Safety Data Sheet According to Regulation (EC) No's 1907/2006, 1272/2008 and Amendments

Date of issue: 09 March. 2023

Revision No.: 7

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

1.1 Product identifier:

Product name: p-grow

Substance name: Mixed Ashes – Meat and Bone Meal Ash

EC Number: 931-597-4

CAS Number: 68131-74-8

REACH Registration Number: UK-01-2119516041-58-0010

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

Use: EU Category SU1: Agriculture, forestry and fishing - Fertilisers derived mainly from incinerated poultry litter. Classified as compound fertilisers in Groups 2C of Schedule 1: Section A of the UK Fertilisers Regulations 1991.

Uses advised against: None determined

1.3 Details of the supplier of the safety data sheet:

Supplier: Fibrophos Ltd
6 Deben Mill Business Centre
Old Maltings Approach
Woodbridge
Suffolk
IP12 1BL

Contact numbers: Telephone: +44 (0) 8450 510510

E-mail contact: jenni.low@eprl.co.uk

1.4 Emergency telephone number:

Emergency contact: Telephone: +44 (0) 7590 224308 (available 24 hours a day, 7 days a week)

E-mail: jenni.low@eprl.co.uk

SECTION 2: Hazards identification

This product is not classified as hazardous, hence classification according to Regulation (EC) No 1272/2008 and its amendments is not applicable. Safety Data Sheets, in accordance with Annex II and Article 32 of Regulation EC 1907/2006, do not have to be provided for non-hazardous products, however this information is provided as a courtesy to our customers in a similar format for ease of use.

2.1 Classification of the substance or mixture

2.1.1 Classification according to according to Regulation (EC) No 1272/2008:

Not classified.

2.2 Label elements:

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

Hazard pictograms: None.

Signal word: None.

Hazard Statement: None.

Precautionary Statements: None.

Supplemental Hazard information (EU): Not applicable.

2.3 Other hazards: None known.

2.4 Additional information:

The substance has been determined to be not classified on the basis of available information in accordance with the classification requirements under Regulation (EC) 1272/2008.

Substances of this product do not meet the criteria for vPvB and PBT according to Regulation (EC) No 1907/2006, Annex XIII.

Substances of this product have not been identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name	EC Number	CAS Number	% Composition by wt
Ashes (residues)	931-597-4	68131-74-8	100 %

The products are prepared by blending ashes produced from the incineration of meat and bone meal.

3.2 Mixtures

Not applicable.

SECTION 4: First aid measures

4.1 Description of first aid measures

Ingestion Wash mouth with water and give copious quantities to drink. Do not induce vomiting. Obtain medical advice if more than small quantities have been swallowed.

Skin contact	Remove contaminated clothing, brush off any loose particulates and wash the affected area with soap and running water.
Eye contact	Immediately wash out with eye-wash bottle containing saline solution. Obtain medical advice if symptoms persist.
Inhalation	Remove to fresh air. Irrigate nose and throat with water for 20 minutes. Obtain medical advice if symptoms persist.

4.2 Most important symptoms and effects, both acute and delayed

Ingestion	No symptoms or effects known.
Skin contact	No symptoms or effects known.
Eye contact	No symptoms or effects known.
Inhalation	No symptoms or effects known.

4.3 Indication of immediate medical attention and special treatment needed

Treatment should be based on the judgement of the doctor in response to the symptoms of the patient.

The following advice is recommended for facilities handling the substance:

First aid facilities	Safety shower, hand and eye washing facilities are recommended for the workplace.
Medical treatment	Show this safety data sheet to medical personnel. Give symptomatic treatment and supportive therapy.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Carbon dioxide, dry chemical, foam, and sand are compatible with the product.

Unsuitable extinguishing media: None Known.

5.2 Specific hazards arising from the substance or mixture

No specific hazards are anticipated with substance. The product is not flammable, explosive or oxidising and is unlikely to decompose to hazardous products if involved in a fire. Dusts may produce a physical explosion hazard, so avoid dust formation.

5.3 Advice for fire fighters

Fire fighters should wear approved self-contained breathing apparatus and full protective clothing as standard.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure full personal protection is worn (see Section 8). Keep unauthorised personnel from the spillage area. Avoid inhalation of dust.

6.2 Environmental precautions

The substance is considered not hazardous to the environment and no special precautions are needed.

6.3 Methods and material for containment and cleaning up

Carefully sweep up and place in suitable container for disposal. Wipe off residual product and then wash contaminated surfaces with water, collect washings for safe disposal. Avoid dust formation. Follow in-house standard procedures for responding to large spills.

6.4 Reference to other sections

For personal protection, see Section 8.

For disposal of waste from clean up operations, see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Utilise appropriate industrial hygiene measures, wherever possible. Avoid contact with skin and eyes, and inhalation of dust. Wear protective clothing and dust respirator as detailed in Section 8. Always wash hands after handling.
Avoid formation of dust clouds, and dispose of as detailed in section 6.3 above.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated place, away from direct sunlight.

7.3 Specific end use(s)

End uses and associated exposures are addressed in the attached annex.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.1.1 Occupational exposure limits:

Substance	Control parameter	Value	Basis
Dust	Limit value – 8 hours	10 mg/m^3 (inhalable) 4 mg/m^3 (respirable)	UK. EH40 WEL - Workplace Exposure Limits Control of Substances Hazardous to Health Regulations 2002 (as amended).

8.1.2 Biological Limit Values: None established for the product or its components.

8.1.3 PNECs and DNELs:

Derived No Effect Levels (DNELs):

No acute Derived No Effect Level (DNEL) derived due to an absence of effects.

