



Material Safety Data Sheet

<p>NFPA</p>	<p>HMIS</p> <table border="1" style="margin: auto;"> <tr> <td style="background-color: #00FFFF;">Health Hazard</td> <td style="text-align: center; font-weight: bold;">1</td> </tr> <tr> <td style="background-color: #FFC0CB;">Fire Hazard</td> <td style="text-align: center; font-weight: bold;">0</td> </tr> <tr> <td style="background-color: #FFFF00;">Reactivity</td> <td style="text-align: center; font-weight: bold;">1</td> </tr> </table>	Health Hazard	1	Fire Hazard	0	Reactivity	1	<p>Personal Protective Equipment</p> <p style="text-align: center;">See Section 15.</p>
Health Hazard	1							
Fire Hazard	0							
Reactivity	1							

Section 1. Chemical Product and Company Identification		<i>Page Number: 1</i>
Common Name/ Trade Name	Molecular Sieve, Type 4a 1/16" Pellets	Catalog Number(s). M1295
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS# Mixture.
Commercial Name(s)	Molecular Sieve, Type 4a 1/16" Pellets	RTECS Not applicable.
Synonym	Not available.	TSCA TSCA 8(b) inventory: Quartz; Magnesium oxide; Aluminum oxide; Sodium Oxide; Silicon Dioxide, Amorphous
Chemical Name	Not applicable.	CI# Not applicable.
Chemical Family	Metal oxide. (Salt.)	<p style="text-align: center; color: blue; margin: 0;">IN CASE OF EMERGENCY</p> <p style="text-align: center; color: blue; margin: 0;">CHEMTREC (24hr) 800-424-9300</p> <p style="text-align: center; margin: 0;">CALL (310) 516-8000</p>
Chemical Formula	Not applicable.	
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	

Section 2. Composition and Information on Ingredients					
Name	CAS #	<i>Exposure Limits</i>			% by Weight
		TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	
1) Quartz	14808-60-7	0.3			<3
2) Magnesium oxide	1309-48-4	15	10		<5
3) Aluminum oxide	1344-28-1	5			<30
4) Sodium Oxide	1313-59-3				<30
5) Silicon Dioxide, Amorphous	7631-86-9 or 112926-00-8	6			<50

Toxicological Data on Ingredients	<p>Quartz LD50: Not available. LC50: Not available.</p> <p>Magnesium oxide LD50: Not available. LC50: Not available.</p> <p>Aluminum oxide LD50: Not available. LC50: Not available.</p> <p>Sodium Oxide LD50: Not available. LC50: Not available.</p> <p>Silicon Dioxide, Amorphous:</p>
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ORAL (LD50): Acute: >10000 mg/kg [Rat].
 DERMAL (LD50): Acute: >5000 mg/kg [Rabbit].

Section 3. Hazards Identification

Potential Acute Health Effects	Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. The amount of tissue damage depends on length of contact. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death.
Potential Chronic Health Effects	Slightly hazardous in case of inhalation. CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC, 1 (Clear evidence.) by NTP, + (Proven.) by OSHA, + (Proven.) by NIOSH [Quartz]. Classified A2 (Suspected for human.) by ACGIH [Quartz]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Aluminum oxide]. Classified A3 (Proven for animal.) by ACGIH [Silicon Dioxide, Amorphous]. Classified 3 (Not classifiable for human.) by IARC [Silicon Dioxide, Amorphous]. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Quartz]. TERATOGENIC EFFECTS: Classified None. for human [Aluminum oxide]. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to lungs. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Serious Skin Contact	Not available.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Not available.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not applicable.
Flash Points	Not applicable.
Flammable Limits	Not applicable.
Products of Combustion	Not available.
Fire Hazards in Presence of Various Substances	Not applicable.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	Not applicable.

