

[In accordance with the criteria of Regulation No 1907/2006 (REACH) as amended]

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

1.1. Product identifier

Trade name: COLLECTIVE ZINC-LEAD CONCENTRATE BULK

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

Relevant identified uses: raw material in metallurgical process of zinc production.

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

Eye Irrit. 2 H319; Repr. 1A H360Df; STOT RE 2 H373; Aquatic Chronic 2 H411

Causes serious eye irritation. May damage the unborn child. Suspected of damaging fertility. May cause damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

2.2. Label elements

Hazard symbols and signal words



DANGER

Hazard statements

H319 Causes serious eye irritation.

H360Df May damage the unborn child. Suspected of damaging fertility.

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P201 Obtain special instructions before use.

P260 Do not breathe dust.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P314 Get medical advice/attention if you feel unwell.

Additional markings on the label

Contains: lead sulphide.

For professional users only.

2.3. Other hazards

Substances contained in the mixture does not meets the PBT or vPvB criteria in accordance with the Annex XIII of the REACH Regulation.

Section 3: Composition/information on ingredients

3.1. Substances

Not applicable.

3.2. Mixtures

Blend containing zinc and lead sulfide with other metals and their salts impurities.

Components classified as hazardous:

CAS: 1314-87-0 EINECS: 215-246-6 Index number: 082-001-00-6 (for lead compounds) REACH Registration number: -	<u>lead compound (as lead sulphide)</u> Repr. 1A H360Df; Acute Tox. 4 H332; Acute Tox. 4 H302; STOT RE 2 H373; Aquatic Acute 1 H400; Aquatic Chronic 1 H410	5-11%
CAS: 1305-78-8 EINECS: 215-138-9 Index number: - REACH Registration number: -	<u>calcium oxide</u> STOT SE 3 H335; Skin Irrit. 2 H315; Eye Dam. 1 H318	2,09%
CAS: - EINECS: - Index number: 048-001-00-5 REACH Registration number: -	<u>cadmium compounds</u> Acute Tox. 4 H332; Acute Tox. 4 H312; Acute Tox. 4 H302; Aquatic Acute 1 H400; Aquatic Chronic 1 H410	0,24%

Components not classified as hazardous:

CAS: 1314-98-3 EINECS: 215-251-3 Index number: - REACH Registration number: -	<u>zinc sulphide</u> not classified as hazardous	45-50% (as zinc)
CAS: - EINECS: - Index number: - REACH Registration number: -	<u>sulphides</u> not classified as hazardous	29,43%
CAS: - EINECS: - Index number: - REACH Registration number: -	<u>iron compounds</u> not classified as hazardous	3-8% (as iron)
CAS: 1309-48-4 EINECS: 215-171-9 Index number: - REACH Registration number: -	<u>magnesium oxide</u> not classified as hazardous	0,95%
CAS: 14808-60-7 EINECS: 238-878-4 Index number: - REACH Registration number: -	<u>quartz</u> not classified as hazardous	0,6%
CAS: 1344-28-1 EINECS: 215-691-6 Index number: - REACH Registration number: -	<u>aluminium oxide</u> not classified as hazardous	0,24%
<u>copper, arsenic, antimony, nickel, germanium, manganese, thallium, silver, tin, fluorine, cobalt</u>		< 0,5%

Full text of each relevant H phrase is given in section 16 of SDS.

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. Wash the contaminated clothes before next use.

Eye contact: wash out eyes with plenty of water with the eyelid hold wide open, for 15 min. Avoid powerful water stream – risk of cornea damage. Protect non-irritated eye, remove any contact lenses. Obtain medical attention, if irritation persists.

Ingestion: rinse mouth with water. Never give anything by mouth to an unconscious person. Immediately call a doctor, show the label or container.

Inhalation: remove to fresh air, keep warm and calm. Obtain medical attention immediately. If the victim has troubles with breathing, give him oxygen. Place the unconscious victim in a recovery position.

4.2. Most important 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: dust may cause irritation of the mucous membrane of respiratory tract, cough and breathing problems, nausea, vomiting, feeling of dryness in nose and throat, tightness of the chest, fatigue, drowsiness, loss of appetite.

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

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

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

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

Section 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: CO₂, extinguishing powders and foams, water spray.

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 zinc oxides, sulphur oxides and other metals if burning. Do not inhale combustion products – it can be dangerous for health.

5.3. Advice for firefighters

Use personal protection typical in case of fire. Self-contained breathing apparatus and protective clothing should be worn. Collect extinguishing water.

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. In case of large spills, isolate the exposed area. Ensure that the effects of the accident was removed only by trained personnel. Wear adequate personal protective equipment. Avoid skin and eyes contamination. Ensure adequate ventilation. Avoid creating and breathing dust.

6.2. Environmental precautions

Prevent the mixture from entering the ground waters and soil. 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

Collect the spilled product mechanically and place it in a closed container. Treat the material as 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. If working with open devices the material should be systematically sprinkled due to the dust emission to work environment during the work process (grinding, mixing, etc.). When handling do not eat, drink or smoke. Use personal protective clothing. Before break and after work wash carefully hands. Avoid skin and eyes contamination. Keep the unused containers tightly closed. Avoid contact with mouth.

7.2. Conditions for safe storage, including any incompatibilities

Store product in a sheltered landfill with an impermeable surface, with roof. In the absence of the roof, cover the product with foil. Crumbled and powdered material should be stored in enclosed areas, tanks or silos. Small quantities of the material may be stored in bags. Prevent from dusting of secondary lead, zinc and their compounds. Temporary storage of materials in piles unprotected against dusting is admissible only if they are frequently sprayed with water. In all areas where the materials containing zinc and lead are processed, places where dust can accumulate should be cleaned regularly, and whole floor should be washed or mechanically dedusted at least once during a work shift.

7.3. Specific end use(s)

Raw material in metallurgical process of zinc production.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Name of agent	Limit values				Notation
	8 hours		Short term		
	mg/m ³	ppm	mg/m ³	ppm	
silver - fume and dust [CAS 7440-22-4]	0,1	-	-	-	-
fluorine [CAS 7782-41-4]	1,58	1,0	3,16	2,0	-

Legal basis: Commission Directive 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU.

Please check any national occupational exposure limit values in your country.

Recommended control procedures

Procedures Concerning the control over the dangerous components concentrations in the air and control over the air quality in the workplace - if they are available and Justified for the position - in accordance with the European Standards, with the conditions within the exposure place and a proper test methodology adapted to the working conditions.

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 ventilation for upper part of the room. When handling, 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 if there is a risk of eye contamination.

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).

Applied personal protective equipment must comply with the requirements of the Regulation 2016/425/EU. The employer is obliged to provide protective equipment relevant to performed activities and in accordance with all quality requirements, including its maintenance and cleaning.

Environmental exposure controls

Avoid releasing to the environment, prevent from entering the sewage system. 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:	gray
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 (water=1):	4,0-4,2
solubility(ies):	not soluble in water
partition coefficient: n-octanol/water:	not applicable
auto-ignition temperature:	is not subject to auto-ignition
decomposition temperature:	not determined
explosive properties:	not display
oxidising properties:	not display
viscosity:	not applicable

9.2. Other information

granulation:	0-0,1 mm
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Section 10: Stability and reactivity

10.1. Reactivity

Reactive product. Product does not undergo a dangerous polymerization.

10.2. Chemical stability

The product is stable under normal conditions of storage and use.

10.3. Possibility of hazardous reactions

Reacts with acids with emission of hydrogen and hydrogen sulphide.

10.4. Conditions to avoid

Not known.

- 10.5. Incompatible materials
Acids, bases, strong oxidants.
- 10.6. Hazardous decomposition products
Not known.

Section 11: Toxicological information

11.1. Information on toxicological effects

Toxicity of components

zinc sulphide [CAS 1314-98-3]

LC ₅₀ (inhalation, rat)	≥ 5 mg/l/4h
LD ₅₀ (oral, rat)	> 2000 mg/kg
LD ₅₀ (skin rat)	> 2000 mg/kg

Exposure to zinc fumes or vapours generated in the melting process of zinc alloys may cause respiratory tract irritation. The main symptoms of acute poisoning are as follows: muscle pain, chills and fever (so-called steelworker fever).

lead

TCL ₀ (inhalation, human)	0,01 mg/m ³
TDL ₀ (oral, rat)	790-1140 mg/kg

Lead compounds damage the peripheral and central nervous system and cause anemia, mainly due to inhibition of synthesis of hemoglobin of red blood cells. Lead accumulates in the body, mainly in bones, as well as in the kidneys and other tissues. Acute symptoms of poisoning may occur after few days of exposure to high concentrations of dusts or fumes in excess of the maximum admissible concentrations. Symptoms of exposure include abdominal pain, diarrhea followed by constipation, loss of appetite, metallic taste in mouth, nausea, vomiting, fatigue, insomnia, muscle weakness, joint pain, irritability, headache, dizziness, increased blood pressure. It may cause anemia, kidney, liver, female gonads and central nervous system damage. Lead compounds cause severe irritation and hypersensitivity of respiratory tract, shortness of breath, short breath and asthma symptoms. There is a danger of cumulative effects.

Toxicity of mixture

Acute toxicity

ATE _{mix} (inhalation, dusts)	13,6 mg/l
ATE _{mix} (oral)	4546 mg/kg

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

Skin corrosion/irritation

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

Serious eye damage/irritation

Causes serious eye irritation.

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

Mixture 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

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

Aspiration hazard

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

Pregnant women should not work with the product.

Section 12: Ecological information

- 12.1. Toxicity
Toxic to aquatic life with long lasting effects.
- 12.2. Persistence and degradability
Mixture does not 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
Not determined.
- 12.6. Other adverse effects
This product has no influence on global warming or ozone layer depletion.

Section 13: Disposal considerations

- 13.1. Waste treatment methods
Disposal methods for the product: disposal in accordance with local legislation. Do not remove with municipal waste. 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. Packaging after dusty materials should be dedusted in enclosed areas. Only completely emptied packaging can be recycled.
Legal basis: Directive 2008/98/EC as amended, European Parliament and Council Directive 94/62/EC as amended.

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
The product is hazardous for the environment in accordance with the transport regulations.
- 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) No 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 as amended.

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.

Commission Directive 2017/164/EU of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU.

Regulation (EU) No 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC.

15.2. Chemical safety assessment

There is no data concerning chemical safety assessment performed for substances contained in the mixture.

Section 16: Other information

Full text of indicated H phrases mentioned in section 3

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360Df	May damage fertility or the unborn child. Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Clarification of aberrations and acronyms

Repr. 1A	Reproductive toxicity category 1A
Skin Irrit. 2	Skin irritation category 2
Eye Dam. 1	Serious eye damage category 1
STOT RE 2	Specific Target Organ Toxicity – repeated exposure category 2
STOT SE 3	Specific Target Organ Toxicity – single exposure category 3
Acute Tox. 4	Acute toxicity category 4
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity 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).

Key literature references and sources of data

This sheet was prepared on the basis of on manufacturer's data, literature data, online databases, our knowledge and experience, taking into account the current legislation.

Other data

Date of update: 18.10.2019
Version: 5.0/EN
Changes: sections: 2
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.