDS and labels contain all the information as required by the standard.

Classification:
Skin sensitization, Category 1
Carcinogenicity, Category 1A
Specific target organ toxicity - repeated exposure, Category 1,
Inhalation, Lungs

SDS Number: 100000014464
Labeling

Symbol(s): ☣️ ☢️

Signal Word: Danger

Hazard Statements:
- H317: May cause an allergic skin reaction.
- H350: May cause cancer.
- H372: Causes damage to organs (Lungs) through prolonged or repeated exposure if inhaled.

Precautionary Statements:

Prevention:
- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P260: Do not breathe dust/fume/gas/mist/vapor/spray.
- P264: Wash skin thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P272: Contaminated work clothing should not be allowed out of the workplace.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:
- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P308 + P313: IF exposed or concerned: Get medical advice/attention.
- P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.
- P363: Wash contaminated clothing before reuse.

Storage:
- P405: Store locked up.

Disposal:
- P501: Dispose of contents/container to an approved waste disposal plant.

Carcinogenicity:

IARC
- Group 1: Carcinogenic to humans
  - Crystalline Silica 14808-60-7

NTP
- Known to be human carcinogen
  - Crystalline Silica 14808-60-7

SECTION 3: Composition/information on ingredients

Synonyms: Cement Spacer Viscosifier

Molecular formula: Mixture

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl ester of sulfonated tannin</td>
<td>Proprietary</td>
<td>5 - 15</td>
</tr>
<tr>
<td>Crystalline Silica</td>
<td>14808-60-7</td>
<td>1 - 11</td>
</tr>
</tbody>
</table>

SDS Number: 100000014464
SECTION 4: First aid measures

General advice: Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

If inhaled: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact: If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact: Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed: Induce vomiting immediately and call a physician. Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point: Not applicable
Autoignition temperature: No data available

Unsuitable extinguishing media: High volume water jet.
Specific hazards during firefighting: Do not allow run-off from fire fighting to enter drains or water courses.
Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.
Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Fire and explosion protection: Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

SECTION 6: Accidental release measures

Personal precautions: Use personal protective equipment. Avoid dust formation. Avoid breathing dust.
Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers
and lakes or drains inform respective authorities.

Methods for cleaning up: Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Handling

Advice on safe handling: Avoid formation of respirable particles. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion: Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

Storage

Requirements for storage areas and containers: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Use: Cement Additive

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>US</th>
<th>Components</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crystalline Silica</td>
<td>OSHA Z-3 TWA</td>
<td>250mppcf / %SiO2+5</td>
<td>(f), a, b, respirable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA Z-3 TWA</td>
<td>10mg/m3 / %SiO2+2</td>
<td>(f), e, respirable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA Z-1-A TWA</td>
<td>0.1 mg/m3</td>
<td>Respirable fraction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ferrous Sulfate</td>
<td>ACGIH TWA</td>
<td>0.025 mg/m3</td>
<td>Lung cancer, pulm fibrosis, A2, Respirable fraction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA Z-1 TWA</td>
<td>0.05 mg/m3</td>
<td>Respirable fraction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA Z-1 TWA</td>
<td>0.05 mg/m3</td>
<td>Respirable fraction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA Z-1-A TWA</td>
<td>1 mg/m3</td>
<td>Respirable dust</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stannous Sulfate</td>
<td>OSHA Z-1 TWA</td>
<td>2 mg/m3</td>
<td>Pneumoconiosis (or stannosis), varies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH TWA</td>
<td>2 mg/m3</td>
<td>Pneumoconiosis (or stannosis), varies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA Z-1-A TWA</td>
<td>2 mg/m3</td>
<td>Varies</td>
<td></td>
</tr>
</tbody>
</table>

See Table Z-3 for the exposure limit for any operations or sectors where the exposure limit in § 1910.1053 is stayed or is otherwise not in effect.