Oral Systemic Derived No Effect Level (DNEL)(Long term): Not determined

Dermal Systemic Derived No Effect Level (DNEL)(Long term): 7 mg/kg/day

Inhalation Systemic Derived No Effect Level (DNEL)(Long term): 1.4 mg/m³

Predicted No EffectConcentrations (PNECs):

PNEC	Assessment factor	Remarks/Justification
PNEC aqua (freshwater): 0.213 mg/L	100	Extrapolation method: assessment factor Data from short-term toxicity tests from three trophic levels- lowest EC50 (EC50 = 21.3 mg/L)
PNEC aqua (marine water): 0.0213 mg/L	1000	Extrapolation method: assessment factor Data from short-term toxicity tests from three trophic levels- lowest EC50 (EC50 = 21.3 mg/L)
PNEC aqua (intermittent releases): 0.0213 mg/L	100	Extrapolation method: assessment factor Data from short-term toxicity tests from three trophic levels- lowest EC50 (EC50 = 21.3 mg/L)
PNEC sediment (freshwater): 4593 mg/kg sediment dw		Extrapolation method: partition coefficient
PNEC sediment (marine water): 459 mg/kg sediment dw		Extrapolation method: partition coefficient
PNEC STP: 1 mg/L	100	Extrapolation method: assessment factor Activated sludge growth inhibition test (EC50 > 100 mg/L)
PNECsoil		No data for estimating PNECsoil

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Utilise appropriate industrial hygiene measures, wherever possible.
Safety shower, hand and eye washing facilities are recommended for the workplace.

8.2.2 Individual protection measures, such as personal protective equipment

Wherever the substance is available for exposure the following PPE should be utilised:

Powder dust mask:	EN149 as minimum standard
Gloves:	EN374 as minimum standard
Eye protection:	EN166 as minimum standard, eye protection should be safety goggles providing side splash protection.
Protective clothing:	EN368 as minimum standard

8.3 Environmental exposure controls

The substance is not classified as hazardous to the environment. No special controls are required for the substance.
For further details see the appended exposure scenario.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Fine powder
Colour	Grey
Odour	Slight odour of residual ammonia
Melting point/freezing point	>300 °C
Boiling point	>300 °C
Flammability	Non flammable
Upper/lower explosive limits	No data
Flash point	No data available
Aut-ignition temperature	No self-ignition
Decomposition temperature	No data available
pH	Principally alkaline, up to 12.8
Kinematic viscosity	Not applicable
Solubility	Water: <1mg/l at 20 ˚C
Partition coefficient (n-octanol/water)	No data available
Vapour pressure	No data, but expected to be not volatile
Density	Approximately 1000 kg/m^3
Relative vapour densitiy	No data
Particle charactierstics	
Particle size	Mass Median Diameter: 35.873 µm Volume weighted mean:90.301 µm

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Explosives	No data available
Flammable gases	Not applicable
Aerosols	Not applicable
Oxidising gases	Not applicable
Gases under pressure	Not applicable
Flammable liquids	Not applicable
Flammable solids	No data available
Self-reactive substances and mixtures	No data available
Pyrophoric liquids	Not applicable
Pyrophoric solids	No data available
Self-heating substances and mixtures	No data available
Substances and mixtures, which emit	No data available

	flammable gases in contact with water	
	Oxidising liquids	Not applicable
	Oxidising solids	No data available
	Organic peroxides	No data available
	Corrosive to metals	No data available
	Desensitised explosives	No data available
9.2.2	**Other safety characteristics**	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
Exothermic rehydration reaction in contact with water, releases trace amounts of ammonia.

10.2 Chemical stability
Stable under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions
Alkaline in nature (a 10% aqueous extract has a pH up to 11-12.5) and may react with strong acids and can attack aluminium, lead and brass if exposed to moisture.

10.4 Conditions to Avoid
Avoid exposure to strong acids and exposure to metals (e.g. aluminium, lead and brass) in the presence of moisture.
Avoid exposure to ammonium salts such as ammonium nitrate and ammonium sulphate.

10.5 Incompatible materials
Ammonium salts such as ammonium nitrate and ammonium sulphate.

10.6 Hazardous decomposition products
Ammonia.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity	Not classified for acute toxicity.
Oral :	>2000 mg/kg (based on 28-day oral toxicity data)
Dermal:	No data
Inhalation:	No data
Skin corrosion/irritation:	Not classified. Determined not to be irritating to skin in an in vitro skin irritation: Reconstructed Human Epidermis Model Test (OECD 439).
Serious eye damage/ irritation:	Not classified.

	No data available.
Respiratory or skin sensitisation:	Not classified. Non-sensitising (based on expert assessment of metal content analysis)
Mutagenicity:	Not classified.
In vitro Ames test (OECD Method 471; Salmonella typhimurium, Escherichia coli)	Non-mutagenic
In vitro chromosome aberration (OECD Method 473; human lymphocytes)	Non-clastogenic
In vitro mouse lymphoma assay (OECD Method 476; L5178Y cells)	Not mutagenic
In vivo mutagenicity	No data available
Carcinogenicity:	Not classified. No data available. Anticipated to represent no hazard based on mutagenicity and experience of use.
Reproductive toxicity:	Not classified. No data available. Anticipated to represent no hazard based on mutagenicity and repeated dose non human toxicity data.
STOT-single exposure:	Not classified. No specific data available. Considered likely to cause a hazard of respiratory irritation based on known irritation/ corrosivity potential and high pH.
STOT-repeated exposure:	Not classified. NOAEL (oral, 28 d, rat) 500 mg/kg/day; Not classified as Harmful. No serious toxic effects and no target organs could be defined.
Aspiration hazard:	Not classified. No hazard anticipated. Substance is not a low viscosity inorganic substance.

Information on likely routes of exposure
Oral, dermal and inhalation.

Symptoms related to the physical, chemical and toxicological characteristics

None known.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
None known.

