



Material Safety Datasheet

GROUND GRANULATED BLASTFURNACE SLAG (GGBS)

It is important that you, or any persons working for you or to whom you have supplied Ground Granulated Blastfurnace Slag (GGBS), become familiar with the information given on both pages of this datasheet before handling, using or disposing of the product.

Ground Granulated Blastfurnace Slag (GGBS)

1. Identification of substance/preparation and supplier

Supplier/manufacturer: CEMEX UK Operations Ltd
CEMEX House, Evreux Way
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Substance/preparation: CEMEX Ground Granulated Blastfurnace Slag (GGBS)

Revision date: May 2006

Hazard information

2. Composition/information on ingredients

GGBS:

A finely ground, off-white powder insoluble in water. A latent hydraulic binder normally mixed with cement and water for construction purposes.

Blastfurnace slag consists principally of non-crystalline oxides of aluminium, calcium, silicon and magnesium together with sulfur compounds and small quantities of alkalis.

3. Hazards identification

Fine powder of nuisance dust classification. May irritate eyes, skin, respiratory system or gastro-intestinal tract. On mixing with water, the resultant liquid may be alkaline.

Emergency action

4. First aid measures

- 4.1 Eye contact:
Wash eyes immediately with plenty of clean water.
Seek medical advice.
- 4.2 Skin contact:
Wash the affected area thoroughly with soap and water.
If irritation or other skin problems arise seek medical advice.
- 4.3 Ingestion:
Wash out mouth with water and give patient plenty of water to drink. If continuing discomfort is experienced, seek medical advice.
- 4.4 Inhalation:
Move to fresh air. If airways become inflamed seek medical advice.

5. Fire fighting measures

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

6. Accidental release measures

- 6.1 Personal Precautions (See 8.3.)
- 6.2 Cleaning Up:
Recover spillage in a dry state if possible. Minimise generation of airborne dust. The product may be slurried with water but will slowly harden.
- 6.3 Environmental Measures:
Prevent from entering drains, sewers or water courses.

Precautions

7. Storage

Requirements for storage rooms and containers: Dry storage.
Advice for storage together with other material:
Do not store amongst ammonia – containing material.

8. Exposure controls/personal protection

- 8.1 Workplace Exposure Limits (WELs) of 10mg/m³ total inhalable dust and 4mg/m³ respirable dusts (8 hour TWA) are listed in EH40 for aluminium oxide and magnesium oxide. Calcium Oxide is assigned a long term (8 hour TWA) WEL of 2mg/m³.
- 8.2 Engineering Measures:
Where reasonably practicable dust exposures should be controlled by engineering methods.
- 8.3 Personal Protective Equipment:
- Respiratory Protection:
Suitable respiratory protection (HSE approved standard) should be worn to ensure that personal exposure is less than the workplace exposure limit values. Always ensure good ventilation.
 - Hand and Skin Protection:
Protective clothing should be worn which ensures that GGBS or GGBS water mixtures do not come into contact with the skin. This is particularly important where GGBS is being used in conjunction with cement – e.g. when laying concrete. Waterproof gloves, waterproof trousers and boots may be necessary. Should wet concrete or mortar get inside boots, gloves or other protective clothing then this protective clothing should be immediately removed and the skin thoroughly washed as well as the protective clothing/footwear.
 - Eye Protection:
Dust-proof goggles (HSE approved standard) should be worn whenever there is a risk of GGBS powder, or any other GGBS/cement/water mixture entering the eye.

Product information

9. Physical & chemical properties

9.1 Physical Data:

Physical state	Particulate
Mean particle size	5 – 30 micron
Colour	Off-white
Odour	Odourless when dry but may give rise to sulfide odour when wet
pH	When wet, up to 12
Viscosity	N/A
Freezing point	N/A
Boiling point	>1700°C
Melting point	>1200°C
Flash point	N/A (not flammable)
Explosive properties	N/A
Density at 20°C	2.4 - 2.8 g/cm ³
Water solubility	at 20°C <1g/l

9.2 Chemical Compounds:

Essentially non-crystalline silicates and aluminosilicates.