(f) This standard applies to any operations or sectors for which the respirable crystalline silica standard, 1910.1053, is stayed or is otherwise not in effect.

a Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques.

b The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable.

c Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics: Aerodynamic diameter (unit density sphere): 2; Percent passing selector: 90 Aerodynamic diameter (unit density sphere): 2.5; Percent passing selector: 75 Aerodynamic diameter (unit density sphere): 3.5; Percent passing selector: 50 Aerodynamic diameter (unit density sphere): 5.0; Percent passing selector: 25 Aerodynamic diameter (unit density sphere): 10; Percent passing selector: 0. The measurements under this note refer to the use of an AEC (now NRC) instrument.
The respirable fraction of coal dust is determined with an MRE; the figure corresponding to that of 2.4 mg/m³ in the table for coal dust is 4.5 mg/m³.

### Pneumoconiosis
- Lung cancer
- Pneumoconiosis (or Stannosis)
- Pulmonary fibrosis
- Skin irritation
- Upper Respiratory Tract irritation

### Immediately Dangerous to Life or Health Concentrations (IDLH)

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS-No.</th>
<th>Immediately Dangerous to Life or Health Concentration Value</th>
<th>Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline Silica</td>
<td>14808-60-7</td>
<td>Immediately Dangerous to Life or Health Concentration Value</td>
<td>50 mg/m³</td>
</tr>
<tr>
<td>Stannous Sulfate</td>
<td>7488-55-3</td>
<td>Immediately Dangerous to Life or Health Concentration Value</td>
<td>100 mg/m³</td>
</tr>
</tbody>
</table>

### Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

### Personal protective equipment

- **Respiratory protection**: Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Dusts and Mists / P100. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

- **Hand protection**: The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

- **Eye protection**: Eye wash bottle with pure water. Safety glasses.

- **Skin and body protection**: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Lightweight protective clothing. Footwear protecting against chemicals. Remove and wash contaminated clothing before re-use. Skin should be washed after contact.

- **Hygiene measures**: When using do not eat or drink. When using do not smoke.
Wash hands before breaks and at the end of workday.

### SECTION 9: Physical and chemical properties

#### Information on basic physical and chemical properties

**Appearance**
- Physical state: Solid
- Color: Reddish brown
- Odor: Mild, earthy

**Safety data**
- Flash point: Not applicable
- Lower explosion limit: Not applicable
- Upper explosion limit: Not applicable
- Oxidizing properties: no
- Autoignition temperature: No data available
- Molecular formula: Mixture
- Molecular weight: Not applicable
- pH: No data available
- Freezing point: No data available
- Pour point: No data available
- Boiling point/boiling range: Not applicable
- Vapor pressure: No data available
- Relative density: 2.2 at 15.6 °C (60.1 °F)
- Water solubility: dispersible
- Partition coefficient: n-octanol/water: No data available
- Viscosity, kinematic: Not applicable
- Relative vapor density: No data available
- Evaporation rate: Not applicable

### SECTION 10: Stability and reactivity
Chemical stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions: Further information: No decomposition if stored and applied as directed.

Conditions to avoid: No data available.

Other data: No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Diacel® WBS-200, Powder
Acute oral toxicity: Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Diacel® WBS-200, Powder
Acute inhalation toxicity: No data available

Diacel® WBS-200, Powder
Acute dermal toxicity: No data available

Diacel® WBS-200, Powder
Skin irritation: Mild skin irritant

Diacel® WBS-200, Powder
Eye irritation: Product dust may be irritating to eyes, skin and respiratory system.

Diacel® WBS-200, Powder
Sensitization: Causes sensitization.

Repeated dose toxicity
Methyl ester of sulfonated tannin: Species: Rat, male
Sex: male
Application Route: oral gavage
Dose: 100, 300, 1000 mg/kg
Exposure time: 32 d
Number of exposures: Daily
NOEL: 1,000 mg/kg
Method: OECD Guideline 422
No adverse effects expected
Diacel® WBS-200, Powder

Species: Rat, female
Sex: female
Application Route: oral gavage
Dose: 100, 300, 1000 mg/kg
Exposure time: 39 - 47 d
Number of exposures: Daily
NOEL: 1,000 mg/kg
Method: OECD Guideline 422
No adverse effects expected

Genotoxicity in vitro
Methyl ester of sulfonated tannin:
Test Type: Chromosome aberration test in vitro
Metabolic activation: with and without metabolic activation
Method: OECD Guideline 473
Result: negative

Reproductive toxicity
Methyl ester of sulfonated tannin:
Species: Rat
Sex: male
Application Route: oral gavage
Dose: 100, 300, 1000 mg/kg
Exposure time: 32 d
Number of exposures: Daily
Method: OECD Guideline 422
NOAEL Parent: 1,000 mg/kg
Fertility and developmental toxicity tests did not reveal any effect on reproduction.

