
1. IDENTIFICATION OF PRODUCT AND SUPPLIER

- 1.1 Product Identifier Ground Granulated Blast furnace Slag.
Presented GGBS afterward in the document.
Reach Registration Number (from Supplier) : 01-2119487456-25-0019
- 1.2 Use of
Substance/Preparation: GGBS is used as a cementitious binder in the ready-mix and precast
concrete industries and for use in mortars and grouts.
- 1.3 Supplier details ECOCEM IRELAND LTD
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2. HAZARDS IDENTIFICATION

- 2.1 Classification GGBS is not classified as a hazardous material, and it presents no
risks.
- 2.2 Label elements Not concerned.
- 2.3 Other hazards The handling and use of this substance can possibly generate a dust
capable of causing physical irritation of eyes, skin, nose, and throat.
- When mixed with water and cement, the resulting solution is
alkaline, with a pH superior at 12.

3. COMPOSITION / INFORMATION ON INGREDIENTS

- 3.1 Substances GGBS is predominantly a finely ground powder comprising non-
crystalline oxides of calcium, silicon, aluminium and magnesium.
- N° CAS :** 65996-69-2
N ° EINICS : 266-002-0
- 3.2 Hazardous ingredients The content in soluble Chromium Cr VI is very low, lower than the
statutory limit of 2 ppm (0.0002 % according to EN 196-10).
GGBS contains less than 1 % of crystalline silica.

4. FIRST AIDS AND MEASURES

Bring this safety data sheet when seeking medical attention

- 4.1 Inhalation If irritation occurs, leave the area and go to an area with plenty of fresh air. If irritation persists, and nose or airways become inflamed or constricted, seek medical advice.
- 4.2 Eye Contact Wash eyes immediately with clean water for at least 15 minutes, and then seek medical advice.
It is advisable to use saline solution (0.9% Na Cl) to wash eyes.
- 4.3 Skin contact If GGBS is dry, remove it before rinsing thoroughly with water.

Wash the affected area thoroughly with water and soap. If any irritation or pain occurs, seek immediate medical advice. Clothing contaminated by wet concrete or mortar should be removed, and washed thoroughly before re-use.
- 4.4 Ingestion Do not induce vomiting. Firstly wash out mouth with water, and then give plenty of water to drink.
If discomfort continues, seek medical advice.

5. FIRE FIGHTING MEASURES

- 5.1 Means to extinguish All extinguishing agents can be used.
- 5.2 Particular danger from product None.
- 5.3 Advice for fire-fighters None.

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal Precautions Refer to sections on Exposure Controls and Personal Protection (Section 8) and follow Handling and storage recommendations (section 7).
Urgent procedures are not necessary.
- 6.2 Environmental precautions Do not flush into sewers, drains, drainage systems and waterways.
- 6.3 Cleaning Up **GGBS dry :**
Use cleaning methods that avoid the dispersion of the product in the air. Cleaning with an industrial vacuum cleaner equipped with appropriate filters is recommended.

The product can also be turned into slurry and disposed of as described below under "GGBS wet".

If recovery is not dry by suction and can be done only by manual handling, the people carrying out the manual cleanup must wear appropriate protective equipment.

GGBS wet :

Recover and discharge into a closed container.

6.4.Reference to other sections Eliminate as described in section 13.

7. HANDLING AND STORAGE

Do not store or handle GGBS near food, drink

- 7.1 Handling Follow the recommendations described in paragraph 8.
Avoid dust formation.
GGBS used in an open mixer; pour in the water and then GGBS do not pour from a great height and mix carefully.

For cleaning, refer to section 6.3.
- 7.2 Storage Bulk GGBS should be stored in sealed silos (with very low internal condensation), clean and free from contamination.

Adequate security measures must be applied when entering confined spaces containing GGBS such as silos, hoppers, bulk truck, or other types of container. In an enclosed space, the GGBS can accumulate along the walls and is liable to collapse suddenly.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Exposure Limit Values OEL (total) : 10mg/m³
OEL (alveolar) : 5mg/m³

The repeated or prolonged exposure to higher values with ELV can cause diseases of the nose and respiratory.
- 8.2 Exposure Controls. Avoid contact with eyes and skin.

When GGBS is combined with EN197-1 cements, avoid any skin contact with the mortar and concrete. If it is necessary to work on knees or in direct contact with the mortar and fresh concrete, it is imperative to wear impervious protective clothing, including knee pads.

Do not eat or drink when handling GGBS to avoid contact with skin or mouth.

Immediately after handling GGBS, bathe and clean affected skin.

Remove clothing, shoes, watches and other objects contaminated and clean thoroughly before reuse.


Respiratory Protection

The appropriate respiratory protection measures must be implemented if a person is exposed to dust content higher than the permitted levels of exposure. Protection measures, in accordance with EN 149 must be adapted for dust levels. Wearing a mask of at least grade P2 is recommended at least as a minimum requirement of respiratory protection.


Eye Protection

Whether handling the GGBS dry or wet, it should wear eye protection to EN 166 should be worn to avoid contact with eyes.


Skin Protection

Wear gloves lined with cotton, waterproof and resistant to abrasion and alkali, boots and long sleeves clothes. Use of protective products and moisturizers is advisable to protect skin from contact with dry or wet GGBS.



Take care to prevent GGBS (dry or wet) from entering boots. If is mixed with cement EN197-1, when mixing concrete and laying floor screeds in particular, it is essential to wear knee pads or waterproof pants.

