SAFETY DATA SHEET

[In accordance with the criteria of Regulation No 1907/2006 (REACH) and 2015/830]

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

1.1. Product identifier

Trade name: **LEAD CONCENTRATE – GALENA FLOTACYJNA**
Chemical name: lead sulfide(II)
Index number: 082-001-00-6
Registration number: the substance is exempted from registration in accordance with Annex V of REACH Regulation

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

Relevant identified uses: raw material in lead production process.
Uses advised against: not determined.

1.3. Details of the supplier of the safety data sheet

Manufacturer: Zakłady Górniczo-Hutnicze „Bolesław" Spółka Akcyjna
[Mining and Metallurgical Plant „Bolesław" Joint Stock Company]
Address: ul. Kolejowa 37, 32-332 Bukowno, Poland
Telephone/Fax number: +48 32 295 51 00/+48 32 295 50 00
E-mail address for a competent person responsible for sds: biuro@theta-doradztwo.pl

1.4. Emergency telephone number

112

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Repr. 1A H360Df; STOT RE 2 H373; Acute Tox. 4 H332; Acute Tox. 4 H302; Aquatic Acute 1 H400; Aquatic Chronic 1 H410

May damage the unborn child. Suspected of damaging fertility. May cause damage to organs through prolonged or repeated exposure. Harmful if inhaled. Harmful if swallowed. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Hazard symbols and signal words

DANGER

Hazard statements

H360Df May damage the unborn child. Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure.
H332 Harmful if inhaled.
H302 Harmful if swallowed.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P201 Obtain special instructions before use.
P260 Do not breathe dust.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P314 Get medical advice/attention if you feel unwell.

Additional markings on the label

For professional users only.

2.3. Other hazards

Investigate the substance in accordance with the criteria for classification of PBT or vPvB accordance with Annex XIII of REACH Regulation is not required.

Section 3: Composition/information on ingredients

3.1. Substances

UVCB substance of varying composition, contains admixtures of other compounds (zinc, arsenic, calcium oxide, magnesium oxide, and bismuth, cadmium, copper, antimony, nickel, fluorine, manganese, cobalt, tin).

lead sulfide

Range:	55-72% (as Pb)
CAS number:	1314-87-0
EINECS number:	215-246-6
Index number:	082-001-00-6
Registration number:	the substance is exempted from registration in accordance with Annex V of REACH Regulation

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: take off contaminated clothes. Wash out skin with plenty of water with soap. If irritation occurs consult a doctor.

Eye contact: wash out eyes with plenty of water with the eyelid hold wide open, for 10-15 min. Remove any contact lenses. Avoid powerful water stream – risk of cornea damage. Obtain medical attention, if necessary.

Ingestion: rinse mouth with water, then drink plenty of water. Do not give anything to drink to unconscious. Immediately call a doctor, show the label.

Inhalation: remove to fresh air, keep warm and calm. Obtain medical attention immediately. Do not give painkillers in case of dust inhalation.

4.2. Most import ant symptoms and effects, both acute and delayed

Eye contact: mechanical irritation, redness, tearing.

Skin contact: inflammation in prolonged or repeated contact at sensitive individuals.

Inhalation of dust: irritation of the mucous membrane of respiratory tract, cough and breathing problems, nausea, vomiting, high blood pressure.

Ingestion: irritation of the gastrointestinal mucosa, nausea, vomiting, abdominal pain, abdominal colic, increased blood pressure.

Effects of chronic exposure: hypochromic anemia, changes in peripheral nerves, mainly the limbs and signs of central nervous system damage (lead encephalopathy). Lead accumulates in the body, mainly in the bones, as well as in the kidney and other tissues. May cause harm to the unborn child. Possible risk of impaired fertility.

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

Physician makes a decision regarding further medical treatment after thoroughly examination of the injured.

Section 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: use extinguishing measures that are appropriate to the environment.

Unsuitable extinguishing media: water jet – risk of the propagation of the flame.

5.2. Special hazards arising from the substance or mixture

May produce toxic fumes of lead and sulphur oxides if burning. Do not inhale combustion products – it can be dangerous for health.

5.3. Advice for firefighters

Substance is not flammable. Use personal protection typical in case of fire. Self-contained breathing apparatus and protective clothing should be worn.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Limit the access for the outsiders into the breakdown area, until the suitable cleaning operations are completed. Ensure that the effects of the accident was removed only by trained personnel. In case of release of large amounts of the substance, it is necessary to take appropriate steps to prevent it from spreading into the environment. Wear adequate personal protective equipment. Avoid skin and eyes contamination. Avoid formation and inhalation of dust. Ensure adequate ventilation.

