1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name                          MasterMet 2
Product Code(s)                      40-6380-006, 40-6380-064
(M)SDS Number                       1341314_A

Other means of identification

Synonyms                            None

Recommended use of the chemical and restrictions on use

Recommended Use                      Laboratory Use Only
Uses advised against                  No information available

Details of the supplier of the safety data sheet

Manufacturer                         Buehler
Manufacturer Address                 41 Waukegan Rd
                                        Lake Bluff, IL 60044
                                        www.buehler.com
Phone number                          +1 847 295 6500
E-mail Address                       custserv@buehler.com

Emergency telephone number

Global Access Code: 334545
Americas: +1 760 476 3962              Asia Pacific: +1 760 476 3960
Middle East/Africa: +1 760 476 3959    Europe: +1 760 476 3961

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

GHS Label elements, including precautionary statements

Emergency Overview
The product contains no substances which at their given concentration, are considered to be hazardous to health.

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Physical state</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Slurry</td>
<td>Odorless</td>
</tr>
</tbody>
</table>

Precautionary Statements - Prevention
Obtain special instructions before use

Precautionary Statements - Response
None

Precautionary Statements - Storage
None

Precautionary Statements - Disposal
None

Hazards not otherwise classified (HNOC)
Not applicable

Other information
No information available

Interactions with Other Chemicals
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol</td>
<td>25322-68-3</td>
<td>10 - 30%</td>
<td>*</td>
</tr>
<tr>
<td>Silica</td>
<td>7631-86-9</td>
<td>10 - 30%</td>
<td>*</td>
</tr>
<tr>
<td>Diethylene glycol</td>
<td>111-46-6</td>
<td>1 - 5%</td>
<td>*</td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

Eye contact
Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin contact
Wash with soap and water.

Inhalation
Remove to fresh air.

Ingestion
Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
Most Important Symptoms and Effects

No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

---

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Explosion Data

Sensitivity to Mechanical Impact

None.

Sensitivity to Static Discharge

None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

---

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions

Ensure adequate ventilation.

Environmental precautions

Environmental precautions

See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica 7631-86-9</td>
<td>TWA: 20 mppcf; (80)/% SiO2 mg/m³ TWA</td>
<td>IDLH: 3000 mg/m³ TWA</td>
<td></td>
</tr>
</tbody>
</table>

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

Other Exposure Guidelines
Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Appropriate engineering controls

Engineering Measures
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection
No special protective equipment required.

Skin and body protection
No special protective equipment required.

Respiratory protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state Slurry

Appearance White

Color No information available

Odor Odorless

Odor Threshold No information available
<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>UNKNOWN</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>100 °C / 212 °F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Soluble in water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softening Point</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOC Content (%)</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Particle Size</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Particle Size Distribution</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**Reactivity**

No data available.

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Conditions to avoid**

None known based on information supplied.

**Incompatible materials**

None known based on information supplied.

**Hazardous Decomposition Products**

None known based on information supplied.

### 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information**

Specific test data for the substance or mixture is not available.

**Inhalation**

Specific test data for the substance or mixture is not available.
Eye contact
Specific test data for the substance or mixture is not available.

Skin contact
Specific test data for the substance or mixture is not available.

Ingestion
Specific test data for the substance or mixture is not available.

Component Information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol</td>
<td>28 g/kg (Rat) = 22 g/kg (Rat)</td>
<td>&gt; 20 g/kg (Rabbit) &gt; 20 mL/kg (Rabbit)</td>
<td>-</td>
</tr>
<tr>
<td>25322-68-3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silica</td>
<td>&gt; 5000 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rabbit)</td>
<td>&gt; 2.2 mg/L (Rat) 1 h</td>
</tr>
<tr>
<td>7631-86-9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diethylene glycol</td>
<td>12565 mg/kg (Rat)</td>
<td>11890 mg/kg (Rabbit)</td>
<td>-</td>
</tr>
<tr>
<td>111-46-6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Information on toxicological effects

Symptoms
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization
No information available.

Mutagenic Effects
No information available.

Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
</table>
| Silica        | Group 3 | IARC (International Agency for Research on Cancer)
| 7631-86-9     |       | Group 3 - Not Classifiable as to Carcinogenicity in Humans |

Reproductive toxicity
No information available.

STOT - single exposure
No information available.

STOT - repeated exposure
No information available.

Chronic Toxicity
Contains a known or suspected carcinogen. May cause adverse liver effects.

Target Organ Effects

Aspiration Hazard
No information available.

Numerical measures of toxicity
Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)
8,800.00 mg/kg
12. ECOLOGICAL INFORMATION

**Ecotoxicity**
The environmental impact of this product has not been fully investigated.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Toxicity to Microorganisms</th>
<th>Daphnia Magna (Water Flea)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol</td>
<td></td>
<td>24h LC50: &gt; 5000 mg/L (Carassius auratus)</td>
<td>EC50 = 100000 mg/L 15 min</td>
<td></td>
</tr>
<tr>
<td>25322-68-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silica</td>
<td>72h EC50: = 440 mg/L (Pseudokirchneriella subcapitata)</td>
<td>96h LC50: = 5000 mg/L (Brachydanio rerio)</td>
<td>48h EC50: = 7600 mg/L</td>
<td></td>
</tr>
<tr>
<td>7631-86-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diethylene glycol</td>
<td></td>
<td>96h LC50: = 75200 mg/L (Pimephales promelas)</td>
<td>EC50 = 29228 mg/L 15 min</td>
<td>48h EC50: = 84000 mg/L</td>
</tr>
<tr>
<td>111-46-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Persistence and Degradability**
No information available.

**Bioaccumulation**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylene glycol</td>
<td>-1.98</td>
</tr>
<tr>
<td>111-46-6</td>
<td></td>
</tr>
</tbody>
</table>

**Other adverse effects**
No information available.

13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Disposal methods**
This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

**Contaminated Packaging**
Dispose of contents/containers in accordance with local regulations.

14. TRANSPORT INFORMATION

**DOT**
- **Proper Shipping Name**: NOT REGULATED
- **Hazard Class**: N/A

**TDG**
- NOT REGULATED

**MEX**
- NOT REGULATED

**ICAO**
- NOT REGULATED
IATA
Proper Shipping Name

IMDG/IMO

RID

ADR

ADN

15. REGULATORY INFORMATION

International Inventories

TSCA
Complies

DSL
All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard: No
Chronic Health Hazard: No
Fire Hazard: No
Sudden release of pressure hazard: No
Reactive Hazard: No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
<th>Rhode Island</th>
<th>Illinois</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica 7631-86-9</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diethylene glycol 111-46-6</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
International Regulations

Canada
WHMIS Hazard Class
Not determined

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical and Chemical Hazards</th>
<th>HMIS</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Physical Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Prepared By
Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Issuing Date
01-Mar-2017

Revision Date
01-Mar-2017

Revision Note
No information available

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End of Safety Data Sheet