

GGBS

Material Safety Data Sheet (MSDS)



1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

1.1 Product identifier

1.1.1 Identification on the label / tradename: Ground Granulated Blast furnace Slag GGBS

1.1.2 Additional terms: Slags, ferrous metal, blast furnace (granulated)

1.1.3 REACH Registration number: 01-2119487456-25

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

1.2.1 Identified uses: Constituent of standard cements (EN 197-1) and special binders, concrete preparation, road construction

1.2.2 Uses advised against: None

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

This substance does not meet the requirements for classification as dangerous under both the EU Dangerous Substances (67/548/EEC) Directive and secondly according to the Classification, Labelling and Packaging of substances and mixtures (CLP) regulations (EC 1272/2008).

2.2 Other hazards:

Dust of granulated slag can act as an irritant and cause mechanical irritation to the eyes and respiration system.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance related information:

Slags, ferrous metal, blast furnace

EG-Nr.: 266-002-0 CAS-Nr.: 65996-69-2

complex Ca-Mg- Al- silicate composition

Further information:

Granulated slag is a vitrified substance, which is a byproduct of iron production in a blast furnace. The structure of the granulated slag depends on the temperature during cooling.

4. FIRST AID MEASURES

4.1 In case of inhalation:

Move affected person into fresh air. Seek medical advice if irritation persists.

4.2 In case of skin contact:

Wash with soap and water.

4.3 In case of eye contact:

Rinse the eyes with water with the eyelids open.

4.4 In case of ingestion:

Seek medical advice if irritation persists. Rinse mouth and drink plenty of water.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

Product itself does not burn. Coordinate fire-fighting measures with surrounding.

5.2 Special hazards arising from the substance or mixture:

None

5.3 Advice for firefighters:

Not applicable

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions:

Avoid dust dispersion.

6.2 Environmental precautions:

Not necessary

6.3 Methods for cleaning up:

Pick up mechanically, avoid disturbing dust. Use dust reducing cleaning method.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

7.1.1 Advices on safe handling: Avoid dust dispersion. Where applicable keep dust wet. In closed areas provide adequate ventilation to prevent dust inhalation.

7.1.2 Technical measures: In case of further handling with foreseeable high dust dispersion, use for example an exhaust ventilation with filter or a closed system.

7.1.3 Advice on general occupational hygiene: Do not eat, drink, smoke or take snuff while working. Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any Incompatibilities:

None

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits:			Limit value - short term ml/m ³ mg/m ³
CAS-No.	Name	Limit value - 8 h ml/ m ³ mg/m ³	
	Dust, respirable	3	6
	Dust, inhalable	10	20

8.1.2 Additional hints on exposure limits:

Source (German legislation): (no EU-Value available!) TRGS 900:
"Arbeitsplatzgrenzwerte". Observe in addition the national legislative regulations!

8.1.3 DNEL and PNEC values:

No specific substance related threshold can be derived.

8.2 Exposure controls

8.2.1 Occupational exposure controls:

Refer to no. 7.

8.2.2 Respiratory protection:

In case of high dust concentration: EN149 FFP2 filter.

8.2.3 Hand protection:

Check the resistance to chemicals of the protective gloves together with the supplier of the gloves. Use only gloves conform to 89/686/EEC. Wear duration at permanent or occasional contact: gloves made of fabric coated with nitrile rubber Breakthrough time (maximal wear duration): > 480 min.

8.2.4 Eye protection:

At appearance of dust: safety glasses.

8.2.5 Suitable protective clothing:

Use usual working clothes.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state:	Granulated: 0/5 mm
Colour:	Grey
Odour	Odourless
pH Value:	10 -12 (DEV-S4-eluate according EN 12457-4)
Melting point/freezing point:	> 1000°C
Density	Approx. 2.4 - 3 g/cm ³ (20 °C)
Water solubility:	<1 g/l
Flash point:	N.A. (substance is inorganic)
Other information:	None

10. STABILITY AND REACTIVITY**10.1 Conditions to avoid:**

None

10.2 Incompatible materials:

None

10.3 Hazardous decomposition products:

None

11. TOXICOLOGICAL INFORMATION**11.1 Acute effects****11.1.1 Acute toxicity:****Oral: tested substance GBS**

OECD Guideline 401, Wistar rat LD50 > 2000 mg/kg CSR

Inhalative: tested substance GGBSOECD Guideline 403, Wistar rat LC50 (powder) (4h) > 5234 mg/m³ CSR**11.1.2 Irritant-/corrosive effects:****Skin: tested substance ABS**

Acute irritant effect, OECD 404, New Zealand White rabbit result: not irritant CSR

Eye: tested substance ABS

Acute irritant effect, OECD 405, New Zealand White rabbit result: not irritant CSR

11.2 Sensitisation:**Skin: tested substance ABS**

OECD 406, Dunkin-Hartley guinea pig result: not sensitive CSR

11.3 Repeated dose toxicity (subacute, subchronic, chronic):

n.d.a.