6.2. Environmental precautions

In case of release of large amounts of the substance, it is necessary to take appropriate steps to prevent it from spreading into the environment. Notify relevant emergency services.

6.3. Methods and material for containment and cleaning up

Spilled product pick up mechanically and place to closed container. Material treat like a waste or reuse it.

6.4. Reference to other sections

Appropriate conduct with waste product – section 13. Appropriate personal protective equipment – section 8.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Ensure adequate ventilation, use product only in areas with efficient dedusting ventilation, local and overall. Do not breathe dust. In the case of work in the facilities open, during which there is particulate emissions into the environment of work (grinding, mixing, etc.) should be systematically wash material. When handlings do not eat, drink or smoke. Use personal protective clothing. Before break and after work wash carefully hands. Avoid skin and eyes contamination. Not used containers keep tightly closed. Do not let the substance to get into the mouth.

7.2. Conditions for safe storage, including any incompatibilities

Store product in a landfill with an impermeable surface, roof and sheltered. In the absence of canopy cover with foil product. The material in comminuted and powdered should be stored in enclosed spaces, tanks or silos. Storage of small quantities of material is allowed in the bag. Prevent the occurrence of the secondary pollen lead, zinc and their compounds. Is allowed to temporary storage of materials in stacks of non dusting, provided frequent spraying them with water. In all areas, where the materials containing zinc and lead are processing, places where dust can accumulate should be cleaned regularly, and at least once during a work shift wash or mechanically dedust floor.

7.3. Specific end use(s)

Raw material in lead production process.

Section 8: Exposure controls/personal protection

8.1. Control parameters

For substance is not defined occupational exposure limit value at working place in Community.
Please check any national occupational exposure limit values in your country.

Legal basis: Commission Directive 2000/39/EC, 2006/15/EC, 2009/161/EU.

8.2. Exposure controls

Use the product in accordance with good occupational hygiene and safety practices. Ensure effective local exhaust dedusting ventilation system and general for upper part of the room. When handlings do not eat, drink or smoke. Before break and after work carefully wash hands. Avoid skin and eyes contamination. Do not form and inhale dust. Provide washbasin with warm water at the exit from the room.

Hand protection

Wear the protective gloves. In the case of short-term contact use protective gloves the level of effectiveness of 2 or higher (breakthrough time > 30 min.). In the case of long term contact use protective gloves on the level of effectiveness 6 (breakthrough time > 480 min.).

The material that the gloves are made of must be impenetrable and resistant to the product's effects. The selection of material must be performed with consideration of breakthrough time, penetration speed and degradation. Moreover, the selection of proper gloves depends not only on the material, but also on other quality features and changes depending on the manufacturer. The producer should provide detailed information regarding the exact breakthrough time. This information should be followed.

Body protection

Wear protective clothes, dust-protective, if necessary.

Eye/face protection

Wear goggles when working in dusty atmosphere.

Respiratory protection

In case of air contamination with dusts in concentrations exceeding their maximum admissible concentrations, use adequate filtration equipment (P1/ used when the particles' concentration is not higher than TLVx4, P2/ used when the particles' concentration is not higher than TLVx10, P3/ used when the particles' concentration is not higher than TLVx30).

Personal protective equipment must meet requirements of directive 89/686/CE. Employer is obliged to ensure equipment adequate to activities carried out, with quality demands, cleaning and maintenance.

Environmental exposure controls

Do not allow the mixture to contaminate surface water/ground water. Any emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

physical state:	solid
colour:	dark blue
odour:	odourless
odour threshold:	not determined
pH:	not applicable
melting point/freezing point:	not determined
initial boiling point and boiling range:	not applicable
flash point:	not applicable
evaporation rate:	not determined
flammability (solid, gas):	not flammable
upper/lower flammability or explosive limits:	not applicable
vapour pressure:	not determined
relative vapour density:	not determined
vapour density:	not determined
density (20^{o}C):	ca. 6,0 g/cm^{3}
solubility(ies):	not soluble in water
partition coefficient: n-octanol/water:	not applicable
auto-ignition temperature:	not self-ignition
decomposition temperature:	not determined
explosive properties:	not display
oxidising properties:	not display
viscosity:	not applicable

9.2. Other information

granulation:	0-0,2 mm

Section 10: Stability and reactivity

10.1. Reactivity

Substance is poorly reactive.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Not known.