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Special Remarks on Fire Hazards	Powerful oxidizers may cause fire. [Quartz] Chlorine Trifluoride reacts violently with Aluminum Oxide producing a flame.[Aluminum Oxide] Magnesium Oxide may ignite and explode when heated with sublimed sulfur, magnesium powder, or aluminum powder. It reacts violently with interhalogens (bromine pentafluoride, chlorine trifluoride) and produces flame. When combined with phosphorus pentachloride, it incandesces. [Magnesium Oxide]
Special Remarks on Explosion Hazards	Powerful oxidizers or metals may cause explosions. [Quartz] Magnesium Oxide may ignite and explode when heated with sublimed sulfur, magnesium powder, or aluminum powder. [Magnesium Oxide]

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep container dry. Do not ingest. Do not breathe dust. Never add water to this product. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	<p>Quartz TWA: 0.05 (mg/m³) from ACGIH (TLV) [United States] [1999] Inhalation Respirable. TWA: 0.1 (mg/m³) from OSHA (PEL) [United States] Inhalation Respirable. TWA: 0.3 (mg/m³) [United Kingdom (UK)] Inhalation Respirable. TWA: 0.2 (mg/m³) [Australia] Inhalation TWA: 0.1 (mg/m³) [Canada] Inhalation Respirable.</p> <p>Magnesium oxide TWA: 10 (mg/m³) from ACGIH (TLV) [United States] Inhalation Total. TWA: 4 STEL: 10 (mg/m³) [United Kingdom (UK)] Inhalation Respirable. TWA: 15 (mg/m³) from OSHA (PEL) [United States] Inhalation Total. TWA: 10 (mg/m³) [United Kingdom (UK)] Total.</p> <p>Aluminum oxide TWA: 10 (mg/m³) from ACGIH (TLV) [United States] Inhalation Total. TWA: 10 (mg/m³) [Canada] Inhalation Total. TWA: 5 (mg/m³) from OSHA (PEL) [United States] Inhalation Respirable. TWA: 15 from OSHA (PEL) [United States] Inhalation Total. TWA: 10 [United Kingdom (UK)] Inhalation Total. TWA: 4 [United Kingdom (UK)] Inhalation Respirable.</p> <p>Silicon Dioxide, Amorphous TWA: 2 (mg/m³) [Australia] Inhalation Respirable. TWA: 6 (mg/m³) [United Kingdom (UK)] Inhalation Respirable.</p> <p>Consult local authorities for acceptable exposure limits.</p>

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Beads Solid pellets.)	Odor	Not available.
Molecular Weight	Not applicable.	Taste	Not available.
pH (1% soln/water)	Not applicable.	Color	Beige. Tan. (Light.)
Boiling Point	Not available.		
Melting Point	2800°C (5072°F) based on data for: Magnesium oxide. Weighted average: 1692.71°C (3078.9°F)		
Critical Temperature	Not available.		
Specific Gravity	Weighted average: 2.9 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	The product is insoluble in water and oil.		
Ionicity (in Water)	Not available.		
Dispersion Properties	Is not dispersed in cold water, hot water.		
Solubility	Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.		

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials, moisture, excess dust generation
Incompatibility with various substances	May be slightly reactive to reactive with oxidizing agents, acids Slight reactive with moisture.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	<p>Hygroscopic. Reacts with water to evolve heat.</p> <p>Sudden contact with high concentrations of chemicals having high heats of adsorption such as elefins, HCl, etc. When first wetted, the product can heat up to the boiling point of water. Flood with water to cool material. [Molecular Sieve mixture]</p> <p>Incompatible with fluoride, oxygen difluoride, chlorine trifluoride. May react vigorously with vinyl acetate vapor. [Silicon Dioxide]</p> <p>Incompatibility with powerfull oxidizers: fluorine, chlorine trifluoride, manganese trioxide, oxygen difluoride, hydrogen peroxide, etc.; Incompatible with acetylene and ammonia. This chemical is attacked by Hydrogen Fluoride. Silica will dissolve in Hydrofluoric Acid and produce the corrosive gas Silicon Tetrafluoride (SiF4). [Quartz]</p> <p>Chlorine Trifluoride reacts violently with Aluminum Oxide producing a flame.</p> <p>Ethylene oxide may polymerize violently when in contact with highly catalytic surfaces such as pure Aluminum Oxide.</p> <p>Reacts with hot chlorinated rubber. [Aluminum Oxide]</p> <p>Reacts violently with water [Sodium Oxide]</p> <p>Reacts violently with ClF3 (Chlorine Trifluoride) and PCI5 (Phosphorous Pentachloride).</p> <p>Hygroscopic. Air Sensitrive. Readily absorbs moisture and carbon dioxide when exposed to air. Hydrates slowly in contact with moisture.</p> <p>Takes up carbon dioxide and water from the air. This happens more readily for the light form vs. the heavy form.</p> <p>Slight alkaline reaction to water. [Magnesium Oxide]</p>
Special Remarks on Corrosivity	Not available.

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Polymerization Will not occur.

