SECTION 1: Identification

Product identifier

Product name Unfired Cordierite
Substance name Magnesium Aluminum Silicate
2MgO•2Al₂O₃•5SiO₂
Other names / synonyms Cordierite

Recommended use of the chemical and restrictions on use
Raw material for technical ceramic components.

Supplier’s details

Name Superior Technical Ceramics
Address 600 Industrial Park Road
St. Albans, Vermont 05478
USA
Telephone 802-527-7726
Fax 802-527-1181

Emergency phone number(s)
802-527-7726

SECTION 2: Hazard identification

This product is considered an article and does not pose any health hazard under normal use. The health effects listed below may be relevant when dust is generated during machining or other processing conditions.

Classification of the substance or mixture
- Carcinogenicity (chapter 3.6), Cat. 1
- Specific target organ toxicity, repeated exposure (chapter 3.9), Cat. 1

GHS label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H335 May cause respiratory irritation
H350i May cause cancer by inhalation.
H372 Causes damage to organs through prolonged or repeated exposure

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.

Other hazards which do not result in classification
This product has the potential of generating respirable dust during handling and machining. Dust may contain respirable crystalline silica. Prolonged or massive inhalation of respirable crystalline silica dust may cause lung fibrosis, commonly referred to as silicosis. Principal symptoms of lung fibrosis are cough and breathlessness. Control and monitor occupational exposure to respirable crystalline silica dust in accordance to federal, state and local laws.

SECTION 3: Composition/information on ingredients

Components

1. Silica, crystalline (airborne particles of respirable size)
   Concentration 40 - 60 % (Weight)
   Other names / synonyms Quartz; Sand; Silica, crystalline (airborne particles of respirable size); Silicon (IV) oxide
   CAS no. 14808-60-7
   H335 May cause respiratory irritation
   H350i May cause cancer by inhalation.
   H372 Causes damage to organs through prolonged or repeated exposure

2. Aluminum oxide
   Concentration 25 - 35 %
   Other names / synonyms activated Alumina; alpha-Alumina; Alumina; Aluminum oxide; Aluminum oxide (fibrous forms); Aluminum oxide (Powder or Fiber); ALUMINUMOXIDE
   CAS no. 1344-28-1

3. Magnesium oxide
   Concentration 15 - 20 %
   Other names / synonyms Magnesium oxide
   CAS no. 1309-48-4

4. Organic Binders
   Concentration 1 - 5 %
   Other names / synonyms Organic Binders

SECTION 4: First-aid measures

Description of necessary first-aid measures
General advice
Organic portion may be combustible. Dust may cause irritation to eyes, nose, throat, and/or skin.

If inhaled
Move to fresh air and consult with local medical personnel if discomfort persists.

In case of skin contact
Wash affected area with soap and water and consult with local medical personnel if irritation persists.

In case of eye contact
Flush with tepid water for a minimum of 15 minutes and consult with local medical personnel if discomfort persists.

If swallowed
Administer water to dilute, but not if person is unconscious. Consult with local medical personnel if discomfort persists.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Use any means suitable for extinguishing surrounding fire.

Specific hazards arising from the chemical
Possible Class A fire hazard – combustible vapors can develop in the headspace over the product. Flash point is 220°C (428°F).

Special protective actions for fire-fighters
Use protective clothing and breathing equipment appropriate for the surrounding fire and to protect against the dust that may be dispersed in the air.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Any dust from machining should be wet mopped or dry vacuumed.

Methods and materials for containment and cleaning up
Any dust from machining should be wet mopped or dry vacuumed.

SECTION 7: Handling and storage

Precautions for safe handling
Store in a cool dry place. Any dust should be sponge mopped.