Interactive effects None known.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties
Substances of this product have not been identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

11.2.2 Other information No other information

SECTION 12: Ecological information

12.1 Toxicity Not classfied.

Fish:	LC_{50} (96 h; fish; OECD Method 203): Inadequate data
Daphnia magna:	NOEC 3.2 mg/L based on reproduction study.
Algal growth inhibition:	EC_{50} (72 h; algae; OECD Method 201): 21.3 mg/L
Activated sludge Respiration Inhibition:	NOEC (3 h): 100 mg/L test material (nominal)

12.2 Persistence and degradability
As the registered substance is an inorganic mixed ash with various trace metal oxides it was not technically possible, or necessary to perform testing on persistence.

Hydrolysis	Not determined due to physical nature. No mode of hydrolysis for inorganic substance.
Biodegradation	Not determined due to physical nature. No mode of biodegradation for an inorganic substance.

12.3 Bioaccumulative potential
LogBCF ≤ 107. Mixed ashes are considered to be not bio-accumulative.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
Ash does not fulfill the criteria of PBT or vPvB and therefore does not require classification as PBT compound.

Criterion	Method	Result of the test	Ash
P	Not applicable	Not biodegradable	P
B	BCFs from literature	LogBCF ≤ 107	Not B

T	Daphnia magna reproduction test (OECD No 211)	NOEC 3.2 mg/l	Not T

12.6 Endocrine disrupting properties

Substances of this product have not been identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

12.7 Other adverse effects

None known at the time of issuance

SECTION 13: Disposal considerations

13.1 Waste treatment methods

13.1.1 Residual wastes

Collect dry. Shovel into bags and dispose of in accordance with the national/regional/local regulations.

13.1.2 Contaminated containers and packaging

Completely remove any residual product from the packaging or containers before disposal/recycling in accordance with the national/regional/local regulations.

13.2 Other information: Avoid contamination of drains or watercourses.

SECTION 14: Transport information

Not classified as hazardous for transport.

14.1 ***UN number:*** Not applicable

14.2 ***UN proper shipping name:*** Not applicable

14.3 ***Transport hazard class****:* Not applicable

14.4 ***Packing group:*** Not applicable

14.5 ***Environmental Hazards:*** Not applicable

14.6 ***Special Precautions for user:*** Not applicable

14.7 ***Transport in bulk according to IMO instruments*** Not applicable

SECTION 15: Regulatory information

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

EU regulations

Regulation of the European Parliament and Council Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): Compliant

Regulation of the European Parliament and Council Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP) and its adaptations: Compliant

International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors: Neither banned nor restricted

Restrictions on the marketing and use of certain dangerous substances and preparations: Neither banned nor restricted

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Neither banned nor restricted

Candidate List of Substances of Very High Concern for Authorisation: Neither banned nor restricted

REACH - List of substances subject to Authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants: Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances: Not applicable

UK regulations

The Control of Substances Hazardous to Health Regulations 2002 (as amended). : Compliant

EH40/2005 Workplace exposure limits. Containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations (as amended). Health and Safety Executive, Second edition, published 2011.

Control of Asbestos Regulations 2012 (SI 2012/632).

The Control of Lead at Work Regulations 2002 (CLAW).

The Control of Major Accident Hazards (COMAH) Regulations.

The Dangerous Substances and Explosive Atmospheres Regulations (DSEARs) 2002 (SI 2002/2776).

15.2 Chemical Safety Assessment

A full Chemical safety Assessment and Chemical Safety Report has been conducted on this substance by the Ash Consortium. Suitable exposure scenarios, relevent to the recommended use(s) are appended to this Safety Data Sheet. The Chemical Safety Report is an industry standard document and uses full industry details that are not specific to Fibrophos Limited. Any appendices from the Chemical Safety Report are not attached to this Safety Data Sheet. Please contact the supplier should any additional information from the Chemical Safety Report be required.

SECTION 16: Other information

Full text of H-statements referred to under Sections 2 and 3:
Not applicable.

Latest revisions:

5. Update to SDS format, particularly Section 2.

Date of revision: 25 April 2019

6. Updates for the requirements of Commission Regulation (EU) 2020/878

Date of revision: 04 April 2022

7. Updated to change the EU REACH Registration number 01-2119516041-58-0010 to the UK REACH Registration number.

Date of revision: 09 March 2023

Methods of evaluation:

Classification and labeling has been determined according to EU Regulation No 1272/2008 (including amendments) and take into account the intended product use.

References

Proprietary test data, including data available from the Ash Consortium lead registration dossier.

EU Directive 1907/2006 (REACH).

EU Directives 67/548/EEC (including amendments)

Regulation (EC) No 1272/2008 (including amendments)

Annex VI of Regulation 1272/2008 on *Harmonised Classification and Labeling for Certain Hazardous Substances*.

Personal protective equipment (PPE): 89/686/EEC.

European occupational exposure limits: 2000/39/EC.

Protection of health and safety of workers: 98/24/EC.

RTECS (Registry of Toxic Effects of Chemical Substances), 2004.

ECHA Guidance on the compilation of safety data sheets. Version 4.0. November 2020.

Abbreviations

BCF: Bioconcentration Factor.

DNEL: Derived No Effect Level

EC50: half maximal effective concentration

LD50: lethal dose, 50%

NOEC, No Observed Effect Concentration

PBT: Persistent, bioaccumulative and toxic

PNEC: Predicted No Effect Concentration.

PPE: Personal protective equipement.

STOT: Specific target organ toxicity

STP: Sewage treatment plant.

vPvB: Very persistent and very bioaccumulative.

Other information:

The information contained herein is carefully presented, based on the data available. However, all precautions described herein are for normal handling, not for special handling. Please establish the safe usage in accordance with your handling procedures by reference to this SDS and applicable laws and guidance. In addition, the description, composition, and physical/chemical properties are typical values and not guaranteed for this product.

Appendix 1: Relevant Exposure Scenarios taken from the Chemical Safety Report for this substance

9.1. Production of Ash

Ash is by-product from gasification and combustion of carbonaceous materials, like biomass, biofuels, peat and sludge with coal, solid recovered fuel (SRF) and supplementary fuels as needed. The following elements may be present as oxides: aluminium, calcium, iron, magnesium, phosphorous, potassium, sodium and silicon. The combustion technologies could be grid firing, fluidized bed (bubbling or circulated) firing or pulverized firing. The burning temperature is typically above 800◦C.

