SAFETY DATA SHEET

1. Identification

Product identifier MX-80

Other means of identification

CAS number 1302-78-9

Recommended use Bentonite has a variety of uses. It can be used as a rheology modifier, binding agent, adsorbent, hydraulic-barrier, and filler.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name CETCO, an MTI Company

Address 2870 Forbs Avenue

Hoffman Estates, IL 60192

United States

Telephone General Information 800 527-9948

Website http://www.cetco.com/

E-mail safetydata@mineralstech.com

Emergency phone number

Emergency 1.866.519.4752/1 760 476 3962

Americas 1.866.519.4752 (US, Canada, Mexico) 1 760 476 3962

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Carcinogenicity Category 1A

Specific target organ toxicity, repeated Category 1 exposure

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

Response If exposed or concerned: Get medical advice/attention.

Storage Store away from incompatible materials.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

Material can be slippery when wet

Supplemental information None.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUARTZ (SIO2)</td>
<td></td>
<td>14808-60-7</td>
<td>6</td>
</tr>
</tbody>
</table>
### 4. First-aid measures

**Inhalation**
Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**
Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact**
Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion**
Rinse mouth. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed**
Dusts may irritate the respiratory tract, skin and eyes. Prolonged exposure may cause chronic effects.

**Indication of immediate medical attention and special treatment needed**
Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

**General information**
IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire-fighting measures

**Suitable extinguishing media**
Use any media suitable for the surrounding fires.

**Unsuitable extinguishing media**
Not applicable, non-combustible.

**Specific hazards arising from the chemical**
During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**
Material can be slippery when wet. Firefighters should wear full protective gear.

**Fire fighting equipment/instructions**
Move containers from fire area if you can do so without risk.

**Specific methods**
Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards**
This material will not burn. Material can be slippery when wet. No unusual fire or explosion hazards noted.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Material can be slippery when wet. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Wear a dust mask if dust is generated above exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

**Methods and materials for containment and cleaning up**
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk. Collect dust using a vacuum cleaner equipped with HEPA filter.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

**Environmental precautions**
Never return spills to original containers for re-use.

**Avoid discharge into drains, water courses or onto the ground.**

### 7. Handling and storage

**Precautions for safe handling**
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**
Store in original tightly closed container. Store in a well-ventilated place. Keep out of the reach of children.
8. Exposure controls/personal protection

Occupational exposure limits

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRISTOBALITE (CAS 14464-46-1)</td>
<td>PEL</td>
<td>0.05 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>QUARTZ (SIO2) (CAS 14808-60-7)</td>
<td>PEL</td>
<td>0.05 mg/m³</td>
<td>Respirable dust.</td>
</tr>
</tbody>
</table>

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRISTOBALITE (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.05 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td>QUARTZ (SIO2) (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>Respirable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.2 mppcf</td>
<td>Respirable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4 mppcf</td>
<td>Respirable</td>
</tr>
</tbody>
</table>

**Constituents**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>INERT OR NUISANCE DUSTS</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 mppcf</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mppcf</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

**US. ACGIH Threshold Limit Values**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRISTOBALITE (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>QUARTZ (SIO2) (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

**US. NIOSH: Pocket Guide to Chemical Hazards**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRISTOBALITE (CAS 14464-46-1)</td>
<td>TWA</td>
<td>0.05 mg/m³</td>
<td>Respirable dust.</td>
</tr>
<tr>
<td>QUARTZ (SIO2) (CAS 14808-60-7)</td>
<td>TWA</td>
<td>0.05 mg/m³</td>
<td>Respirable dust.</td>
</tr>
</tbody>
</table>

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

If contact is likely, safety glasses with side shields are recommended.

**Skin protection**

**Hand protection**

Suitable gloves can be recommended by the glove supplier.

Use of protective coveralls and long sleeves is recommended.

**Other**

In case of inadequate ventilation, use respiratory protection.

**Respiratory protection**

Wear appropriate thermal protective clothing, when necessary.

**Thermal hazards**

**General hygiene considerations**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

**Appearance**

Lump, granular or fine powder.

**Physical state**

Solid.

**Form**

Powder. Various.

