According to EC-Regulation 1907/2006 (REACH)

SAFETY DATA SHEET

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

1.1. Product identifier

Trade name
Flue dust, lead refining
Product no.
-
REACH registration number
01-2119498061-39-0000 (UVCB)
Other means of identification

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

Relevant identified uses of the substance or mixture
For use only as intermediate.

Uses advised against
-

1.3. Details of the supplier of the safety data sheet

Company and address
Boliden Commercial
Box 750
SE-101 35 Stockholm
Sweden

Tel +46 8 610 15 00
Fax +46 8 31 55 45
Contact person
-
E-mail
info.market@boliden.com
SDS date
01-06-2015
SDS Version
1.0

1.4. Emergency telephone number

999 (or 111 for non-emergency medical advice). Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service). See section 16.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

STOT RE 1; H372
Repr. 1A; H360FD
Muta. 1B; H340
Carc. 1A; H350
Acute. Tox. 3; H301 + H331
Eye Dam. 1; H318
Skin Sens. 1; H317
Skin Irrit. 2; H315
Aquatic Chronic 1; H410
Aquatic Acute 1; H400

See full text of H-phrases in section 2.2.

2.2. Label elements

Hazard pictogram(s)

Signal word

Danger!

Hazard statement(s)

Causes damage to organs through prolonged or repeated exposure. (H372)
May damage fertility or the unborn child. (H360FD)
May cause genetic defects. (H340)
May cause cancer. (H350)
Toxic if swallowed or if inhaled. (H301 + H331)
Causes serious eye damage. (H318)
May cause an allergic skin reaction. (H317)
Causes skin irritation. (H315)
Very toxic to aquatic life with long lasting effects. (H410)

Safety statement(s)

General	-
Prevention	Avoid release to the environment. (P273). Use personal protective equipment as required. (P281).
Response	IF SWALLOWED: Immediately call a POISON CENTER/doctor. (P301+P310). IF ON SKIN: Wash with plenty of soap and water. (P302+P352). IF INHALED: Remove person to fresh air and keep comfortable for breathing. (P304+P340). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338).
Storage	-
Disposal	-

Identity of the substances primarily responsible for the major health hazards

Flue dust, lead refining is a UVCB substance including lead, cadmium and arsenic.

2.3. Other hazards

May react with water to produce heat and hydrogen chloride.

Additional labelling

-

Additional warnings

-

VOC

-

SECTION 3: Composition/information on ingredients

3.1 Substances

NAME:	flue dust, lead-refining
IDENTIFICATION NOS.:	CAS-no: 69029-67-0 EC-no: 273-809-1 REACH-no: 01-2119498061-39-0000
CONTENT:	100%
CLP CLASSIFICATION:	Acute Tox. 3, STOT RE 1, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1, Muta. 1B, Carc. 1A, Repr. 1A, Aquatic Acute 1, Aquatic Chronic 1
	H301, H315, H317, H318, H331, H340, H350, H360FD, H372, H400, H410

(*) See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

3.2. Mixtures

-

Other informations

Flue dust, lead refining is a UVCB substance formed as a by-product from refining and smelting of lead containing materials. Flue dust lead refining consists of variable amounts of (name (EC/CAS)) lead (231-100-4/7439-92-1), copper (231-159-6/7440-50-8), zinc (231-175-3/7440-66-6), tin (231-141-8/7440-31-5), cadmium (231-152-8/7440-43-9), antimony (231-146-5/7440-36-0), arsenic (231-148-6/7440-38-2) and other metals in either alloy form or as compounds such as oxides, sulphides and sulphates.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor, if in doubt about the injured person's condition or if the symptoms continue. Never give an unconscious person water or similar.

Inhalation

Get the injured person into fresh air. Make sure there is always someone with the injured person. Prevent shock by keeping the injured person warm and calm. If the person stops breathing, give mouth-to-mouth resuscitation. If unconscious, roll the injured person onto side with the top leg bent at both knee and hip. Call an ambulance.

Skin contact

Remove contaminated clothing and shoes at once. Skin that has come in contact with the material must be washed thoroughly with water and soap. Skin cleanser can be used. DO NOT use organic solvents or thinners. Seek medical attention if irritation persists.

Eye contact

Remove contact lenses. Flush eyes with plenty of water (20-30°C) for at least 15 minutes and continue until irritation stops. Make sure you flush under the upper and lower eyelids. Contact a doctor at once.

