



MATERIAL SAFETY DATA SHEET

[In accordance with 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) (Official Journal of the European Union No L.132 of 29.05.2015)]

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

1.1 Product identifiers

Trade name: **SOLDER WIRE OF TIN SILVER COPPER**

(Sn96,3Ag3Cu0,5 ; Sn95,8Ag3,5Cu0,7 ; Sn95,5Ag3,8Cu0,7 ; Sn95,5Ag4Cu0,5; Sn98,3Ag1Cu0,7 with flux CF48, 1.1.3, 1.2.3)

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

Relevant identified uses:

Product used in the manufacture of soft soldering manual and automatic.

Uses advised against:

Not determined

1.3 Details of the supplier of the safety data sheet

Supplier: **Cynel-Unipress Sp z o.o.**

Address: ul. Białolecka 231B, 03-253 Warszawa, Poland

Telephone/Fax number: +48 22 519 29 48/ 22 519 29 46

E-mail address : marketing@cynel.com.pl

1.4 Emergency telephone number

Emergency Phone # : 112

Section 2. Hazards identification

2.1 Classification of the substance or mixture

Not classified as dangerous.

2.2 Label elements

Hazard symbols:

None

Substance name for labeling:

Not applicable

Risk phrases:

None

Safety phrases:

None

2.3 Other hazards

No information whether the mixture meets criteria for PBT or vPvB in accordance with Annex XIII of Regulation REACH.



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Section 3. Composition/Information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures:

Tin (Sn):

Range of percentages: 92,05 – 95,93%
CAS number: 7440-31-5
EC number: 231-141-8
Registration number: 01-2119486474-28-XXXX
Classification acc. to 1272/2008/EC: not classified

Substance with defined value of the permissible concentration in the working environment at Community level.

Silver (Ag):

Range of percentages: 0,78 – 4,07%
CAS number: 7440-22-4
EC number: 231-131-3
Registration number: 01-2119555669-21-0029
Classification acc. to 1272/2008/EC: not classified

Substance with defined value of the permissible concentration in the working environment at Community level.

Copper (Cu):

Range of percentages: 0,29 – 0,87%
CAS number: 7440-50-8
EC number: 231-159-6
Registration number: 01-2119480154-42-0002
Classification acc. to 1272/2008/EC: not classified

Substance with defined value of the permissible concentration in the working environment at Community level.

Hydrogenated rosin:

Range of percentages: < 3 %
CAS number: 65997-06-0
EC number: 266-041-3
Registration number: 01-2119487113-41-0000
Classification acc. to 1272/2008/EC: not classified

Section 4. First aid measures

4.1 Description of first aid measures



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General information: at room temperature (outside of the dangers of a mechanical nature), alloy in metallic form does not pose risk to human health and life. But in the process of soldering the main risks are: high temperature, solder fumes and vapours.

Skin contact:

Wire: wash the affected skin thoroughly with soap and water.

In the process of soldering: possible thermal burn. Damaged skin rinse with cold water. Apply a sterile dressing. Consult with the doctor.

Eye contact:

Wire: exposure not possible. However, if filings get into eyes, immediately wash out with plenty of water with the eyelid hold wide open, for at least 10-15 min. Remove any contact lenses. Obtain medical attention if necessary.

In the process of soldering: splashes of molten metal can cause burns. Apply a sterile dressing. Immediately consult an ophthalmologist.

Ingestion: exposure not possible.

Inhalation:

Wire: exposure not possible.

In the process of soldering: take victim to fresh air and obtain medical attention

4.2 Most important symptoms and effects, both acute and delayed

Silver in forms of granules and ingots is not hazardous. However, during production and some uses, the hazardous respirable silver-bearing particles may occur/be formed

Eye contact: may cause irritation, redness, tearing.

Skin contact: may cause redness, burning sensation, burns (during soldering)

Inhalation: irritation of respiratory tract, cough.

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: CO₂, extinguishing powder, foam, water spray. 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

During combustion may release toxic gases, vapors, and fumes. Do not inhale combustion products – it can be dangerous for health.

5.3 Advice for firefighters

Personal protection typical in case of fire. Self-contained breathing apparatus and protective clothing should be worn.



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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 consequences of failure remove only trained personnel. Use personal protective equipment. Do not inhale dust.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Pick it up mechanically. Treat collected material 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 during the soldering process. Before break and after work wash carefully hands. Avoid contact with eyes and skin. Do not breathe fumes in the process of soldering. Unused containers keep tightly closed.

