SAFETY DATA SHEET

Soltex® Additive

Version 2.16

according to GB/T 16483 and GB/T 17519

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

Product information

Product Name: Soltex® Additive
Material: 1016807

Use: Drilling Mud Additive

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

Local: See Company Address

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 +32.14.583516 (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

GHS Classification and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.29 (GHS 2011)

Emergency Overview

Danger
Form: Powder  Physical state: Solid  Color: Black  Odor: No odor

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**Soltex® Additive**

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<table>
<thead>
<tr>
<th>Hazards</th>
<th>May cause cancer by inhalation.</th>
</tr>
</thead>
</table>

**Classification**

: Carcinogenicity, Category 1A, Inhalation

**Labeling**

**Symbol(s)** :

**Signal Word** : Danger

**Hazard Statements** : H350i: May cause cancer by inhalation.

**Precautionary Statements** :

**Prevention:**

P261: Avoid breathing dust.

P281: Use personal protective equipment as required.

**SECTION 3: Composition/information on ingredients**

**Synonyms** : Drilling Mud Additive

**Molecular formula** : Mixture

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No. / EINECS-No.</th>
<th>Concentration [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt, Sulfonated, Sodium Salt</td>
<td>68201-32-1</td>
<td>40 - 70</td>
</tr>
<tr>
<td>Sodium Sulfate</td>
<td>7757-82-6</td>
<td>10 - 25</td>
</tr>
<tr>
<td>Crystalline Silica</td>
<td>14808-60-7</td>
<td>0.1 - 2.5</td>
</tr>
</tbody>
</table>

**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 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** : 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

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Unsuitable extinguishing media</td>
<td>High volume water jet.</td>
</tr>
<tr>
<td>Specific hazards during fire fighting</td>
<td>Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.</td>
</tr>
<tr>
<td>Special protective equipment for fire-fighters</td>
<td>Wear self-contained breathing apparatus for firefighting if necessary.</td>
</tr>
<tr>
<td>Further information</td>
<td>Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.</td>
</tr>
<tr>
<td>Fire and explosion protection</td>
<td>Avoid dust formation. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Carbon oxides. Sulfur oxides.</td>
</tr>
</tbody>
</table>

### SECTION 6: Accidental release measures

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal precautions</td>
<td>Use personal protective equipment. Avoid dust formation. Avoid breathing dust.</td>
</tr>
<tr>
<td>Environmental precautions</td>
<td>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.</td>
</tr>
<tr>
<td>Methods for cleaning up</td>
<td>Pick up and arrange disposal without creating dust. Clean up promptly by sweeping or vacuum. Keep in suitable, closed containers for disposal.</td>
</tr>
<tr>
<td>Additional advice</td>
<td>Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).</td>
</tr>
</tbody>
</table>

### 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 |
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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. Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary, but may not by themselves be sufficient.

Advice on protection against fire and explosion: Avoid dust formation. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. 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. Electrical installations / working materials must comply with the technological safety standards.

Use: Drilling Mud Additive

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>CN Components</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalline Silica</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>0.7 mg/m³</td>
<td>G1, Respirable</td>
<td></td>
</tr>
<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>1 mg/m³</td>
<td>G1, Total</td>
<td></td>
</tr>
<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>0.2 mg/m³</td>
<td>G1, Respirable</td>
<td></td>
</tr>
<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>0.5 mg/m³</td>
<td>G1, Total</td>
<td></td>
</tr>
<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>0.3 mg/m³</td>
<td>G1, Respirable</td>
<td></td>
</tr>
<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>0.7 mg/m³</td>
<td>G1, Total</td>
<td></td>
</tr>
<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>0.5 mg/m³</td>
<td>G1, Total dust</td>
<td></td>
</tr>
<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>0.2 mg/m³</td>
<td>G1, (respirable dust)</td>
<td></td>
</tr>
<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>0.7 mg/m³</td>
<td>G1, Total dust</td>
<td></td>
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<td>GBZ 2.1-2007</td>
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<td>G1, (respirable dust)</td>
<td></td>
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<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>1 mg/m³</td>
<td>G1, Total dust</td>
<td></td>
</tr>
<tr>
<td>GBZ 2.1-2007</td>
<td>PC-TWA</td>
<td>0.7 mg/m³</td>
<td>G1, (respirable dust)</td>
<td></td>
</tr>
</tbody>
</table>

G1 - Carcinogenic to humans

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 /
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: Protective suit. Safety shoes.