Ingestion

Rinse out mouth and give plenty of water to drink. Contact a doctor immediately and take this safety data sheet or the label from the material with you. Do not induce vomiting. In the event of spontaneous vomiting, hold head facing down so that no vomit runs back into the mouth and throat.

Burns

Rinse with water until the pain stops and continue for 30 minutes.

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

This product can cause irreversible damage to eyes.

Clinical manifestations of lead poisoning include weakness, irritability, asthenia, nausea, abdominal pain with constipation, and anaemia.

Carcinogenic effects: This product contains substances which are considered or proven to be carcinogenic.

Reproductive toxicity: This product contains teratogenic substances which can do long-term damage to human offspring. The effects on the child can be: death, deformity, delayed development, and functional disorders.

Reproductive toxicity: This product contains substances which can do damage to reproductive capacity, e.g. damage to germ cells or hormonal regulation. The effects can be: sterility, reduced fertility, menstruation disorders, etc.

Sensitivity effects: This product contains substances which can give an allergic reaction on contact with skin. The allergic reaction will typically set in 12-72 hours after exposure as the substance penetrates the skin and reacts with proteins in the outer skin. The body's immune system sees the chemically changed protein as a foreign body and will try to react to it.

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

Symptoms of poisoning may occur after several hours; therefore medical observation for at least 48 hours after the accident is recommended.

Information to medics

Bring this safety data sheet.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Sand. Do not use water due to risk of hazardous fumes (hydrogen chloride) being produced.

5.2. Special hazards arising from the substance or mixture

Fumes from fire may be toxic. The dust is very finely divided and risk of explosion cannot be excluded.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing.

6.2. Environmental precautions

Do not discharge into the drains/surface waters/groundwater. In case of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

Vacuum or sweep up spillage. Collect and put in marked container for disposal. Avoid generating dust.

6.4. Reference to other sections

See section 13 with regard to the handling of waste. See section 8 for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Consider putting up waste collecting trays/basins to prevent leakage to the surroundings. See section 8 for information on personal protection. Avoid direct contact with the product.

7.2. Conditions for safe storage, including any incompatibilities

Store Dry.

Storage temperature

No data available.

7.3. Specific end use(s)

This product should only be used for applications described in Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OEL

Lead and inorganic compounds (EH40/2005)
Long-term exposure limit (8-hour TWA reference period): - ppm | 0.15 mg/m3
Short-term exposure limit (15-minute reference period): - ppm | - mg/m3

DNEL / PNEC

DNEL (lead): 40 µg/dL - Duration: Long term – Systemic effects - Workers - Remarks: Adult neurological function.
DNEL (lead): 10 µg/dL - Duration: Long term – Systemic effects - Workers - Remarks: Developmental effect on foetus of pregnant women.

PNEC (lead): 3.1 µg Pb/L - Exposure: Freshwater - Remarks: dissolved
PNEC (lead): 3.5 µg Pb/L - Exposure: Marine water - Remarks: dissolved
PNEC (lead): 174.0 mg Pb/kg dw - Exposure: Freshwater sediment - Remarks: without bioavailability correction
PNEC (lead): 41.0 mg Pb/kg dw - Exposure: Freshwater sediment - Remarks: with bioavailability correction
PNEC (lead): 164.0 mg Pb/kg dw - Exposure: Marine water sediment
PNEC (lead): 212.0 mg Pb/kg dw - Exposure: Soil
PNEC (lead): 0.1 mg Pb/L - Exposure: Sewage Treatment Plant

8.2. Exposure controls

Compliance with the stated exposure limits values should be checked on a regular basis.

Blood lead monitoring: Set in place a certified monitoring regime which covers all site activities; Define a policy for submitting workers to regular blood lead monitoring, including increased frequency for workers undertaking high-risk jobs and workers with elevated blood lead levels; Ensure all workers have a blood test prior to working on site. Set an “action level” that is typically 5 µg/dL below the exposure limit deemed to be safe. If the action level is exceeded, appropriate measures are to be taken, to prevent further increases in blood lead. If the safe threshold is exceeded, continue or begin ban on overtime, ensure strict hygiene procedures are followed, undertake detailed inspections to ensure correct use of personal protective equipment, undertake detailed inspections to ensure recommended workplace procedures are followed, move employee to workplace where exposure is expected to be lower or remove from lead environment altogether, further increase blood lead sampling frequency, and continue frequent sampling until results are below the first action level.

General recommendations

Observe general occupational hygiene.

