Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • **Buehler Miromet Suspension / SDS# 9104295**

Product Code • 40-6355-006; 40-6355-128

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

Relevant identified use(s) • Polishing compound

1.3 Details of the supplier of the safety data sheet

Manufacturer • BUEHLER, a division of Illinios Tool Works Inc.

41 Waukegan Road
Lake Bluff, IL 60044
United States

Telephone (Technical) • 847-295-6500

1.4 Emergency telephone number

Manufacturer • 800-424-9300 - CHEMTREC

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to: EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP • Acute Toxicity Oral 4 - H302
Hazardous to the aquatic environment Acute 1 - H400

DSD/DPD • Harmful (Xn)
Dangerous to the Environment (N)
R22, R50

2.2 Label Elements

CLP

WARNING

Hazard statements • H302 - Harmful if swallowed
H400 - Very toxic to aquatic life

Precautionary statements

Prevention
- P264 - Wash thoroughly after handling.
  P270 - Do not eat, drink or smoke when using this product.
  P273 - Avoid release to the environment.

Response
- P301+P312 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
  P330 - Rinse mouth.
  P391 - Collect spillage.

Storage/Disposal
- P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

DSD/DPD

Risk phrases
- R22 - Harmful if swallowed.
  R50 - Very toxic to aquatic organisms.

Safety phrases
- S57 - Use appropriate containment to avoid environmental contamination.

2.3 Other Hazards

CLP
- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

DSD/DPD
- According to European Directive 1999/45/EC this material is considered dangerous.

UN GHS

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2.1 Classification of the substance or mixture

UN GHS
- Acute Toxicity Oral 4
  Hazardous to the aquatic environment Acute 1

2.2 Label elements

UN GHS

WARNING

Hazard statements
- Harmful if swallowed
  Very toxic to aquatic life

Precautionary statements

Prevention
- Wash thoroughly after handling.
  Do not eat, drink or smoke when using this product.
  Avoid release to the environment.

Response
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
  Rinse mouth.
  Collect spillage.

Storage/Disposal
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

UN GHS
- According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012

- Acute Toxicity Oral 4

2.2 Label elements

OSHA HCS 2012

WARNING

Hazard statements

- Harmful if swallowed

Precautionary statements

Prevention

- Wash thoroughly after handling.
  Do not eat, drink or smoke when using this product.

Response

- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
  Rinse mouth.

Storage/Disposal

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS

2.1 Classification of the substance or mixture

WHMIS

- Not classified

2.2 Label elements

WHMIS

- No label element(s) required.

2.3 Other hazards

WHMIS

- In Canada, the product mentioned above is not considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance.

3.2 Mixtures

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
Cerium oxide	**CAS:**1306-38-3 **EINECS:**215-150-4	20% TO 50%	Ingestion/Oral-Rat LD50 • 1000 mg/kg	**UN GHS:** Acute Tox. 4 (orl); Aquatic Acute 1 **EU DSD/DPD:** Xn; R22 N; R50 **EU CLP:** Acute Tox. 4, H302; Aquatic Acute 1, H400 **OSHA HCS 2012:** Acute Tox. 4 (orl)	NDA

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation
- Remove to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.

Skin
- Wash skin with soap and water. Take off contaminated clothing and wash before reuse. If irritation develops and persists, get medical attention.

Eye
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion
- Do NOT induce vomiting. Give victim a glass of water or milk. Never give anything by mouth to an unconscious person. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media
- In case of fire use media as appropriate for surrounding fire.

Unsuitable Extinguishing Media
- No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Does not burn.

Hazardous Combustion Products
- No data available

5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
  Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
  Wear positive pressure self-contained breathing apparatus (SCBA).

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions
- Ventilate enclosed areas. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stay upwind. Keep out of low areas. Keep unauthorized personnel away.

6.2 Environmental precautions

- Avoid run off to waterways and sewers.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures
- Stop leak if you can do it without risk.
SMALL SPILLS: Take up with sand or other non-combustible absorbent material and place into containers for later disposal.
LARGE SPILLS: Dike far ahead of spill for later disposal.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling
- Use only with adequate ventilation. Empty containers retain product residue and can be hazardous. Wear appropriate personal protective equipment, avoid direct contact. Avoid breathing mist, vapours and/or spray. Avoid contact with skin, eyes, and clothing. Do not ingest. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage
- Keep container tightly closed. Keep only in the original container. Store in a cool, dry place. Do not expose to direct sunlight. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines
- No applicable exposure limits available for product or components.

8.2 Exposure controls

Engineering Measures/Controls
- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory
- In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face
- Wear chemical splash safety goggles.

