Material Data Sheet

according to UN GHS (ST/SG/AC.10/11/Rev.10)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

AF 32®

Further trade names

none

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

Substance name:	specialty glass, chemical, oxide
CAS No:	65997-17-3

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Glass. Reserved for industrial and professional use.

Uses advised against

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

1.3. 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

1.4. Emergency telephone number:

The product is not: Hazardous substance.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

UN GHS (ST/SG/AC.10/11/Rev.10)

This substance is not classified as hazardous in accordance with UN-GHS (Rev. 10).

2.2. Label elements

Additional advice on labelling

Labelling according to Regulation (EC) No. 1272/2008 [CLP]: none

2.3. Other hazards

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
In case of inhalation (particulates and dust):
Irritation to respiratory tract. A repeated, excessive dust exposure can cause pneumoconiosis.
After eye contact (particulates and dust): Do not subject to friction. Risk of serious damage to eyes.

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SECTION 3: Composition/information on ingredients

3.1. 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.

Further Information

Substance is complex UVCB.

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

SECTION 4: First aid measures

4.1. 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.

4.2. 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.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

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

5.2. Special hazards arising from the substance or mixture

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

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

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

entering drains or surface water.

SECTION 6: Accidental release measures

6.1. 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

Use personal protection equipment.

6.2. Environmental precautions

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

6.3. 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.

Other information

Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections

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

SECTION 7: Handling and storage

7.1. 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

No information available.

7.2. 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, H3PO4, Phosphoric acid, Alkali (lye), concentrated

Further information on storage conditions

Protect from moisture.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin

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Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
1344-28-1	Aluminium oxides, inhalable dust	-	10		TWA (8 h)	WEL
1344-28-1	Aluminium oxides, respirable dust	-	4		TWA (8 h)	WEL
-	Barium compounds, soluble (as Ba)	-	0.5		TWA (8 h)	WEL
1305-78-8	Calcium oxide	-	2		TWA (8 h)	WEL
1303-86-2	Diboron trioxide	-	10		TWA (8 h)	WEL
		-	20		STEL (15 min)	WEL
-	Dust, inhalable	-	10		TWA (8 h)	WEL
-	Dust, respirable	-	4		TWA (8 h)	WEL
1309-48-4	Magnesium oxide (as Mg), respirable dust	-	4		TWA (8 h)	WEL
-	Tin compounds, inorganic, except SnH4, (as Sn)	-	2		TWA (8 h)	WEL
		-	4		STEL (15 min)	WEL

Additional advice on limit values

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

8.2. 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 solely goggles. Wear face protection.

Hand protection

Tested protective gloves must be worn (cut-resistant)

Skin protection

Wear suitable protective clothing. Disposal of contaminated protective clothing separately, do not reuse.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Thermal hazards

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

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid	
Colour:	No information available.	
Odour:	odourless	
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	

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Lower explosion limits:	not applicable	
Upper explosion limits:	not applicable	
Flash point:	not applicable	
Auto-ignition temperature:	not applicable	
Decomposition temperature:	not determined	
pH-Value:	7,6	OECD
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.	
Vapour pressure:	up to Tg no significant vapor pressure is to be expected	
Density:	2,4 g/cm³	
Relative vapour density:	not applicable	
Particle characteristics:	not determined	

9.2. Other information

Other safety characteristics

glass transition temperature: 710 - 720 °C

Further Information

softening point: 950 - 970 °C

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid

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

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

Metal oxide smoke, toxic (Temperature > Decomposition temperature)

SECTION 11: Toxicological information

11.1. 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.

Acute oral toxicity: no bioaccessibility detected

Acute dermal toxicity: no bioaccessibility detected

Acute inhalation toxicity: 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.
After eye contact (dust/mist): Serious eye damage/irritation:
pH: Test results: refer to section 9.
at pH 5,6 - < 7,3 & > 9,7 - 10,5: Potential hazards: Irritation (GHS/CLP criteria are not met.)
at pH > 2 - < 5,6 & > 10,5 - < 11,5: Potential hazards: Risk of serious damage to eyes. (GHS/CLP criteria are not met.)