This use covers production in closed process with or without a dedicated sampling point. Ash is transferred as bulk material in open or closed systems.

The production itself occurs in a closed system. Typically, ash is collected and transferred in closed or partially closed systems with or without a dedicated sampling point. Ash is stored indoors or outdoors typically e.g. in silos or as open bulk material. Contact with ash is occasional and mainly in maintenance. Minor amounts of ash may end up directly or indirectly to waterways via drainage.

9.1.1. Exposure scenario

Section 1	**Exposure Scenario Title**
Title	**Production of Ash**
Use Descriptor	Sector of Use: Industrial (SU6b, SU8, SU23)
	Process Categories: PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15, PROC19
	Environmental Release Categories: ERC 1
Processes, tasks, activities covered	Burning of combination of carbonaceous materials in closed process with or without sampling, bulk transfers, maintenance, associated laboratory activities and storage.
Section 2	**Operational conditions and risk management measures**
Section 2.1	**Control of worker exposure**
Product characteristics	
Physical form of product	Solid, not explosive or flammable, particle size distribution 0.2 - 2000 µm. Irritates skin and eyes.
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13]
Amounts used	*Not applicable*
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	*Not applicable*

Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently) [G17]
	Assumes a good basic standard of occupational hygiene is implemented [G1]
	Solid, high dustiness [OC6]
Contributing Scenarios	**Risk Management Measures**
General exposures (closed systems) [CS15]. Boiler	Handle substance within a closed system [E47]. Operation is carried out at elevated temperature (> 20°C above ambient temperature) [OC7].
General exposures (closed systems) [CS15]. Temporary storage silo	Handle substance within a closed system [E47]. Ensure material transfers are under containment or extract ventilation [E66]. Operation is carried out at elevated temperature (> 20°C above ambient temperature) [OC7].
Process sampling [CS2] Non-dedicated facility [CS81]	Wear suitable gloves (tested to EN374) and eye protection [PPE19]. Avoid carrying out operation for more than 1 hour [OC11]. If this time is exceeded or dust is formed, wear a respirator conforming to EN140 with Type P1 filter or better. Outdoor [OC9].
Process sampling [CS2] Dedicated facility [CS82]	Wear suitable gloves (tested to EN374) and eye protection [PPE19]. Avoid carrying out operation for more than 1 hour [OC11]. If this time is exceeded or dust is formed, wear a respirator conforming to EN140 with Type P1 filter or better.
Laboratory activities [CS36].	Handle in a fume cupboard or under extract ventilation [E83]. Wear suitable gloves tested to EN374 [PPE15].
Bulk transfers [CS14] Use in contained systems [CS38].	Transfer via enclosed lines [E52].
Bulk transfers [CS14] (open systems) [CS108]	Wear suitable gloves tested to EN374 [PPE15]. Avoid carrying out operation for more than 1 hour [OC11]. If this time is exceeded or dust is formed, wear a respirator conforming to EN140 with Type P1 filter or better.
Equipment cleaning and maintenance [CS39] Cleaning of solids filtering equipment [CS120]	Wear suitable gloves (tested to EN374), coverall and eye protection [PPE23]. Wear a respirator conforming to EN140 with Type **P1** filter or better.
Mixing operations (open systems) [CS30]	Wear suitable gloves (tested to EN374) and eye protection [PPE19]. Avoid carrying out operation for more than 1 hour [OC11]. If above technical/organisational control measures are not feasible, then adopt following PPE [PPE30]: Wear a respirator conforming to EN140 with Type **P1** filter or better.

Bulk product storage [CS85] (closed systems) [CS107]	Store substance within a closed system [E84].
Bulk product storage [CS85] (open systems) [CS108]	Wear suitable gloves tested to EN374 [PPE15].
Section 2.2	**Control of environmental exposure**
Assessment method	EUSES
Product characteristics	Ash is composed of minerals, oxides and soluble salts of metals. Water solubility of ash is negligible but the constituents of Ash may become water soluble in a long run under changing environmental conditions. Hazardous to aquatic environment.
Amounts used	EU production: 34100 ktonnes per year
	Regional production: 34100 ktonnes per year
	Site production: 300 ktonnes per year
Frequency and duration of use	Emission days per year: 300
Environmental factors not influenced by risk management	Local freshwater dilution fraction: 10
	Local marine dilution fraction: 100
Other Operational Conditions of use affecting environmental exposure	Release fraction to air from process: 1.0E10-5
	Release fraction to (waste)water from process: 3.0E10-3
	Release fraction to soil from process (regional): 0.0001 (ERC)
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Air emission controls to be added.
Organisation measures to prevent/limit release from site	Dispose of waste in accordance with environmental legislation.
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	Not applicable
Conditions and measures related to external recovery of waste	Not applicable

Other environmental control measures additional to above	Do not discharge directly in waterways.
Section 3	**Exposure Estimation**
3.1. Health	*When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.1.*
3.2. Environment	*When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.*
Section 4	**Guidance to check compliance with the Exposure Scenario**
4.1. Health	*Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A.1 for details of efficiencies and OC.*
4.2. Environment	*Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 92.5% which would be typically found in waste-water treatment plant.*

9.3. Formulation and repacking of Ash

Includes uses corresponding to formulation and granulation. Material can be stored in closed containers or as bulk material indoors or outdoors. Use includes sampling, laboratory analysis and occasional intimate contact with the material, e.g. hand-mixing. Some ash can enter soil and waterways.

