SAFETY DATA SHEET
MICA* (All Grades)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name: MICA* (All Grades)

Synonyms, Trade Names: MICA FINE, MICA MEDIUM, MICA COARSE, MICA 15Z (C), MICA 25Z (M), MICA 40Z (F)

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

Identified uses: Lost circulation material.

1.3. Details of the supplier of the safety data sheet

Supplier: M-I SWACO
A Schlumberger Company
Woodlands Drive
Kirkhill Industrial Estate
Dyce, Aberdeen AB21 0GW
Scotland UK
T=+44(0)1224-246600
F=+11(0)1224-246699
Email - MISDS@slb.com

1.4. Emergency telephone number

(24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600.

National Emergency Telephone Number
+31 (0)30-2748888 Only for the purpose of informing medical personnel in cases of acute intoxications in the Netherlands.

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards: Not classified.

Human health: Not classified.

Environment: Not classified.

Classification (67/548/EEC)

Not classified.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Human health

This product contains a small quantity of quartz, crystalline silica. IARC Monographs, Vol 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC classification Group 1. Because of quantity and composition, the health hazard is small.

2.2. Label elements

Label in Accordance With (EC) No. 1272/2008
No pictogram required.

Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC. HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
2.3. Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz, Crystalline Silica</td>
<td>14808-60-7</td>
<td>238-878-4</td>
<td>Xn;R48/20.</td>
<td>STOT RE 2 - H373</td>
</tr>
</tbody>
</table>

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition Comments

The data shown is in accordance with the latest EC Directives. This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because of quantity and composition, the health hazard is small.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation
Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

Ingestion
Do not induce vomiting. Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Get medical attention if any discomfort continues.

Skin contact
Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact
Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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

General information
The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop as described the casualty should be transferred to hospital as soon as possible. For further information, please refer to section 11.

4.3. Indication of any immediate medical attention and special treatment needed

Treat Symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media
Use fire-extinguishing media appropriate for surrounding materials.

5.2. Special hazards arising from the substance or mixture
**MICA* (All Grades)**

**Hazardous combustion products**
When heated, vapours/gases hazardous to health may be formed.

**Unusual Fire & Explosion Hazards**
High concentrations of dust may form explosive mixture with air.

### 5.3. Advice for firefighters

**Special Fire Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Protective equipment for fire-fighters**
Self contained breathing apparatus and full protective clothing must be worn in case of fire.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

#### 6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

#### 6.2. Environmental precautions

Do not allow to enter drains, sewers or watercourses.

#### 6.3. Methods and material for containment and cleaning up

Avoid generation and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water.

#### 6.4. Reference to other sections

For waste disposal, see section 13.

### SECTION 7: HANDLING AND STORAGE

#### 7.1. Precautions for safe handling

Avoid inhalation of dust and contact with skin and eyes. Avoid handling which leads to dust formation. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site. Remove contaminated clothing. Do not eat, drink or smoke when using the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place.

#### 7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Control parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>STD</th>
<th>TWA - 8 Hrs</th>
<th>STEL - 15 Min</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICA</td>
<td>WEL</td>
<td>0,8 mg/m3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUARTZ, CRYSTALLINE SILICA</td>
<td>WEL</td>
<td>0,1 mg/m3</td>
<td></td>
<td></td>
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</tbody>
</table>

WEL = Workplace Exposure Limit.

**Ingredient Comments**
NOHSC (Australia) - MICA, TWA: 2.5 mg/m3 (inspirable).
No biological limit allocated.

#### 8.2. Exposure controls

**Protective equipment**
Process conditions
All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures
Provide adequate general and local exhaust ventilation.

Respiratory equipment
If ventilation is insufficient, suitable respiratory protection must be provided. Use respiratory equipment with particle filter, type P3.

Hand protection
For prolonged or repeated skin contact use suitable protective gloves. PVC or rubber gloves are recommended.

Eye protection
Wear approved chemical safety goggles where eye exposure is reasonably probable.