Exposure scenarios

If there is an appendix to this safety data sheet, the indicated exposure scenarios must be complied.

Exposure limits

Trade users are covered by the rules of the working environment legislation on maximum concentrations for exposure. See work hygiene threshold values.

Appropriate technical measures

Airborne gas and dust concentrations must be kept as low as possible and below the current threshold values. Use for example an exhaust system if the normal air flow in the work room is not sufficient. Make sure that eyewash and emergency showers are clearly marked.

Hygiene measures

Personal Hygiene: Ensure workers follow simple hygiene rules (e.g. do not bite nails and keep them cut short, avoid touching or scratching face with dirty hands or gloves); Ensure workers do not wipe away sweat with hands or arms; Ensure workers use disposable tissues rather than a handkerchief; Prohibit drinking, eating and smoking in production areas, or access to eating and non-production areas in working clothes; Ensure workers wash hands, arms, faces and mouths (but preferably shower) and change into clean clothing before entering eating areas; For high exposure workplaces, separate rooms for cleaning hands, removal of clothes, showers and clean clothes may be necessary; Ensure workers handle dirty working clothes with care; Allow no personal belongings to be taken into production areas, or items that have been used in production areas to be taken home. Ensure general shop cleanliness is maintained by frequent washing/vacuuming. Clean every workplace at the end of every shift.

Measures to avoid environmental exposure

One or more of the following measures may if necessary be taken to reduce emissions to water:
• Chemical precipitation: used primarily to remove the metal ions
• Sedimentation
• Filtration: used as final clarification step
• Electrolysis: for low metal concentration
• Reverse osmosis: extensively used for the removal of dissolved metals
• Ion exchange: final cleaning step in the removal of heavy metal from process wastewater

One or more of the following measures may if necessary be taken to reduce emissions to air:
• Electrostatic precipitators using wide electrode spacing: Wet electrostatic precipitators:
• Cyclones, but as primary collector Fabric or bag filters: high efficiency in controlling fine particulate (melting): achieve emission values Membrane filtration techniques can achieve
• Ceramic and metal mesh filters. PM10 particles are removed
• Wet scrubbers

Lead removal from treatment works should be at least the minimum default 84% removal used in the CSR. Solid material collected from on-site treatment must be sent for metal recovery or treated as hazardous waste. Waste water treatment sludge must be recycled, incinerated or landfilled and not used as agricultural fertiliser.

Individual protection measures, such as personal protective equipment

Generally

Only CE-marked personal protection equipment should be used.

Respiratory Equipment

Suitable respiratory protective device recommended if work activity is likely to result in formation of lead fumes, vapours or dust. In case of brief or low level exposure use dust mask or half mask with particle filter P2. Assess the need to wear respiratory protective equipment in production areas. Consider use effective masks accompanied by a compliance policy (ensure proper shaving; ensure workers do not remove RPE in production areas in order to communicate). Where masks are used, employ formal mask cleaning and filter changing strategies.

Skin protection

Wear protective work clothing. For workers in areas of significant exposure, provide sufficient working clothes to enable daily change into clean clothes. In such cases all work clothing should be cleaned by the employer on a daily basis and is not permitted to leave the work site.

Hand protection

Protective gloves. Material of gloves: Neoprene or Leather.

Eye protection

Safety glasses.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Colour	Odour	pH	Viscosity	Density (g/cm3)
Solid	Faint yellow to light grey	None	Approx.5	Not applicable	<1.0

Phase changes

Melting point (°C)	Boiling point (°C)	Vapour pressure (mm Hg)
>500	Decomposes	Negligible

Data on fire and explosion hazards

Flashpoint (°C)	Ignition (°C)	Self ignition (°C)
Not applicable	Not applicable	Not applicable

Explosion limits (Vol %)	Oxidizing properties
Risk of dust explosion cannot be excluded	Not considered to be oxidising

Solubility

Solubility in water	n-octanol/water coefficient	Particle size
0.1-100 mg/L	Not applicable	<20µm

9.2. Other information

-

SECTION 10: Stability and reactivity

10.1. Reactivity

The dust is very finely divided and risk of explosion cannot be excluded.

10.2. Chemical stability

The product is stable under the conditions noted in section 7.

10.3. Possibility of hazardous reactions

May react with water, generating heat and hydrogen chloride. Contact with acids may produce toxic fumes.

10.4. Conditions to avoid

Avoid excessive exposure to heat.

10.5. Incompatible materials

Strong oxidizing agents, acids, water.