Species: Rat
Sex: female
Application Route: oral gavage
Dose: 100, 300, 1000 mg/kg
Exposure time: 39 - 47 d
Number of exposures: Daily
Method: OECD Guideline 422
NOAEL Parent: 1,000 mg/kg
NOAEL F1: 1,000 mg/kg
Fertility and developmental toxicity tests did not reveal any effect on reproduction.

CMR effects
Crystalline Silica: Carcinogenicity: Positive evidence from human epidemiological studies (inhalation)

Diacel® WBS-200, Powder
Further information: Chronic Health Hazard.

SECTION 12: Ecological information

Toxicity to fish
Methyl ester of sulfonated tannin: LL50: > 1,800 mg/l
tannin

Exposure time: 96 h
Species: Scophthalmus maximus (Flatfish, Flounder)
Method: OECD Test Guideline 203

Ferrous Sulfate

LL50: > 6.25 mg/l
Exposure time: 96 h
Species: Cyprinodon variegatus (sheepshead minnow)
semi-static test Method: OECD Test Guideline 203

Stannous Sulfate

> 0.0625 mg/l
Exposure time: 96 h
Species: Cyprinodon variegatus (sheepshead minnow)
static test Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

Methyl ester of sulfonated tannin

EL50: 73.2 mg/l
Exposure time: 48 h
Species: Acartia tonsa (Marine Copepod)
Method: ISO TC147/SC5/WG2

Ferrous Sulfate

LC50: 190 mg/l
Exposure time: 48 h
Species: Acartia tonsa (Marine Copepod)
Method: ISO TC147/SC5/WG2

Stannous Sulfate

EC50: 230 mg/l
Species: Acartia tonsa (Marine Copepod)
Method: ISO TC147/SC5/WG2

Toxicity to algae

Methyl ester of sulfonated tannin

ErC50: > 100 mg/l
Exposure time: 72 h
Species: Desmodesmus subspicatus (green algae)
Method: OECD Test Guideline 201

EbC50: 79 mg/l
Exposure time: 72 h
Species: Desmodesmus subspicatus (green algae)
Method: OECD Test Guideline 201

Ferrous Sulfate

EL50: 45 mg/l
Exposure time: 72 h
Species: Skeletonema costatum (Marine Algae)
Method: ISO 10253

Stannous Sulfate

EC50: 0.55 mg/l
Exposure time: 72 h
Species: Skeletonema costatum (Marine Algae)
Method: ISO 10253

Biodegradability

Methyl ester of sulfonated tannin

aerobic
38 %
Testing period: 28 d  
According to the results of tests of biodegradability this product is not readily biodegradable.

Additional ecological information  
Ecotoxicology Assessment

<table>
<thead>
<tr>
<th>Short-term (acute) aquatic hazard</th>
<th>Long-term (chronic) aquatic hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl ester of sulfonated tannin</td>
<td>Methyl ester of sulfonated tannin</td>
</tr>
<tr>
<td>Harmful to aquatic life.</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Stannous Sulfate</td>
<td>Stannous Sulfate</td>
</tr>
<tr>
<td>Very toxic to aquatic life.</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.  
Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

<table>
<thead>
<tr>
<th>Product</th>
<th>Contaminated packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.</td>
<td>Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.</td>
</tr>
</tbody>
</table>

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition). Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.). Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

**US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)**

UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S., (FERROUS SULFATE), 9, III, RQ (FERROUS SULFATE)

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.
IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION) 
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE)) 
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE)) 
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS) 
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards: Respiratory or skin sensitization 
Carcinogenicity 
Specific target organ toxicity (single or repeated exposure)

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO – KNOW

CERCLA Reportable Quantity: This material does not contain any components with a CERCLA RQ.

SARA 302 Reportable Quantity: This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity: This material does not contain any components with a section 302 EHS TPQ.

SARA 304 Reportable Quantity: This material does not contain any components with a section 304 EHS RQ.
## Diacel® WBS-200, Powder

### SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Clean Air Act

**Ozone-Depletion Potential:** This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

### California Prop. 65 Components
**WARNING!** This product contains a chemical known in the State of California to cause cancer.
- Crystalline Silica 14808-60-7

### Notification status

<table>
<thead>
<tr>
<th>Region</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe REACH</td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>Switzerland CH INV</td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>United States of America (USA) TSCA</td>
<td>On or in compliance with the active portion of the TSCA inventory</td>
</tr>
<tr>
<td>Canada DSL</td>
<td>All components of this product are on the Canadian DSL</td>
</tr>
<tr>
<td>Australia AICS</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>New Zealand NZIoC</td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>Japan ENCS</td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>Korea KECI</td>
<td>A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance.</td>
</tr>
<tr>
<td>Philippines PICCS</td>
<td>Not in compliance with the inventory</td>
</tr>
<tr>
<td>China IECSC</td>
<td>This product contains one or more substances that have been notified under New Substances Notification laws. However, only CPChem and other independent notifiers are approved to be the importers of record.</td>
</tr>
<tr>
<td>Taiwan TCSI</td>
<td>Not in compliance with the inventory</td>
</tr>
</tbody>
</table>

**SDS Number:** 100000014464
NFPA Classification : Health Hazard: 2  
                        Fire Hazard: 1  
                        Reactivity Hazard: 0

Further information
Legacy SDS Number : CPC00049

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Government Industrial Hygienists</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose 50%</td>
</tr>
<tr>
<td>AICS</td>
<td>Australia, Inventory of Chemical Substances</td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>DSL</td>
<td>Canada, Domestic Substances List</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Agency</td>
</tr>
<tr>
<td>NDSL</td>
<td>Canada, Non-Domestic Substances List</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
</tr>
<tr>
<td>CNS</td>
<td>Central Nervous System</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
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<tr>
<td>CAS</td>
<td>Chemical Abstract Service</td>
</tr>
<tr>
<td>NZIoC</td>
<td>New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>EC50</td>
<td>Effective Concentration</td>
</tr>
<tr>
<td>NOAEL</td>
<td>No Observable Adverse Effect Level</td>
</tr>
<tr>
<td>EC50%</td>
<td>Effective Concentration 50%</td>
</tr>
<tr>
<td>NOEC</td>
<td>No Observed Effect Concentration</td>
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<tr>
<td>EGEST</td>
<td>EOSCA Generic Exposure Scenario Tool</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety &amp; Health Administration</td>
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<tr>
<td>EOSCA</td>
<td>European Oilfield Specialty Chemicals Association</td>
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<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
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<tr>
<td>EINECS</td>
<td>European Inventory of Existing Chemical Substances</td>
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<tr>
<td>PICCS</td>
<td>Philippines Inventory of Commercial Chemical Substances</td>
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<tr>
<td>MAK</td>
<td>Germany Maximum Concentration Values</td>
</tr>
<tr>
<td>PRNT</td>
<td>Presumed Not Toxic</td>
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<tr>
<td>GHS</td>
<td>Globally Harmonized System</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation Recovery Act</td>
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<tr>
<td>&gt;=</td>
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<tr>
<td>STEL</td>
<td>Short-term Exposure Limit</td>
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<tr>
<td>IC50</td>
<td>Inhibition Concentration 50%</td>
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<tr>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
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<td>TLV</td>
<td>Threshold Limit Value</td>
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<td>IECSC</td>
<td>Inventory of Existing Chemical Substances in China</td>
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<td>TWA</td>
<td>Time Weighted Average</td>
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<tr>
<th>ENCS</th>
<th>Japan, Inventory of Existing and New Chemical Substances</th>
<th>TSCA</th>
<th>Toxic Substance Control Act</th>
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<td>Korea, Existing Chemical Inventory</td>
<td>UVCB</td>
<td>Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</td>
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<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
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<td>LC50</td>
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