



Material Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product:	Lead free solder wire
Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date:	05.03.2019

2. Hazards Identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified.

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

Hazard pictograms (CLP)	None
Signal word	None
Hazard statements	Not applicable
Precautionary statements	Not applicable
EU Specific Hazard Statements	None

2.3. Other hazards

No information available.



Material Safety Data Sheet

3. Composition/Information on Ingredient

3.1 Mixture

Chemical Name	EC No.	CAS number	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Tin	231-141-8	7440-31-5	97.761	Eye Irrit 2 STOT SE 3
Modified rosin	266-042-9	65997-13-9	1.5	Not classified
Copper	231-159-6	7440-50-8	0.739	Skin Sens.1 Resp.Sens.1

4. First aid measures

4.1. Description of first aid measures

General advice

If you feel unwell, seek medical advice (show directions for use or safety data sheet if possible).

Inhalation

Not an expected route of exposure.

Skin contact

Not expected to present a significant skin hazard under anticipated conditions of normal use. No special technical protective measures required.

Eye contact

Not an expected route of exposure.

Ingestion

Rinse mouth out with water. If you feel unwell, seek medical advice.

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

No additional information available.

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

Treat symptomatically.



5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media:

No information available.

5.2. Special hazards arising from the substance or mixture

Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire:

Eliminate every possible source of ignition. Keep container tightly closed and away from heat, sparks and flame.

Protection during firefighting:

Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

Other information:

Ensure adequate ventilation, especially in confined areas. Evacuate personnel to a safe area. Avoid contact with skin, eyes and inhalation of vapors. Move containers from fire area if it can be done without personal risk. Cool tanks/drums with water spray/remove them into safety. Stay upwind.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures:

Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Avoid contact with skin, eyes and inhalation of vapors.

6.1.2. For emergency responders

Protective equipment:

Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures:

Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.



Material Safety Data Sheet

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Use a clean shovel to collect it in a properly sealed waste container with a label and completely sealed. Such containers shall be stored in suitable locations for the purpose of handling or disposing in accordance with national law Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

7. Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling:

Ensure good ventilation of the work station. Wear personal protective equipment. Do not open, destroy, or incinerate batteries because the battery may explode, break, or vent during these processes. Do not short-circuit the battery, overcharge, forced discharge or thrown into the fire.

Hygiene measures:

Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions:

Prohibited high temperature storage. Store in a well-ventilated place. Store in a dry place. Keep container tightly closed. Keep cool.

7.3. Specific end use(s)

No additional information available



Material Safety Data Sheet

8. Exposure controls/personal protection

8.1. Control parameters

Tin (7440-31-5)

Austria	MAK (mg/m ³)	2 mg/m ³ (inhalable fraction)
Austria	MAK Short time value (mg/m ³)	4 mg/m ³ (inhalable fraction)
Belgium	Limit value (mg/m ³)	2 mg/m ³
Bulgaria	OEL TWA (mg/m ³)	0.1 mg/m ³ 2 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	2 mg/m ³
Cyprus	OEL TWA (mg/m ³)	2 mg/m ³
Finland	HTP-arvo (8h) (mg/m ³)	2 mg/m ³
Germany	TRGS 910 Acceptable concentration notes	
Greece	OEL TWA (mg/m ³)	2 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	2 mg/m ³
Ireland	OEL (15 min ref) (mg/m ³)	6 mg/m ³ (calculated)
Malta	OEL TWA (mg/m ³)	2 mg/m ³
Poland	NDS (mg/m ³)	2 mg/m ³ (inhalable fraction)
Portugal	OEL TWA (mg/m ³)	2 mg/m ³
Slovenia	OEL TWA (mg/m ³)	0.1 mg/m ³ (applies to organic compounds-inhalable fraction) 2 mg/m ³ (applies to inorganic compounds)
Spain	VLA-ED (mg/m ³)	2 mg/m ³
Sweden	nivågränsvärde (NVG) (mg/m ³)	2 mg/m ³ (inhalable dust)
USA - ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³



Material Safety Data Sheet

Copper (7440-50-8)

