

MATERIAL SAFETY DATA SHEET

SILICA GEL

PRODUCT CODE NUMBER(S): 6983-8, 6984-8, 6985-8, 6986-8, 6987-8, 6988-8, 6989-8, 7070-8, 7080-8

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: *Silica gel*
Chemical Family: *Desiccant/adsorbent*
Chemical Formula: SiO_2
Product Use: *Chromatography use, dessicant*
Manufacturer's Name and Address:
Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9
Telephone No: (905) 877-0101
Fax No: (905) 877-6666
Emergency Telephone No: CANUTEC (613) 996-6666

HAZARDOUS INGREDIENTS OF MATERIALS

Ingredients	%	TLV Units	CAS No.
<i>Silica gel</i>	>99	6 mg/m ³ (PEL)	7631-86-9

PHYSICAL DATA

Physical State: *Solid*
Odour and Appearance: *Fine white powder, odourless*
Odour Threshold (ppm): *Not applicable*
Vapour Pressure (mm Hg): *Not applicable*
Vapour Density (Air = 1): *Not applicable*
Evaporation Rate: *Not applicable*
Boiling Point (degrees C): 2230°C
Melting Point (degrees C): 1710°C
pH: 2.3 to 7.4 (*aqueous suspensioh*)
Specific Gravity: 2.22
Coefficient of Water/Oil distribution: *Not applicable*

SHIPPING DESCRIPTION

UN: *Not regulated*
T.D.G. Class: *Not regulated*
Pkg. Group: *Not regulated*

REACTIVITY DATA

Chemical Stability: *Stable*
Incompatibility with other substances: *May react violently or explosivley with strong oxidiers such as fluorine, chlorine trifluoride, oxygen dichloride, manganese trifluoride. Will dissolve in hydrofluoric acid to form the corrosive gas, silicon tetrafluoride. Mixtures of magnesium with wet silica gel exploded violently. May react with burning sodium. Reacts with xenon hexa fluoride to form explosive xenon trioxide.*
Reactivity: *Avoid excessive heat, generation of dust, moisture, all incompatible materials.*
Hazardous Decomposition Products: *Toxic gases*

FIRE AND EXPLOSION DATA

Flammability: *Not combustible. Will not burn.*
Extinguishing Media: *Use an extinguisher appropriate to the surrounding material that is burning. Water spray can also be used to cool containers, prevent dust formation, flush chemical away from fire. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment and clothing sufficienet to prevent inhalation of dust or fumes, and contact with skin and eyes.*
Flash Point (Method Used): *Not applicable*
Autoignition Temperature: *Not applicable*
Upper Flammable Limit (% by volume): *Not applicable*
Lower Flammable Limit (% by volume): *Not applicable*
Hazardous Combustion Products: *Toxic gases may e relased in fire.*
Sensitivity to Impact: *None*
Sensitivity to Static discharge: *None identified*

TOXICOLOGICAL PROPERTIES AND HEALTH DATA

Toxicological Data:

LD₅₀: *SiO₂ (oral, rat) 31.6 g/kg; (skin, rabbit) 2g/kg/48h*
LC₅₀: *Not available*

Effects of Acute Exposure to Product:

Inhaled: *Silica gel may be irritating and drying, causing temporary discomfort, coughing.*
In contact with skin: *May cause mild mechanical irritation or drying.*
In contact with eyes: *May cause mild, mechanical, reversible irritation.*
Ingested: *Relatively non-toxic; may be harmful in very large amounts. Not a typical route of industiral exposure.*

Effects of Chronic Exposure to Product:

No reports of lung damage, such as are seen with crystalline types of silica. If silica gel is heated to a sufficiently high temperature, for a sufficient length of time, it can be converted to cystalline silica, which causes severe, chronic lung disease (silicosis). There is no data regarding the conversion temperature.

Carcinogenicity: *Ingredients are not classified as carcinogenic by IARC, ACGIH, OSHA or NTP.*

Teratogenicity: *No human or animal information available.*

Reproductive Effects: *No human or animal information available.*

Mutagenicity: *No information available*

Synergistic Products: *None known*

PREVENTIVE MEASURES

Engineering Controls: *Local exhaust ventilation recommended*

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Respiratory Protection: Up to 30 mg/m³: NIOSH/OSHA approved dust/mist respirator. Up to 60 mg/m³: dust/mist respirator, except single-use or quarter-mask, or supplied-air respirator. Up to 150 mg/m³: continuous-flow supplied-air respirator, or powered, air-purifying respirator with dust/mist filter. Up to 300 mg/m³: full face-piece respirator with high-efficiency particulate filters, or continuous-flow supplied-air respirator with tight-fitting face-piece. Up to 3000 mg/m³: positive-pressure supplied-air respirator. Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator with auxiliary positive-pressure self-contained breathing apparatus.

Eye Protection: Chemical safety glasses. Do not wear contact lenses when working with chemicals.

Skin Protection: Rubber or plastic gloves. Plastic apron, sleeves and boots as required to prevent contact.

Other Personal Protective Equipment: Safety shower and eye-wash fountain in work area.

Leak and Spill Procedure: Ventilate area if dust is present. Wet to prevent generation of dust. If spill is large, cleanup personnel must be trained in the handling of hazardous materials and must wear protective equipment and clothing sufficient to prevent inhalation of mist or fumes, and contact with skin and eyes. Transfer carefully into container and arrange removal by disposal company. Wash site of spillage thoroughly with water and detergent.

Waste Disposal: Follow all federal, provincial and local regulations for disposal.

Handling Procedures and Equipment: Workers using this chemical must be properly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Avoid generating dust. Use the smallest amount possible for the purpose, in a designated area with adequate ventilation. Use good housekeeping to prevent accumulations of dust. Avoid contact with skin and eyes. Avoid inhalation. Wash thoroughly after handling. Empty containers may contain hazardous residues; treat with caution.

Storage Requirements: Store in a cool, dry, well-ventilated area, out of direct sunlight and away from incompatible materials. Keep containers tightly closed.

REFERENCES USED

CCINFO disc: Cheminfo, MSDS's

Sax, Lewis: *Hawley's Condensed Chemical Dictionary*, 11th ed., 1987

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: October 28, 1991

Revision: May 2011

MSDS: 6983-8, 6984-8, 6985-8, 6986-8, 6987-8, 6988-8, 6989-8, 7070-8, 7080-8

WHMIS Designation: Not a controlled product. Not required to be updated every three years (WHMIS 1992, B-40, Section 29.2)

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
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FIRST AID MEASURES

Specific Measures:

Eyes: Flush eyes thoroughly with gently running water, holding eyelids open while flushing, for five to ten (5-10) minutes, or until no trace of chemical remains. Get medical advice if irritation develops.

Skin: Brush or wipe off dry material. Flush skin with plenty of running water until no evidence of chemical remains. If irritation develops get medical attention.

Inhalation: Remove to fresh air. Give oxygen and get medical attention for any breathing difficulty.

Ingestion: If victim is alert and NOT convulsing, rinse mouth, give several glasses of water to drink to dilute. If discomfort occurs, or if a large amount has been ingested, get medical attention.