9.3.1. Exposure scenario

Section 1	**Exposure Scenario Title**
Title	**Formulation and repacking of Ash**
Use Descriptor	Sector of Use: Industrial and professional (SU10, SU13)
	Process Categories: PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15, PROC19
	Product Categories: PC0 (Building and construction materials), PC9b, PC12
	Environmental Release Categories: ERC 2
Processes, tasks, activities covered	Formulation and granulation of Ash and its mixtures and its mixtures in continuous or batch processes, including repacking, material transfers, storage and associated laboratory activities.
Section 2.1	**Control of worker exposure**
Product characteristics	
Physical form of product	Solid, not explosive or flammable, particle size distribution 0.2 - 2000 µm. Irritates skin and eyes.
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13]
Amounts used	*Not applicable*
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	*Not applicable*
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently) [G17]
	Assumes a good basic standard of occupational hygiene is implemented [G1]
Risk Management Measures	
Mixing operations (closed systems) [CS29] Closed batch process	Formulate in enclosed or ventilated mixing vessels [E46].
Mixing operations (open systems) [CS30] Batch process	Formulate in enclosed or ventilated mixing vessels [E46].

Mixing operations (open systems) [CS30] Open mixing process	Formulate in enclosed or ventilated mixing vessels [E46].
Mixing operations (open systems) [CS30] Hand mixing	Wear suitable gloves (tested to EN374) and eye protection [PPE19]. Avoid carrying out operation for more than 1 hour [OC11]. If this time is exceeded or dust is formed, wear a respirator conforming to EN140 with Type P1 filter or better.
Process sampling [CS2] Non-dedicated facility [CS81]	Wear suitable gloves (tested to EN374) and eye protection [PPE19]. Avoid carrying out operation for more than 1 hour [OC11]. If this time is exceeded or dust is formed, wear a respirator conforming to EN140 with Type P1 filter or better.
Process sampling [CS2] Dedicated facility [CS82]	Wear suitable gloves (tested to EN374) and eye protection [PPE19]. Avoid carrying out operation for more than 1 hour [OC11]. If this time is exceeded or dust is formed, wear a respirator conforming to EN140 with Type P1 filter or better.
Laboratory activities [CS36]	Handle in a fume cupboard or under extract ventilation [E83]. Wear suitable gloves tested to EN374 [PPE15].
Drum and small package filling [CS6] Small scale weighing [CS90]	Solid, low dustiness [OC1]: No specific measures identified [EI18]. Wear suitable gloves tested to EN374 [PPE15]. If dust is formed, wear a respirator conforming to EN140 with Type P1 filter or better.
Bulk transfers [CS14] (closed systems) [CS107] Bulk weighing [CS91]	Solid, high dustiness [OC6]: Transfer via enclosed lines [E52].
Bulk transfers [CS14] (closed systems) [CS107] Bulk weighing [CS91]	Solid, low dustiness [OC1]: Ensure material transfers are under containment or extract ventilation [E66].
Equipment cleaning and maintenance [CS39]	Wear suitable gloves (tested to EN374) and eye protection [PPE19]. Wear a respirator conforming to EN140 with Type P1filter or better [PPE29].
Storage [CS67] (closed systems) [CS107]	Store substance within a closed system [E84].
Storage [CS67] (open systems) [CS108]	Wear suitable gloves tested to EN374 [PPE15].
Section 2.2	**Control of environmental exposure**
Assessment method	EUSES
Product characteristics	Ash is composed of minerals, oxides and soluble salts of metals. Water solubility of ash is negligible but the constituents of Ash may become water soluble in a long run under changing environmental conditions. Hazardous to aquatic environment.
Amounts used blend, bitumiliuos	EU production: *10230* ktonnes per year

	Regional production: *10230* ktonnes per year
	Site production: ktonnes per year
	Fraction of main source: 0.6
Frequency and duration of use	Emission days per year: 300
Environmental factors not influenced by risk management	Local freshwater dilution fraction: 10
	Local marine dilution fraction: 100
Other Operational Conditions of use affecting environmental exposure	Release fraction to air from process: 2.5E10-3
	Release fraction to surface water from process: 1.0E10-3
	Release fraction to soil from process (regional): 0.0001 (ERC)
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Air emission controls to be added.
Organisation measures to prevent/limit release from site	Dispose of waste in accordance with environmental legislation.
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	Not applicable
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Do not discharge directly in waterways.
Section 3	**Exposure Estimation**
3.1. Health	*When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.3.*
3.2. Environment	*When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.*

Section 4	**Guidance to check compliance with the Exposure Scenario**
4.1. Health	*Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A.3 for details of efficiencies and OC.*
4.2. Environment	*Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 92.5% which would be typically found in waste-water treatment plant.*

9.2. Distribution of Ash

Loading/unloading of Ash with dedicated or non-dedicated systems. Direct short-time contact with ash is typical. Some Ash ends up to waterways and to soil.

9.2.1. Exposure scenario

Section 1	**Exposure Scenario Title**
Title	**Distribution of Ash**
Use Descriptor	Sector of Use: Industrial and professional (SU6b, SU8, SU23)
	Process Categories: PROC2, PROC4, PROC8a, PROC8b, PROC15, PROC19
	Environmental Release Categories: ERC 1
Processes, tasks, activities covered	Loading/unloading of Ash, including its distribution and storage.
Section 2	**Operational conditions and risk management measures**
Section 2.1	**Control of worker exposure**
Product characteristics	
Physical form of product	Solid, not explosive or flammable, particle size distribution 0.2 - 2000 µm. Irritates skin and eyes.
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13]
Amounts used	*Not applicable*
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	*Not applicable*
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently) [G17]
	Assumes a good basic standard of occupational hygiene is implemented [G1]
	Solid, high dustiness [OC6]
Risk Management Measures	
Process sampling [CS2] Non-dedicated facility [CS81]	Wear suitable gloves (tested to EN374) and eye protection [PPE19]. Avoid carrying out operation for more than 1 hour [OC11]. If this time is exceeded or dust is formed, wear a respirator conforming to EN140 with Type P1 filter or better. Outdoor [OC9].
Laboratory activities [CS36]	Handle in a fume cupboard or under extract ventilation [E83]. Wear suitable gloves tested to

