



Fly Ash

Safety Information Sheet

Invicta's Fly Ash is produced for the ready-mixed concrete and concrete product industries. Fly Ash is used in concrete, mortar and grout as part of the cement to improve fresh and hardened properties.

Fly Ash is produced from the burning of pulverised coal to generate electricity, and is also known as *Pulverised-Fuel Ash*, PFA or pfa.

Fly Ash is not a hazardous material and so there is no requirement to provide a Safety Data Sheet. Notwithstanding its non-hazardous nature this information sheet contains information pertaining to the safe handling, storage, processing, transport, use and disposal of Fly Ash.

European Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures came into force on 20 January 2009 in all European Union (EU) Member States, including the UK. It is known by its abbreviated form, 'the CLP Regulation' or just plain 'CLP'. The EU CLP Regulation adopts the United Nations' Globally Harmonized System of the classification and labelling of chemicals (GHS) across all EU countries. This included the UK when a EU Member State. As GHS is a voluntary agreement rather than a law, it must be adopted through a suitable national or regional legal mechanism to ensure it becomes legally binding. That's what the EU CLP Regulation does, and the EU CLP Regulation as amended is retained in GB law and is identified as GB CLP.

1. Identification of the substance and of the company	
1.1 Product identifier	
General	Fly ash in accordance with BS EN 450-1. The term 'fly ash', 'pulverised-fuel ash', 'PFA', and 'pfa' are synonymous. It is the fine material recovered from the flue gas emitted during the burning of pulverised coal in furnaces used for the generation of electricity at power stations.
Substance definition Joint registration	Ashes (residual), coal
EC No.	JS_Ashes (residual), coal
Reach registration No.	931-322-8 UK-01-9520049405-2-0011
1.2 Relevant Identified uses of the substance and uses advised against	
General uses	Used in concrete, mortar and grout as part of the cement to improve fresh and hardened properties.

1.3 Details of the supplier of the safety information sheet	
Supplier	Invicta
Address Telephone	Invicta Terminal, Great Basin Road, Port of Sheerness, ME12 1RS 01795 418630
email	anna.ozyurek@invictasolutions.co.uk info@invictasolutions.co.uk
1.3 Emergency telephone number	
Emergency telephone	01795 418630
2 Hazards identification	
2.1 Classification of the substance	
Not hazardous	Fly ash is not considered hazardous according to the Regulation (EC) 1272/2008 criteria.
2.2. Label elements	
No hazard label	Fly ash does not need to be labelled according to Directive EC 67/548/EEC criteria and Regulation (EC) 1272/2008 criteria.
2.3. Other hazards	
Fine powder	In itself no hazards but as the material is often used in combination with cement as a constituent of concrete, mortar or grout then awareness of the hazards associated with these other materials is advised.
3 Composition/information on ingredients	
3. 1 Substances	
Fly ash	Fly ash is identified as a UVCB, where UVCB stands for 'unknown or variable composition, complex reaction products or of biological materials'. Fly ash is a fine powder of mainly spherical, glassy particles, derived from the burning of pulverised coal in furnaces where the heat is used to generate electricity. The composition is reported in terms of oxide analysis. For fly ash in accordance with EN 450-1 the sum of silicon dioxide, SiO ₂ , aluminium oxide, Al ₂ O ₃ , and iron oxide, Fe ₂ O ₃ , shall not be less than 70% by mass
4 First aid measures	
4.1 Description of first aid measures	
Inhalation	Provide fresh air and rest. Where there is persistent throat

	irritation or coughing then medical attention should be sought.
Skin contact	Remove contaminated clothing and wash the skin thoroughly with water.
Eye contact	Do not rub the eye. Rinse immediately with plenty of water for up to 15minutes. Remove any contact lenses and open eyes fully. Where irritation persists then medical attention should be sought.
Ingestion	Rinse mouth and then drink plenty of water. Keep the person under surveillance. Where uncomfortable then medical attention should be sought
4.2 Most important symptoms and effects, both acute and delayed	
Acute symptoms and effects	May cause irritation to skin, eyes, respiratory tract and mucous membranes.
4.3 Indication of any immediate medical attention and special treatment needed	
Other Information	None known
5 Firefighting measures	
5.1 Extinguishing media	
Suitable extinguishing media	Fly ash is incombustible. Use water or foam for extinguishing surrounding fires. Do not use high pressure gases as this will create airborne dust.
5.2 Special hazards arising from the substance or mixture	
Fire and explosion hazards	No special precautions
5.3 Advice for firefighters	
Personal protective equipment	Precautions as used to avoid the inhalation of smoke will apply to fly ash. Fly ash is a fine powder and therefore avoid agitation. Avoid agitating the powder or damp it down with water to prevent it becoming airborne.
6 Accidental release measures	
6.1 Personal precautions, protective equipment and emergency procedures	
Accidental spills	Fly ash is a fine powder and therefore avoid agitation or creating airborne dust. Clean up by vacuum or lightly spray with water and sweep it up.
6.2 Environmental precautions	

