Pulverised Fuel Ash

Safety Data Sheet

Version 02
Issued August 2017

It is important that you, or any persons working for you or to whom you have supplied ash products, become familiar with the information given on all pages of this datasheet before handling, using or disposing of the product(s).

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

1.1. Product identifier

Breedon Cement Products:
Substance/preparation:
Fly Ash (also known as Pulverized-fuel ash (P-fa) in the UK).
Furnace Bottom Ash (FBA).

1.2. Details of the supplier of the safety data sheet

Breedon Cement Limited (Breedon Group)
Breedon Quarry,
Breedon on the Hill,
Derby,
DE73 8AP

Telephone: 01332 694 001
Email: cement@breedongroup.com
Web: www.breedongroup.com

1.3. Emergency telephone number

Telephone: 01433 622 201

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Fly Ash:

Fly Ash is a fine grey powder with virtually no odour.

Furnace Bottom Ash:

Furnace Bottom Ash is a semi vitrified granular material ranging in colour from dark grey to black with virtually no odour. It may contain small quantities of Chromium (VI). When damp, both fly ash and furnace bottom ash become moderately alkaline. These materials are not considered to be hazardous to health but should be handled in accordance with good occupational hygiene and safety practices.

SECTION 3: Composition/information on ingredients

3.1. Extensive testing has shown that PFA and FBA are non-toxic and environmentally benign.

Exposure to airborne dust may cause irritation to the eyes and respiratory system.

3.2. Chromium (VI) may cause allergic contact dermatitis.

SECTION 4: First aid measures

Wet concrete, mortar & screed:

4.1 Eye contact:

If the substance has entered the eyes then irrigate with emergency eye wash solution (if available) or clean water for up to 15 minutes. Obtain medical advice if any pain or redness persists.

4.2 Skin contact:

Immediately wash with copious amounts of clean water. Clothing contaminated by wet cement, concrete or mortar should be removed and washed thoroughly before use.

4.3 Ingestion:

There are no known adverse effects. Wash mouth out with water and give water to drink. Do not induce vomiting. If symptoms persist, seek medical advice.

4.4 Inhalation:

If inhalation of the dust causes irritation of the nose or coughing remove the patient into fresh air. Keep warm and at rest. Carefully remove any excess dust from nasal passages and rinse mouth with water until clear. If symptoms persist obtain medical advice.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Common cements are not flammable.

5.2. Special hazards arising from the substance or mixture

Cements are non-combustible and non-explosive and will not facilitate or sustain the combustion of other materials.

5.3. Advice for fire-fighters

Cement poses no fire-related hazards. No need for special protective equipment for fire-fighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures (See section 8)

6.2. Cleaning Up: Large spills of dry material should be removed by a vacuum system. Conditioned (dampened) material should be removed by mechanical means where possible and be recycled or disposed of in a licensed site. The potential for dust blow can be reduced by applying a fine water spray.

6.3. Environmental Measures: Prevent from entering drains, sewers or water courses.

SECTION 7: Handling and storage

7.1 Storage:

In dry form, keep in containers or silos or in sealed bags. When stored in stockpiles keep exposed surfaces damp and cover small stock piles with protective sheeting.

7.2. Handling:

Avoid prolonged skin contact especially where the product is dampened.

SECTION 8: Exposure controls/personal protection

8.1. Workplace Exposure Limits:

Workplace Exposure Limits (WEL's) of 10mg/m3 total inhalable dust and 4mg/m3 respirable dust (8 hour TWA) are listed in EH40 for fly ash.

8.2. Engineering Measures: Where dust is generated then engineering control measures should be considered (water sprays) to maintain the airborne dust concentration as low as is reasonably expected.

8.3. Personal Protective Equipment:

a) 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.
b) Hand and Skin Protection: Avoid skin contact by wearing protective clothing, for example waterproof gloves, overalls and boots. Change heavily contaminated clothing as soon as possible and launder before re-use.
c) Eye Protection: Dust-proof goggles (HSE approved standard) should be worn whenever there is a risk of airborne dust.

SECTION 9: Physical and chemical properties

Fly Ash and FBA are composed of inorganic material with a small proportion of carbon particulate resulting from the incomplete combustion of the parent fuel. FBA is extracted from the combustion chamber by a hydraulic process. Fly Ash is extracted from the flue gases discharged from the combustion processes by electrostatic and mechanical extraction.

Physical state	Particulate	Component	Average % by weight
Particle density *(specific gravity)*	1.8 to 2.4	SiO_2	45 to 51%
Solubility in water	Less than 2%	$A1_2O_3$	27 to 32%
Bulk density	1.2 to 1.7g/cm	Fe_2O_3	7 to 11%
Alkalinity-pH	9 to 12 when damp	CaO	1 to 5%
Boiling point / Boiling range	N/A	MgO	1 to 4%
Melting point / Melting range	N/A	K_2O	1 to 5%
Flash point	N/A	Na_2O	0.8 to 1.7%
Flammability & Auto flammability	N/A	TiO_2	0.8 to 1.1%
Oxidising properties	N/A	SO_2*	0.3 to 1.3%
Vapour pressure	N/A	Cl	0.05 to 0.15%

*Water soluble.
The figures for SiO_2 do not refer to free silicon but to silicon present as silicates of varying compositions.

SECTION 10: Stability and reactivity

Conditions contributing to chemical instability: None.
Hazardous decomposition products: None.
Special precautions: None

SECTION 11: Toxicological information

Extensive testing has shown that fly ash and FBA are non-toxic and environmentally benign.
Contains chromium (VI) which may cause allergic reaction.

SECTION 12: Ecological information

There are no known Eco Toxic effects in the existing patterns of production, handling, storage and use.

SECTION 13: Disposal considerations

Not hazardous and are classed as 'Controlled Wastes' in the UK which have no special requirements for their disposal at appropriately licensed facilities.

SECTION 14: Transport information

Not hazardous. Classification for conveyance – not required.

SECTION 15: Regulatory information

15.1. Chemicals (Hazard Information and Packaging for Supply) Regulations.
Classification: Not classified as dangerous for supply in the UK.

15.2. Risk/safety phrases: Risk Phrases:

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

SECTION 16: Other information

- Health & Safety at Work, etc. Act 1974
- 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)

Prepared in accordance with UK REACH Competent Authority Information Leaflet 13 - REACH and SDS - May 2008.

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 Fly Ash and Furnace Bottom Ash supplied by subsidiary or affiliate companies of Breedon 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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