	EN374 [PPE15].
Bulk transfers [CS14] (closed systems) [CS107]	Transfer via enclosed lines [E52].
Bulk transfers [CS14] (open systems) [CS108]	Wear suitable gloves tested to EN374 [PPE15]. Avoid carrying out operation for more than 1 hour [OC11]. If this time is exceeded or dust is formed, wear a respirator conforming to EN140 with Type P1 filter or better.
Equipment cleaning and maintenance [CS39]	Wear suitable gloves (tested to EN374) and eye protection [PPE19]. Wear a respirator conforming to EN140 with Type **P1** filter or better.
Mixing operations (open systems) [CS30]	Wear suitable gloves (tested to EN374) and eye protection [PPE19]. Avoid carrying out operation for more than 1 hour [OC11]. If above technical/organisational control measures are not feasible, then adopt following PPE [PPE30]: Wear a respirator conforming to EN140 with Type **P1** filter or better.
Storage [CS67] (closed systems) [CS107]	Store substance within a closed system [E84].
Storage [CS67] (open systems) [CS108]	Wear suitable gloves tested to EN374 [PPE15].
Section 2.2	**Control of environmental exposure**
Assessment method	EUSES
Product characteristics	Ash is composed of minerals, oxides and soluble salts of metals. Water solubility of ash is negligible but the constituents of Ash may become water soluble in a long run under changing environmental conditions. Hazardous to aquatic environment.
Amounts used	EU production: 34100 ktonnes per year
	Regional production: 34100 ktonnes per year
	Site production: 300 ktonnes per year
Frequency and duration of use	Emission days per year: 300
Environmental factors not influenced by risk management	Local freshwater dilution fraction: 10
	Local marine dilution fraction: 100
Other Operational Conditions of use affecting environmental exposure	Release fraction to air from process: 1.0E10-5
	Release fraction to (waste)water from process: 3.0E10-3
	Release fraction to soil from process (regional): 0.0001 (ERC)
Technical onsite conditions and measures to reduce or limit discharges, air emissions and	Air emission controls to be added.

releases to soil	
Organisation measures to prevent/limit release from site	Dispose of waste in accordance with environmental legislation.
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	Not applicable
Conditions and measures related to external recovery of waste	Not applicable
Other environmental control measures additional to above	Do not discharge directly in waterways.
Section 3	**Exposure Estimation**
3.1. Health	*When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.2.*
3.2. Environment	*When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.*
Section 4	**Guidance to check compliance with the Exposure Scenario**
4.1. Health	*Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A.2 for details of efficiencies and OC.*
4.2. Environment	*Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 92.5% which would be typically found in waste-water treatment plant.*

9.7. Use of Ash as fertilizer

Wide dispersive professional use of substance and its mixtures.

9.7.1. Exposure scenario

Section 1	**Exposure Scenario Title**
Title	**Use of Ash as fertilizer**
Use Descriptor	Sector of Use: Professional (SU1)
	Process Categories: PROC1, PROC8a, PROC8b, PROC11
	Product Categories: PC12
	Environmental Release Categories: ERC 8E
Processes, tasks, activities covered	Spreading of Ash as such or as formulation with a dedicated equipment including repackaging, material transfers and storage.
Section 2	**Operational conditions and risk management measures**
Section 2.1	**Control of worker exposure**
Product characteristics	
Physical form of product	Solid, not explosive or flammable, particle size distribution 0.2 - 2000 µm. Irritates skin and eyes.
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13]
Amounts used	*Not applicable*
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	*Not applicable*
Other Operational Conditions affecting worker exposure	Assumes activities are at ambient temperature (unless stated differently) [G17]
	Assumes a good basic standard of occupational hygiene is implemented [G1]
	Solid, low dustiness [OC1]
Risk Management Measures	
Bulk transfers [CS14]	No specific measures identified [EI18]. Outdoor [OC9]. If in contact with material, wear suitable gloves tested to EN374.
Spraying/fogging by machine application [CS25]	If in contact with material, wear suitable gloves tested to EN374. Outdoor [OC9].

Equipment cleaning and maintenance [CS39]	Wear suitable gloves tested to EN374 [PPE15].
Vessel / container cleaning [CS103]	Wear suitable gloves tested to EN374 [PPE15].
Storage [CS67]	Store finished products in closed containers (e.g. bulk tanks, drums, cans) [A5].
Section 2.2	**Control of environmental exposure**
Assessment method	EUSES
Product characteristics	Ash is composed of minerals, oxides and soluble salts of metals. Water solubility of ash is negligible but the constituents of Ash may become water soluble in a long run under changing environmental conditions. Hazardous to aquatic environment.
Amounts used	EU tonnage: 10230 ktonnes per year
	Regional tonnage: 10230 ktonnes per year
	Fraction of main source:
Frequency and duration of use	Intermittent release? Emission days per year:
Environmental factors not influenced by risk management	Local freshwater dilution fraction: 10
	Local marine dilution fraction: 100
Other Operational Conditions of use affecting environmental exposure	Release fraction to air from process (regional): 0.011
	Release fraction to freshwater from process: 0.05
	Release fraction to soil from process (regional): 0.01 (ERC)
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Organisation measures to prevent/limit release from site	Dispose of waste in accordance with environmental legislation.
Conditions and measures related to municipal sewage treatment plant	Not applicable
Conditions and measures related to external treatment of waste for disposal	Not applicable
Conditions and measures related to external recovery of waste	Not applicable

Other environmental control measures additional to above	Do not discharge directly in waterways.
Section 3	**Exposure Estimation**
3.1. Health	*When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.9.*
3.2. Environment	*When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.*
Section 4	**Guidance to check compliance with the Exposure Scenario**
4.1. Health	*Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A.9 for details of efficiencies and OC.*
4.2. Environment	*Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 92.5% which would be typically found in waste-water treatment plant.*

