

EXTOVER®

EXTINGUISHING WITH GLASS

MINERAL FIRE EXTINGUISHING AGENT FOR
CLASS D FIRES AND LITHIUM-BATTERIES

Displaces
oxygen and
suppresses the fire

Prevents
re-flaming

No
extinguishing
water
damage

Absorbing
fluids
(eg electrolyte)

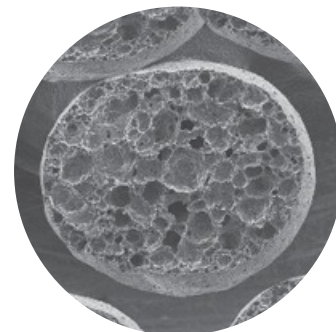
Covering the fire load with EXTOVER® granulate displaces oxygen and separates it from the fuel. Like glass, EXTOVER® melts at a certain temperature. The granulate absorbs a lot of heat in the form of melting energy, thereby cooling the fire and forming at the same time an impermeable layer over the fire load. A reaction with oxygen is effectively prevented.

Technical data

Grain size		extra fine	fine	coarse
Grain size	[mm]	0.04 - 0.125	0.25 - 0.5	1 - 4
Particle size	[US mesh #]	400 - 120	60 - 35	18 - 5
Fire rating class (DIN 4102-4*)		non combustible (A1)		
Dry loose bulk density	[kg/m³]	530 ± 70	340 ± 30	220 ± 30
	[lb/ft³]	33.1 ± 4.4	21.2 ± 3.2	13.7 ± 1.9
Apparent density ¹⁾	[kg/m³]	1,150 ± 150	700 ± 80	400 ± 60
	[lb/ft³]	71.8 ± 18.7	43.7 ± 5.0	25 ± 3.7
Water absorption by mass	[Mass. %]	50	21	17
Water absorption by volume	[Vol. %]	30	15	12
Compressive strength	[Mpa]	≥ 9.0	≥ 2.6	≥ 1.5
	[psi]	≥ 1,305	≥ 377	≥ 217
Oversize	[M.-%]	≤ 10		
Undersize	[M.-%]	≤ 15		
pH value		8 - 12		
Moisture content	[M.-%]	≤ 0.5		
Softening point	[° C]	700		
Thermal Conductivity	[W/(m·K)]	0.106	0.090	0.07
	[BTU-in/hr-ft²·°F]	0.735	0.625	0.486
Main Component		silicon dioxide		
CE according DIN EN 13055-1*		✓		
Fire extinguishing agent class D		fire extinguisher use	fire extinguisher use	MPA No. 20140494-1*



Health-friendly material:
mineral, inert, VOC-free and odourless.



Multicellular expanded granules with
a closed pore structure.



Best free-flowing properties thanks to
the spherical grain shape.

www.cleanenergysafety.org

Apparent (relative) density according to EN 1097-6
Values according to DIN V 18004 on request

The strength grades may vary within the tolerance
range of bulk densities.

* References to testing and standards are specific to European
EXTOVER® grain sizes and are not directly transferable and applicable
to North American EXTOVER® grain sizes or to North America testing
requirements. It is the responsibility of the end-user to conduct their
own testing and to acquire their own certifications.

Advantages

- + Purely mineral
- + Low density
- + Dry bulk material
- + Best free flowing properties

- + Odourless, VOC-free, health friendly material
- + Environmental friendly - made from recycled glass
- + Suitable for the use in class D fire extinguishers

Distributor
CESAT - info@cleanenergysafety.org



Product Safety Information

This voluntary information sheet replaces the Material Safety Data Sheet, since EXTOWER[®] is non hazardous material according to the CLP regulation.

EXTOWER[®]

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Product

EXTOWER[®] is a product according to REACH (see statement on the REACH regulation for EXTOWER[®]) and not a raw material or mixture in the sense of a hazardous substance. It is therefore excluded from the obligation of registration (see paragraph 15.2).

Chemical description: Non-organic, thermally expanded glass granulate on basis of post consumer recycled glass (container glass and flat glass - soda-lime-silica glass).

Ingredients:	Chemical formula	mass % by weight
Silicon dioxide	SiO ₂	70 - 75
Sodium oxide	Na ₂ O	10 - 15
Calcium oxide	CaO	7 - 11
Aluminium oxide	Al ₂ O ₃	0.5 - 5
Magnesium oxide	MgO	0 - 5
Potassium oxide	K ₂ O	0 - 4

Main component (approx. 95 %)	CAS-No.	EINECS-No.
Soda-lime-silicate glass	65997-17-3, 142844-00-6	266-046-0
Subsidiary component (approx. < 5 %; from this results the Aluminium oxide content)		
Kaolin	1332-58-7	310-194-1

Index No. Not assigned
Additional information: Not applicable

4. FIRST AID MEASURES

4.1 Description of the first aid measures:

After inhalation: Supply fresh air immediately. If the product irritates the respiratory tract: consult a doctor.

