Material Data Sheet

according to 29 CFR 1910.1200(g)

1. Identification

Product identifier

MEMpax®

Further trade names

none

Registration status: This substance is exempted according to REACH Article 2 (7) and Annex V.

Substance name:	Specialty Glass, oxide, chemicals
CAS No:	65997-17-3

Recommended use of the chemical and restrictions on use

Use of the substance/mixture

Glass.
Industrial use

Uses advised against

Do not use for private purposes (household). Professional use.

Details of the supplier of the material data sheet

Company name:	SCHOTT AG
Street:	Hüttenstr. 1
Place:	D-31073 Grünenplan
Telephone:	+49 (0)5187 / 771-0
Contact person:	Dr. Andreas Helmstedt
E-mail (Contact person):	andreas.helmstedt@schott.com
Internet:	www.schott.com
Responsible Department:	Site High Performance Materials Grünenplan: Telefon: +49 (0)5187 / 771 831
Emergency phone number:	The product is not: Hazardous substance.

2. Hazard(s) identification

Classification of the chemical

29 CFR Part 1910.1200

This substance is not classified as hazardous in accordance with Regulation 29 CFR 1910.1200(d).

Label elements

Additional advice on labelling

GHS label elements, including precautionary statements: none

Hazards not otherwise classified

The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
In case of inhalation (dust/mist):
Irritation to respiratory tract. A repeated, excessive dust exposure can cause pneumoconiosis.
After eye contact (dust/mist): Do not subject to friction. Causes serious eye damage.

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3. Composition/information on ingredients

Substances

Chemical characterization

specialty glass, chemical, oxide
CAS No.: 65997-17-3
EC No.: 701-387-5

As the substance glass is not included in the candidate list of substances of very high concern, currently there are no information duties according to article 33 of REACH. However for the production of glass we may use substances, which are on the candidate list and had been included in Annex XIV of the REACH regulation or could be included in future. These powdery substances are not present as such in the final glass; they are fully integrated into the glass matrix through the melting process. Thus they lose their original characteristics. With unintended use, some of these substances may be released from the matrix and become bioavailable.

The main components of the glass batch are listed as additional information in chapter 16.

Relevant ingredients

none (according to 29 CFR 1910.1200(g))

Further Information

Substance is complex UVCB.

Composition of mixture according to raw materials, based on the oxides.: SECTION 16: Other information

4. First-aid measures

Description of first aid measures

General information

When in doubt or if symptoms are observed, get medical advice.

After inhalation

dust/mist: Provide fresh air. When in doubt or if symptoms are observed, get medical advice.

After contact with skin

dust/mist: In case of skin reactions, consult a physician.

After contact with eyes

dust/mist: Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist.

After ingestion

dust/mist: Get medical advice/attention.

Most important symptoms and effects, both acute and delayed

In case of inhalation (dust/mist):
Irritation to respiratory tract. A repeated, excessive dust exposure can cause pneumoconiosis.
After eye contact (dust/mist): Do not subject to friction. Causes serious eye damage.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Specific hazards arising from the chemical

The product itself does not burn. In case of fire may be liberated: Metal oxide smoke, toxic

Special protective equipment and precautions for fire-fighters

In case of fire: Wear self-contained breathing apparatus.

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Additional information

Knock down dust with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

General advice

Provide adequate ventilation. Use personal protection equipment. Avoid dust formation. Do not breathe dust.

For non-emergency personnel

Use personal protection equipment.

For emergency responders

Personal protection equipment (PPE): see section 8

Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

Methods and material for containment and cleaning up

For containment

Measures to prevent aerosol and dust generation

For cleaning up

Take up mechanically. Do not subject to friction. Treat the recovered material as prescribed in the section on waste disposal.

Reference to other sections

Safe handling: see section 7
Personal protection equipment (PPE): see section 8
Disposal: see section 13

7. Handling and storage

Precautions for safe handling

Advice on safe handling

Provide adequate ventilation. Use personal protection equipment. Avoid dust formation. Do not breathe dust.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Take off contaminated clothing. Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes.

Further information on handling

Protect from moisture.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Provide adequate ventilation. Store in a dry place.