Sensitising 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.
diboron trioxide (Repr. 1B) Leaching-Amount < 0,1 weight-%
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): no classification

STOT-single exposure

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

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.

Information on likely routes of exposure

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

Endocrine disrupting properties

No information available.

Other information

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

SECTION 12: Ecological information

12.1. Toxicity

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.

12.2. 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.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

No information available.

12.7. Other adverse effects

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No information available.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. 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.

SECTION 14: Transport information

Marine transport (IMDG)

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

Air transport (ICAO-TI/IATA-DGR)

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

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No information available.

14.7. Maritime transport in bulk according to IMO instruments

not relevant

SECTION 15: Regulatory information

National regulatory information

Additional information

Observe in addition any national regulations!

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging
EU: European Union
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
REACh: Registration, Evaluation and Authorization of Chemicals
UN: United Nations
PBT: Persistent, Bioaccumulative, Toxic
SVHC: Substance of Very High Concern
vPvB: very Persistent, very Bioaccumulative
ATE: Acute Toxicity Estimates
BCF: Bio-Concentration Factor
DMEL: Derived Minimal Effect Level
DNEL: Derived No Effect Level

PNEC: Predicted No Effect Concentration
VOC: Volatile Organic Compounds
DIN: Deutsches Institut für Normung e.V. (German Institute for Standardization)
EN: European Standard
ISO: International Organization for Standardization
IUCLID: International Uniform ChemicaL Information Database
LC50: Lethal Concentration, 50 %
LD50: Lethal Dose, 50 %
LL50: Lethal Loading, 50 %
OECD: Organisation for Economic Co-operation and Development
EC50: Effective Concentration 50 %
EL50: Effect Loading, 50 %
ErC50: Effective Concentration 50 %, growth rate
M-Faktor: Multiplication Factor
NOEC: No Observed Effect Concentration
ADN: Accord européen relatif au transport international des marchandises Dangereuses par voies de Navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR: Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
DGR: Dangerous Goods Regulations
EmS: Emergency Schedules
IATA: International Air Transport Association
IBC: Intermediate Bulk Container
ICAO: International Civil Aviation Organization
IE: Industrial Emissions
IMDG: International Maritime Code for Dangerous Goods
LQ: Limited Quantity
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
MFAG: Medical First Aid Guide
RID: Regulations concerning the International carriage of Dangerous goods by rail
TI: Technical Instructions
Dep-VO: deutsche Deponie-Verordnung
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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Further Information

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

Substance name: SILICON DIOXIDE
CAS No.: 7631-86-9
Weight fraction: 55 - 65
SVHC substance.: No.
Carcinogenicity: No.

Substance name: ALUMINIUM OXIDE
CAS No.: 1344-28-1
Weight fraction: 10 - 20
SVHC substance.: No.
Carcinogenicity: No.

Substance name: BORON TRIOXIDE
CAS No.: 1303-86-2
Weight fraction: 5 - 15
SVHC substance.: Yes.
Carcinogenicity: Yes. (Repr. 1B)

Substance name: CALCIUM OXIDE
CAS No.: 1305-78-8
Weight fraction < 10
SVHC substance.: No.
Carcinogenicity: No.

Substance name: BARIUM OXIDE
CAS No.: 1304-28-5
Weight fraction < 10
SVHC substance.: No.
Carcinogenicity: No.

Substance name: MAGNESIUM OXIDE
CAS No.: 1309-48-4
Weight fraction < 10
SVHC substance.: No.
Carcinogenicity: No.

Substance name: TIN DIOXIDE
CAS No.: 18282-10-5
Weight fraction: < 2
SVHC substance.: No.
Carcinogenicity: No.

Substance name: STRONTIUM OXIDE
CAS No.: 1304-28-5
Weight fraction < 4
SVHC substance.: No.
Carcinogenicity: No.

Occupational exposure limit values, Occupational exposure limit values (Air), 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.