Section 11. Toxicological Information

Routes of Entry Inhalation. Ingestion.

Toxicity to Animals Molecular Sieve, type 4a, 1/16" pellets:
Acute oral toxicity (LD50): >32000 mg/kg [Rat].
Acute dermal toxicity (LD50): >2000 mg/kg [Rabbit].

Chronic Effects on Humans **CARCINOGENIC EFFECTS:** Classified 1 (Proven for human.) by IARC, 1 (Clear evidence.) by NTP, + (Proven.) by OSHA, + (Proven.) by NIOSH [Quartz]. Classified A2 (Suspected for human.) by ACGIH [Quartz]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Aluminum oxide]. Classified A3 (Proven for animal.) by ACGIH [Silicon Dioxide, Amorphous]. Classified 3 (Not classifiable for human.) by IARC [Silicon Dioxide, Amorphous].
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Quartz].
TERATOGENIC EFFECTS: Classified None. for human [Aluminum oxide].
May cause damage to the following organs: lungs.

Other Toxic Effects on Humans Slightly hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals Not available.

Special Remarks on Chronic Effects on Humans Contains about 3% Quartz which may cause cancer. Quartz has been classified by IARC as a class 1 carcinogen.

Special Remarks on other Toxic Effects on Humans Potential Health Effects
Skin: May cause skin irritation. The product gets hot as it first adsorbs water.
Eyes: Dust and /or product may cause eye discomfort and/or irritation.
Ingestion: The product gets hot as it first adsorbs water. Burns to moist body tissues may result if contact is prolonged.
Inhalation: Exposure to dust particles generated from this material may cause irritation of the respiratory tract and may cause lung injury/cancer.
Repeated and prolonged inhalation of crystalline silica in the form of quartz from occupational sources may cause cancer.

Section 12. Ecological Information

Ecotoxicity Not available.

BOD5 and COD Not available.

Products of Biodegradation Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation Not available.

Section 13. Disposal Considerations

Waste Disposal Waste must be disposed of in accordance with federal, state and local environmental control regulations.

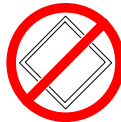
Section 14. Transport Information

DOT Classification Not a DOT controlled material (United States).

Identification Not applicable.

Special Provisions for Transport Not applicable.

DOT (Pictograms)



Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Quartz
 California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Quartz
 Illinois toxic substances disclosure to employee act: Magnesium oxide; Aluminum oxide
 Rhode Island RTK hazardous substances: Magnesium oxide; Aluminum oxide
 Pennsylvania RTK: Quartz; Magnesium oxide; Silicon Dioxide, Amorphous
 Florida: Quartz
 Minnesota: Quartz; Magnesium oxide; Aluminum oxide; Silicon Dioxide, Amorphous
 Massachusetts RTK: Quartz; Magnesium oxide; Aluminum oxide; Silicon Dioxide, Amorphous
 New Jersey: Quartz; Magnesium oxide; Aluminum oxide; Silicon Dioxide, Amorphous
 New Jersey spill list: Aluminum oxide
 TSCA 8(b) inventory: Quartz; Magnesium oxide; Aluminum oxide; Sodium Oxide; Silicon Dioxide, Amorphous

California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Quartz

Other Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications

WHMIS (Canada)

Not controlled under WHMIS (Canada).

DSCL (EEC)


R14- Reacts with water.
 R45- May cause cancer.

S1/2- Keep locked up and out of the reach of children.
 S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
 S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S46- If swallowed, seek medical advice immediately and show this container or label.
 S53- Avoid exposure - obtain special instructions before use.

HMIS (U.S.A.)

Health Hazard	1
Fire Hazard	0
Reactivity	1
Personal Protection	E

National Fire Protection Association (U.S.A.)

Health  Flammability
 Reactivity
 Specific hazard

WHMIS (Canada) (Pictograms)



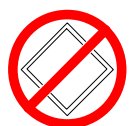
DSCL (Europe)
(Pictograms)



TDG (Canada)
(Pictograms)



ADR (Europe)
(Pictograms)



Protective Equipment



Gloves.



Lab coat.



Dust respirator. Be sure to use an approved/certified respirator or equivalent.



Splash goggles.

Section 16. Other Information

MSDS Code M4122

References Not available.

Other Special Considerations Not available.

Validated by Sonia Owen on 7/19/2005.

Verified by Sonia Owen.

Printed 5/31/2006.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.