SAFETY INFORMATION SHEET

Bottom Ash

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Product identifier

Substance name:
Ashes (residues), coal

Trade name:
Furnace bottom ash

Composition:
Main components: glassy/amorphous material, mullite

EC No:
931-322-8

REACH No (general part):
01-2119491179-27-xxxx
N.B.: Full registration numbers of individual producers are available on request

CAS No
Not available yet

1.2 Relevant identified uses of the substance and uses advised against

Use of the substance:

Mineral raw material and construction material in bound and unbound applications, like lightweight aggregate in concrete, lightweight construction material in civil engineering and mineral fibres.

1.2.1 Relevant identified uses

The product is intended for industrial use.
The product is intended for professional use.
The product is intended for private use.
The product is intended for research, analysis and scientific education.

1.2.2 Uses advised against:

None.

1.3 Details of the supplier of the safety information sheet

Supplier:
Vliegasunie B.V. (Distributor)

VLIEGASUNIE BV
P.O. Box 265
4100 AG Culemborg
The Netherlands
Phone: +31 345 509988
Fax : +31 345 509980
www.vliegasunie.nl

Information contact:

Vliegasunie B.V.
P.O. Box 265
4100 AG Culemborg
The Netherlands

Phone (only available during office hours): +31 (0) 345 50 99 88
Fax: +31 (0) 345 50 99 80
E-Mail (competent person): info@vliegasunie.nl

1.4 Emergency Telephone Number

European Emergency Call: 112

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

This substance is not classified as hazardous according to Regulation (EC) No 1272/2008 [CLP]

2.1.2 Classification according to Directive 67/548/EEC [Dangerous Substances]:

This substance is not classified as dangerous according to 67/548/EEC

2.2 Label elements

This substance does not need to be labelled according to Regulation (EC) No 1272/2008 [CLP]

This substance does not require Risk or Hazard statements (R- and H-phrases).

2.3 Other hazards

No special remarkable hazards.

Adverse physicochemical effects:
No special remarkable hazards.

Adverse human health effects and symptoms:
No special remarkable hazards.

Adverse environmental effects:
No special remarkable hazards.

Other adverse effects:
No special remarkable hazards.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Substance name:
Ashes (residues), coal

Composition:
Glassy/amorphous material, mullite.

Purity:
100 % (UVCB)

Synonymes:
Furnace bottom ash, FBA, E-bodemas, Korrelas, Kesselsand

Stabilisers: None.
Hazard impurities: None.
Additional information: None.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General notes
No adverse effects are expected during normal use of the substance, however if any effects do appear the following recommendations apply.

Following inhalation:
Following inhalation of large quantities of dust remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Following skin contact:
If some discomfort appears immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Following eye contact:
Immediately flush eyes with plenty of water, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Following ingestion:
Following ingestion of large quantities of dust induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Notes for the doctor:
No allergic reactions known. Mineral dust.

4.2 Most important symptoms and effects, both acute and delayed

Skin and eye irritation might occur.

4.3 Indication of any immediate medical attention and special treatment needed

Not applicable.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:
Use any means suitable for extinguishing surrounding fire. The substance itself is not combustible.

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Unsuitable extinguishing media:
None.

5.2 Special hazards arising from the substance
None.

5.3 Advice for fire-fighters
Product itself does not burn.
Co-ordinate fire-fighting measures to the fire surroundings.

Special protective equipment for fire-fighters:
None.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
For non-emergency personnel and for emergency personnel:
Ventilate area of leak or spill. Wear appropriate personal protective equipment.
Avoid generation of dust, especially airborne dust.

6.2 Environmental precautions:
No special environmental measures are necessary.

6.3 Methods and material for containment and cleaning up
For containment
All containment for dry substances suitable

For cleaning up
Vacuum cleaning may be used. Avoid dust dispersion.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

General measures:
Avoid dust dispersion.
Avoid inhalation of dust/particles.
Avoid eye contact.
Avoid prolonged skin contact.

Personal Protective Equipment (PPE)
In case dust exposure is inevitable (as a result of higher level control measures), it is recommended to use PPE (see 8.2.2).

Measures to prevent fire
Product itself does not burn.
No special fire protection measures are necessary.

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Measures to prevent aerosol and dust generation:
If technically possible use local exhaust ventilation.

Measures required to protect the environment:
No special provisions if the product is used appropriately

Advice on general occupational hygiene:
Do not eat, drink and smoke in work areas
Wash hands after use
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:
Packaging materials: Keep/store only in original container.

Requirements for storage rooms and vessels:
None.

Storage class:
Non-combustible solids.

Further information on storage conditions:
Storage according to BREF "Emissions from Storage"
http://eippcb.jrc.es/reference/

8. EXPOSURE CONTROLS / PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.1 Control parameters

8.1.1 Occupational exposure limits:

No public limit values for ashes applicable in The Netherlands.
No public limit values for respirable/inhalable nuisance dust applicable in The Netherlands.

In the UK a limit value of 10 mg/m^3 for inhalable nuisance dust is applicable.

In EU countries limit values of 10 mg/m^3 for inhalable nuisance dust are applicable.
In EU countries limit values of 3 – 6 mg/m^3 for respirable nuisance dust are applicable.