Appendix 2: Risk Characterisation

10.1. Production of Ash

10.1.1. Human health

10.1.1.1. Workers

Table 42. Substance specific RCRs

Contributing Scenarios	RCR (inhalation)	RCR (dermal)	RCR (all routes)
General exposures (closed systems) [CS15]	0.0100	0.0200	0.0300
General exposures (closed systems) [CS15]	0.0100	0.0043	0.0143
Process sampling [CS2] Non-dedicated facility [CS81]	0.7000	0.0004	0.7004
Process sampling [CS2] Dedicated facility [CS82]	0.5000	0.0196	0.5196
Laboratory activities [CS36]	0.0500	0.0043	0.0543
Bulk transfers [CS14] Use in contained systems [CS38]	0.0000	0.0986	0.0986
Bulk transfers [CS14] (open systems) [CS108]	0.0000	0.0200	0.0200
Equipment cleaning and maintenance [CS39] Cleaning of solids filtering equipment [CS120]	0.5000	0.1959	0.6959
Mixing operations (open systems) [CS30]	0.3500	0.0404	0.3904
Bulk product storage [CS85] (closed systems) [CS107]	0.0100	0.0200	0.0300
Bulk product storage [CS85] (open systems) [CS108]	0.0070	0.0020	0.0090

10.1.1.2. Consumers

Not relevant.

10.1.1.3. Indirect exposure of humans via the environment

Table 43. Indirect exposure of humans via the environment

Compartment	Daily dose (local)	DNEL	Daily dose/DNEL
Daily dose through intake of drinking water (mg/kg/d)	2.09E-03	7	2.99E-04
Daily dose through intake of fish (mg/kg/d)	1.7E-04	7	2.43E-05
Daily dose through intake of leaf crops (mg/kg/d)	0.0199	7	2.84E-03
Daily dose through intake of root crops (mg/kg/d)	8.81E-05	7	1.26E-05
Daily dose through intake of meat (mg/kg/d)	2.68E-06	7	3.83E-07
Daily dose through intake of milk (mg/kg/d)	4.99E-05	7	7.13E-06
Daily dose through intake of air (mg/kg/d)	7.6E-03	7	1.09E-03

10.1.2. Environment

10.1.2.1. Aquatic compartment (incl. sediment)

Table 44. Local PECs of aquatic compartment including sediment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Freshwater, dissolved (mg/l)	0.0795	0.213	0.3732
Marine water, dissolved (mg/l)	0.0106	0.0213	0.4977
Freshwater sediment (mg/kg wwt)	1.73E+03	4593	0.3767
Marine water sediment (mg/kg wwt)	231	459	0.5033

10.1.2.2. Terrestrial compartment

Table 45. Local PECs of terrestrial compartment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Agricultural soil (total) - 30 days (mg/kg wwt)	1.5E+03	18762	0.0799
Agricultural soil (groundwater) (mg/kg wwt)	0.017	not quantifiable	not quantifiable

10.1.2.3. Atmospheric compartment

Table 46. Local PECs of atmospheric compartment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Air (annual average) (mg/m3)	0.0266	not quantifiable	not quantifiable

10.1.2.4. Microbiological activity in sewage treatment systems

Table 47. Regional PECs of sewage treatment systems

Compartment	Regional PEC	PNEC	PEC/PNEC (RCR)
Sewage treatment plant (mg/l)		1	

10.3. Formulation and repacking of Ash

10.3.1. Human health

10.3.1.1. Workers

Table 53. Substance specific RCRs

Contributing Scenarios	RCR (inhalation)	RCR (dermal)	RCR (all routes)
Mixing operations (closed systems) [CS29]	0.0100	0.0043	0.0143
Mixing operations (open systems) [CS30]	0.0050	0.0986	0.1036
Mixing operations (open systems) [CS30]	0.0050	0.0100	0.0150
Mixing operations (open systems) [CS30]	0.0100	0.4041	0.4141
Process sampling [CS2] Non-dedicated facility [CS81]	0.0500	0.1959	0.2459
Process sampling [CS2] Dedicated facility [CS82]	0.0100	0.0980	0.1080
Laboratory activities [CS36]	0.0500	0.0043	0.0543
Drum and small package filling [CS6] Small scale weighing [CS90]	0.0010	0.0986	0.0996
Bulk transfers [CS14] (closed systems) [CS107] Bulk weighing [CS91]	0.0005	0.0986	0.0991
Bulk transfers [CS14] (closed systems) [CS107] Bulk weighing [CS91]	0.5000	0.0200	0.5200
Equipment cleaning and maintenance [CS39]	0.5000	0.1959	0.6959
Storage [CS67] (closed systems) [CS107]	0.0100	0.0200	0.0300
Storage [CS67] (open systems) [CS108]	0.0350	0.0099	0.0449

10.3.1.2. Consumers

Not relevant.

10.3.1.3. Indirect exposure of humans via the environment

Table 54. Indirect exposure of humans via the environment

Compartment	Daily dose (local)	DNEL	Daily dose/DNEL
Daily dose through intake of drinking water (mg/kg/d)	1.27E-03	7	1.81E-04
Daily dose through intake of fish (mg/kg/d)	1.03E-04	7	1.47E-05
Daily dose through intake of leaf crops (mg/kg/d)	2.24E-03	7	3.2E-04
Daily dose through intake of root crops (mg/kg/d)	8.81E-05	7	1.26E-05
Daily dose through intake of meat (mg/kg/d)	2.42E-06	7	3.46E-07
Daily dose through intake of milk (mg/kg/d)	9.82E-03	7	1.40E-03
Daily dose through intake of air (mg/kg/d)	0.185	7	0.026