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

Form: Powder
Physical state: Solid
Color: Black
Odor: No odor
Odor Threshold: Not applicable

Safety data

Flash point: Not applicable
Lower explosion limit: No data available
Upper explosion limit: No data available
Oxidizing properties: No
Autoignition temperature: Not applicable
Molecular formula: Mixture
Molecular weight: No data available
pH: 7 - 10
Pour point: Not applicable
Boiling point/boiling range: Not applicable
Vapor pressure : Not applicable
Relative density : Not applicable
Density : 1.54 g/cm³
Water solubility : Partly soluble
Partition coefficient: n-octanol/water : No data available
Viscosity, kinematic : Not applicable
Relative vapor density : Not applicable
Evaporation rate : Not applicable

SECTION 10: Stability and reactivity

Reactivity : Stable at normal ambient temperature and pressure.

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 : Hazardous reactions: Hazardous polymerization does not occur.
Further information: No decomposition if stored and applied as directed.

Conditions to avoid : Generation of Dusts.

Materials to avoid Hazardous decomposition products : No data available.

Hazardous decomposition products : Carbon oxides
Sulfur oxides

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

SECTION 11: Toxicological information

Acute oral toxicity
Asphalt, Sulfonated, Sodium Salt : LD50: > 5,000 mg/kg
Sodium Sulfate : LD50 Oral: >2000 milligram per kilogram
Species: Rat
Sex: female
Acute inhalation toxicity
- **Asphalt, Sulfonated, Sodium Salt**: LC50: > 5.3 mg/l
  - Exposure time: 4 h
  - Species: Rat
  - Sex: male and female
  - Test atmosphere: dust/mist
  - Method: OECD Test Guideline 423

  Rats exposed to a 5.3 mg/L dust aerosol for 4-hr resulted in effects generally expected with high concentrations of dust aerosols made of relatively dense particles. Higher lung weight and atelectasis persisted after the 14-day recovery period. There were no reports of lethality or any significant clinical observations. There was however an acute inflammatory response with evidence of recovery after 14-days. The presence of particulate matter with indication of partial clearance from the lung after the 14-day recovery period was noted. These effects would not be expected during normal operating conditions when using this substance.

- **Sodium Sulfate**: LC50: > 2400 milligram per cubic meter
  - Exposure time: 4 h
  - Test atmosphere: dust/mist

Acute dermal toxicity
- **Asphalt, Sulfonated, Sodium Salt**: No data available
- **Sodium Sulfate**: > 4,000 mg/kg
  - Species: Rabbit

Skin irritation
- **Asphalt, Sulfonated, Sodium Salt**: No skin irritation
- **Sodium Sulfate**: No skin irritation

Eye irritation
- **Asphalt, Sulfonated, Sodium Salt**: No eye irritation
- **Sodium Sulfate**: No eye irritation

Sensitization
- **Asphalt, Sulfonated, Sodium Salt**: Did not cause sensitization on laboratory animals.
- **Sodium Sulfate**: Did not cause sensitization on laboratory animals.

Repeated dose toxicity
- **Asphalt, Sulfonated, Sodium Salt**: Species: Rat, Male and female
  - Sex: Male and female
  - Application Route: oral gavage
### Genotoxicity in vitro

**Asphalt, Sulfonated, Sodium Salt**
- Test Type: Mouse micronucleus assay
- Metabolic activation: with and without metabolic activation
- Result: negative
- Remarks: In vitro tests did not show mutagenic effects

Test Type: Ames test
- Metabolic activation: with and without metabolic activation
- Result: negative
- Remarks: In vitro tests did not show mutagenic effects

### Reproductive toxicity

**Asphalt, Sulfonated, Sodium Salt**
- Species: Rat
- Sex: male and female
- Application Route: oral gavage
- Dose: 0, 250, 500, 1000 mg/kg
- Exposure time: 43-54 D
- Number of exposures: daily
- Method: OECD Guideline 422
- NOAEL Parent: 1,000 mg/kg
- NOAEL F1: 1,000 mg/kg