See 8.1.4 for recommended exposure limits

8.1.2 Monitoring procedures
None

8.1.3 Biological limit values
None.

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8.1.4 Additional exposure limits under the conditions of use

DNEL (general population)	**Exposure pattern**	**Value (indicative)**
Oral	Acute systemic effects	> 20 mg/kg bw/day

PNEC (siliceous ashes)	**Remarks**	**Value (indicative)**
Aquatic	Not acutely toxic to fish, invertebrates, algae and microorganisms at the concentrations tested in the studies.	> 2 mg/l (fresh) > 0,2 mg/l (marine)
Sediment	Due to the properties of the substance a hazard to sediment organisms is assumed to be low and adverse effects to sediment organisms are not expected	No data available
Soil	Not acutely toxic to soil microorganisms at the concentrations tested in the studies.	> 71 mg/kg soil dw
Sewage Treatment Plant	Not toxic to STP microorganisms	> 100 mg/l

Recommended Exposure Limit Values (Workers) *	**Remarks**	**Limit value 8-hours ****
Inhalation	Nuisance dust, respirable	5 mg/m^3
Inhalation	Nuisance dust, inhalable	**10 mg/m^3**

* Available from Threshold Limit Value list (Netherlands, 2007), withdrawn in 2008
** Short term (15 min) limit value is equal to the 8 hours value multiplied by a factor of 2 (10 mg/m^3 and 20 mg/m^3 for respirable and inhalable nuisance dust respectively)

Note: it is always recommended to use national exposure limit values when available (see 8.1.1).

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Closed cycles	Care for dedusting installations and chimney filters
Semi-closed and open cycles	Care for sufficient local exhaust ventilation or wetting the ashes

8.2.2 Personal Protective Equipment (PPE)

Eye / face protection	Safety goggles if potential for contact is existing
Skin (hand) protection:	Gloves if potential for contact is given; further measures for body protection are usually not necessary
Respiratory protection	No special protective equipment required If dust occurs constantly – use respiratory dust mask (P1)

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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Solid. Coarse particles
Colour:	Greyish black
Odour:	Neutral
pH (20 °C):	in delivery state: not applicable in aqueous solution: ca. 9 (range 8 - 11)
Melting point/freezing point:	1250°C
Boiling point:	Not applicable
Flash point:	Not applicable
Flammability:	Not applicable
Upper/lower flammability or explosive limits:	Not applicable
Vapour pressure:	Not applicable
Density	1,4 - 1,7 g/cm^3
Bulk density:	ca 790±100 kg/m^3
Water solubility (20°C):	< 5 g/l
Part. coeff. n-Octanol/Water (log Po/w):	Not applicable (inorganic)
Auto ignition temperature:	Not applicable
Decomposition Temperature (°C):	Not applicable
Explosive properties:	Not explosive*
Oxidizing properties:	Not oxidizing

* condition for ash: LOI < 20% m/m

10. STABILITY AND REACTIVITY

10.1 Reactivity
Materials to avoid: No materials known.

10.2 Chemical stability
The substance is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions
Not applicable as material is not hazardous and no reactivity hazards are to be expected.

10.4 Conditions to avoid
None.

10.5 Incompatible materials
No incompatible materials known.

10.6 Hazardous decomposition products
Not applicable.

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11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Oral, inhalation, dermal	no acute toxicity
Irritation Skin, eye irritation	not irritating
Corrosivity	not corrosive
Sensitisation	not sensitising
Repeated dose toxicity	no repeated toxicity
Mutagenicity	not mutagen
Carcinogenicity	no carcinogenetic effects are known
Toxicity to reproduction	no reproduction toxicity

12. ECOLOGICAL INFORMATION

12.1 Toxicity

The substance is not classified as hazardous.
No aquatic toxicity.
No toxicity for sewage treatment plant microorganisms.

12.2 Persistence and degradability

Biodegradation is not expected.

Abiotic degradation (e.g. oxidation, hydrolysis, photolysis) is not expected.

12.3 Bioaccumulative potential

No indication to bioaccumulation potential (inorganic substance).

12.4 Mobility in soil

Moderately mobile in soil
Adsorption to soil particles is possible
Leaching of main compounds is not expected

12.5 Results of PBT and vPvB assessment

This substance does **not** meet the criteria for classification as PBT or vPvB.

12.6 Other adverse effects

No other adverse effects on the environment are known.

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13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product:
Waste disposal according to national regulations covering non-hazardous waste.

Waste codes according to EWC:
10 Wastes from thermal processes
10 01 Wastes from power stations and other combustion plants (except 19)

10 01 01 Bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)
10 01 15 Bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14*

The waste is to be kept separate from other types of waste until its recycling.

Non-contaminated packages may be recycled.

14. TRANSPORT INFORMATION

Transport according to national, European (EU) and international (OECD, ADR, IMDG, IATA) regulations for **non-hazardous** substances

15. REGULATORY INFORMATION

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

EU regulations:
This substance is not classified as hazardous according to Regulation (EC) No 1272/2008 [CLP]
This substance is not classified as dangerous according to 67/548/EEC [Dangerous Substances]

15.2 Chemical Safety Assessment:

For this substance a Chemical Safety Assessment has been carried out

16. OTHER INFORMATION

16.1 Changes in this version

None

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16.2 Disclaimer

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 information 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 information sheet is not necessarily valid for the new made-up material.

Furnace bottom ash is registered under REACH as "Ashes (residues), coal". The product is not classified as hazardous and therefore a safety data sheet (SDS) is legally not obligatory. This safety information sheet (SIS) was composed on a voluntary basis. The information given follows by structure and content Annex 2 of REACH-regulation (EC No 1907/2006 and amendment 453/2010) regarding the preparation of a SDS.

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