10.3.2. Environment

10.3.2.1. Aquatic compartment (incl. sediment)

Table 55. Local PECs of aquatic compartment including sediment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Freshwater, dissolved (mg/l)	0.0445	0.213	0.2089
Marine water, dissolved (mg/l)	7.11E-03	0.0213	0.3338
Freshwater sediment (mg/kg wwt)	967	4593	0.2105
Marine water sediment (mg/kg wwt)	155	459	0.3377

10.3.2.2. Terrestrial compartment

Table 56. Local PECs of terrestrial compartment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Agricultural soil (total) - 30	1.5E+03	18762	0.0799

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
days (mg/kg wwt)			
Agricultural soil (groundwater) (mg/kg wwt)	0.017	not quantifiable	not quantifiable

10.3.2.3. Atmospheric compartment

Table 57. Local PECs of atmospheric compartment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Air (annual average) (mg/m3)	2.98E-03	not quantifiable	not quantifiable

10.3.2.4. Microbiological activity in sewage treatment systems

Table 58. Regional PECs of sewage treatment systems

Compartment	Regional PEC	PNEC	PEC/PNEC (RCR)
Sewage treatment plant (mg/l)	[not relevant]	1	[not relevant]

10.2. Distribution of Ash

10.2.1. Human health

10.2.1.1. Workers

Table 48. Substance specific RCRs

Contributing Scenarios	RCR (inhalation)	RCR (dermal)	RCR (all routes)
Process sampling [CS2] Non-dedicated facility [CS81]	0.7000	0.0004	0.7004
Process sampling [CS2] Dedicated facility [CS82]	0.5000	0.0196	0.5196
Laboratory activities [CS36]	0.0500	0.0043	0.0543
Bulk transfers [CS14] (closed systems) [CS107]	0.0875	0.0986	0.1861
Bulk transfers [CS14] (open systems) [CS108]	0.7000	0.0020	0.7020
Equipment cleaning and maintenance [CS39]	0.5000	0.1959	0.6959
Mixing operations (open systems) [CS30]	0.1500	0.4041	0.5541
Storage [CS67] (closed systems) [CS107]	0.0100	0.0200	0.0300
Storage [CS67] (open systems) [CS108]	0.3500	0.0020	0.3520

10.2.1.2. Consumers

Not relevant.

10.2.2. Environment

10.2.2.1. Aquatic compartment (incl. sediment)

Table 49. Local PECs of aquatic compartment including sediment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Freshwater, dissolved (mg/l)		0.213	
Marine water, dissolved (mg/l)		0.0213	
Freshwater sediment		4593	

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
(mg/kg wwt)			
Marine water sediment (mg/kg wwt)		459	

10.2.2.2. Terrestrial compartment

Table 50. Local PECs of terrestrial compartment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Agricultural soil (total) - 30 days (mg/kg wwt)		18762	
Agricultural soil (groundwater) (mg/kg wwt)		not quantifiable	not quantifiable

10.2.2.3. Atmospheric compartment

Table 51. Local PECs of atmospheric compartment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Air (annual average) (mg/m3)		not quantifiable	not quantifiable

10.2.2.4. Microbiological activity in sewage treatment systems

Table 52. Regional PECs of sewage treatment systems

Compartment	Regional PEC	PNEC	PEC/PNEC (RCR)
Sewage treatment plant (mg/l)		1	

10.7. Use of Ash as fertilizer

10.7.1. Human health

10.7.1.1. Workers

Table 77. Substance specific RCRs

Contributing Scenarios	RCR (inhalation)	RCR (dermal)	RCR (all routes)
Bulk transfers [CS14]	0.0350	0.0986	0.1336
Spraying/fogging by machine application [CS25]	0.0700	0.0306	0.1006
Equipment cleaning and maintenance [CS39]	0.0500	0.1959	0.2459
Vessel / container cleaning [CS103]	0.0500	0.1959	0.2459
Storage [CS67]	0.0002	0.0043	0.0045

10.7.1.2. Consumers

Not relevant.

10.7.1.3. Indirect exposure of humans via the environment

Table 78. Indirect exposure of humans via the environment

Compartment	Daily dose (local)	DNEL	Daily dose/DNEL
Daily dose through intake of drinking water (mg/kg/d)	1.27E-03	7	1.81E-04
Daily dose through intake of fish (mg/kg/d)	1.03E-04	7	1.47E-05
Daily dose through intake of leaf crops (mg/kg/d)	25.2	7	3.6
Daily dose through intake of root crops (mg/kg/d)	1.21E-04	7	1.73E-05
Daily dose through intake of meat (mg/kg/d)	3.57E-04	7	5.1E-05
Daily dose through intake of milk (mg/kg/d)	6.66E-03	7	9.51E-04
Daily dose through intake of air (mg/kg/d)	9.6	7	1.371

10.7.2. Environment

10.7.2.1. Aquatic compartment (incl. sediment)

Table 79. Local PECs of aquatic compartment including sediment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Freshwater, dissolved (mg/l)	0.0445	0.213	0.2089
Marine water, dissolved (mg/l)	7.11E-03	0.0213	0.3338
Freshwater sediment (mg/kg wwt)	967	4593	0.2105
Marine water sediment (mg/kg wwt)	155	459	0.3376

10.7.2.2. Terrestrial compartment

Table 80. Local PECs of terrestrial compartment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Agricultural soil (total) - 30 days (mg/kg wwt)	2.05E+03	18762	0.1093
Agricultural soil (groundwater) (mg/kg wwt)	0.0234	not quantifiable	not quantifiable

10.7.2.3. Atmospheric compartment

Table 81. Local PECs of atmospheric compartment

Compartment	Local PEC	PNEC	PEC/PNEC (RCR)
Air (annual average) (mg/m3)	33.6	not quantifiable	not quantifiable

10.7.2.4. Microbiological activity in sewage treatment systems

Table 82. Regional PECs of sewage treatment systems

Compartment	Regional PEC	PNEC	PEC/PNEC (RCR)
Sewage treatment plant (mg/l)	[not relevant]	1	[not relevant]