

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

1.1. Product identifier

Trade name or designation of the mixture	Rosin Core Lead-Free Solder
Registration number	-
Synonyms	None.
SDS number	WC012
Issue date	22-February-2019
Version number	01
Revision date	-
Supersedes date	-

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

Identified uses	Solder.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier	Worthington Cylinders GmbH
Address	Beim Flaschenwerk 1, A-3291 Kienberg bei Gaming, Austria
Contact person	Ann Stiefvater
E-mail address	Ann.Stiefvater@worthingtonindustries.com
Telephone number	1-920-849-1740

1.4. Emergency telephone number 1-703-527-3887 International / CHEMTREC 1-800-424-9300 US

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms	None.
Signal word	None.
Hazard statements	The mixture does not meet the criteria for classification.

Precautionary statements

Prevention	Observe good industrial hygiene practices.
Response	Wash thoroughly after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.

Supplemental label information None.

2.3. Other hazards This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.
Molten material will produce thermal burns.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Tin	> 90	7440-31-5 231-141-8	-	-	#
Classification:	-				
Copper	3 - 5	7440-50-8 231-159-6	-	-	
Classification:	-				
Rosin	1.5 - 3	65997-06-0 266-041-3	-	-	
Classification:	-				

List of abbreviations and symbols that may be used above

#: This substance has been assigned Community workplace exposure limit(s).

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

4.1. Description of first aid measures

Inhalation

In case of inhalation of dust or fumes: Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Skin contact

Contact with dust: Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. If skin rash or an allergic skin reaction develops, get medical attention.

Eye contact

Contact with dust: Rinse immediately with plenty of water for at least 15 minutes. Remove any contact lenses. Get medical attention if irritation develops or persists.

Ingestion

Rinse mouth thoroughly if dust is ingested. Get medical attention if symptoms occur.

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

Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the eye, mucous membranes and respiratory tract. Contact with molten material may cause thermal burns.

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

Treat symptomatically. Exposure may aggravate pre-existing respiratory disorders. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards

Solid metal is not flammable; however, finely divided metallic dust or powder may form an explosive mixture with air.

5.1. Extinguishing media

Suitable extinguishing media

Extinguish with foam, carbon dioxide or dry powder.

Unsuitable extinguishing media

Do not use water or halogenated extinguishing media.

5.2. Special hazards arising from the substance or mixture

Fire or high temperatures create: Metal oxides.

5.3. Advice for firefighters

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures

Move containers from fire area if you can do it without risk.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Keep unnecessary personnel away. Avoid inhalation of dust from the spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

For emergency responders

Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water.

6.3. Methods and material for containment and cleaning up

Massive, solid metal: Pick up and arrange disposal without creating dust.
Dust: Collect dust or particulates using a vacuum cleaner with a HEPA filter. Use approved industrial vacuum cleaner for removal. Avoid generation and spreading of dust.
Recover and recycle, if practical. Keep out of water supplies and sewers.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Wear appropriate personal protective equipment (See Section 8). Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Avoid inhalation of dust and fumes. Avoid contact with eyes, skin, and clothing. Do not eat, drink or smoke when using the product. Wash thoroughly after handling.

Any surface that comes in contact with molten metal must be preheated or specially coated and rust free. Inadvertent contaminants to product such as moisture, ice, snow, grease, or oil can cause an explosion when charged to a molten metal bath or metal furnace (preheating metal will remove moisture from product).

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from food, drink and animal feeding stuffs. Keep out of reach of children. Store away from incompatible materials (See Section 10).

7.3. Specific end use(s)

Solder.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Copper (CAS 7440-50-8)	STEL	2 mg/m ³	Inhalable dusts and mists.
	TWA	1 mg/m ³	Inhalable dusts and mists.
		0.2 mg/m ³	Fume.

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU

Components	Type	Value
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no effect levels (DNELs)

Not available.

Predicted no effect concentrations (PNECs)

Not available.

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of dust. Keep melting/soldering temperatures as low as possible to minimize the generation of fume. Shower, hand and eye washing facilities near the workplace are recommended.

Individual protection measures, such as personal protective equipment

General information

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection

Wear safety glasses with side shields (or goggles). Wear a face shield when working with molten material.

Skin protection

- Hand protection

Wear protective gloves (i.e. latex, nitrile, neoprene).

- Other

Chemical resistant clothing is recommended.

Respiratory protection

Use a respirator when local exhaust or ventilation is not adequate to keep exposures below the OEL. In a confined space a supplied respirator may be required. In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter (type P2).

