

Safety Data Sheet

according to Regulation (EC) No 1907/2006

GGBS (Ground Granulated Blastfurnace Slag)

Revision date: 01.02.2017

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

GGBS (Ground Granulated Blastfurnace Slag)

Further trade names

This MSDS covers the following products:

GGBS Normal

GGBS Superfine

REACH Registration Number: 01-2119487456-25-

CAS No: 65996-69-2

EC No: 266-002-0

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

Use of the substance/mixture

Additives, additives and binders for concrete, mortar and chemistry products for building industries, soil stabilization and immobilization and other construction products.

PROC 2: Use in closed, continuous process with occasional controlled exposure ,PROC 3: Use in closed batch process (synthesis or formulation) ,PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) ,PROC 7: Industrial spraying ,PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities ,PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities ,PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) ,PROC 10: Roller application or brushing, PROC 11: Non industrial spraying ,PROC 13: Treatment of articles by dipping and pouring ,PROC 19: Hand-mixing with intimate contact and only PPE available, PROC 24: High (mechanical) energy work-up of substances bound in materials and/or articles ,PROC 26: Handling of solid inorganic substances at ambient temperature, ERC 5: Industrial use resulting in inclusion into or onto a matrix , ERC 10a: Wide dispersive outdoor use of long-life articles and materials with low release , ERC 11a: Wide dispersive indoor use of long-life articles and materials with low release

Uses advised against

Any uses not listed above.

1.3. Details of the supplier of the safety data sheet

Company name: Ecocem
Street: F1 East Point Office Park
Place: Dublin 3, Ireland
Telephone: +44 0 845 434 8191
e-mail: info@ecocem.ie
Contact person:
www.ecocem.co.uk

1.4. Emergency telephone number: NHS – 111 (24 hour)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

This substance is not classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

2.2. Label elements

Additional advice on labelling

Labelling according to Regulation (EC) No. 1272/2008 [CLP]: none

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2.3. Other hazards

The product develops an alkaline pH value with moisture and can cause irritation.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical characterization

Slag in solid form, which is formed from the molten substance by the action of a melting agent on the lode matter of iron-containing materials from a blast furnace. The rapid cooling during the granulation creates glassy Blast Furnace Granules.

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
65996-69-2	Slags, ferrous metal, blast furnace			100 %
	266-002-0		01-2119487456-25-	

Full text of H and EUH statements: see section 16.

Further Information

Product does not contain any listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest. In case of respiratory tract irritation, consult a physician.

After contact with skin

Gently wash with plenty of soap and water. In case of skin irritation, seek medical treatment.

After contact with eyes

Rinse cautiously with water for several minutes. In case of persistent symptoms, consult an ophthalmologist.

After ingestion

Rinse mouth thoroughly with water. Drink water in little sips (dilution effect). Do NOT induce vomiting. In all cases of doubt, or when symptoms persist, seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation of dust/particles: Irritation to respiratory tract. Coughing.

In case of skin contact: mechanical irritation. May cause sensitisation especially in sensitive humans.

Eye contact: Damage can be caused through mechanical influence of the product (eg. sticking).

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media



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Suitable extinguishing media

Product is not flammable. Carbon Dioxide (CO₂), Dry extinguishing powder, alcohol resistant foam, atomized water can be used

Unsuitable extinguishing media

None. Co-ordinate fire-fighting measures to the fire surroundings.

5.2. Special hazards arising from the substance or mixture

GGBS is non-combustible and non -explosive. It will not facilitate or sustain the combustion of other materials.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ventilate affected area. Avoid generation of dust. Do not breathe dust.

Wear personal protection equipment (refer to section 8).

6.2. Environmental precautions

Leaks may be protected against wind drifts with a tarpaulin. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

Use approved industrial vacuum cleaner for removal. (High efficiency particulate air filter (HEPA filter).)

If vacuuming is not possible, knock down dust with water spray jet. Take up mechanically. Prevent the risk of slipping.

Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Wear personal protection equipment (refer to section 8). Do not breathe dust.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Further information on handling

Avoid generation of dust.

General protection and hygiene measures: refer to chapter 8

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep the packing dry and well sealed to prevent contamination and absorption of humidity.

Advice on storage compatibility

Do not store together with: Explosives, oxidizing solids, oxidizing liquids, radioactive substances, infectious substances, food and animal feeding stuff.

Further information on storage conditions

Recommended storage temperature: 20°C

Protect against: moisture.

7.3. Specific end use(s)

refer to chapter 1.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PNEC values

CAS No	Substance	
	Environmental compartment	Value
65996-69-2	Slags, ferrous metal, blast furnace	
	Freshwater	5000 mg/l
	Marine water	500 mg/l
	Micro-organisms in sewage treatment plants (STP)	10000 mg/l
	Soil	1000 mg/kg

8.2. Exposure controls



Appropriate engineering controls

Dust should be exhausted directly at the point of origin.