### Developmental Toxicity

**Asphalt, Sulfonated, Sodium Salt**
- Species: Rat
- Application Route: oral gavage
- Dose: 0, 250, 500, 1000 mg/kg
- Number of exposures: daily
- Test period: 54 D
- NOAEL Teratogenicity: 1,000 mg/kg
- NOAEL Maternal: 1,000 mg/kg

### CMR effects

**Asphalt, Sulfonated, Sodium Salt**
- Carcinogenicity: Not available
- Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- Teratogenicity: Animal testing did not show any effects on fetal development.
- Reproductive toxicity: Animal testing did not show any effects on fertility.

**Crystalline Silica**
- Carcinogenicity: Positive evidence from human epidemiological studies (inhalation)

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**Further information**
- Chronic Health Hazard.
### SECTION 12: Ecological information

**Ecotoxicity effects**  
**Toxicity to fish**

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50</th>
<th>Exposure time</th>
<th>Species</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt, Sulfonated, Sodium Salt</td>
<td>&gt; 240 mg/l</td>
<td>96 h</td>
<td>Scophthalmus maximus (Flatfish, Flounder) semi-static test</td>
<td>OECD Test Guideline 203</td>
</tr>
<tr>
<td>Sodium Sulfate</td>
<td>13,500 - 14,000 mg/l</td>
<td>96 h</td>
<td>Pimephales promelas (fathead minnow)</td>
<td></td>
</tr>
</tbody>
</table>

**Toxicity to daphnia and other aquatic invertebrates**

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50</th>
<th>Exposure time</th>
<th>Species</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt, Sulfonated, Sodium Salt</td>
<td>380 mg/l</td>
<td>48 h</td>
<td>Acartia tonsa (Marine Copepod) static test</td>
<td>ISO TC147/SC5/WG2</td>
</tr>
<tr>
<td>Sodium Sulfate</td>
<td>4,547 mg/l</td>
<td>96 h</td>
<td>Daphnia magna (Water flea)</td>
<td></td>
</tr>
</tbody>
</table>

**Toxicity to algae**

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC50</th>
<th>Exposure time</th>
<th>Species</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt, Sulfonated, Sodium Salt</td>
<td>240 mg/l</td>
<td>72 h</td>
<td>Skeletonema costatum (Marine Algae) static test</td>
<td>ISO 10253</td>
</tr>
</tbody>
</table>

**Biodegradability**  
This material is not expected to be readily biodegradable.

**Elimination information (persistence and degradability)**

- **Bioaccumulation**: No data available
- **Mobility**: No data available

**Results of PBT assessment**

- **Asphalt, Sulfonated, Sodium Salt**: Non-classified PBT substance, Non-classified vPvB substance
- **Additional ecological information**: This material is not expected to be harmful to aquatic organisms.

**Ecotoxicology Assessment**

- **Short-term (acute) aquatic hazard**: This material is not expected to be harmful to aquatic organisms.
- **Long-term (chronic) aquatic**: This material is not expected to be harmful to aquatic organisms.
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.

Product : Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

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) 
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

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.
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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

Notification status
Europe REACH : A substance or substances in this product is not registered or notified to be registered. Importation or manufacture of this product is still permitted provided that it does not exceed the REACH minimum threshold quantity of the non-regulated substances.
Switzerland CH INV : On the inventory, or in compliance with the inventory
United States of America (USA) TSCA : On or in compliance with the active portion of the TSCA inventory
Canada DSL : All components of this product are on the Canadian DSL
Australia AICS : On the inventory, or in compliance with the inventory
New Zealand NZIoC : On the inventory, or in compliance with the inventory
Japan ENCS : On the inventory, or in compliance with the inventory
Korea KECI : 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.

Philippines PICCS : On the inventory, or in compliance with the inventory
China IECSC : On the inventory, or in compliance with the inventory
Taiwan TCSI : Not in compliance with the inventory


SECTION 16: Other information

Further information
Legacy SDS Number : 59370

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.

<table>
<thead>
<tr>
<th>Key or legend to abbreviations and acronyms used in the safety data sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
</tr>
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<td>AICS</td>
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<tr>
<td>DSL</td>
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