8.3. Environmental exposure controls

According to the available techniques.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 General Information

GGBS is a finely ground inorganic material.
(white powder, without odour)

9.2 Chemical information

GGBS is composed mainly of: CaO, SiO₂, Al₂O₃, and MgO.
it contains less than 1% crystalline silica and less than 2ppm water soluble chromium VI.

9.3 Physical information

Particle size	0.1 to 40 microns
Solubility in water (T = 20°C) :	< 1,5 g/l
Relative Density (Specific Gravity)	2.85–2.95
Bulk density	0.90 – 1.2.
pH (T = 20 °C in water) :	9to 11
Boiling point :	> 1250 °C
Flash point, Flammability :	n/a
Melting point :	n/a
Freezing point, evaporation rate	not relevant
Vapour pressure, vapour density, viscosity:	not relevant

10. STABILITY AND REACTIVITY

10.1 Conditions contributing to chemical reactivity	Mixed with water, GGBS reacts slowly and forms a stable hardened material which does not react in ordinary environments. Mixed with water in the presence of cements (e.g. EN197-1 cements) or hydrated lime, GGBS is more reactive and hardens relatively quickly.
10.2 Stability	GGBS remains stable when is kept in appropriate conditions (cf. § 7.2). GGBS can be used in combination with most of the other building materials.
10.3 Conditions to avoid	Condensation and damp can cause clumping and loss of quality of GGBS.
10.4 Materials to avoid	Combination with alumina powder leads to formation of Hydrogen gas. Combination with ammonia containing products leads to formation of Ammonia gas.
10.5 Hazardous decomposition products	GGBS does not decompose to hazardous by-products and does not undergo polymerization.

11. TOXICOLOGICAL INFORMATION

11.1 Short Term Effects	Eye contact Mild exposure to GGBS powder can cause soreness. Long exposure or untreated mild. Exposure can lead to burning and/or ulceration of the eye. Skin contact Prolonged contact with wet GGBS may cause alkali burns, but this is virtually unknown in normal use. No connection has been established between GGBS and dermatitis, but this possibility cannot be ruled out.. Ingestion Swallowing small amounts of GGBS or a GGBS/water mixture is unlikely to cause any significant reaction. Larger doses may result in irritation to the gastrointestinal tract. Inhalation GGBS powder inhalation may cause inflammation of the mucous membranes.
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11.2 Chronic Effects**Inhalation**

Repeated exposure to respirable dust in excess of the limit value for occupational exposure can cause coughing, sneezing, respiratory problems and cause the onset of chronic obstructive pulmonary disease (COPD).

cancer genesis

No causal association between exposures to GGBS and development of cancer is established.

Contact dermatitis / awareness

No causal link is found between the occurrence of contact dermatitis and contact with GGBS. Some people may experience skin irritation caused by high pH and handling of wet GGBS. The reactions range from mild erythema to more serious irritation.

**11.3 Medical Conditions
Aggravated by Exposure**

Inhalation of GGBS dust may aggravate pre-existing illnesses such as emphysema and asthma, as well as pre-existing conditions of the skin and eyes.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

In normal use, GGBS does not pose a threat to the environment. However, the addition of high amounts of GGBS can cause a rise in pH and thus be harmful to aquatic organisms.

**12.2 Persistence and degradability
/ Bio accumulative potential /
Results of PBT assessment / Other
adverse effects**

Not applicable, GGBS is an inorganic material.

13. DISPOSAL CONSIDERATIONS

**13.1 Instructions for removing
GGBS dry**

Pick up in dry form, avoiding dust formation. Store the waste and recovered waste in containers clearly labelled. Reuse of stored GGBS is possible. Dispose of according to 13.3.

**13.2 Instructions for removing
GGBS wet**

Store mud with GGBS in a waste container. Avoid discharge into drains, sewers and drainage systems and waterways. Dispose of according to 13.3.

13.3 Removing

Dispose of in accordance with local laws.

**13.4 Registration to the European
Waste List**

10 13 14 Wastes from concrete production - waste concrete and concrete sludge.

17 01 01 Construction Waste and Demolition Concrete.

13.5 Packaging Not applicable.

14. TRANSPORT INFORMATION

GGBS is not subject to international regulations on the transport of dangerous goods (IMDG, IATA, ADR / RID). A classification is not mandatory. With the exception of recommendations described in paragraph 8, no precautions are necessary.

15. REGULATORY INFORMATION

Classification and labelling
according to Directive 2001/59/EC

Risk phrases R:

None.

Safety Phrases S:

S2 Keep out of the reach of children.

S14 Keep away from acid products.

S22 Do not breathe dust.

S24/25 Avoid contact with skin and eyes.

16. OTHER INFORMATION

Revision

Version revised 10 July 2012 change section 1 to 16.

Abbreviation

ADR/RID: Agreement on the transport of dangerous good by road/
Regulations on the international transport of dangerous
goods by rail.

IATA : International Air Transport Association.

IMDG: International Maritime dangerous Goods.

OEV: Occupational exposure limit.

Declaration

The information in this safety data sheet is based on current knowledge and experiences. This information is reliable subject using the product as prescribed and in accordance with the applications specified on the package and / or in the technical sheets. Any other use of the product, including in combination with any other product or process is the sole responsibility of the user.

It is understood that the user is solely responsible for determining appropriate security measures and enforcement of legislation governing its activities.