10.4. Conditions to avoid

Not known.

10.5. Incompatible materials

Not known.

10.6. Hazardous decomposition products

Not known.

Section 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Substance is harmful if inhaled and harmful if swallowed.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Substance may damage the unborn child. Suspected of damaging fertility.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Substance may cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Based on available data, the classification criteria are not met.

Other toxic effects

Lead compounds damage the peripheral and central nervous system and cause anemia, mainly due to inhibition of synthesis of hemoglobin red blood cells. Lead accumulates in the body, mainly in the bones, as well as in the kidney and other tissues. Acute symptoms of poisoning may occur after a few days of exposure to high concentrations of dust or fumes in excess of the airborne limit values. Symptoms of exposure include abdominal pain, diarrhea followed by constipation, loss of appetite, metallic taste in the mouth, nausea, vomiting, fatigue, insomnia, muscle weakness, joint pain, irritability, headache, dizziness, increased blood pressure. May occur anemia, kidney damage, liver and female gonads and central nervous system. Lead compounds cause severe irritation and hypersensitivity of respiratory tract, shortness of breath, short breath and asthma symptoms. As effects of chronic exposure to lead compounds are observed hypochromic anemia, changes in peripheral nerves, mainly the limbs and signs of central nervous system damage (lead encephalopathy).

Pregnant women should not work with the product

Section 12: Ecological information

12.1. Toxicity

Substance is very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

Substance doesn't undergo the biological degradation.

12.3. Bioaccumulative potential

Danger of cumulative effects in aquatic organisms.

12.4. Mobility in soil

Poorly mobile in soil and aquatic environment. Heavier than water, sinks to the bottom and stays there. The risk of lead absorption by aquatic organisms.

12.5. Results of PBT and vPvB assessment

Substance does not meet the PBT or vPvB criteria.

12.6. Other adverse effects

This product has no influence on the global warming or the ozone layer depletion.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods for the product: disposal in accordance with the local legislation. Do not remove with household garbage. Waste product store in original containers. Consider recycling. Dispose via licensed waste disposal contractor.

Disposal methods for used packing: reuse/recycling/liquidation of empty containers dispose in accordance with the local legislation. Packs of dusty materials should be dedusted in enclosed areas. Only completely emptied packaging can be recycled. Disposable containers transfer to waste contractor. Product sold and transported in the wagon do not have individual packages.

Legal basis: Directive 2008/98/EC, European Parliament and Council Directive 94/62/EC.

Section 14: Transport information

14.1. UN number

UN 3077

14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (lead sulfide)

14.3. Transport hazard class(es)

9

14.4. Packing group

III

14.5. Environmental hazards

Hazardous for the environment according to the criteria set out in the transport rules.

14.6. Special precautions for user

Use appropriate personal protective equipment according to section 8.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.

Section 15: Regulatory information

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

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC as amended.
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 as amended.
Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.
European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste.
Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.
Commission Directive 2006/15/EC of 7 February 2006 establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC.
Commission Directive 2009/161/EU of 17 December 2009 establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC.

The substance is a subject to restrictions on manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (in accordance with Annex XVII of the REACH Regulation).

15.2. Chemical safety assessment

For the substance is not required preparation of Chemical Safety Report.

Section 16: Other information

Clarification of aberrations and acronyms

Repr. 1A	Reproductive toxicity category 1A
STOT RE 2	Specific Target Organ Toxicity – repeated exposure category 2
Acute Tox. 4	Acute toxicity category 4
Aquatic Acute 1	Hazardous to the aquatic environment category 1
Aquatic Chronic 1	Hazardous to the aquatic environment category 1
PBT	Persistent, Bioaccumulative and Toxic substance
vPvB	very Persistent, very Bioaccumulative substance

Trainings

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo a proper workplace training.
People associated with transport of hazardous materials in accordance with ADR should be adequately trained for their job responsibilities (general training, bench and safety).

Other data

Date of update:	08.07.2015
Version:	2.0
Changes:	sections: 2, 8, 15, 16.
Composed by:	Joanna Puchalska-Gad (on the basis of producer's data).
Safety Data Sheet made by:	**„THETA"** Doradztwo Techniczne
	This SDS annuls and replaces all previous versions

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.