CORNING

Material Safety Data Sheet

Material Name: Glass Code 9658, MACOR Machinable Glass-Ceramic **ID: C-046**

RS REACh revision date 01/12/10

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

Glass Code: 9658
Product Use: Used in the manufacture of glass articles
Synonyms: GC 9658, MACOR MGC

Supplied by:
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Tel: +44 (0) 1536 402888 (8am to 8pm)
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Manufacturer Information

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* * * Section 2 - 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. Exposure to glass powder or dusts 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. At very high exposure levels the dust may have an effect on the lungs.

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: 1 **Fire:** 0 **Physical Hazard:** 0 **Pers. Prot.:** Gloves/glasses
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
66402-68-4	Ceramic materials and wares, chemicals	100
Not Available	Fluorides (** See NOTE below)	5-10

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Nuisance particulates, Fluorides and Hydrogen fluoride.

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 solid having its own unique properties.

Processing of this article may produce dusts or fumes which are considered hazardous under U.S. 29 CFR 1910.1200 (Hazard Communication) and the Canadian Controlled Product Regulations.

****NOTE:** This component is not a separate component; it is included in the glass product. This fluoride component is bound with calcium, potassium, magnesium or aluminum.

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

First Aid: Eyes

Eye injuries from glass/ceramic 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.

First Aid: Ingestion

Seek medical attention if material is ingested.

First Aid: Inhalation

Move person to non-contaminated air. Call a physician if symptoms persist.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties.

This material will not burn.

Hazardous Combustion Products

Material will begin softening at about 800º 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: 1 **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

Wear appropriate protective equipment and clothing during clean-up. 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.

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* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines

A: General Product Information

The OSHA (Vacated) 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

Ceramic materials and wares, chemicals (66402-68-4)

ACGIH:	10 mg/m3 TWA (inhalable particles, recommended); 3 mg/m3 TWA (respirable particles, recommended) (related to Particulates (insoluble or poorly soluble) not otherwise specified (PNOS))
OSHA (Final):	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) (related to Particulates not otherwise regulated)
OSHA (Vacated):	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) (related to Particulates not otherwise regulated)
Alberta:	10 mg/m3 TWA (total particulate); 3 mg/m3 TWA (respirable particulate) (related to Particulates not otherwise regulated)
British Columbia:	10 mg/m3 TWA (total dust); 3 mg/m3 TWA (respirable fraction) (related to Particles (insoluble or poorly soluble) not otherwise specified)
Manitoba:	10 mg/m3 TWA (inhalable particles, recommended); 3 mg/m3 TWA (respirable particles, recommended) (related to Particulates (insoluble or poorly soluble) not otherwise specified)
New Brunswick:	10 mg/m3 TWA (particulate matter containing no asbestos and < 1% crystalline silica, inhalable fraction); 3 mg/m3 TWA (particulate matter containing no asbestos and < 1% crystalline silica, respirable fraction) (related to Particulates not otherwise classified)
NW Territories:	5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass) (related to Nuisance particulate)
Nova Scotia:	10 mg/m3 TWA (inhalable particles, recommended); 3 mg/m3 TWA (respirable particles, recommended) (related to Particulates (insoluble or poorly soluble) not otherwise specified)
Nunavut:	5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass) (related to Nuisance particulate)
Ontario:	10 mg/m3 TWAEV (inhalable particulate); 3 mg/m3 TWAEV (respirable particulate) (related to Particles (insoluble or poorly soluble) Not Otherwise Specified)
Quebec:	10 mg/m3 TWAEV (total dust, containing no asbestos and less than 1% crystalline silica) (related to Particulates not otherwise classified)
Saskatchewan:	10 mg/m3 TWA (inhalable fraction); 3 mg/m3 TWA (respirable fraction) (related to Particulates, n.o.c.) 20 mg/m3 STEL (inhalable fraction); 6 mg/m3 STEL (respirable fraction) (related to Particulates, n.o.c.)