Protective and hygiene measures

Always close containers tightly after the removal of product. When using do not eat, drink, smoke. Wash hands before breaks and after work.

Eye/face protection

Dust protection goggles.

Hand protection

In case of prolonged or frequently repeated skin contact:

Wear suitable gloves.

Suitable material:

FKM (fluororubber). - Thickness of glove material: 0,4 mm

Breakthrough time \geq 8 h

Butyl rubber. - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

CR (polychloroprenes, Chloroprene rubber). - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

NBR (Nitrile rubber). - Thickness of glove material: 0,35 mm

Breakthrough time \geq 8 h

PVC (Polyvinyl chloride). - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Before using check leak tightness / impermeability. In the case of wanting to use the gloves again, clean them before taking off and air them well.

Skin protection

Suitable protective clothing: Protective clothing.

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

-Generation/formation of dust



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-exceeding exposure limit values

Suitable respiratory protective equipment: particulates filter device (DIN EN 143). Type P1-3

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

Half-face mask or quarter facepiece: maximum use concentration for substances with exposure limits: P1 filter: up to a max. of 4 times the exposure limit. P2 filter: up to a max. of 10 times the exposure limit. P3 filter: up to a max. of 30 times the expo Full-face mask or mouthpiece with particulate filter: maximum use concentration for substances with exposure limits: P1 filter: up to a max. of 4 times the exposure limit. P2 filter: up to a max. of 15 times the exposure limits

Environmental exposure controls

No special precautionary measures are necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Powder, solid
Colour: white - light grey
Odour: characteristic

Test method

pH-Value: > 11,5 (in aqueous solution)

Changes in the physical state

Melting point: Not Applicable
Initial boiling point and boiling range: Not Applicable
Sublimation point: Not Applicable
Softening point: Not Applicable
Pour point: Not Applicable
Flash point: Not Applicable
Sustaining combustion: Will not sustain combustion

Explosive properties

none

Lower explosion limits: Not Applicable
Upper explosion limits: Not Applicable
Ignition temperature: Not Applicable

Auto-ignition temperature

Solid: Not Applicable

Decomposition temperature: Not Applicable

Oxidizing properties

none

Vapour pressure: Not Applicable

Density: 2,85-2,95 g/cm³

Bulk density: 0.90 – 1.2

Water solubility: 0,10 - 0,15 g/L

Solubility in other solvents

not determined

Partition coefficient: Not Applicable

Viscosity / dynamic: Not Applicable

Viscosity / kinematic: Not Applicable

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Flow time: Not Applicable

Vapour density: Not Applicable

9.2. Other information

Solid content: Not Applicable

Granulometry:

GGBS Normal: 1 - 60 µm

GGBS Superfine: 0,1 - 40 µm

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

The product develops hydrogen in an aqueous solution in contact with metals.

10.4. Conditions to avoid

Protect against: moisture.

10.5. Incompatible materials

Materials to avoid: Oxidizing agents, strong. Reducing agents, strong. Acid. Light metal. (Aluminium) ammonium salts. (Release of: Ammonia.)

10.6. Hazardous decomposition products

As in the case of all fire: Carbon monoxide. Carbon dioxide (CO₂) can be released

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicokinetics, metabolism and distribution

No data available.

Acute toxicity

Based on available data, the classification criteria are not met.

No data available.

CAS No	Chemical name			
	Exposure route	Dose	Species	Source
65996-69-2	Slags, ferrous metal, blast furnace			
	oral	LD50 >2000 mg/kg	Rat	ECHA Dossier
	dermal	LD50 >4000 mg/kg	Rat	ECHA Dossier
	inhalative (4 h) aerosol	LC50 >5,23 mg/l	Rat	ECHA Dossier

Irritation and corrosivity

Based on available data, the classification criteria are not met.

No data available.

Sensitising effects

Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation:

Method: OECD Guideline 406

Result / evaluation: no danger of sensitization.

Carcinogenic/mutagenic/toxic effects for reproduction

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Based on available data, the classification criteria are not met.
 In-vitro mutagenicity: negative. ; literature information ECHA Dossier
 In-vivo mutagenicity: negative. ; literature information ECHA Dossier
 No evidence for reproductive toxicity in experimental animals.
 No evidence for: Carcinogenicity.

STOT-single exposure

Based on available data, the classification criteria are not met.
 No data available.

STOT-repeated exposure

Based on available data, the classification criteria are not met.
 Subchronic inhalation toxicity :
 Method: OECD Guideline 412 (Repeated Dose Inhalation Toxicity: 28/14-Day)
 Species: Rat. ; Exposure duration: 28 d
 Result: NOAEC = 24.9 mg/m³; literature information: ECHA Dossier

Aspiration hazard

Based on available data, the classification criteria are not met.
 No data available.