Hints on joint storage

Do not store together with: Strong acid, Hydrofluoric acid, H_3PO_4, Phosphoric acid, Alkali (lye), concentrated

Further information on storage conditions

Protect from moisture.

8. Exposure controls/personal protection

Control parameters

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Exposure limits

CAS No	Substance	ppm	mg/m³		Category	Origin
-	Particles (insoluble or poorly soluble) not otherwise specified (inhalable fraction)		10		TWA (8 h)	ACGIH-2025
-	Particles (insoluble or poorly soluble) not otherwise specified (respirable fraction)	-	3		TWA (8 h)	ACGIH-2025
-	Particulates not Otherwise regulated (PNOR) Respirable fraction	529.5 mp/m³	5		TWA (8 h)	PEL
-	Particulates not Otherwise regulated (PNOR) Total dust	1765 mp/m³	15		TWA (8 h)	PEL

Additional advice on limit values

Grinding, brushing and polishing:
dust formation: Irritation to respiratory tract. A repeated, excessive dust exposure can cause pneumoconiosis.

Exposure controls




Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear goggles. Wear face protection.

Hand protection

Wear protective gloves. (cut-resistant)

Skin protection

Use of protective clothing Disposal of contaminated protective clothing separately, do not reuse.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.
Filtering device (full mask or mouthpiece) with filter: FFP3

Thermal hazards

Melt: Wear protective gloves/protective clothing. (heat-resistant)

Environmental exposure controls

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state:	solid
Color:	colorless, transparent
Odor:	odorless
Odour threshold:	not applicable

	Test method
Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	not determined
Flammability:	not applicable
Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Flash point:	not applicable

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Auto-ignition temperature:	not applicable	
Decomposition temperature:	> 532 °C	
pH-Value:	8,2	OECD 122
Viscosity / kinematic:	not applicable (solid)	
Water solubility:	practically insoluble	

Solubility in other solvents

Fat: not applicable

Partition coefficient n-octanol/water:	The substance is not soluble in water.	
Vapor pressure (at 20 °C):	<< 0,1 hPa	
Density:	2,22 g/cm³	
Relative vapour density:	not applicable	
Particle characteristics:	not determined	

Other information

Other safety characteristics

glass transition temperature:	532 °C	ISO 7884-4

Further Information

No information available.

10. Stability and reactivity

Reactivity

No hazardous reaction when handled and stored according to provisions.

Chemical stability

Stability: Stable

The product is stable under storage at normal ambient temperatures.

Possibility of hazardous reactions

Hazardous reactions: May occur

Reaction with: Strong acid, Hydrofluoric acid, H3PO4, Phosphoric acid, Alkali (lye), concentrated

Conditions to avoid

Humidity
Temperature > Decomposition temperature (Formation of: Metal oxide smoke, toxic)

Incompatible materials

Strong acid, Hydrofluoric acid, H3PO4, Phosphoric acid, Alkali (lye), concentrated

Hazardous decomposition products

Metal oxide smoke, toxic (Temperature > Decomposition temperature)

11. Toxicological information

Route(s) of Entry

oral, Skin contact.
dust/mist: Inhalation, Eye contact.

Information on toxicological effects

Acute toxicity

Based on available data, the classification criteria are not met.
The toxicological potential of glasses results from the bioavailability of individual components when used improperly. This is determined by the bioaccessibility test according to Fraunhofer. It is a leaching method of the material performed in 5 artificial body fluids. (AHBL)

Acute oral toxicity: no classification (no bioaccessibility detected)

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Acute dermal toxicity: no classification (no bioaccessibility detected)

Acute inhalation toxicity: no classification (no bioaccessibility detected)

Irritation and corrosivity

Skin corrosion/irritation: Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

Sensitizing effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.

Specific target organ toxicity (STOT) - single exposure

Based on available data, the classification criteria are not met.

Specific target organ toxicity (STOT) - repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to humans.

Other information

In case of inhalation (dust/mist):
Irritation to respiratory tract. A repeated, excessive dust exposure can cause pneumoconiosis.

12. Ecological information

Ecotoxicity

The ecotoxicological effect of glasses is determined by the ecological accessability of hazardous substances that can be released under environmental conditions from the glass matrix. For characterization, the test from the German landfill regulation (Dep-VO) is used. In the evaluation, the leachable hazardous substance content, in relation to the total amount of the per se non-hazardous glass, is treated as a standard mixture proportion and classified accordingly.