Thermal hazards

Heat resistant/insulated gloves and clothing are recommended when working with molten material.

Hygiene measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Silver to silver-gray metallic metal. Contains core of light yellow.
Physical state	Solid.
Form	Wire.
Colour	Silver to gray. Rosin core: light yellow
Odour	Odourless. Rosin core: Rosin odor
Odour threshold	Not applicable.
pH	Not applicable.
Melting point/freezing point	227.22 - 250 °C (441 - 482 °F)
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Solid metal is not flammable. Fine particles may form explosive mixtures with air.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit - upper (%)	Not applicable.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	7.2 (H2O=1)
Solubility(ies)	Insoluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
9.2. Other information	No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur.
10.4. Conditions to avoid	Contact with incompatible materials. Avoid molten metal contact with water.
10.5. Incompatible materials	Chlorine. Turpentine. Magnesium. Acetylene Gas.
10.6. Hazardous decomposition products	Toxic metal oxides are emitted when heated above the melting point.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the mucous membranes and respiratory tract. Lung damage and possible pulmonary edema can result from dust exposure. Inhalation of fumes may cause a flu-like illness called metal fume fever.
Skin contact	Dust may irritate skin. Contact with molten material may cause thermal burns.
Eye contact	Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the eye.

Ingestion	Ingestion of dusts generated during working operations may cause nausea and vomiting. Copper poisoning can result in hemolytic anemia and kidney, liver and spleen damage.
Symptoms	Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the eye, mucous membranes and respiratory tract. Contact with molten material may cause thermal burns.

11.1. Information on toxicological effects

Acute toxicity	High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever. When heated, the vapours/fumes given off may cause respiratory tract irritation. Overexposure of Tin can cause irritation of the eyes, skin, mucous membranes, and respiratory system. Acute overexposure to Copper dust/fume can cause irritation of the eyes, nose, throat, and skin and under severe fume overexposure can cause metal fume fever with flu-like symptoms such as sweet metal taste, dry throat, coughing, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue. Symptoms usually disappear within 24 hours. Copper may cause skin and hair discoloration. Inhalation of copper dusts may change the gums and mucous lining of the mouth which is generally attributable to localized tissue effect rather than general toxicity.
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Components	Species	Test Results
Copper (CAS 7440-50-8)		
Acute		
Inhalation		
LC50	Rat	> 2.77 mg/l, 4 hours
Oral		
LD50	Rat	481 mg/kg
Skin corrosion/irritation	Dust may irritate skin.	
Serious eye damage/eye irritation	Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the eye.	
Respiratory sensitisation	Based on available data, the classification criteria are not met.	
Skin sensitisation	Based on available data, the classification criteria are not met.	
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.	
Carcinogenicity	Based on available data, the classification criteria are not met.	
Reproductive toxicity	Based on available data, the classification criteria are not met.	
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.	
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.	
Aspiration hazard	Based on available data, the classification criteria are not met.	
Mixture versus substance information	No data available.	
Other information	Prolonged and repeated overexposure to dust and fumes can lead to benign pneumoconiosis (stannosis). Overexposure to Tin can result in benign pneumoconiosis (stannous). This form of pneumoconiosis produces progressive x-ray changes of the lungs as long as exposure exists, but there is no distinctive fibrosis, no evidence of disability and no special complicating factors.	

SECTION 12: Ecological information

12.1. Toxicity	Alloys in massive forms present a limited hazard for the environment.
12.2. Persistence and degradability	The product contains inorganic compounds which are not biodegradable.
12.3. Bioaccumulative potential	No data available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	Alloys in massive forms are not mobile in the environment.
12.5. Results of PBT and vPvB assessment	This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.
12.6. Other adverse effects	None expected.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose of in accordance with local regulations. Scrapped material should be sent for refining to recover precious metal content. Solid metal and alloys in the form of particles may be reactive. Its hazardous characteristics, including fire and explosion, should be determined prior to disposal.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Dispose in accordance with all applicable regulations.
Special precautions	Dispose of in accordance with local regulations.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Copper (CAS 7440-50-8)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Copper (CAS 7440-50-8)

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

15.2. Chemical safety assessment No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

PBT: Persistent, bioaccumulative, toxic.
vPvB: very Persistent, very Bioaccumulative.

References

HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
STEL: Short-Term Exposure Limit.
TWA : Time Weighed Average Value.

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any H-statements not written out in full under Sections 2 to 15

None.

Training information

Follow training instructions when handling this material.

Disclaimer

All information in this Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.