Austria	MAK (mg/m ³)	1 mg/m ³ (inhalable fraction) 0.1 mg/m ³ (respirable fraction, smoke)
Austria	MAK Short time value (mg/m ³)	4 mg/m ³ (inhalable fraction) 0.4 mg/m ³ (respirable fraction, smoke)
Belgium	Limit value (mg/m ³)	2 mg/m ³ 0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Bulgaria	OEL TWA (mg/m ³)	0.1 mg/m ³ (metal vapor)
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust)
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	2 mg/m ³ (fume and dust)
Czech Republic	Expoziční limity (PEL) (mg/m ³)	1 mg/m ³ (dust) 0.1 mg/m ³ (fume)
Denmark	Grænseværdie (langvarig) (mg/m ³)	1 mg/m ³ (dust and powder) 0.1 mg/m ³ (fume)
Estonia	OEL TWA (mg/m ³)	1 mg/m ³ (total dust) 0.2 mg/m ³ (respirable dust)
Finland	HTP-arvo (8h) (mg/m ³)	0.02 mg/m ³ (respirable dust)
France	VME (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust)
France	VLE (mg/m ³)	2 mg/m ³ (dust)
Germany	TRGS 910 Acceptable concentration notes	
Greece	OEL TWA (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust)
Greece	OEL STEL (mg/m ³)	2 mg/m ³ (dust)
Hungary	AK-érték	1 mg/m ³ 0.1 mg/m ³ (fume)
Hungary	CK-érték	4 mg/m ³ 0.4 mg/m ³ (fume)
Ireland	OEL (8 hours ref) (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dusts and mists)
Ireland	OEL (15 min ref) (mg/m ³)	2 mg/m ³ (dusts and mists) 0.6 mg/m ³ (calculated-fume)
Latvia	OEL TWA (mg/m ³)	0.5 mg/m ³
Lithuania	IPRV (mg/m ³)	1 mg/m ³ (inhalable fraction) 0.2 mg/m ³ (respirable fraction)



Material Safety Data Sheet

Netherlands	Grenswaarde TGG 8H (mg/m ³)	0.1 mg/m ³ (inhalable fraction)
Poland	NDS (mg/m ³)	0.2 mg/m ³
Portugal	OEL TWA (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Romania	OEL TWA (mg/m ³)	0.5 mg/m ³ (powder)
Romania	OEL STEL (mg/m ³)	0.2 mg/m ³ (fume) 1.5 mg/m ³ (dust)
Slovakia	NPHV (priemerná) (mg/m ³)	1 mg/m ³ (inhalable fraction) 0.2 mg/m ³ (respirable fraction)
Slovenia	OEL TWA (mg/m ³)	1 mg/m ³ (inhalable fraction) 0.1 mg/m ³ (respirable fraction, fume)
Slovenia	OEL STEL (mg/m ³)	4 mg/m ³ (inhalable fraction) 0.4 mg/m ³ (respirable fraction, fume)
Spain	VLA-ED (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Sweden	nivågränsvärde (NVG) (mg/m ³)	0.01 mg/m ³ (respirable dust)
United Kingdom	WEL TWA (mg/m ³)	1 mg/m ³ (dust and mists) 0.2 mg/m ³ (fume)
United Kingdom	WEL STEL (mg/m ³)	0.6 mg/m ³ (calculated-fume) 2 mg/m ³ (dust and mist)
Norway	Grenseverdier (AN) (mg/m ³)	0.1 mg/m ³ (fume) 1 mg/m ³ (dust)
Norway	Grenseverdier (Korttidsverdi) (mg/m ³)	0.3 mg/m ³ (value calculated-fume) 2 mg/m ³ (value calculated-dust)
Switzerland	MAK (mg/m ³)	0.1 mg/m ³ (inhalable dust)
Switzerland	KZGW (mg/m ³)	0.2 mg/m ³ (inhalable dust)
USA - ACGIH	ACGIH TWA (mg/m ³)	0.2 mg/m ³ (fume)



Material Safety Data Sheet

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station. Remove all sources of ignition. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:

Avoid release to the environment.