11.4 CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**Mutagenicity: tested substance ABS**Reversed mutation test, EU method B.13/14,
Salmonella typhimurium result: no mutagenic effect CSR**Mutagenicity: tested substance ABS**Mamman cell gene mutation test, EU method B.17,
Chinese hamster lung fibroblast (V79) result: no mutagenic effect CSR**11.5 Experiences made in practice:**

None

11.6 Additional information:

Due to "read across", results from other slag types are referred to

12. ECOLOGICAL INFORMATION**12.1 Toxicity:****Short-term fish toxicity, tested substance GBS**OECD 203, *Leuciscus idus*

LC0 (96 h) > 1000 g/l

LC50 (96 h) > 1000 g/l CSR

Short-term toxicity aquatic invertebrates, tested substance GBSOECD 202, *Daphnia magna*

EC0 (48 h) > 1000 g/l

EC50 (48 h) > 1000 g/l CSR

Algae toxicity, tested substance GBSOECD 201, *Scenedesmus subspicatus*

IC10 (72 h) > 100 g/l

IC50 (72 h) > 100 g/l CSR

Micro organism toxicity, tested substance ABS

OECD 209, activated sludge

EC ₁₀	(3 h)	> 10 g/l	
EC ₅₀	(3 h)	> 10 g/l	
EC ₁₀₀	(3 h)	> 10 g/l	CSR

Long-term toxicity aquatic invertebrates, tested substance ABSOECD 211, *Daphnia magna*

EC ₁₀	(21 d)	5 g/l	
EC ₂₀	(21 d)	> 5 g/l	
EC ₅₀	(21 d)	> 5 g/l	CSR

12.2 Persistence and degradability:

n.a

12.3 Bioaccumulative potential:

No evidence for bioaccumulation potential.

12.4 Mobility in soil:

n.d.a.

12.5 Results of PBT assessment:

n.d.a.

12.6 Other adverse effects:

No negative ecological effects are expected according to the present state of knowledge.

12.7 Additional information:

Due to "read across", results from other slag types are referred to.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Granulated blast furnace slag can be recovered after spillage. In the case there is no further use, the slag can be disposed following local legislation.

13.2 List of proposed waste codes/waste designations in accordance with AVV (or EWC):

Waste classification due to trade and processing. Disposal is possible as follows:
EWC-Code: 10 02 01: waste from the processing of slags.

14. TRANSPORT INFORMATION

14.1 Land transport (ADR/RID/CDG Road/ CDG Rail):

No hazardous material as defined by transport regulations.

14.2 Inland waterway craft (ADN/ADNR):

No hazardous material as defined by transport regulations.

14.3 Marine transport (IMO):

No hazardous material as defined by transport regulations.

14.4 Air transport (ICAO/IATA):

No hazardous material as defined by transport regulations.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1 EU law:

None

15.1.2 National law:

See national legislation!

15.2 Chemical safety assessment:

Not necessary

16. OTHER INFORMATION

16.1 Documentation of changes:

*Data changed compared with the previous version. Revision of Material safety data sheet from 01.02.2011

16.2 Training instructions:

None

16.3 Recommended restrictions on use:

None

16.4 Further information:

Abbreviations:

n.d.a. No data available

n.a. Not applicable

ABS Air-cooled blast furnace slag GBS = Granulated Blast furnace Slag

GGBS Ground Granulated Blast furnace Slag

CSR Chemical Safety Report Ferrous Slags

16.5 Sources

Disclaimer

The information in this Safety Data Sheet was believed to be correct at the time of issue. It does not, however, give assurances of product properties and establishes no contract legal rights.

If you have purchased this product for supply to a third party for use at work, it is your duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet.

If you are an employer, it is your duty to tell your employees and others who may be affected of any hazards described in this sheet and any of the precautions which should be taken.

This Safety Data Sheet does not constitute the user's own assessment of workplace risk, and it is the user's sole responsibility to take all necessary safety precautions when using this product.

The product is to be used exclusively for the applications named in the technical leaflet or in the processing instructions. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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