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

Product identifier

Product Name MicroPolish & MicroPolish II Alumina Powder

Product Code(s) 4010075; 4010076; 4010077; 4010078; 4010079; 4010080; 406321016; 406321080; 406322016; 406323016; 406323080

(M)SDS Number 1341982_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.

### 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>Aluminum oxide</td>
<td>1344-28-1</td>
<td>&gt; 99%</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  Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling  Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage  Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible Products  None known based on information supplied.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>TWA: 1 mg/m³ respirable particulate matter</td>
<td>TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 10 mg/m³ total dust (vacated) TWA: 5 mg/m³ respirable fraction</td>
<td></td>
</tr>
<tr>
<td>1344-28-1</td>
<td></td>
<td></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

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Powder(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>White</td>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Color</td>
<td>No information available</td>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>2050°C / 3722°F</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
</tbody>
</table>
Flammability Limit in Air

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>None known</td>
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</table>

Vapor pressure

<table>
<thead>
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<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>

Vapor density

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
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</tbody>
</table>

Specific Gravity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
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</tbody>
</table>

Water Solubility

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Insoluble</td>
<td></td>
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</table>

Solubility in other solvents

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>

Partition coefficient: n-octanol/water

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>

Autoignition temperature

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>

Decomposition temperature

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>

Kinematic viscosity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>

Dynamic viscosity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>

Explosive properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>

Oxidizing properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>None known</td>
</tr>
</tbody>
</table>

Other Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening Point</td>
<td>No data available</td>
</tr>
<tr>
<td>VOC Content (%)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Particle Size</td>
<td>No data available</td>
</tr>
<tr>
<td>Particle Size Distribution</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

<table>
<thead>
<tr>
<th>Route</th>
<th>Specific test data for the substance or mixture is not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td></td>
</tr>
<tr>
<td>Eye contact</td>
<td></td>
</tr>
<tr>
<td>Skin contact</td>
<td></td>
</tr>
<tr>
<td>Ingestion</td>
<td></td>
</tr>
</tbody>
</table>


Component Information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td>&gt; 5000 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1344-28-1</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

Contains no ingredient listed as a carcinogen.

Reproductive toxicity

No information available.

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Target Organ Effects

Eyes. Respiratory system. Skin. Lungs.

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

Not applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

Persistence and Degradability

No information available.

Bioaccumulation

No information available

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: NON REGULATED
Hazard Class: N/A

TDG
NOT REGULATED

MEX
NOT REGULATED

ICAO
NOT REGULATED

IATA
Proper Shipping Name: NON REGULATED

IMDG
NOT REGULATED

RID
NOT REGULATED

ADR
NOT REGULATED

ADN
NOT REGULATED

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 contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight-%</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
</table>

---

BUEHLER
Aluminum oxide - 1344-28-1

<table>
<thead>
<tr>
<th>SARA 311/312 Hazard Categories</th>
<th>1344-28-1</th>
<th>&gt; 99%</th>
<th>1.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudden release of pressure hazard</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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>Component</th>
<th>Carcinogen Status</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum oxide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1344-28-1 (&gt; 99%)</td>
<td></td>
<td>Mexico: TWA = 10 mg/m³</td>
</tr>
</tbody>
</table>

Mexico
National occupational exposure limits

Mexico - Occupational Exposure Limits - Carcinogens

Canada
WHMIS Hazard Class
Not determined

16. OTHER INFORMATION

NFPA  Health Hazards 0  Flammability 0  Instability 0  Physical and Chemical Hazards - Personal Protection X

HMIS  Health Hazards 0  Flammability 0  Physical Hazard 0  Personal Protection X

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

Issuing Date 01-Mar-2017
Revision Date 06-Jul-2018
Revision Note No information available
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 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.

End of Safety Data Sheet