

Material Safety Data Sheet

Material Name: Glass Code 9658, MACOR Machinable Glass-Ceramic

ID: C-046

*** Section 1 - Chemical Product and Company Identification ***

Product Name: 9658

Product Use: Used in the manufacture of glass articles

Synonyms: GC 9658, MACOR MGC

Manufacturer Information

Corning Incorporated

Phone: (607) 974-7945

HP-ME-03-56

Corning, NY 14831

Emergency # (607) 974-8002

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent
7440-21-3	Silicon	<30
7429-90-5	Aluminum	<10
7439-95-4	Magnesium	<10
16984-48-8	Fluoride	<10
7440-42-8	Boron	<5

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Aluminum (7429-90-5).

Component Information/Information on Non-Hazardous Components

Glass-ceramic is a solid material produced by combining various raw materials (e.g. oxides, carbonates, etc.), melting these components together, and cooling to a non-crystalline solid having its own unique properties. This material contains the above elements. The remaining components are inert.

*** Section 3 - Hazards Identification ***

Emergency Overview

This is a non-combustible, non-reactive solid material. It is supplied in the form of a glass-ceramic bar, rod or sheet. Use methods suitable to fight surrounding fire. Exposure to dust may be irritating to eyes, nose, and throat. At very high exposure levels the dust may have an effect on the lungs. The metallic elements contained in the glass may be biologically available if ingested or inhaled.

Hazard Statements

Dust or powder may be irritating to the eyes, skin, respiratory system and gastrointestinal tract.

Potential Health Effects: Eyes

Dust or powder may irritate eye tissue. Rubbing may cause abrasion of cornea. Symptoms can include irritation, redness, scratching of the cornea, and tearing.

Potential Health Effects: Skin

Dust or powder may irritate the skin. Mechanical rubbing may increase skin irritation. No components in this product are known to be absorbed through the skin.

Potential Health Effects: Ingestion

May cause temporary irritation of the throat, stomach, and gastrointestinal tract.

Potential Health Effects: Inhalation

Dusts from this product may cause irritation of the nose, throat, and respiratory tract. When inhaled in very large amounts, damage to the lung can occur.

HMIS Ratings: Health: 0 Fire: 0 Reactivity: 0 Pers. Prot.: Gloves/glasses

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 4 - First Aid Measures ***

First Aid: Eyes

Eye injuries from particles should be treated by a physician immediately.

First Aid: Skin

Cuts or abrasions should be treated promptly with thorough cleansing of the affected area.

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First Aid: Ingestion

No need for first aid is anticipated if material is swallowed.

First Aid: Inhalation

If inhaled, remove person to fresh air. If symptoms develop or persist, get medical attention.

First Aid: Notes to Physician

None.

***** Section 5 - Fire Fighting Measures *******Flash Point:** Not applicable**Upper Flammable Limit (UFL):** Not applicable**Auto Ignition:** Not applicable**Rate of Burning:** Not applicable**General Fire Hazards**

This material will not burn.

Hazardous Combustion Products

Material will begin softening at about 800 deg. C, will proceed to a liquid and will form irritating and toxic gaseous metallic oxides at extremely high temperatures.

Extinguishing Media

Use methods for the surrounding fire.

Fire Fighting Equipment/Instructions

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

NFPA Ratings: Health: 0 Fire: 0 Reactivity: 0**Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe******* Section 6 - Accidental Release Measures *******Containment Procedures**

Avoid creating dusts.

Clean-Up Procedures

Collect spill using a vacuum cleaner with a HEPA filter. Place in a closed container.

Evacuation Procedures

None necessary.

Special Procedures

Regulations vary. Consult local authorities before disposal. Glass products may be recycled.

***** Section 7 - Handling and Storage *******Handling Procedures**

Avoid inhalation of dusts. Avoid contact with skin and eyes. Wash thoroughly after handling.

Storage Procedures

Keep container closed when not in use. Store in a dry area.

***** Section 8 - Exposure Controls / Personal Protection *******Exposure Guidelines****A: General Product Information**

The OSHA air contaminants exposure limits (PELs) are those provided in the 1989 update to 29 CFR 1910.1000. These limits were vacated by OSHA and may not be enforceable.

B: Component Exposure Limits**Silicon (7440-21-3)**ACGIH: 10 mg/m³ TWA (The value is for total dust containing no asbestos and <1% crystalline silica)OSHA: total dust: 10 mg/m³ TWA; respirable fraction: 5 mg/m³ TWANIOSH: total: 10 mg/m³ TWA; respirable dust: 5 mg/m³ TWA

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Fluoride (16984-48-8)ACGIH: as F: 2.5 mg/m³ TWAOSHA: as F: 2.5 mg/m³ TWANIOSH: as F: 2.5 mg/m³ TWA**Aluminum (7429-90-5)**ACGIH: as Al; 2 mg/m³ TWAOSHA: as Al; 2 mg/m³ TWA (Listed under 'Aluminum')NIOSH: total: 10 mg/m³ TWA; respirable dust: 5 mg/m³ TWA; pyro powders and welding fumes: 5 mg/m³ TWA; soluble salts and alkyls: 2 mg/m³ TWA (related to Aluminum)**Engineering Controls**

Whenever particulates or fumes are generated, use appropriate local exhaust ventilation to keep exposures below the regulated limits.

PERSONAL PROTECTIVE EQUIPMENT**Personal Protective Equipment: Eyes/Face**

Wear safety glasses with side shields.

Personal Protective Equipment: Skin

Wear leather or other appropriate work gloves, if necessary for type of operation. The use of coveralls is recommended.

