

MATERIAL SAFETY DATA SHEET

ACCORDING TO EC-REGULATIONS 91/155/EC,
2006/1907/EC AND 2006/121/EC

This Material Safety Data Sheet provides information about the substance to enable appropriate risk management and apply suitable measures when dealing with the substance.

1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY UNDERTAKING

Identification of the substance

Ground Granulated Blastfurnace Slag (GGBS) is a fine powder off-white to light grey in appearance.

Company Identification

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Reach Registration Number: 01-2119487456-25

Use of substance

To be used as a cementitious component in (EN197-1) standard cements used in concrete, mortar and grout.

2. HAZARD IDENTIFICATION

GGBS 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).

GGBS can cause mechanical irritation to the eyes and respiration system. When mixed with water the

resulting paste will gradually become alkaline with a pH up to 12. GGBS may be hot when delivered in bulk.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance related information

Slags, ferrous metal, EG-Nr: 266-002-0 CAS-Nr: 65996-69-2 complex CA-Mg-Al-Silicate composition

Further information

GGBS is a vitrified substance, which is a by-product of iron production in a blast furnace the structure of the Granulated Blastfurnace Slag depends on the temperature when cooled. It consists primarily of oxides of calcium, silicon, aluminum and magnesium.

GGBS contains less than 1% crystalline silica and contains less than 2 ppm water soluble chromium VI.

4. FIRST AID MEASURES

Inhalation

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

Skin Contact

Wash with soap and water.

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Eye Contact

Do not rub eye as the material can scratch the surface of the eye. Rinse the eye thoroughly with water, with the eyelids open for at least 15 minutes seek medical advice if irritation persists.

Ingestion

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

5. FIREFIGHTING MEASURES

GGBS is not flammable and will not facilitate combustion with other materials

Suitable/Unsuitable extinguishing media

Use media suitable for any other materials present that may be involved in the fire.

Special hazards arising in a fire

None - material does not combust and therefore will not release any combustion products.

Advice for firefighters

None - general measures for fighting fires are applicable.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid breathing dust and excessive physical contamination. Follow risk controls such as wearing protective equipment and environmental exposure controls detailed in section 7 and follow the safe handling and storage advice in section 8.

Environmental precautions

Avoid dispersal of airborne dust. Entry into watercourses such as drainage system and bodies of water should be avoided as far as possible.

Methods and materials for containment and cleaning up

If possible recover the spillage in a dry state by mechanical means such as vacuuming, to minimize generation of airborne dust. The product can be slurried by the addition of water.

7. HANDLING AND STORAGE

Precautions for safe handling

Follow recommendations for exposure control / personal protection within section 8

Bags/Tubs may have a small amount of GGBS on the outer surface the appropriate personal protective clothing should be used.

Advice on safe handling

Avoid dust dispersion. Where applicable keep dust wet. In enclosed areas adequate ventilation to prevent dust inhalation should be available and used.

Technical measures

In case of further handling with high dust dispersion, use a fume exhaust system to ventilate the dust and prevent dust inhalation.

Advice for general occupational hygiene

Do not eat, drink or smoke whilst working. Wash hands before and after breaks at work.

Precautions for safe storage

Bulk GGBS should be stored in silos that are waterproof, dry if possible with internal condensation minimized, clean and protected from contamination and foreign body ingress.

Packed bag products should be safely stacked in a stable manner and if stored on racking must not exceed the maximum safe load limit for the racking design.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

OCCUPATIONAL EXPOSURE LIMITS:			
CAS-NO.	Name	Limit value 8 hr ml/m ³ mg/m ³	Limit value - short term ml/m ³ mg/m ³
	Dust, respirable	3	6
	Dust, inhalable	10	20

Measures to control dust by engineering/ventilation

Ensure where possible measures to reduce dust generation and adequate ventilation are available this can be through exhaust ventilation, de-dusting, or dry cleaning methods which don't cause airborne dispersion of dust.

If it isn't possible to minimize the dust dispersion or use the product in a well ventilated area individual personal measures must be used.

Individual Protection/Personal Protective Equipment

Even in areas where good ventilation and dust suppression are available, it is advisable to use the following PPE when in close proximity or handling GGBS:

Eye Protection

Eye protection in the form of safety glasses/goggles must be worn these should be to the standard according to EN166 with side protection whenever there is a risk of GGBS potentially entering the eye area either in powder form or once water has been added and the material is wet.

