

Material Safety Data Sheet

Material Name: MACOR Machinable Glass-Ceramic

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

Product Use: Used in the manufacture of glass articles

Synonyms: MACOR MGC

Manufacturer Information:

Heeger Materials Inc.

230 Steele St Denver,

CO 80206

United States

Phone: 1-833-222-8587

Emergency # CHEMTREC: (800) 424-9300

Section 2-Composition/Information on ingredients ***

CAS #	Component	Percent
66402-68-4	Ceramic materials and wares, chemicals	100
Not Available	Fluorides (** See NOTE below)	<8

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 29 CFR 1910.1200 (Hazard Communication).

****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 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. 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.

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: 1 Fire: 0 Reactivity: 0 Pers. Prot.: Gloves/glasses

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

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*** 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.

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

Method Used: Not applicable

Lower Flammable Limit (LFL): Not applicable

Flammability Classification: Not applicable

General Fire Hazards

This material will not burn.

Hazardous Combustion Products

Material will begin softening at about 800° 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.

*** 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.

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B: Component Exposure Limits

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

ACGIH: 10 mg/m³ TWA (inhalable fraction, particulate matter containing no asbestos and <1% crystalline silica); 3 mg/m³ TWA (respirable fraction, particulate matter containing no asbestos and <1% crystalline silica) (related to Particulates 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)

Fluorides (Not Available)

NIOSH: 2.5 mg/m³ TWA (as F) (related to Fluorides)

OSHA (Final): 2.5 mg/m³ TWA (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:	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

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. 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. 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

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Epidemiology

No information available for product.

Neurotoxicity

No information available for product.

Mutagenicity

No information available for product.

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 information available.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

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

Environmental Fate

No information available.

*** 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.

*** 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

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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 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.

B: Component Analysis

None of this products 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

None of this product's components are listed on the state lists from CA, FL, MA, MN, NJ, or PA.

Other Regulations

A: General Product Information

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

B: Component Analysis - Inventory

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

C: Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

*** Section 16 - Other Information ***

Other Information

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

Revision Information: 3 year regulatory update/Reformulation/Revision 3: 7/31/2024

Revision 2: 2/26/2018 Changes: Regulatory and Literature review.