Personal Protective Equipment: Respiratory

Not normally needed. If permissible levels are exceeded, use NIOSH approved dust respirator.

Personal Protective Equipment: General

Use good hygiene practices when handling this material including changing and laundering work clothing after use.

***** Section 9 - Physical & Chemical Properties *****

Appearance: White	Odor: Odorless
Physical State: Solid glass-ceramic	pH: Not applicable
Vapor Pressure: Not applicable	Vapor Density: Not applicable
Boiling Point: Not applicable	Melting Point: Not available
Solubility (H₂O): Not applicable	Specific Gravity: 2.25 gm/cm ³ (density)
Freezing Point: Not applicable	Particle Size: Not applicable
Softening Point: >800 deg C	Evaporation Rate: Not applicable
Viscosity: Not applicable	Bulk Density: Not applicable
Percent Volatile: Not applicable	Molecular Weight: Not applicable

Physical Properties: Additional Information

No information available.

***** Section 10 - Chemical Stability & Reactivity Information *******Chemical Stability**

Stable

Chemical Stability: Conditions to Avoid

None known.

Incompatibility

None known.

Hazardous Decomposition

None identified.

Hazardous Polymerization

Will not occur.

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***** Section 11 - Toxicological Information *******Acute Toxicity****A: General Product Information**

Silicon dust seems to have little adverse effect on lungs and does not appear to produce significant organic disease or toxic effects when exposures are kept under reasonable control. Aluminum has been shown to cause bone disease, lung disease and respiratory distress. High exposures to boron may cause pulmonary and gastrointestinal tract disorders. Fluoride ingestion may cause acute systemic poisoning. Fluoride has been reported to effect gastric, intestinal, circulatory, respiratory and nervous systems, as well as skin rashes and complaints related to bones, joints and muscles. Acute poisoning from inhalation of the dusts or mists of fluoride salts has rarely been recorded. Overexposure to dusts of this product may produce eye irritation including redness, scratching of the cornea, and tearing. Mechanical irritation from inhalation of product dust may cause coughing, soreness of throat and nose, and sneezing. Very high exposures may cause difficulty in breathing, congestion, tightness of chest and hemorrhage.

B: Component Analysis - LD50/LC50**Silicon (7440-21-3)**

Oral LD50 Rat: 3160 mg/kg

Boron (7440-42-8)

Oral LD50 Mouse: 560 mg/kg

Oral LD50 Rat: 650 mg/kg

Carcinogenicity**A: General Product Information**

No information available for product.

B: Component Carcinogenicity**Fluoride (16984-48-8)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Epidemiology

No information available for product.

Neurotoxicity

Aluminum soluble compounds, when ingested or inhaled, may have neurotoxic effects evidently due to the metal binding to nervous tissue. Accumulation of aluminum in the body has been associated with neurological disorders.

Teratogenicity

No information available for product.

Other Toxicological Information

Under normal conditions of use for this product, the likelihood of inhaling or ingesting amounts necessary for adverse effects to occur is very small.

***** Section 12 - Ecological Information *******Ecotoxicity****A: General Product Information**

No data is available.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

This material has not been analyzed.

Environmental Fate

No data is available.

***** Section 13 - Disposal Considerations *******US EPA Waste Number & Descriptions****A: General Product Information**

This product does not contain any component identified as hazardous under 40 CFR 261.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Waste must be handled in accordance with all applicable regulations. Purchaser is advised to review regulations referenced for applicability as determined by purchaser's use of the product. Glass products may be recycled.

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*** Section 14 - Transportation Information ***

US DOT Information

Shipping Name: Not regulated as a hazardous material.

Hazard Class: Not applicable

UN/NA #: Not applicable

Packing Group: Not applicable

Required Label(s): None

Additional Info.: None

International Transportation Regulations

This product is not regulated as a hazardous material by the United States (DOT) or Canadian (TDG) transportation regulations.

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

This product contains metal(s), which as dusts, fumes or particulates, is subject to the reporting requirements of Section 313 of SARA and its associated regulations. If the physical form and usage meets the definition of an article, no reporting is necessary.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Aluminum (7429-90-5)

SARA 313: form R reporting required for 1.0% de minimus concentration (fume or dust only) (related to Aluminum)

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Silicon	7440-21-3	No	No	Yes	Yes	Yes	Yes
Magnesium	7439-95-4	Yes	Yes	Yes	No	Yes	Yes
Fluoride	16984-48-8	Yes	No	No	Yes	No	Yes
Aluminum (¹ related to Aluminum)	7429-90-5	Yes	Yes ¹	Yes ¹	Yes	Yes ¹	Yes

Other Regulations

A: General Product Information

No information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Silicon	7440-21-3	Yes	Yes	Yes
Magnesium	7439-95-4	Yes	Yes	Yes
Fluoride	16984-48-8	No	No	No
Aluminum	7429-90-5	Yes	Yes	Yes
Boron	7440-42-8	Yes	Yes	Yes

C: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Aluminum	7429-90-5	1% item 53 (198)

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Reasonable care has been taken in the preparation of this information, but Corning makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. Corning makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

Revision Information: Revised 02/26/98.

Key/Legend

NA = Not available or Not Applicable. ACGIH = American Conference of Governmental Industrial Hygienists. TLV = Threshold Limit Value. NIOSH = National Institute of Occupational Safety and Health. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration. NFPA = National Fire Protection Association. HMIS = Hazardous Material Information System. CFR = Code of Federal Regulations. HEPA = High Efficiency Particulate Air

Contact: Corporate Safety & Health

Contact Phone: (607) 974-6926

This is the end of MSDS # C-046