SECTION 8: Exposure controls/personal protection

Control parameters

1. Silicates (less than 1% crystalline silica), Soapstone, respirable dust
PEL (Inhalation): See Annotated Z-3 ppm (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

2. Silicates (less than 1% crystalline silica), Soapstone, respirable dust
PEL (Inhalation): See Annotated Z-3 mg/m³ (OSHA)
OSHA Annotated Table Z-1, www.osha.gov
3. Silicates (less than 1% crystalline silica), Soapstone, respirable dust
PEL (Inhalation): See Annotated Z-3 (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

4. Silicates (less than 1% crystalline silica), Soapstone, respirable dust
REL (Inhalation): See Annotated Z-3 (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

5. Magnesium oxide fume - Total Particulate (CAS: 1309-48-4)
PEL (Inhalation): 15 mg/m³ (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

6. Magnesium oxide fume - Total Particulate (CAS: 1309-48-4)
PEL (Inhalation): 10 mg/m³ (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

7. Magnesium oxide fume - Total Particulate (CAS: 1309-48-4)
REL (Inhalation): See Appendix D (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

8. alpha-Alumina (CAS: 1344-28-1)
PEL (Inhalation): see PNOR (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

9. alpha-Alumina (CAS: 1344-28-1)
REL (Inhalation): See Appendix D (NIOSH)
OSHA Annotated Table Z-1, www.osha.gov

10. alpha-Alumina, Total dust (CAS: 1344-28-1)
PEL (Inhalation): 15 mg/m³ (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

11. alpha-Alumina, Total dust (CAS: 1344-28-1)
PEL (Inhalation): 10 mg/m³ (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

12. alpha-Alumina, Respirable fraction (CAS: 1344-28-1)
PEL (Inhalation): 5 mg/m³ (OSHA)
OSHA Annotated Table Z-1, www.osha.gov

13. alpha-Alumina, Respirable fraction (CAS: 1344-28-1)
PEL (Inhalation): 5 mg/m³ (Cal/OSHA)
OSHA Annotated Table Z-1, www.osha.gov

Appropriate engineering controls
Local or general exhaust ventilation recommended.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Safety goggles in the presence of airborne dust.

Skin protection
Polymer gloves for prolonged dust exposure.

Respiratory protection
NIOSH/MSHA approved respirator for dust when exposure limit is exceeded.

Thermal hazards
CO and CO₂ in a fire and at temperatures >220°C (428°F).
SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

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<tr>
<th>Property</th>
<th>Value</th>
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<tr>
<td>Appearance/form</td>
<td>Gray/Tan Chalky Solid</td>
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<td>Odor</td>
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<td>Odor threshold</td>
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<tr>
<td>pH</td>
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<tr>
<td>Melting point/freezing point</td>
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<td>Flash point</td>
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<tr>
<td>Evaporation rate</td>
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<td>Flammability (solid, gas)</td>
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<tr>
<td>Upper/lower explosive limits</td>
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<td>Relative density</td>
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<td>Decomposition temperature</td>
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<td>Explosive properties</td>
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<td>Oxidizing properties</td>
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</tbody>
</table>

SECTION 10: Stability and reactivity

Chemical stability
Stable

Hazardous decomposition products
CO and CO2 in a fire and at temperatures >220ºC (428ºF).

SECTION 11: Toxicological information

Information on toxicological effects

Respiratory or skin sensitization
See Section 2

Carcinogenicity
See Section 2

STOT-repeated exposure
See Section 2

SECTION 12: Ecological information

No Applicable Information Found
SECTION 13: Disposal considerations

Disposal of the product
This material is not hazardous per 40 CFR 261. Consultation with federal, state and local officials is recommended before disposal.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

SECTION 15: Regulatory information

US FEDERAL

TSCA
CAS# 1344-28-1 is listed on the TSCA inventory.
CAS# 1309-48-4 is listed on the TSCA inventory.
CAS# 14808-60-7 is listed on the TSCA inventory.

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

Section 313
CAS# 1344-28-1 is reported under Section 313.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

US STATE

CAS# 1344-28-1 can be found on the following state right to know lists:
Illinois, Minnesota, Massachusetts, New Jersey, Pennsylvania, Texas.

CAS# 1309-48-4 can be found on the following state right to know lists:
Illinois, New Jersey, Pennsylvania, Texas (regulated under a synonym)

CAS# 14808-60-7 can be found on the following state right to know lists:
Massachusetts, Pennsylvania, Texas.
Consult your state and local resources for further information.

California Prop 65
Crystalline Silica (airborne particles of respirable size) is classified as a substance known to the state of California to be a carcinogen.

SECTION 16: Other information

Further information/disclaimer
Although reasonable care has been taken to provide accurate and current information in preparation of this document, Superior Technical Ceramics extends no warranties, makes no representation and assumes no responsibility for any loss, damage, or injury of any kind which may result from reliance of information provided in this document by any person.
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