10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

This product has not been tested. Judgements on the expected toxicity of this product have been made based upon consideration of its major components, taking into account the elemental and mineralogical composition of representative samples and the toxicity of the various metal species. Lead is slowly absorbed by ingestion and inhalation and poorly absorbed through the skin. If absorbed, it will accumulate in the body with low rates of excretion, leading to long-term build up.

Acute toxicity

Based upon consideration of its components, this grade of flue dust, lead refining is expected to be acutely toxic by ingestion and inhalation.

Skin corrosion/irritation

This grade of flue dust, lead refining is expected to be irritating to skin based upon consideration of the components of a representative sample, including arsenic trioxide.

Serious eye damage/irritation

This grade of flue dust, lead refining is expected to be corrosive to eyes based upon consideration of the components of a representative sample, including arsenic trioxide.

Respiratory or skin sensitisation

This grade of flue dust, lead refining may contain nickel in quantities sufficient to result in skin sensitisation. This grade of flue dust, lead refining is expected to be a skin sensitiser, based upon consideration of its components.

Germ cell mutagenicity

This grade of flue dust, lead refining is considered to be a germ cell mutagen due to the presence of cadmium sulphate in representative samples at levels above the threshold for classification.

Carcinogenicity

This grade of flue dust, lead refining is considered to be a carcinogen based upon consideration of the components of a representative sample, including arsenic trioxide at levels above the threshold for classification.

Reproductive toxicity

This grade of flue dust, lead refining is considered to be a reproductive toxin due to the presence of cadmium sulphate, lead and lead compounds in representative samples at levels above the threshold for classification.

STOT-single exposure

This grade of flue dust, lead refining is considered to be acutely toxic and no additional specific target organ effects have been identified as a result of acute exposure.

STOT-repeated exposure

This grade of flue dust, lead refining contains significant amounts of lead and lead compounds, which are cumulative poisons and may be absorbed into the body through ingestion or inhalation. Lead and lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the haemotopoetic (blood) system, kidney function, reproductive function and the central nervous system. This grade of Flue dust, lead refining may also contain a significant amount of cadmium sulphate.

Aspiration hazard

This grade of flue dust, lead refining is a solid and aspiration hazards are not expected to occur.

Long term effects

Reproductive toxicity: This product contains teratogenic substances which can do long-term damage to human offspring. The effects on the child can be: death, deformity, delayed development, and functional disorders.
Reproductive toxicity: This product contains substances which can do damage to reproductive capacity, e.g. damage to germ cells or hormonal regulation. The effects can be: sterility, reduced fertility, menstruation disorders, etc.
Carcinogenic effects: This product contains substances which are considered or proven to be carcinogenic. The danger may lie in inhalation, skin contact or ingestion.
Sensitivity effects: This product contains substances which can give an allergic reaction on contact with skin. The allergic reaction will typically set in 12-72 hours after exposure as the substance penetrates the skin and reacts with proteins in the outer skin. The body's immune system sees the chemically changed protein as a foreign body and will try to destroy it.
Irritation effects: This product contains substances which cause irritation to skin and eyes, or when inhaled. Contact with locally irritative substances can cause the area of contact to be more prone to absorb damaging substances such as allergens.

SECTION 12: Ecological information

12.1. Toxicity

The toxicity of this grade of flue dust, lead refining has been estimated using calculation methods that take into account the elemental and mineralogical composition of representative samples and the toxicity of the various metal species. On this basis, this grade of flue dust, lead refining is considered to be acutely and chronically very toxic to the aquatic environment.

Substance	Species	Test	Test duration	Result
flue dust, lead-refining	Crustacean	EC50	48h	≤ 1 mg/L (estimated)
flue dust, lead-refining	Algae	EC50	27h	≤ 1 mg/L (estimated)

12.2. Persistence and degradability

Flue dust, lead refining is an inorganic substance and does not degrade. The fate and distribution of the separate metals present are likely to be the same as for the elements. Biodegradation is not relevant for inorganic substances.

12.3. Bioaccumulative potential

Flue dust, lead refining contains inorganic lead and lead compounds which are considered to be bioaccumulating in the environment, and may accumulate in aquatic and terrestrial plants and animals.

12.4. Mobility in soil

Flue dust, lead refining contains inorganic lead and lead compounds which are sparingly soluble and are expected to be adsorbed onto soils and sediments. Mobility is expected to be low.

12.5. Results of PBT and vPvB assessment

The PBT and vPvB criteria do not apply to inorganic substances.