7.2 Including any incompatibilities

Keep only in original, tightly closed containers in dry and well-ventilated place. Store at temp. 5-20°C. Keep away from food and beverages. Keep away from strong oxidants, acids and bases.

7.3 Specific end uses

Product used in the manufacture of low-melting solder pastes.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Airborne Exposure Limits:

For silver:

-Occupational exposure limit value in European Community: 0,1 mg/m³/eight hours

-ACGIH Threshold Limit Value (TLV): 0,1 mg/m³ TWA (metal)

-OSHA Permissible Exposure Limit (PEL): 0,01 mg/m³ (TWA)

For tin:

-ACGIH Threshold Limit Value (TLV): 2 mg/m³ (TWA)

-OSHA Permissible Exposure Limit (PEL): 2 mg/m³ (TWA)



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For copper:

-ACGIH Threshold Limit Value (TLV): 0,2 mg/m³ (TWA)

-OSHA Permissible Exposure Limit (PEL): 0,1 mg/m³ (TWA)

Regulation of the Minister of Labour and Social Policy of 6 June 2014. On maximum permissible concentration and intensity of harmful factors in the work environment (Dz.U. 2014 poz. 817)

Specification	NDS	NDSch	NDSP
Tin [CAS 7440-31-5] and its inorganic compounds - fume and dust	2 mg/m ³	—	—
Silver – fume and dust [CAS 7440-22-4]	0,05 mg/m ³	—	—
Copper [7440-50-8] and its inorganic compounds – calculation on Cu	0,2 m	—	—

Royal Decree of 11 March 2002 on the protection of the health and safety of workers against the risks related to chemical agents at work (MB 14.3.2002, Ed 2; Erratum MB 26.6.2002, 2 Ed.)

Specification	Value limit [ppm]	Value limit [mg/m ³]	Value short [ppm]	Short value duration [mg/m ³]	classification additional
Silver (Ag) [CAS 7440-22-4]	—	0,1	—	—	—
Tin [CAS 7440-31-5]	—	0,1	—	0,2	D ¹⁾
Copper [7440-50-8] – dusts and mists	—	1	—	—	—

1) D means that the absorption of the agent through the skin, mucous membranes or eyes, is an important part of the exhibition total. This reduction can be done both by direct contact and by the presence of the agent in the air.

List of MAK and BAT Values 2014 Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area

Specification	MAK [ppm]	MAK [mg/m ³]	Peak limitation	Pregnancy risk group
Silver (Ag) [CAS 7440-22-4]	—	0,1	II (8)	Group D
Tin [CAS 7440-31-5]	—	0,1	—	0,2
Copper [7440-50-8]	—	0,01R	II (2)	Group C

Group D: Either there are no data for an assessment of damage to the embryo or foetus or the currently available data are not sufficient for classification in one of the groups A–C.

Group C: C: There is no reason to fear damage to the embryo or foetus when MAK and BAT values are observed

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



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8.2 Exposure controls

Use the product in accordance with good occupational hygiene and safety practices. Ensure adequate general and/or local ventilation. When handlings do not eat, drink or smoke. Before break and after work carefully wash hands. Avoid dusting.

Hand and body protection

In case of a short-term exposure: recommended gloves with protection class 2 or higher (breakthrough time > 30 min.). In case of a long-time exposure wear protection gloves with protection class 6 (breakthrough time > 480 min.). Depending on the task, use protective clothing appropriate to the potential hazard. Material of gloves must be impermeable and resistant to the product. Material selection should be made taking into account the penetration times, rates of diffusion and degradation. Moreover, the selection of suitable gloves not only depends on the material, but also on further marks of quality and varies depending on the manufacturer. From the manufacturer's advice should be obtained about the exact break trough time has to be observed. It is recommended to regularly change gloves and replace them immediately if you experience any signs of wear, damage or change in appearance (color, elasticity, shape).

Eye protection

In case of risk of eyes contamination wear protective goggles.

Respiratory protection

Properly fitted respirator, equipped with a canister or air filter, consistent with an approved standard should be used when a risk assessment indicates that is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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

Allow release to the environment, do not enter 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:	grey, metallic
odour:	odourless
odour threshold:	not determinate
pH:	not applicable
melting point/freezing point:	217 - 224°C
initial boiling point and boiling range:	not determinate
flash point:	not applicable
evaporation rate:	not determinate



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flammability (solid, gas):	not flammable
upper/lower flammability or explosive limits:	not applicable
vapour pressure (20°C):	not applicable
relative vapour density:	not determinate
vapour density:	not determinate
density (20°C):	7,30 – 7,45 g/cm ³
solubility(ies):	not soluble in water
partition coefficient: n-octanol/water:	not determinate
auto-ignition temperature:	not self-ignition
decomposition temperature:	not determinate
explosive properties:	not display
oxidising properties:	not display
viscosity (20°C):	not applicable

9.2 Other safety information

no data

Section 10. Stability and reactivity

10.1 Reactivity

Product is reactive; reacts with oxidants, peroxides, acids and bases

10.2 Chemical stability

The product is stable under normal conditions.