Result / Evaluation: The product is not: Ecotoxic.

Persistence and degradability

Inorganic product which is not eliminable from water through biological cleaning processes. The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

Other adverse effects

No information available.

Further information

Avoid release to the environment.

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13. Disposal considerations

Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Neither the product nor the residues from the processing. Dispose of waste according to applicable legislation.

Contaminated packaging

Dispose of waste according to applicable legislation.

14. Transport information

U.S. DOT 49 CFR 172.101

Proper shipping name: No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

UN number or ID number: No dangerous good in sense of this transport regulation.
UN proper shipping name: No dangerous good in sense of this transport regulation.
Transport hazard class(es): No dangerous good in sense of this transport regulation.
Packing group: No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

UN number or ID number: No dangerous good in sense of this transport regulation.
UN proper shipping name: No dangerous good in sense of this transport regulation.
Transport hazard class(es): No dangerous good in sense of this transport regulation.
Packing group: No dangerous good in sense of this transport regulation.

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

Special precautions for user

No information available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not relevant

15. Regulatory information

U.S. Regulations

National Inventory TSCA

CAS No. 65997-17-3, specialty glass, chemical, oxide: Yes.

State Regulations

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)

This product can not expose you to chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Additional information

Observe in addition any national regulations!

Observe in addition any national regulations!

16. Other information

Hazardous Materials Identification System (HMIS)

Health: 0
Flammability: 0
Physical Hazard: 0

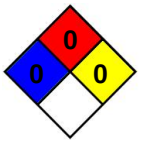
NFPA Hazard Ratings

Health: 0

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Flammability:	0
Reactivity:	0



Revision date:	8/22/2024
Revision No:	1,0

Abbreviations and acronyms

ACGIH: American Conference of Governmental Industrial Hygienists
CFR: Code of Federal Regulations
DOT: Department of Transportation
ICAO: International Civil Aviation Organization
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IARC: International Agency for Research on Cancer
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service
NFPA: National Fire Protection Association
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: permissible exposure limit
REL: recommended exposure limit
SARA: Superfund Amendments and Reauthorization Act
STEL: Short-term exposure limit
TSCA: Toxic Substances Control Act
TWA: time-weighted average
TI: Technical Instructions
DGR: Dangerous Goods Regulations
UN: United Nations
ATE: Acute toxicity estimate
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
LL50: Lethal loading, 50%
EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
VOC: Volatile Organic Compounds
SVHC: Substance of Very High Concern
Dep-VO: deutsche Deponie-Verordnung
UVCB Unknown or Variable composition, Complex reaction products or Biological materials
AHBL: 5 artificial human body liquids im Bioaccessability-Test nach Fraunhofer: GST (artificial gastric fluid; pH 1,5; stomach acid), ASW (artificial sweat solution; pH 6,5; hypo-osmolar fluid on skin), ALF (artificial lysosomal fluid; pH 4,5; lung, intracellular), GMB (Gamble‘s solution; pH 7,4; interstitial fluid in deep lung), PBS (phosphate buffered saline; pH7,4; blood serum)

Key literature references and sources for data

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations). (v.1.2, 2013)

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Other data

Composition of mixture according to raw materials, based on the oxides.:

Substance name (Molecular formula): SiO_2
CAS No.: 7631-86-9
Weight fraction: 75 - 85 %
SVHC substance.: No.
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): No.

Substance name (Molecular formula): B_2O_3
CAS No.: 1303-86-2
Weight fraction: 7 - 15 %
SVHC substance.: Yes.
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): Yes. (Reproductive toxicant 1B)

Substance name (Molecular formula): Al_2O_3
CAS No.: 1344-28-1
Weight fraction: < 5 %
SVHC substance.: No.
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): No.

Substance name (Molecular formula): Na_2O
CAS No.: 1313-59-3
Weight fraction: < 5 %
SVHC substance.: No.
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): No.

Substance name (Molecular formula): K_2O
CAS No.: 12136-45-7
Weight fraction: < 1 %
SVHC substance.: No.
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): No.

Occupational exposure limit values, Biological limit values: For further specification, refer to section 8 of the SDS.

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.