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

The product is covered by the regulations on dangerous waste.

Waste

EWC code

06 04 05, 10 04 05

Specific labelling

-

Contaminated packing

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14: Transport information

This product is covered by the conventions on dangerous goods.

14.1 – 14.4

ADR/RID

14.1. UN number	3288
14.2. UN proper shipping name	TOXIC SOLID, INORGANIC, N.O.S. (Flue dust lead refining (General Grade))
14.3. Transport hazard class(es)	6.1
14.4. Packing group	III
Notes	-
Tunnel restriction code	D/E

IMDG

UN-no.	3288

Proper Shipping Name	TOXIC SOLID, INORGANIC, N.O.S. (Flue dust lead refining (General Grade))
Class	6.1
PG*	III
EmS	F-A, S-F
MP**	Yes
Hazardous constituent	-

IATA/ICAO

UN-no.
Proper Shipping Name
Class
PG*

14.5. Environmental hazards

This product contains substances which can cause undesirable long-term effects in the water environment, due to its poor biodegradability.

14.6. Special precautions for user

No specific transport precautions

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not transported by sea in bulk

(*) Packing group
(**) Marine pollutant

SECTION 15: Regulatory information

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

Restrictions for application

People under the age of 18 must not be exposed to this product cf. Council Directive 94/33/EC. Only for industrial use. Pregnant and nursing women must not be exposed to the effects of this product. The risk, and possible technical precautions or design of the workplace to avoid such risk, must therefore be evaluated.

Demands for specific education

-

Additional information

-

Sources

EC regulation 1907/2006 (REACH)
Directive 2000/532/EC
EC Regulation 1272/2008 (CLP)

15.2. Chemical safety assessment

A Chemical Safety Assessment has not been carried out for this product.

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H301 - Toxic if swallowed.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H331 - Toxic if inhaled.
H340 - May cause genetic defects.
H350 - May cause cancer.
H360 - May damage fertility or the unborn child.
H372 - Causes damage to organs through prolonged or repeated exposure.
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

The full text of identified uses as mentioned in section 1

-

Other symbols mentioned in section 2

-

Other

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
A change (in proportion to the last essential change (first cipher in SDS version)) is marked with a blue triangle.

Emergency numbers

Austria: Poison Control Centre Emergency helpline +43 1 406 43 43, 112
Belgium: 070 - 245 245
Bulgaria: +359 2 9154 409
Czech Republic: Toxikologické informační středisko Telefon: +420 224 919 293, +420 224 915 402
Denmark: Kontakt Giftlinien på tlf.nr.: 82 12 12 12 (åbent 24 timer i døgnet).
Estonia: 112, 16662, ((+372) 626 93 90)
Finland: 09-4711/Myrkytystietokeskus tai suora numero 09-471977 Myrkytystietokeskus/HUS, Tukholmankatu 17, 00029 HUS (Helsinki) 112
France: ORFILA (INRS) : + 33 (0)1 45 42 59 59. 24 heures sur 24 et 7 jours sur 7
Germany: Giftnotruf Berlin, Emergency telephone: +49 30 19240 (Tag und Nacht)
Greece: +30 10 779 3777
Hungary: Telefon: 06-80-20-11-99
Iceland: Neyðarlínan: Sími 112. Eitrunarmiðstöð Landsspítalans. Sími: 543 2222.
Ireland: +353 1 8379964
Italy: Centro antiveleni di Roma - Policlinico Umberto I tel. 06-49978000
Latvia: +371 704 2468
Lithuania: Visuomenės sveikatos centrams +370 5 236 20 52 arba +370 687 53378
Malta: 2425 0000
Netherlands: 30-2748888
Norway: Giftinformasjonssentralen på tlf.nr.: 22 59 13 00, 113
Poland: +48 58301 65 16 / +48 58 349 2831
Portugal: Em caso de intoxicacao, ligue 808 250 143
Romania: +40 21 3183606
Slovakia: +421 2 54 77 4166
Slovenia: + 386 41 650500
Spain: Servicio de Información Toxicológica Teléfono: + 34 91 562 04 20 (solo emergencias toxicológicas) Información en español (24h/365 días)
Sweden: 112, 08-331231 (vardagar kl 9-17)
United Kingdom: 999 (or 111 for non-emergency medical advice). Emergency Action: In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department or the NHS enquiry service)

Date of last essential change (First cipher in SDS version)

-

Date of last minor change (Last cipher in SDS version)

-