After skin contact: Wash off with plenty of water and soap, rinse thoroughly.

After eye contact: Remove contact lenses. Rinse immediately with plenty of water for at least 15 minutes with the eyelids open. Consult an ophthalmologist if necessary.

After ingestion: Irritations in the mouth, throat and oesophagus as well as in the gastrointestinal tract are possible. Immediately rinse mouth thoroughly. Drink plenty of water (200 - 300 ml) in small sips (dilution effect). Avoid vomiting.

4.2 The most important, urgent and delayed symptoms and effects

There are not known any typical symptoms and effects.

4.3 Information on immediate medical help or special treatment

No special measures required.

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5. FIRE FIGHTING MEASURES

5.1 Extinguishing agent

Not applicable, product is non-flammable.

5.2 Special risks of the material/ mixture

No special risks caused by the product or mixture.

5.3 Information about fire fighting

The extinguishing agent should be chosen according to the primary cause of fire.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Note to untrained emergency personnel: Use appropriate protective equipment. Ensure adequate ventilation and avoid dust. Use of a dust mask is recommended.

6.2 Measures for environmental protection

The product shouldn't get into the canalisation, because it floats on the water due to its low density, and may cause a blockage of pipes.

6.3 Procedure to stop spillage and measures for cleaning

Remove spillage by sweeping, vacuuming or wet absorption. Cover sewer system to prevent the material from entering the sewer system.

6.4 Reference to another paragraph

Observe protective measures, see paragraphs 7, 8 and 13.

7. HANDLING AND STORAGE

7.1 Notes for safe handling

Avoid the formation of dust. The usage of a particle filtered protective mask FFP2 is required if the dust concentration rises above the reference value. Avoid contact with eyes. Avoid ingestion or inhalation.

7.2 Notes for safe storage in consideration of incompatibility

Protect against humidity.

7.3 Specific end-use

Please observe the technical data sheet.

Observe information documents on delivery forms, conveyance, transport options and storage. For pneumatic conveying, please observe the maximum conveying pressure of 0.8 bar.

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8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Parameters to be controlled

Exposure limits:	General maximum dust emission (ASGW) according to TRGS 900
Alveolar fraction:	1.25 mg/m ³ (A dust).
Exceedance factor:	8 (VIII); with an 8-fold exceedance of 1.25 mg/m ³ four times per shift over 15 minutes, no further exposure must occur, as otherwise the ASGW will be exceeded.
Total fraction inhalable dust:	10 mg/m ³ (E dust)
Exceedance factor:	2 (I); For a period of 15 minutes, the respective limit value may be exceeded by up to 2 times in one shift.
Einatembare Fraktion:	10 mg/m ³ (E-Staub)
Überschreitungs faktor:	2 (I); Für einen Zeitraum von 15 Minuten darf in einer (Kurzzeitwert) Schicht der jeweilige Grenzwert um das bis zu 2-fache überschritten werden

8.2 Limitation and controlling of the exposition

Personal protective equipment

Eye protection

Wear safety glasses with side shields to protect against eye contact.

Hand protection

Wear suitable protective gloves in order to minimize skin contact.

Respiratory protection

The usage of a particle filtered protective mask FFP2 is required if the dust concentration rises above the reference AGW value.

Specific hygienic measures

Not applicable

Limitation and monitoring of environmental exposure

See paragraphs 6 and 7.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information about the basic physical and chemical properties *Appearance*

State of aggregation:	Solid granulate
Colour:	Creamy white
Odour:	Odourless

Safety-relevant data

Odour threshold:	Not applicable
pH-value:	8-12 according to DIN EN ISO 787-9
Melting point/freezing point	Approx. 900°C, literature value for container glass
Melting temperature:	
Initial boiling/Boiling range:	Not applicable
Flash point:	Non-combustible

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Evaporation rate:	Not applicable
Flammability (solid, gaseous):	Not applicable
Upper/Lower flammability or explosion limits:	Not applicable
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Relative density:	
Bulk density:	In the range of 190 - 250 and 340 - 460 kg/m ³ depending on grain size, according to DIN EN 1097-3
Solubility:	Insoluble in water
Distribution coefficient n-Octanol/water:	Not applicable
Autoignition temperature:	Not applicable
Decomposition temperature:	
Softening point:	Approx. 700°C according to DIN ISO 7884-6
Viscosity:	Not applicable
Explosive properties:	
Dust explosion hazard:	Not applicable
Oxidizing properties:	Not applicable