9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Solid
Colour:	No data available
Odour:	No data available
Odour threshold:	No data available
pH:	No data available
Relative evaporation rate (butylacetate=1):	No data available
Melting point:	No data available
Freezing point:	Not applicable
Boiling point:	No data available
Flash point:	Not applicable
Auto-ignition temperature:	Not applicable
Decomposition temperature:	No data available
Flammability (solid, gas):	Non flammable.
Vapour pressure:	No data available
Relative vapour density at 20 °C:	No data available
Relative density:	No data available
Solubility:	No data available
Log Pow:	No data available
Viscosity, kinematic:	Not applicable
Viscosity, dynamic:	Not applicable
Explosive properties:	No data available
Oxidising properties:	No data available
Explosive limits:	Not applicable

9.2. Other information

No additional information available



Material Safety Data Sheet

10. Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No deformation, destruction, crushed, disassemble, overcharge, short circuit. Prolonged exposure to damp conditions

10.5. Incompatible materials

Strong acid, Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified
Modified rosin (65997-13-9)	LD50 oral rat > 2000 mg/kg
Skin corrosion/irritation	Not classified.
Serious eye damage/irritation	Not classified.
Respiratory or skin sensitisation	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.
Reproductive toxicity	Not classified.
STOT-single exposure	Not classified.
STOT-repeated exposure	Not classified.
Aspiration hazard	Not classified.



12. Ecological information

12.1. Toxicity

Ecology - general

The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Acute aquatic toxicity

Not classified

Chronic aquatic toxicity

Not classified

12.2. Persistence and degradability

No additional information available.

12.3. Bioaccumulative potential

No additional information available.

12.4. Mobility in soil

No additional information available.

12.5. Results of PBT and vPvB assessment

No additional information available.

12.6. Other adverse effects

No additional information available.

13. Disposal considerations

13.1. Waste treatment methods

Waste treatment methods

Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations

Dispose of contents/container in accordance with licensed collector's sorting instructions.



Material Safety Data Sheet

14. Transport information

In accordance with ADR / RID / IMDG / IATA / AND

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated

No supplementary information available

14.6. Special precautions for user

Overland transport	Not regulated
Transport by sea	Not regulated
Air transport	Not regulated
Inland waterway transport	Not regulated
Rail transport	Not regulated

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

Not applicable



Material Safety Data Sheet

15. Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

Tin (7440-31-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Copper (7440-50-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Modified rosin (65997-13-9)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.1.2. National regulations

Tin (7440-31-5)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

Copper (7440-50-8)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on the TCSI (Taiwan Chemical Substance Inventory)



Material Safety Data Sheet

Modified rosin (65997-13-9)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on the Japanese ISHL (Industrial Safety and Health Law)

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

Germany

Reference to AwSV:

Water hazard class (WGK) nwg, Non-hazardous to water (Classification according to AwSV, Annex 1)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV

Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen

Modified rosin is listed

SZW-lijst van mutagene stoffen:

Modified rosin is listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding

None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid

None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling

None of the components are listed

15.2. Chemical safety assessment

No chemical safety assessment has been carried out



Material Safety Data Sheet

16. Other information

Full text of H- and EUH-phrases

H317: May cause an allergic skin reaction.

H319: Causes serious eye irritation.

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335: May cause respiratory irritation.

Key or legend to abbreviations and acronyms used in the safety data sheet

ADR : European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMDG : International Maritime Dangerous Goods

IATA : International Air Transport Association

ADN : European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterway

RID : Regulations Concerning the International Carriage of Dangerous Goods by Rail

PBT : Persistent, Bioaccumulative and Toxic

vPvB : Very Persistent and Very Bioaccumulative

DNEL : Derived No Effect Level

PNEC : Predicted No Effect Concentration

LC50 : Lethal Concentration 50

LD50 : Lethal Dose 50

EC50 : Effective Concentration 50

TWA : Time Weighted Average

STEL : Short Term Exposure Limit

Key literature references and sources for data

ECHA: <http://echa.europa.eu/>

IFA GESTIS: [http://gestis-en.itrust.de/nxt/gateway.dll?f=templates\\$fn=default.htm\\$vid=gestiseng:sdbeng](http://gestis-en.itrust.de/nxt/gateway.dll?f=templates$fn=default.htm$vid=gestiseng:sdbeng)

HSDB: <http://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

ICSC: <http://www.ilo.org/dyn/icsc/showcard.home>

eChemPortal: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

NITE-CHRIP: http://www.nite.go.jp/en/chem/chrip/chrip_search/srhInput

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.