Specific effects in experiment on an animal

No data available.

SECTION 12: Ecological information

12.1. Toxicity

No data available.

CAS No	Chemical name				
	Aquatic toxicity	Dose	[h] [d]	Species	Source
65996-69-2	Slags, ferrous metal, blast furnace				
	Acute fish toxicity	LC50 >100000 mg/l	96 h	Leuciscus idus	ECHA Dossier
	Acute algae toxicity	ErC50 >100000 mg/l	72 h	Desmodesmus subspicatus	ECHA Dossier
	Acute crustacea toxicity	EC50 >100000 mg/l	48 h	Daphnia magna	ECHA Dossier
	Crustacea toxicity	NOEC >= 1563 mg/l	21 d	Daphnia magna	ECHA Dossier

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

BCF

CAS No	Chemical name	BCF	Species	Source
65996-69-2	Slags, ferrous metal, blast furnace	10	algae	ECHA Dossier

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Other adverse effects

No data available.

Further information

Do not allow to enter into surface water or drains.



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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Observe in addition any national regulations! Consult the local waste disposal expert about waste disposal.

Non-contaminated packages may be recycled.

According to EAKV, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

Control report for waste code/ waste marking according to EAKV:

Waste disposal number of waste from residues/unused products

100202 WASTES FROM THERMAL PROCESSES; wastes from the iron and steel industry; unprocessed slag

Waste disposal number of used product

100202 WASTES FROM THERMAL PROCESSES; wastes from the iron and steel industry; unprocessed slag

Waste disposal number of contaminated packaging

150106 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); mixed packaging

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: Not restricted

14.2. UN proper shipping name: Not restricted

14.3. Transport hazard class(es): Not restricted

14.4. Packing group: Not restricted

Inland waterways transport (ADN)

14.1. UN number: Not restricted

14.2. UN proper shipping name: Not restricted

14.3. Transport hazard class(es): Not restricted

14.4. Packing group: Not restricted

Marine transport (IMDG)

14.1. UN number: Not restricted

14.2. UN proper shipping name: Not restricted

14.3. Transport hazard class(es): Not restricted

14.4. Packing group: Not restricted

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: Not restricted

14.2. UN proper shipping name: Not restricted

14.3. Transport hazard class(es): Not restricted

14.4. Packing group: Not restricted

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

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14.6. Special precautions for user

refer to chapter 6-8

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not relevant

SECTION 15: Regulatory information

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

EU regulatory information

2010/75/EU (VOC):	0 % (estimated)
2004/42/EC (VOC):	0 g/L (estimated)
Information according to 2012/18/EU (SEVESO III):	Not subject to 2012/18/EU (SEVESO III)

Additional information

This substance is classified as not hazardous according to regulation (EC) No. 1272/2008 [CLP].
REACH 1907/2006 Appendix XVII: not relevant

National regulatory information

Water contaminating class (D): - - not water contaminating

15.2. Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Changes

Rev. 1.0; Initial release 01.02.2016

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
CAS Chemical Abstracts Service
DNEL: Derived No Effect Level
IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
LOAEL: Lowest observed adverse effect level
LOAEC: Lowest observed adverse effect concentration
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NOAEL: No observed adverse effect level
NOAEC: No observed adverse effect level
NTP: National Toxicology Program
N/A: not applicable
OSHA: Concerning the International Transport of Dangerous Goods by Rail
PNEC: predicted no effect concentration
PBT: Persistent bioaccumulative toxic
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
SARA: Superfund Amendments and Reauthorization Act



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SVHC: substance of very high concern
TRGS Technische Regeln für Gefahrstoffe
TSCA: Toxic Substances Control Act
VOC: Volatile Organic Compounds
VwVwS: Verwaltungsvorschrift wassergefährdender Stoffe
WGK: Wassergefährdungsklasse

Further Information

Classification according EC regulation 1272/2008 (CLP): - Classification procedure:
Health hazards: Calculation method.
Environmental hazards: Calculation method.
Physical hazards: On basis of test data. and / or calculated and / or estimated.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

Identified uses

No	Short title	SU main	SU	PC	PROC	ERC	AC	Specification
1	Additives, additives and binders for concrete, mortar and chemistry products for building industries, soil stabilization and immobilization and other construction products.	-	-	-	2, 3, 5, 7, 8a, 8b, 9, 10, 11, 13, 19, 22, 26	5, 11a	-	

SU main: Main user groups

PC: Product categories

ERC: Environmental release categories

SU: Sectors of use

PROC: Process categories

AC: Article categories