10.3 Possibility of hazardous reactions

In contact with incompatible materials reacts violently with emission of heat. In contact with acids and bases reacts with liberation of hydrogen.

10.4 Conditions to avoid

Extreme temperature and moisture.

10.5 Incompatible materials

Strong oxidants, acids, bases.

10.6 Hazardous decomposition products

Not known.

Section 11. Toxicological information

11.1 Information on toxicological effects

Toxicity of compounds

Tin

LD50 (oral, rat) > 2 000 mg/kg

LD50 (skin, rat) > 2 000 mg/kg

LC50 (inhalation, rat) > 4,75 mg/l/4h



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In the form of dust or fumes is irritating. May cause shortness of breath, fever, general weakness, sweating, resolving without treatment (so-called smoke-induced fever metals). Dusts may cause mechanical irritation of the conjunctiva with tearing, pain, congestion.

Silver

LD50 (oral, rat) > 2 000 mg/kg

Copper

LD50 (Intraperitoneal-mouse):3,5 mg/kg

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has led to hemolytic anemia and accelerates arteriosclerosis., Damage to the lungs., Vomiting, Diarrhea, Abdominal pain, Blood disorders

Toxicity of mixture

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

Information on the acute and / or delayed effects of exposure have been identified on the basis of information on product classification and / or toxicological studies.

Section 12. Ecological information

12.1 Toxicity

No specific toxicity test results. This product is not classified as dangerous for the environment

12.2 Persistence and degradability

Not biodegradable

12.3 Bioaccumulative potential

Risk of accumulation of heavy metals 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

12.5 Results of PBT and vPvB assessment

Not determinate.

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: disposed of in accordance with applicable regulations. Do not remove with household waste. Residues stored in their original containers. Recycle or re-processed. Recommended way of disposing of waste: thermal transformation.

Disposal methods for used packing: recovery / recycling / elimination of packaging waste carried out in accordance with applicable regulations. Only completely emptied packaging can be recycled.



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Section 14. Transport information

14.1 UN number

Not applicable, product is not classified as hazardous during transport

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packaging group

Not applicable

14.5 Environmental hazards

Not classified as dangerous for the environment

14.6 Special precautions for user

Not necessary

Section 15. Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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.

Directive 1999/45/EC 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.

Commission Regulation (EC) No 790/2009 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 on classification, labelling and packaging of substances and mixtures (Text with EEA relevance).

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 with later changes (adaptation to technical and scientific progress 1-10 ATP)

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)



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Proposal for harmonised classification and labelling, based on regulation (EC) No 1272/2008 (CLP Regulation), Annex VI, Part 2, 20 September 2012

Reach Classification, labelling and packaging of copper, February 28th 2013

Regulation of the Minister of Labour and Social Policy of 6 June 2014. On maximum permissible concentration and intensity of harmful factors in the work environment (Dz.U. 2014 poz. 817)

Royal Decree of 11 March 2002 on the protection of the health and safety of workers against the risks related to chemical agents at work (MB 14.3.2002, Ed 2; Erratum MB 26.6.2002, 2 Ed.)

List of MAK and BAT Values 2014 Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area

Council Directive 91/689/EEC of 12 December 1991 on hazardous waste
Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Text with EEA relevance)

European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), concluded in Geneva on 30 September 1957 (Dz. U. Nr 110, poz. 641).

15.2 Chemical Safety Assessment

There are no data on the safety assessment for chemical substances contained in the mixture.

Section 16. Other information

Trainings

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo proper workplace training.

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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.

Explanation of abbreviations and acronyms

PBT Persistent, Bioaccumulative and Toxic substance

vPvB very Persistent, very Bioaccumulative substance

TWA Time Weighted Average

TLV Threshold Limit Value

PEL Permissible Exposure Limit

Trainings

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo proper workplace training.

Other data Classification of the substances on the basis of information from ECHA. Classification of mixture was performed on the basis of the data concerning the contents of dangerous components using calculation method based on the Regulation (EC) No 1272/2008 (CLP).



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