Hand protection

Gloves should be worn at all times when handling the material they must conform to standard 89/686/EEC and be resistant to chemicals and be watertight. A maximum wear duration time of > 480 minutes should be adhered to avoid skin irritation. If irritation does occur skin barrier creams should be used if the condition continues seek medical advice.

Gloves should be removed and hands thoroughly cleaned prior to handling/eating food.

It is advisable that fresh gloves are used for each prolonged period where gloves will be worn.

Respiratory protection

Dust masks that conform to the minimum of EN140 FFP2 filter should be used in high dust concentrated environments ensuring that the occupational exposure limits are adhered to. The type of dust masks used should be chosen for the best fit and comfort and ensure that individuals are competent in using/fitting the dust mask for their own wellbeing.

Protective clothing

As the product can produce dust when airborne it is advisable to wear protective clothing which can be removed and cleaned if it become covered by the dust so that the dust doesn't spread by the wearer moving place to place.

Environmental exposure controls

Air

Any environmental emission of GGBS particles into the air must be in accordance with the local environmental agency regulations and meet these requirements.

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Water

GGBS should not be allowed to enter the drainage systems such as public sewer or storm drains.

Soil and terrestrial environment

No special control measures are necessary.

9. PHYSICAL AND CHEMICAL PROPERTIES

PROPERTY:	
Appearance	Off white/light grey powder
Odour	None or slight sulphur odour
pH value	10-12 (DEV-S4-eluate according EN 12457-4)
Melting point	>1000°C
Density	Approx. 2.4 – 2.3 g/cm ³ (20°C)
Water solubility	<1 g/l
Explosive properties	Not applicable
Oxidising properties	Not applicable
Flash point	Non-Flammable

10. STABILITY AND REACTIVITY

Reactivity

GGBS has a low reactivity and does not react under normal dry storage conditions.

Chemical stability

GGBS is chemically stable

Conditions to avoid

GGBS should be stored enclosed in either weather proof bags or inside a dry silo. Avoid storing in the open air to prevent wind blowing dust into the air and avoid storing in a damp state.

Incompatible materials

There are no known incompatible materials.

Hazardous decomposition products

There are no known hazardous decomposition products.

11. TOXICOLOGICAL INFORMATION

The substance is not classified as dangerous. Details of the toxicological tests submitted as part of the REACH dossier for the substance are available on the European Chemicals Agency website www.echa.europa.org

12. ECOLOGICAL INFORMATION

Environmental Assessment

When used and disposed of as intended GGBS no adverse environmental effects are foreseen.

Ecotoxicity

When GGBS is mixed in larger quantities with water it will cause the pH of the water to rise to 10-12 pH and may reduce oxygen availability which may be toxic to aquatic life in some circumstances.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Any uncontaminated spillages can be recovered and reused. If the material is to be discarded it can be disposed of according local legislation.

Contaminated packaging

Any completely empty packaging can be disposed of according to local legislation.

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.

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14. TRANSPORT INFORMATION

GGBS is not covered by the international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID), therefore no classification is required.

No special precautions are necessary apart for the Exposure controls and PPE requirements covered in section 8 of this document.

15. REGULATORY INFORMATION

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

GGBS currently does not meet the requirements for classification as a dangerous material under the EU Dangerous Substances directive (67/584/EEC) or the Classification, Labelling, Packaging of substances and mixtures (CLP) regulations (EC1272/2008).

GGBS is not classified as dangerous by any UK national legislation.

Chemical Safety Assessment

No chemical assessment is necessary for this product.

15. OTHER INFORMATION

Training and advice

In addition to a company's own health, safety and environmental training programs covering policies and procedures for their workers. Companies must ensure that workers must read and understand this MSDS and apply all relevant requirements for handling and taking precautions in using GGBS.

Training Instructions

GGBS only to be use in accordance with the manufacturer's technical instructions and for the sole purpose as intended by the manufacturer

The information contained within this document supplied to users is believed to be as accurate as possible and given in good faith. It is for the user themselves to satisfy the suitability of the product for their own particular purpose.

The product is to be used exclusively for the applications designed for or mentioned in the technical data sheet. The receiver of the product is singularly responsible for adhering to the existing laws and regulations.

This material safety data sheet should not constitute the users own workplace risk assessment. It is the user's sole responsibility to take all necessary safety precautions when using this product.

Francis Flower accepts no liability for loss or damage (other than that arising from death or personal injury due to defective product, if proved), resulting from reliance on this documents information. Freedom under Patents, Copyright and Designs cannot be assumed.

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