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Fluorides (Not Available)

ACGIH:	2.5 mg/m3 TWA (as F) (related to Fluorides)
OSHA (Final):	2.5 mg/m3 TWA (as F) (related to Fluorides)
OSHA (Vacated):	2.5 mg/m3 TWA (related to Fluorides)
Alberta:	2.5 mg/m3 TWA (as F) (related to Fluorides)
British Columbia:	2.5 mg/m3 TWA (as F) (related to Fluorides)
Manitoba:	2.5 mg/m3 TWA (as F) (related to Fluorides)
New Brunswick:	2.5 mg/m3 TWA (as F) (related to Fluorides)
Nova Scotia:	2.5 mg/m3 TWA (as F) (related to Fluorides)
Ontario:	2.5 mg/m3 TWAEV (as F) (related to Fluorides)
Quebec:	2.5 mg/m3 TWAEV (as F) (related to Fluorides)

Engineering Controls

If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure 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:**	Not available
Freezing Point:	Not applicable	**Particle Size:**	Not applicable
Softening Point:	>800°C (1472°F)	**Evaporation Rate:**	Not applicable
Viscosity:	Not applicable	**Bulk Density:**	2.25 gm/cm3
Percent Volatile:	Not applicable	**Molecular Weight:**	Not applicable
Auto Ignition:	Not applicable	**Flash Point:**	Not applicable
Flash Point Method:	Not applicable	**Lower Flammability Limit (LFL):**	Not applicable
Upper Flammability Limit (UFL):	Not applicable	**OSHA Flammability Classification:**	Not applicable

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

Chemical Stability

Stable

Chemical Stability: Conditions to Avoid

None known.

Incompatibility

None known.

Hazardous Decomposition

None identified.

Possibility of Hazardous Reactions

Will not occur.

* * * Section 11 - Toxicological Information * * *

Acute Dose Effects

A: General Product Information

Dusts may cause mechanical irritation to eyes and skin. Ingestion may cause transient irritation of throat, stomach and gastrointestinal tract. Inhalation may cause coughing, nose and throat irritation, and sneezing. Higher exposures may cause difficulty breathing, congestion, and chest tightness.

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.

B: Component Analysis - LD50/LC50

No LD50/LC50's are available for this product's components.

Carcinogenicity

A: General Product Information

No information available for product.

B: Component Carcinogenicity

Fluorides (Not Available)

ACGIH: A4 - Not Classifiable as a Human Carcinogen (related to Fluorides)

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 information available.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

A: General Product Information

You must test your waste using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

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. Glass products may be recycled.

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

* * * Section 14 - Transportation Information * * *

US DOT Information

Shipping Name: Not regulated as a hazardous material.

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TDG Information

Shipping Name: Not regulated as a dangerous good.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information

This product may contain 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.

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis

None of this product's components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

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	MA	MN	NJ	PA	RI
Ceramic materials and wares, chemicals ([1]related to Nuisance particulates)	66402-68-4	No	No	No	No	No	Yes[1]
Fluorides ([1]related to Fluorides)	Not Available	No	No	Yes[1]	Yes[1]	No	Yes[1]

Canadian WHMIS Information

A: General Product Information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by CPR.

WHMIS Classification:

D2B: Toxic Material

B: Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Additional Regulatory Information

A: General Product Information

RoHS (2002/95/EC) and WEEE (2002/96/EC) Compliance Statement:

This product does not contain lead, mercury, hexavalent chromium, in excess of 0.1% (by weight) or; cadmium in excess of 0.01% (by weight). This product does not contain polybrominated biphenyls, polybrominated biphenyl ethers or deca brominated diphenyl ether.

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B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Ceramic materials and wares, chemicals	66402-68-4	Yes	Yes	Yes

* * * Section 16 - Other Information * * *

Other Information

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:

Revision 5.0000, 29-SEP-2008: Regulatory Update.
Revision 4.0000, 20-JUL-2005: Formulation revision/Regulatory Update.
Revision 3.0000, 31-JUL-2002: Formulation revision/Regulatory Update.
Revision 2.0000, 26-FEB-1998: Regulatory and literature review.
Revision 1.0000, DEC-1993: New MSDS.

Questions regarding information found in this document should be directed to the address and phone number shown in Section 1. If additional information is needed contact:
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Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Products Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; mg/Kg = milligrams per Kilogram; mg/L = milligrams per Liter; mg/m3 = milligrams per Cubic Meter; MSHA = Mine Safety and Health Administration; NA = Not Applicable or Not Available; NIOSH = National Institute for Occupational Safety and Health; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; RoHS = Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment; SARA = Superfund Amendments and Reauthorization Act; TDG = Transport Dangerous Goods; TSCA = Toxic Substances Control Act; WEEE = Directive 2002/96/EC on waste electrical and electronic equipment; WHMIS = Workplace Hazardous Materials Information System.

End of Sheet C-046