**Color**

Various.
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>8.5 - 11</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>&gt; 842 °F (&gt; 450 °C) / Not applicable.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>This product is not flammable.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td></td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability limit - lower (%) temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability limit - upper (%)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability limit - upper (%) temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive limit - lower (%)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive limit - lower (%) temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive limit - upper (%)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive limit - upper (%) temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>2.6 g/cm³</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>&lt; 0.9 mg/l</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 932 °F (&gt; 500 °C)</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Viscosity temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Other information</td>
<td></td>
</tr>
<tr>
<td>Bulk density</td>
<td>0.9 - 1.4 g/cm³</td>
</tr>
<tr>
<td>Explosive limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive. Not explosive</td>
</tr>
<tr>
<td>Explosivity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Fire point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flame extension</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flame projection</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (flash back)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (Heat of combustion)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (Train fire)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability class</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point class</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>UVCB Substance</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
10. Stability and reactivity
Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability
Material is stable under normal conditions.
Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use.
Conditions to avoid
Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials.
Incompatible materials
Strong oxidizing agents.
Hazardous decomposition products
No hazardous decomposition products are known.

11. Toxicological information
Information on likely routes of exposure
Inhalation
May cause damage to organs through prolonged or repeated exposure by inhalation. Dust may irritate respiratory system.
Skin contact
Dust or powder may irritate the skin.
Eye contact
Dust may irritate the eyes.
Ingestion
Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics
Dusts may irritate the respiratory tract, skin and eyes.

Information on toxicological effects
Acute toxicity

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRISTOBALITE (CAS 14464-46-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 22500 mg/kg</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation
Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation
Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization
Respiratory sensitization
Not a respiratory sensitizer.
Skin sensitization
This product is not expected to cause skin sensitization.

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity
CRISTOBALITE (CAS 14464-46-1) 1 Carcinogenic to humans.
1. Carcinogenic to humans.

2. Cancer

3. Known to be human carcinogen.

4. Known to be a human carcinogen.

5. Not classified.

6. Causes damage to organs through prolonged or repeated exposure.

7. Not an aspiration hazard.

8. Causes damage to organs through prolonged or repeated exposure.

9. Not applicable.

10. Not regulated as dangerous goods.

11. Not regulated as dangerous goods.

12. Not regulated as dangerous goods.

13. Not applicable.

14. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

15. Not regulated.


17. Not regulated.

18. Material name: MX-80

19. Version #: 02

20. Revision date: 27-September-2018

21. Issue date: 22-July-2018
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

CRISTOBALITE (CAS 14464-46-1)  Cancer
QUARTZ (SiO2) (CAS 14808-60-7)  Cancer
CRISTOBALITE (CAS 14464-46-1)  lung effects
QUARTZ (SiO2) (CAS 14808-60-7)  lung effects
CRISTOBALITE (CAS 14464-46-1)  immune system effects
QUARTZ (SiO2) (CAS 14808-60-7)  immune system effects
CRISTOBALITE (CAS 14464-46-1)  kidney effects
QUARTZ (SiO2) (CAS 14808-60-7)  kidney effects

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance
Not listed.

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

Food and Drug Administration (FDA)
Total food additive
Direct food additive
GRAS food additive

US state regulations

California Proposition 65
WARNING: This product contains a chemical known to the State of California to cause cancer.

California Proposition 65 - CRT: Listed date/Carcinogenic substance
QUARTZ (SiO2) (CAS 14808-60-7)  Listed: October 1, 1988

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))
CRISTOBALITE (CAS 14464-46-1)
QUARTZ (SiO2) (CAS 14808-60-7)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
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<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date  22-July-2018
Revision date 27-September-2018
Version # 02
HMIS® ratings
Health: 3*
Flammability: 0
Physical hazard: 0
NFPA ratings
Health: 2
Flammability: 0
Instability: 0

Disclaimer
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 manufacturer expressly does not make any representations, warranties, or guarantees as to its accuracy, reliability or completeness nor assumes any liability, for its use. It is the user's responsibility to verify the suitability and completeness of such information for each particular use.

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. CETCO, an MTI Company cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Revision information
Product and Company Identification: Alternate Trade Names
Hazard(s) identification: Supplemental information