Water and air	Do not wash powder into any drain or waterway. Do not blow powder into the atmosphere.
6.3 Methods and material for containment and cleaning up	
Clean-up	Clean up by vacuum or lightly spray with water and sweep it up.
6.4 Reference to other sections	
Other sections	Section 8 and 13
7 Handling and storage	
7.1 Precautions for safe handling	
Personnel	Wear suitable protective clothing including gloves, eye protection and masks. Do not eat or drink in fly ash storage or working areas. Avoid prolonged contact with skin and wash any ash from skin as soon as practicable.
7.2 Conditions for safe storage, including any incompatibilities	
Safe storage	Do not leave store access doors open such that fly ash could escape if unintentionally disturbed.
7.3 Specific end use(s)	
Cement	As stated in 1.2 fly ash is often used with cement to make concrete. As the pH of fresh concrete, mortar, grout and wet cement is above 12 there are hazards and the Safety Data Sheets for these materials should be referred to.
8 Exposure controls/personal protection	
8.1 Control parameters	
Inhalable dust Respirable dust	The HSE WEL Long-term exposure limit is 10 mg/m ³ (8-hr TWA reference period) The HSE WEL Long-term exposure limit is 4 mg/m ³ (8-hr TWA reference period)
8.2 Exposure controls	
Operational measures	For plant operating within the store then air-conditioned dust free cab should be provided. When personnel are potentially exposed to dust then appropriate respiratory protection is to be used.
Respiratory protection	Short term work: Use respiratory equipment with particle filter, type P2/P3.

	Prolonged work: Use respiratory equipment with particle filter, type P2/P3. Optionally, use a respirator turbo unit. At the risk of oxygen deficiency (closed systems, e.g. silo): Use fresh air supplied respirators.
Hand protection	Use gloves.
Eye protection	Use safety glasses or face mask.
Skin protection	Appropriate clothing and footwear.
Hygiene / Environmental	Remove contaminated clothing and wash skin thoroughly with soap and water after work. Wash hands after use.
9 Physical and chemical properties	
9.1 Information on basic physical and chemical properties	
Physical	Fine powder.
Colour	Light to dark grey.
Odour	Trace of ammonia.
Particle density	BS EN 1097-6 Nominal 2300 Kg/m ₃ .
Bulk density	BS EN 1097-3 Nominal 1000 Kg/m ₃ , 700 Kg/m ₃ to 1400 Kg/m ₃ .
9.2 Other information	
pH	Nominal 11 in 1:10 solution at 20°C.
10 Stability and reactivity	
10.1 Reactivity	Unreactive.
10.2 Chemical stability	Stable.
10.3 Possibility of hazardous reactions	No hazardous reactions.
10.4 Conditions to avoid	None.
10.5 Incompatible materials	None.

10.6 Hazardous decomposition products	None.
11 Toxicological information	
11.1 Information on toxicological effects	
Potential health effects Acute toxicity: Oral, inhalation, dermal Corrosivity Sensitisation Repeated dose toxicity Mutagenicity Carcinogenicity Toxicity to reproduction	Fly ash is not classified as hazardous. No acute toxicity. Not corrosive. Not sensitising. No repeated toxicity. Not a mutagen. No carcinogenetic effects are known. No reproduction toxicity.
12 Ecological information	
12.1 Toxicity	Fly ash is not classified as hazardous, has no aquatic toxicity and has no toxicity in sewage treatment plants.
12.2 Persistence and degradability	Not applicable: inorganic substance. No photo or chemical degradation, or biodegradation is expected.
12.3 Bioaccumulative potential	Not applicable: inorganic substance where on significant bioaccumulation is expected.
12.4 Mobility in soil	Moderately mobile in soil. Adsorption to soil particles is possible but leaching of main compounds, SiO ₂ , Al ₂ O ₃ , is not expected.
12.5 Results of PBT and vPvB assessment	No persistent, bioaccumulative, toxic, PBT, properties. No very persistent, very bioaccumulative, vPvB, properties.
12.6 Other adverse effects	No other adverse effects are known. From the CLP system the substance is not labelled as dangerous for the environment. On the basis of existing data about the elimination, degradation and bioaccumulation potential longer-term damage to the environment is unlikely.
13 Disposal considerations	
13.1 Waste treatment methods	Disposal of fly ash are under national regulations for non hazardous waste where further special treatment methods are necessary. Waste codes / waste designation according to • EWC: 10 WASTES FROM THERMAL PROCESSES • 10 01 wastes from power stations and other combustion

	plants(except 19) 10 01 02 coal fly ash
14 Transport information	
14.1 UN number	Not relevant.
14.2 UN proper shipping name	Not relevant.
14.3 Transport hazard class(es)	Not relevant.
14.4 Packing group	Not relevant.
14.5 Environmental hazards	Not relevant.
14.6 Special precautions for user	Not relevant.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not relevant.
15 Regulatory information	
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	No additional regulatory requirements.
15.2 Chemical safety assessment	No additional regulatory requirements.
16 Other information	
The Information in this safety information sheet is based on current knowledge. The information is intended to give sound guidance about the safe handling of Fly Ash for storage, processing, transport and disposal. The guidance should not be applied to other products. In the case of mixing the Fly Ash with other materials or in the case of processing, the information on this safety data sheet is not necessarily valid for the new material. Fly Ash is most frequently used with cement and aggregates to make concrete, mortar or grout. As the pH of fresh concrete, mortar, grout and wet cement is above 12 there are hazards associated with these materials where the appropriate Safety Data Sheet should be referred to. Invicta supplies this product on the understanding it will be used in the manner and for the	

purpose intended.

Standards and Regulations

BS EN 450-1:2012 Fly ash for concrete - Part 1: Definition, specifications and conformity criteria

BS EN 1097-3:1998 Tests for mechanical and physical properties of aggregates - Determination of loose bulk density and voids

BS EN 1097-6:2022 Tests for mechanical and physical properties of aggregates - Determination of particle density and water absorption

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance).

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances.