MATERIAL SAFETY DATA SHEET

[Made in accordance with EC Regulation 1907/2006 (REACH) and 453/2010]

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

1.1 Product identifier

Trade name:	**SECONDARY LEAD**
chemical name:	metallic lead (Pb)
CAS Number:	7439-92-1
Registration number:	In accordance with Art. 2 of REACH Regulation the substance has been excluded from the obligation of registration.

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

Identified uses:

Industrial uses of lead

Production of lead, production of accumulators, production of metal sheets, production of hot-dip galvanised steel, production of articles (pouring, rolling, extrusion of products, ammunition and lead shot), production of lead steel, production of lead powder.

Professional uses of lead

Use of lead solder, lead ammunition, articles that may get into contact with skin, installation and maintenance of lead metal sheets, assembly of acid-lead accumulators, use of lead steel, use of neutral anodes.

Consumer uses of lead

Use of lead articles that may get into contact with skin, use of outdoor and indoor lead metal sheets, use of articles, for which no exposure is to be expected, use of accumulators, soldering, use of lead ammunition, racking used ammunition.

Uses advised against: not defined.

1.3 Details of the supplier of the safety data sheet

Supplier: **BOLMET S.A.**

Address: ul. Wyzwolenia 1D, 32-329 Bolesław, Poland

Telephone/Fax: +48 32 642 13 61 / +48 32 646 11 86

E-mail of the person responsible for the safety data sheet: biuro@theta-doradztwo.pl

1.4 Emergency telephone number

112 (general emergency number), 998 (fire brigade), 999 (ambulance service)

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification in accordance with 67/548/EEC Directive

The product has not been classified as hazardous to human health or life. Not classified as hazardous to the environment.

Classification in accordance with Regulation 1272/2008/EC

The product has not been classified as hazardous to human health or life. Not classified as hazardous to the environment.

2.2 Label elements

Letter marking and hazard definition:

None

Names of hazardous ingredients stated on the label

None

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Hazard statements

None

Precautionary statements

None

2.3 Other hazards

Metallic lead has not been classified as hazardous. However, there is a possibility of lead intoxication at processing thereof. Lead smokes and vapours emitted in soldering processes have hazardous and irritating effects on the respiratory system. Lead compounds, such as oxides and alloys, have toxic and mutagenic effects, they can accumulate in the body and impair fertility.
In accordance with Annex XIII to REACH Regulation, PBT or vPvB criteria do not refer to inorganic substances.

Section 3: Composition/information on ingredients

3.1 Substances

metallic lead (Pb)

Range of concentrations:	approx. 100%
CAS Number:	7439-92-1
EC number:	231-100-4
Registration number:	01-2119513221-59-0041
Classification acc.to 67/548/EEC:	not classified
Classification acc.to 1272/2008/EEC:	not classified

The substance contains impurities that do not affect classification thereof.

3.2 Mixtures Not applicable

Section 4: First aid measures

4.1 Description of first aid measures

General notes: at room temperature (apart from mechanical hazards) metallic lead does not pose any hazard to human health or life.

Skin contact. Wash the exposed skin areas thoroughly with soapy water. Consult a doctor if worrying symptoms occur.

Eye contact: Rinse contaminated eyes thoroughly with water for 10-15 minutes. Avoid strong water jet – the risk of corneal damage. Protect not irritated eye, remove contact lenses. Consult an ophthalmologist.

Swallowing: exposure by this route usually does not occur. If swallowed, wash mouth with water. Consult physician.

Inhalation: If a victim feels unwell, remove him/her to fresh air and obtain medical aid.

4.2 Most important symptoms and effects, both acute and delayed

In contact with eyes it may cause irritation, redness, tearing.

Skin contact. no negative health effects are observed resulting from metallic lead contact with skin. Adverse reactions are possible in the case of contact with skin of lead compounds, processed product or the product being processed.

Inhalation: no negative health effects are observed at direct contact with metallic lead. Adverse reactions are possible in the case of contact with skin of lead compounds, processed product or the product being processed.

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4.3 Indication of any immediate medical attention and special treatment needed

Decision on the rescue procedure is taken by a doctor following thorough examination of victim's condition.

Section 5: Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media: CO_2, extinguishing powder, water spray, foam. Extinguishing media should be used for the surrounding materials.

Unsuitable extinguishing media: Water jet – the risk of fire spreading.

5.2 Special hazards arising from the substance or mixture

Toxic gases, vapours and smokes, containing toxic lead compounds, may be emitted at combustion. Avoid breathing combustion products, since they can pose health risk.

5.3 Advice for fire-fighters

General protection measures typical in the case of fire. Do not stay in the area endangered with fire without proper chemical-resistant clothing and self-contained breathing apparatus.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For the persons not taking part in the elimination of breakdown effects: Limit the access of bystanders to the endangered area until proper cleaning operations are finished. Use personal protective equipment as required.

For the persons taking part in the elimination of breakdown effects: ensure that breakdown and its results are eliminated by a properly trained staff only. Use chemically resistant protective clothes.

6.2 Environmental precautions

In the case when larger amounts of the substance have been released avoid spreading in the natural environment. Notify proper rescue services.

6.3 Methods and material for containment and cleaning up

Collect mechanically. Transfer the collected material to reuse or treat it as waste.

6.4 Reference to other sections

Waste product handling – section 13 of the Safety Data Sheet.
Individual protection measures – see section 8 of the SDS.

Section 7: Handling and storage

7.1 Precautions for safe handling

Work in accordance with safety and hygiene rules. Ensure proper ventilation. Wash hands before break and after work is finished. Avoid contact with the eyes and skin. See also section 8 of the SDS.

7.2 Conditions for safe storage, including any incompatibilities

Store only in original, tightly sealed containers, if provided by the manufacturer, in dry, cool and well-ventilated place. Keep away from strong acids and bases. Keep away from food and beverages. Lead should be stacked, in sow pigs or in stacks or rows in blocks on concrete or wooden base. Do not lay directly on soil. Protect against mechanical damages and any deformations.

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7.3 Specific end use(s)

Production of lead, production of accumulators, production of metal sheets, production of hot-dip galvanised steel, production of articles (pouring, rolling, extrusion of products, ammunition and lead shot), production of lead steel, production of lead powder, use of lead solder, lead ammunition, articles that may get into contact with skin, installation and maintenance of lead metal sheets, assembly of acid-lead accumulators, use of lead steel, use of neutral anodes, use of lead articles that may get into contact with skin, use of outdoor and indoor lead metal sheets, use of articles, for which no exposure is to be expected, use of accumulators, soldering, use of lead ammunition, racking used ammunition.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Specification	TLV-TWA	TLV-STEL	TLV-C	DSB
Lead [CAS 7439-92-1] and its inorganic compounds – calculated as Pb	0.05 mg/m^3	—	—	500 ug/l [1)] 700 ug/l [2)]

Legal basis: Dz. U. 2002, No.217, item 1833 with amendments, Dz.U. 1996, No.69, item 332 with amendments)

[1)] The substance being determined: lead, biological material: blood.

[2)]The substance being determined: Z-PP: biological material: blood.

Substance	DNEL	DNEL (pregnant women)
lead	40 ug /dL blood	10 ug /dL blood

Substance				
lead	PNEC water (pg/l)			
	fresh water		marine water	
	5.6 ug/l		3.4 ug/L	
	PNEC sediment (mg/kg)			
	fresh water		marine water	
	value	estimation factor	estimated value factor	
	41	10	164	3
	PNEC soil (mg/kg)			
	value		estimation factor	
	147		2	
	PNEC waste treatment plant activated sludge (mg/L)			
	value		estimation factor	
	0.1		10	

Source: Chemical Safety Report

8.2 Exposure control

Observe general safety and hygiene rules. Ensure local ventilation of each workplace and general ventilation in the room. Do not eat, drink or smoke at work. Wash hands before break and after work is finished.

Hand and body protection - not required.

Eye protection – not required.

Respiratory protection – not required.

The above mentioned information related to personal protection measures refer to the contact with metallic lead.

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The use of protective gloves, protective clothes, protective mask is necessary in the case of contact with lead compounds, processed product or the product being processed. The choice of individual protection measures should depend on the use of the substance.

The applied personal protection measures have to meet the requirements included in the Regulation of the Minister of Economy of 21 December 2005 (Dz. U. No.259, item 2173) and Directive 89/686/EC (with amendments). The employer is obliged to ensure protection measures suitable for the operations being performed and meeting all the quality requirements, including maintenance and cleaning.
Procedures for monitoring of concentrations of hazardous components in the air and procedures for control of air purity at workplace should be applied – if available and justified at the specific workplace – in accordance with applicable Polish or European Standards considering conditions in the place of exposure and applicable measuring methods adjusted to working conditions. Mode, type and frequency of tests and measurements should meet the requirements included in the Regulation of the Minister of Health of 20 April 2005. (Dz. U. No.73, item 645 with amendments).

Environmental exposure controls

Do not allow the product to penetrate ground waters, drains, sewage or soil.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

physical state:	solid.
colour:	grey, metallic
odour:	odourless
odour threshold:	not determined
pH value:	not applicable
melting/solidification point:	326°C
Initial boiling temperature:	1744°C
flash point:	not applicable
evaporation rate:	not determined
flammability (solid, gas):	the product is not flammable.
upper/lower explosion limit:	not applicable
vapour pressure (20°C):	not determined
vapour density:	not determined
relative density (20°C)	11.45 g/cm^3
solubility:	soluble in nitric acid and hot, concentrated nitric acid, small amounts dissolve in CO_2-free water.
partition coefficient: n-octanol/water:	not determined
self-ignition point:	not applicable
temperature of decomposition:	not determined
explosive properties:	none observed
oxidizing properties:	none observed
kinematic viscosity (25°C)	not applicable

9.2 Other information

Average particle size – bulk	12.7 um
density	5.3 t/m^3

Section 10: Stability and reactivity

10.1 Reactivity

The product is poorly reactive; it reacts with acids and bases.

10.2 Chemical stability

The product is stable at correct use and storage.

10.3 Possibility of hazardous reactions

No data available

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10.4 Conditions to avoid

No data available.

10.5 Incompatible materials

Acids and bases.

10.6 Dangerous decomposition product

No data available.

Section 11: Toxicological information

11.1 Information on toxicological effects

Information on acute and/or delayed exposure effects have been defined based on information on product classification and/or toxicological tests.

lead

TCLo (inhalation, man)	0.01 mg/m^3
TDL_0 (oral, rat)	790-1,140 mg/kg

Lead compounds cause damage to the peripheral and central nervous system and cause anaemia, mostly resulting from the inhibition of synthesis of red blood cell haemoglobin. Lead is accumulated in the body, predominantly in bones, as well as in kidneys and other tissues. Acute intoxication symptoms may occur after few days of exposure to high concentrations of dust or smokes exceeding acceptable TLV-TWA or DSB limits. Exposure symptoms include: stomach pain, diarrhoea preceded by constipation, loss of appetite, metallic taste in mouth, nausea, vomiting, fatigue, insomnia, muscle weakness, joint pain, agitation, headache and dizziness, increased blood pressure. Anaemia or kidney, liver, female sex organs and central nervous system damage may occur. Lead compounds cause strong irritation and hypersensitivity of the respiratory system, feeling of dyspnoea, short breath and asthmatic symptoms. The risk of accumulation in the body exists.

Section 12: Ecological information

12.1 Toxicity

Toxicity to freshwater fish (short-term)	
LC_{50}(Pimephales promelas)	40.79 ug/L/96h
LC_{50} (Oncorhynchus mykiss)	107.0 ug/L/96h
Toxicity to freshwater fish (long-term)	
EC_{10} (Oncorhynchus mykiss, eggs)	18.9 ug/L/18 months
EC_{10} (Pimephales promelas, 7- day)	39.6 ug/L/30 days
Toxicity to marine fish (long-term)	
EC_{10} (Cyprinodon variegatus, eggs)	229.6 ug/L/28 days
Toxicity to freshwater invertebrates (short-term)	
$LC_{5[}$ (Ceriodaphnia dubia)	26.4 ug/L/48 hours
Toxicity to freshwater invertebrates (long-term)	
EC_{10} (Daphnia magna, 1-day)	9.0 ug/L/21 days
Toxicity to marine invertebrates (long-term)	
EC_{10} (Neanthes arenaceodantata, young individuals) 95.9 pg/L/126 days	
Toxicity to freshwater algae (short-term)	
LC_{50} (Pseudokirchneriella subcapitata)	21.7 ug/L/2 days
Toxicity to freshwater algae (long-term)	
EC_{10} (Lemna minor)	29.5 ug/L/7 days

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Toxicity to marine algae (short-term)

EC_{10} (Skeletonema costatum) 99.4 ug/L/4 days

No detailed toxicity test results. The product has not been classified as hazardous to the environment. However, lead compounds, such as salts and oxides, have toxic effects on aquatic organisms. Acceptable concentration of lead in sewage is 0.1 mg/dm^3 for heating industry; for other types of sewage 0.5 mg/dm^3. Acceptable level of lead in atmospheric air is 0.5 ug/m^3 on average for calendar year.

12.2 Persistence and degradability

No biodegradation occurs.

12.3 Bioaccumulation potential

Risk of accumulation in aquatic organisms.

12.4 Mobility in soil.

The product demonstrates low mobility in soil and aquatic environment. It is heavier than water, falls to the bottom and stays there. There is the risk of absorption by aquatic organisms.

12.5 Results of PBT and vPvB assessment

Not determined.

12.6 Other adverse effects

The product does not affect global warming and ozone layer damage.

Section 13: Disposal considerations

13.1 Waste treatment methods

Advice on mixture: dispose of according to the applicable regulations. Do not dispose with municipal wastes or to drains. Store residue in original containers. If possible, recycling is preferred. Recommended waste neutralisation method: thermal transformation Waste code should be assigned in the place of production.

Advice on used packages recovery/recycling/utilisation of packaging wastes should be carried out in accordance with the applicable regulations. Only completely emptied and cleaned packages may be returned for recycling.

Community legal acts – European Parliament and Council Directives: 2006/12/EC AND 94/62/EC,
Council Directive 91/689/EEC.
Country-specific legal acts: Dz. U. 2001, No. 62, item 628 with amendments, Dz. U. 2001, No. 63, item 638 with amendments

Section 14: Transport information

14.1 UN number

The product has not been classified as hazardous during transport.

14.2 Proper transport name

Not applicable.

14.3 Transport hazard class(es)

Not applicable.

14.4 Packing group

Not applicable.

14.5 Environmental hazards

The substance may be hazardous to the environment.

14.6 Special precautions for user

Not required.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

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Section 15: Regulatory information

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

The Act of 11 January 2001 on chemical substances and preparations (Dz. U. No.11, item 84 with amendments) Consolidated text (Dz. U. of 2009 No.152, item 1222).
Regulation of the Minister of Health of 08 February 2010 on the list of hazardous substances, their classification and labelling (Dz. U. No.27, item 140).
Regulation of the Minister of Health of 2 September 2003 on the criteria and classification of chemical substances and preparations (Dz. U. No.171, item 1666 with amendments).
Regulation of the Minister of Health of 5 March 2009 on labelling hazardous substances and preparations (Dz. U. No.53, item 439}.
Regulation of the Minister of Labour and Social Policy of 29 November 2002 on the maximum acceptable concentrations and intensities of the factors hazardous for health at the workplace (Dz. U. No.217, item 1833 with amendments).
Government Statement of 16 January 2009 on taking effect of Annex A and B to the European Contract on International road transport of hazardous goods (ADR) made up in Geneva on 30 September 1957 (Dz.U. No.27, item 162).
The Act of 27 April 2001 on wastes (Dz. U. No.62, item 628 with amendments). Consolidated text (Dz. 2007, No. 39, item 251).
Regulation of the Minister of Environment of 27 September 2001, on the catalogue of wastes (Dz. U. No.112, item 1206).
Regulation of the Minister of Economy of 21 December 2005, on the basic requirements for personal protection measures (Dz. U. No.259, item 2173 of 2005).
Regulation of the Minister of Health of 20 April 2005 on tests and measurements of the factors hazardous for health at the workplace (Dz. U. No.73, item 645 of 2005 with amendments).
The Act of 22 January 2010 on the amendment to the act on wastes and some other acts (Dz. U. No. 28, item 145.).
The Act of 11 May 2001 on packages and package wastes (Dz. U. 2001, No. 63, item 638, with amendments)
1907/2006/EC Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency and 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
1272/2008/EC Regulation of the European Parliament and 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 the Regulation (EC) No. 1907/2006
67/548/EC Directive of the European Parliament and of the Council of 27 June 1967 concerning the approximation of the laws, regulations and administrative provisions of the member States relating to the classification, packaging and labelling of dangerous preparations.
1999/45/EC Directive of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the member States relating to the classification, packaging and labelling of dangerous preparations.
790/2009/WE Commission Regulation of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, 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.
453/2010/EC Regulation of the (UE) Commission of 20 May 2010 amending the Regulation (EC) No. 1907/2006 of the European Parliament and Council dated December 18, 2006 on registration, evaluation, granting of permissions and restrictions applied in scope of chemicals (REACH).
2006/12/EC Directive of the European Parliament and of the Council of 5 April 2006 on waste.
91/689/EEC Council Directive 91/689/EEC of 12 December 1991 on hazardous waste.
94/62/EC European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste.

15.2 Evaluating the chemical safety status

Chemical safety assessment for the substance has been carried out.

Section 16: Other information

Training

Before working with the product a user should get acquainted with Occupational Safety regulations related to chemicals handling, and especially have special proper workplace training.

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Abbreviations and acronyms

TLV-TWA	Threshold Limit Value, Time-Weighted Average
TLV-STEL	Threshold Limit Value, Short Term Exposure Limit
TLV-C	Ceiling Exposure Limit
DSB	Acceptable concentration in biological material
DNEL:	Derived No Effect Level
PNEC	Predicted No Effect Concentration

Additional information

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Made by:	Marta Kuberska-Maciejewska, MSc. (based on manufacturer's information).

The Safety Data Sheet was issued by: **„THETA"** Doradztwo Techniczne

The above mentioned information has been developed based on the currently available data that characterise the product, as well as manufacturer's experience and knowledge within this scope. They do not constitute quality description of the product or a guarantee of specific properties. The data shall be used only as an aid in safe proceeding during the product transport, handling, and storage. It does not release the user from the responsibility for improper use of the information above and observing all legal standards applicable in this field.