Skin/Body
- Wear appropriate gloves.

Environmental Exposure Controls
- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow

best practice for site management and disposal of waste.

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Tan liquid with no appreciable odor.
Color	Tan	Odor	No appreciable odor.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	32 F(0 C)
Decomposition Temperature	Data lacking	pH	6 to 8
Specific Gravity/Relative Density	= 1.0038 Water=1	Water Solubility	Soluble
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	17.5 mmHg (torr) @ 20 C(68 F)	Vapor Density	> 1 Air=1
Evaporation Rate	< 1 n-Butyl Acetate = 1		
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Excess heat.

10.5 Incompatible materials

- Strong acids.

10.6 Hazardous decomposition products

- Oxides of carbon.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Cerium oxide (20% TO 50%)	1306-38-3	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 1000 mg/kg; **Multi-dose Toxicity:** Inhalation-Rat TCLo • 50 mg/m³ 6 Hour(s) 90 Day(s)-Intermittent; *Lungs, Thorax, or Respiration*:**Structural or functional change in trachea or bronchi**; *Lungs, Thorax, or Respiration*:**Changes in lung weight**; *Blood*:**Other changes**

GHS Properties	Classification
Respiratory sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
Serious eye damage/Irritation	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
Acute toxicity	**EU/CLP** • Acute Toxicity - Oral 4 - ATEmix (oral) = 2000 mg/kg **OSHA HCS 2012** • Acute Toxicity - Oral 4 - ATEmix (oral) = 2000 mg/kg **UN GHS** • Acute Toxicity - Oral 4 - ATEmix (oral) = 2000 mg/kg
Aspiration Hazard	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
Carcinogenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
Skin corrosion/Irritation	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
Skin sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
STOT-RE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
STOT-SE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
Toxicity for Reproduction	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking
Germ Cell Mutagenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking **UN GHS** • Data lacking

Potential Health Effects

Inhalation

Acute (Immediate)
- Not expected to present a hazard in normal industrial use (room temperature processing)

Chronic (Delayed)
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin

Acute (Immediate)
- Substance may cause slight skin irritation.

Chronic (Delayed)
- No data available.

Eye

Acute (Immediate)
- Not expected to present a hazard in normal industrial use.

Chronic (Delayed)
- No data available.

Ingestion

Acute (Immediate)
- Harmful if swallowed. May cause nausea and vomiting.

Chronic (Delayed)
- No data available.

Key to abbreviations
LD = Lethal Dose
TC = Toxic Concentration

Section 12 - Ecological Information

12.1 Toxicity

	CAS	
Buehler Miromet Suspension / SDS# 9104295	NDA	**Aquatic Toxicity-Crustacea:** 21 Day(s) NOEC Water Flea 18 mg/L Comments: Cerium oxide (1306-38-3) **Aquatic Toxicity-Algae and Other Aquatic Plant(s):** 3 Day(s) EC50 *Green Algae* 0.49-1.25 mg/L Comments: Cerium oxide (1306-38-3)

- Very toxic to aquatic life.

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	NDA	Not Regulated	NDA	NDA	NDA
TDG	NDA	Not Regulated	NDA	NDA	NDA
IATA/ICAO	NDA	Not Regulated	NDA	NDA	NDA

14.6 Special precautions for user
- None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Data lacking.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications
- Acute

Inventory						
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**EU EINECS**	**EU ELNICS**	**TSCA**
Cerium oxide	1306-38-3	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Cerium oxide	1306-38-3	Not Listed

Canada - WHMIS - Ingredient Disclosure List

• Cerium oxide	1306-38-3	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Cerium oxide	1306-38-3	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Cerium oxide	1306-38-3	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Cerium oxide	1306-38-3	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Cerium oxide	1306-38-3	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Cerium oxide	1306-38-3	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Cerium oxide	1306-38-3	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Cerium oxide	1306-38-3	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Cerium oxide	1306-38-3	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Cerium oxide	1306-38-3	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Cerium oxide	1306-38-3	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Cerium oxide	1306-38-3	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Cerium oxide	1306-38-3	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Cerium oxide	1306-38-3	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Cerium oxide	1306-38-3	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Cerium oxide	1306-38-3	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Cerium oxide	1306-38-3	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Revision Date
- 01/September/2015

Preparation Date
- 18/April/2012

Disclaimer/Statement of Liability
- To the best of our knowledge, the information contained in this SDS is accurate or is obtained from sources believed to be accurate. However, no liability, expressed or implied, is assumed for the accuracy or completeness of the information contained herein. Buyer assumes liability in its use of the material.

Key to abbreviations

NDA = No Data Available