9.2 Other specifications No further information

10. STABILITY AND REACTIVITY

10.1 Reactivity:	The product is not reactive.
10.2 Chemical stability:	The product is stable under normal temperature and pressure conditions.
10.3 Possible danger reactions:	When handled and stored as directed, no dangerous reactions occur.
10.4 Conditions to avoid:	At temperatures above 900° C, the product starts to melt.
10.5 Incompatibility (material to avoid):	The product dissolves on contact with hydrofluoric acid to form hexafluoridosilicic acid (HSiF ₆).
10.6 Hazardous decomposition or by-products:	Not applicable

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	There are no toxicological reports on the product.
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12. ENVIRONMENTAL INFORMATION

12.1 Toxicity	Not applicable
12.2 Persistence and degradability	Biological nondegradable, as of mineral origin
12.3 Potential of bioaccumulation	Not applicable
12.4 Mobility in the soil	Not applicable
12.5 Results of the PBT- and vPvB-Evaluation	The product does not contain any substance that meets the PBT or vPvB criteria.
12.6. Further harmful effects	No data available.

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13. DISPOSAL NOTES

13.1 Waste treatment process

Disposal via waste water is not recommended.

Dispose the product in accordance with local regulations. Consult the exact waste code with the disposal company.

Name of waste	Lime-soda-silicate glass granulate
AVV waste code:	170202 (glass)
Packaging:	Not applicable.

14. TRANSPORT INFORMATION

14.1 UN-Number:

Not relevant

14.2 Proper UN-shipping name

Not relevant

14.3 Transport hazard classes:

Not relevant

14.4 Packing group:

Not relevant

14.5 Environmental hazards:

Not relevant

14.6 Special precautions for the user:

Protect from humidity; maximum pneumatic conveying pressure: 0.8 bar

14.7 Bulk commodity transport in accordance with appendix II of the MARPOL Convention and according to the IBC-Code:

Not relevant

15. LEGISLATION

15.1 Instructions for safety, health and environmental protection/specific legislation for the material or mixture:

Labelling in accordance to EG-guidelines

Danger symbol:	No labelling required
Danger defining components:	Not applicable
R-phrases:	Not applicable
S-phrases:	Not applicable
Special identification of certain preparations:	S 24/25 avoid contact with eyes and skin
	Not applicable

German national guidelines

Classification according to „StörfallVO“:	
Classification according to „VBF“:	Not applicable
Classification according to „TA-Luft“:	Not applicable
Water pollution classification:	Not applicable
	Not hazardous to water, according to VwVwS appendix 3 No. 5 paragraph b
Resorption by Skin/Sensitizing:	No data available

15.2 Chemical safety assessment

This product is exempt from the REACH-Registration obligation according to Regulation (EC) No. 1907/2006 appendix V.11 by amending Regulation No. 987/2008 of 8 October 2008.

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16. FURTHER INFORMATION

This "Product Safety Information" replaces the Material Safety Data Sheet, because EXTOWER® is no hazardous substance according to the CLP regulation (see statement on the REACH Regulation for EXTOWER®). We would like to point out that this is a voluntary service. There is no obligation for PORAYER GmbH to make these documents available. The details are based on the current state of our knowledge and serve to describe the product with regard to the applicable safety regulations. They do not represent any assurance of product properties and do not give reasons for any contractual legal relationship. Users must themselves decide on the suitability of this information for their particular purposes.

The data sheet is issued by following department: laboratory.

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Statement on REACH Regulation for EXTOWER®

Ladies and Gentlemen,

According to Regulation No. 987/2008 of 08.10.2008 amending the REACH Regulation with regard to appendixes IV and V, glass is exempted from the registration requirement.^[1]

This means that the glass type on which EXTOWER® is based is also exempt from registration.

During production, EXTOWER® is given a specific shape, surface and design which determines its function to a greater extent than its chemical composition. It is therefore a product^[2] which is not registered according to REACH.

For this reason, the product EXTOWER® is not subject to registration.

We are grateful for any comments on this subject and are available for further questions.

PORAVER GmbH

^[1] www.reach-clp-biozid-helpdesk.de/DE/Home/Home_node.html; 11.06.2019

^[2] https://echa.europa.eu/documents/10162/23036412/articles_en.pdf; June 2017, Version 4.0