10. Stability & reactivity

GGBS is stable in most conditions.

Storage with ammonia-containing material may lead to release of ammonia-fumes.

Contact with water or acid may liberate hydrogen sulphide.

11. Toxicological information

- Eye Contact:
Can cause irritation. Gross exposure or untreated mild exposure can lead to eye damage.
- Skin:
Prolonged contact with wet GGBS may cause alkali burns but this is unlikely in normal use. No connection between GGBS and contact dermatitis has been established but this is a possibility. Contact with wet GGBS/cement mixtures can cause burns or contact dermatitis as with cement.
- Ingestion:
The swallowing of small amounts is unlikely to cause significant reaction. Large doses may result in irritation to the gastro intestinal tract.
- Inhalation:
Could cause inflammation of mucous membranes.

12. Ecological information

12.1 Aquatic Toxicity Rating:

LC50 aquatic toxicity rating not determined. The addition of GGBS to water will, however, cause the pH to rise and may therefore be toxic to aquatic life in some circumstances.

12.2 Biological Oxygen Demand (BOD):

Not applicable

13. Disposal considerations

Dispose of empty containers or surplus GGBS to a place authorised to accept builder's waste. Keep out of reach of children.

Additional information

14. Transport information

Not hazardous. Classification for conveyance – not required.

15. Regulatory information

15.1 Chemicals (Hazard Information and Packaging for Supply) Regulations:

Classification – Irritant.

15.2 Risk/safety phrases:

Risk Phrases:

- Irritating to skin
- Irritating to eyes
- Mixtures with wet cement may cause irritation, dermatitis or burns

Safety Phrases:

- Contains Chromium (VI), may cause allergic reaction
- Avoid eye and skin contact by wearing suitable eye protection, clothing and gloves
- Avoid breathing dust
- Keep out of reach of children
- On contact with eyes or skin, rinse immediately with plenty of clean water. Seek medical advice after eye contact

16. Legislation & other information

- EINECS No. 266-002-0 May 1995
- Health & Safety at Work, etc. Act 1974
- HSE Guidance Note HSG205 Assessing and Managing Risks at Work from Skin Exposure to Chemical Agents
- Control of Substances Hazardous to Health Regulations (COSHH) 2002
- Control of Substances Hazardous to Health (Amendment) Regulations 2004
- Environmental Protection Act 1990
- HSE Guidance Note EH40 (Workplace Exposure Limits)
- Any authorised manual on First Aid by St.John's/St. Andrews/Red Cross
- Manual Handling Operations Regulations 1992 (as amended)

Data Sheet prepared in accordance with the Safety Data Sheets Directive (91/155/EEC, as amended by Directives 93/122/EC and 2001/58/EC)

Guidance references

Available from HMSO, HSE area offices, or local authority Environmental Health Departments:

- EH40/: Workplace Exposure Limits
- A step-by-step guide to COSHH Assessment (HS[G]97)

IMPORTANT NOTES

The purpose of this datasheet is to provide Health, Safety and Environmental guidance on the safe handling, use and disposal of GGBS supplied by subsidiary or affiliate companies of CEMEX in the United Kingdom.

The information contained in this datasheet is correct at the date of, and applies only in relation to, the supply of material referred to in the delivery docket to which this datasheet is attached and forms part.

This datasheet should alert purchasers and/or users to the usual hazards in handling the supplied material when using it within the ordinary range of uses for which such material is normally supplied. If you have purchased or arranged the supply on behalf of a third party who will work with the material supplied it is your duty to pass this information on to them BEFORE such work commences.

For the avoidance of doubt the datasheet DOES NOT constitute the user's own assessment of workplace risk as may be required by other safety legislation and nothing herein shall be construed or relied upon as relieving the purchaser, user or any intermediate supplier or third party from any statutory or other legal duty which may apply to them or from taking care or precautions to protect themselves or others to whom they owe a duty of care.

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