Other Protection
Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid</td>
</tr>
<tr>
<td>Colour</td>
<td>Grey to Silver.</td>
</tr>
<tr>
<td>Odour</td>
<td>No characteristic odour.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water</td>
</tr>
<tr>
<td>Melting point (°C)</td>
<td>1300°C</td>
</tr>
<tr>
<td>Relative density</td>
<td>2.7 - 2.8 @ 20°C</td>
</tr>
<tr>
<td>pH-Value, Diluted Solution</td>
<td>9.0 @ 10%</td>
</tr>
</tbody>
</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particle Size (Micron)</td>
<td>250 - 4750</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
There are no known reactivity hazards associated with this product.

10.2. Chemical stability
Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions
Not known.

10.4. Conditions to avoid
Not known.

10.5. Incompatible materials

Materials To Avoid
Not known.

10.6. Hazardous decomposition products
When heated, vapours/gases hazardous to health may be formed.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxicological information
No data recorded.

Aspiration hazard:
Not anticipated to present an aspiration hazard based on chemical structure.

**Inhalation**
Dust may irritate respiratory system or lungs.

**Ingestion**
May cause discomfort if swallowed.

**Skin contact**
Prolonged and frequent contact may cause redness and irritation.

**Eye contact**
Particles in the eyes may cause irritation and smarting.

**Route of entry**
No route of entry noted.

**Target Organs**
No specific target organs noted.

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### SECTION 12: ECOLOGICAL INFORMATION

**Ecotoxicity**
Contact M-I SWACO's QHSE Department for ecological information at env@miswaoco.slb.com. OSPAR have defined this chemical as PLONOR.

12.1. **Toxicity**

**Acute Fish Toxicity**
Not considered toxic to fish.

12.2. **Persistence and degradability**

**Degradability**
The product is not biodegradable.

12.3. **Bioaccumulative potential**

**Bioaccumulative potential**
No data available on bioaccumulation.

12.4. **Mobility in soil**

**Mobility:**
The product is insoluble in water.

12.5. **Results of PBT and vPvB assessment**

Not Classified as PBT/vPvB by current EU criteria.

12.6. **Other adverse effects**

None known.

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### SECTION 13: DISPOSAL CONSIDERATIONS

13.1. **Waste treatment methods**

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

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### SECTION 14: TRANSPORT INFORMATION

**General**
The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID), and (ADG).

14.1. **UN number**

Not applicable.

14.2. **UN proper shipping name**
14.3. Transport hazard class(es)
Not applicable.

14.4. Packing group
Not applicable.

14.5. Environmental hazards
Environmentally Hazardous Substance/Marine Pollutant
No.

14.6. Special precautions for user
Not applicable.

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

Uk Regulatory References

EU Legislation

National Regulations
In accordance with Dutch Mining Regulation 9.2 and ARBO regulation Chapter 4.

Water hazard classification
WGK 1

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated.

New Zealand Hazard Classification and HSNO Approval No.
Not Classified. HSNO Approval No. Not Required.

Australian Regulations

15.2. Chemical Safety Assessment

International Chemical Inventories
Contact REACH@miswaco.stb.com for REACH information.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms used in the safety data sheet
*a mark of M-I L.L.C.

General information
HMIS Health -1 HMIS Flammability - 0 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

Information Sources
Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. LOLI. European Chemicals Bureau - ESIS (European Chemical Substances Information).

Revision Comments
General revision. Compiled or revised by Sandra McWilliam

Issued By
Bill Cameron

Revision Date
05-Feb-13
<table>
<thead>
<tr>
<th>Risk Phrases in Full</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R48/20</td>
<td>Harmful: danger of serious damage to health by prolonged exposure through inhalation.</td>
</tr>
<tr>
<td>NC</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Hazard Statements in Full</td>
<td>May cause damage to organs &lt;&lt;Organs&gt;&gt; through prolonged or repeated exposure.</td>
</tr>
</tbody>
</table>

**Disclaimer**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to the product or to the data herein is made or incurred hereunder.