SAFETY DATA SHEET

WORTHINGTON ENTERPRISES

1. Identification

Product identifier **Electrical Solder (Rosin Core) - 0.6 oz / 17 g**

Other means of identification

Product code WC059 / RCS060

Recommended use Soldering

Recommended restrictions Uses other than the recommended use.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Worthington Enterprises

Address 200 Old Wilson Bridge Road
Columbus, OH 43085
United States of America

E-mail SDSRequest@WTHG.com

Telephone 1-866-928-2657

Emergency telephone CHEMTREC - 24 HOURS:
Within US and Canada 800-424-9300
Outside US and Canada +1 703-741-5970 (collect calls accepted)

2. Hazard identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 3

Label elements

Hazard symbol None.

Signal word None.

Hazard statement Harmful to aquatic life.

Precautionary statement

Prevention Avoid release to the environment.

Response Not assigned.

Storage Not assigned.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental information Molten material will produce thermal burns.

Other hazards May form combustible dust concentrations in air. Repeated or prolonged inhalation of rosin fumes from rosin cored solders can cause allergic reaction (symptoms include wheezing and asthma).

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Tin		7440-31-5	97 - 99
Rosin		8050-09-7	1 - 3
Copper		7440-50-8	0.1 - 1

Composition comments All concentrations are in percent by weight.

4. First-aid measures

Inhalation	In case of inhalation of dust or fumes: Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists. If burned by contact with molten material, cool as quickly as possible with cold water. Do not peel material from skin. Get medical attention for thermal burn.
Eye contact	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Dusts may irritate the respiratory tract, skin and eyes. Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. Typical metal fume fever begins four to twelve hours after sufficient exposure to freshly formed fumes. The first symptoms are a metallic taste, dryness and irritation of the throat. Cough and shortness of breath may occur along with headache, fatigue, nausea, vomiting, muscle and joint pain, fever and chills. The syndrome runs its course in 24-48 hours. Contact with hot material can cause thermal burns which may result in permanent damage.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Special powder against metal fires. Dry sand. Apply extinguishing media carefully to avoid creating airborne dust. Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
Unsuitable extinguishing media	Do not use water or halogenated extinguishing media. Hot molten material will react violently with water resulting in spattering and fuming.
Specific hazards arising from the chemical	Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. Contact with acids will release flammable hydrogen gas. During fire, hazardous combustion products are released that may include: Fumes of metal oxides.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Solid metal is not flammable; however, finely divided metallic dust or powder may form an explosive mixture with air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Pick up mechanically. Collect dust using a vacuum cleaner equipped with HEPA filter. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimise dust generation and accumulation. Recover and recycle, if practical. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Minimise dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Combustible dust clouds may be created where operations produce fine material (dust). Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Explosion-proof general and local exhaust ventilation. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials (see section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Rosin (CAS 8050-09-7)	TWA	0.001 mg/m3	Inhalable fraction.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	Inhalable fraction.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act), as amended

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Rosin (CAS 8050-09-7)	TWA	0.001 mg/m3	Inhalable fraction.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	Inhalable fraction.

Canada. New Brunswick OELs: Threshold Limit Values (TLVs) Based on the 1991 and 1997 ACGIH TLVs and BEIs Publication (New Brunswick Regulation 91-191)

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21), as amended

Components	Type	Value	Form
Copper (CAS 7440-50-8)	15 minute	3 mg/m3	Dust and mist.
		0.6 mg/m3	Fume.
	8 hour	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Tin (CAS 7440-31-5)	15 minute	4 mg/m3	
	8 hour	2 mg/m3	

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

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves. When material is heated, wear gloves to protect against thermal burns. Suitable gloves can be recommended by the glove supplier.

Other Wear suitable protective clothing.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Selection and use of respiratory protective equipment should be in accordance with CSA Standard Z94.4. Appropriate respirator selection should be made by a qualified professional.

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

General hygiene considerations When using, do not eat, drink or smoke. 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.

9. Physical and chemical properties

Physical state Solid.

Form Solid wire with internal flux core.

Colour Grey to silver.

Odour None.

Melting point/freezing point 227 °C (440.6 °F)

Boiling point or initial boiling point and boiling range 2507 °C (4544.6 °F)

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

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Property has not been measured.

Explosive limit – upper (%)	Property has not been measured.
Flash point	Property has not been measured.
Auto-ignition temperature	Property has not been measured.
Decomposition temperature	Not applicable as the product is not unstable.
pH	Not applicable (material is insoluble in water).
Kinematic viscosity	Not applicable, material is a solid.
Solubility	
Solubility (water)	Insoluble in water.
Partition coefficient (n-octanol/water) (log value)	Not applicable, product is a mixture.
Vapour pressure	Not applicable, material is a solid.
Density and/or relative density	
Relative density	Property has not been measured.
Vapour density	Not applicable, material is a solid.
Particle characteristics	
Particle size	Property has not been measured.
Other information	
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Contact with strong acids will release highly flammable hydrogen gas.
Conditions to avoid	Contact with incompatible materials. Minimise dust generation and accumulation. Avoid molten metal contact with water.
Incompatible materials	Acids. Chlorine. Strong oxidising agents.
Hazardous decomposition products	Toxic metal oxides are emitted when heated above the melting point.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Elevated temperatures or mechanical action may form dust and fumes which may be irritating to the respiratory tract. Inhalation of powder or fumes may cause metal fume fever.
Skin contact	Dust or powder may irritate the 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 eyes.
Ingestion	Dust: May cause discomfort if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Dusts may irritate the respiratory tract, skin and eyes. Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. Typical metal fume fever begins four to twelve hours after sufficient exposure to freshly formed fumes. The first symptoms are a metallic taste, dryness and irritation of the throat. Cough and shortness of breath may occur along with headache, fatigue, nausea, vomiting, muscle and joint pain, fever and chills. The syndrome runs its course in 24-48 hours. Contact with hot material can cause thermal burns which may result in permanent damage.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.

Components	Species	Test Results
Rosin (CAS 8050-09-7)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg
Oral		
LD50	Rat	2800 mg/kg

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Fumes released during thermal processing may cause eye irritation.

Respiratory or skin sensitisation

ACGIH sensitisation

Resin acids, as total Resin Acids, inhalable fraction (CAS 8050-09-7)	Dermal sensitisation
	Respiratory sensitisation

Canada - British Columbia OELs: Dermal sensitization

Rosin (CAS 8050-09-7)	Dermal sensitisation

Canada - British Columbia OELs: Respiratory sensitization

Rosin (CAS 8050-09-7)	Respiratory sensitisation

Canada - Manitoba OELs Hazard: Dermal sensitization

Rosin (CAS 8050-09-7)	Dermal sensitisation

Canada - Manitoba OELs Hazard: Respiratory sensitization

Rosin (CAS 8050-09-7)	Respiratory sensitisation

Canada - New Brunswick OELs: Dermal sensitization

Rosin (CAS 8050-09-7)	Dermal sensitisation

Canada - New Brunswick OELs: Respiratory sensitization

Rosin (CAS 8050-09-7)	Respiratory sensitisation

Canada - Quebec OELs: Dermal sensitization

Rosin (CAS 8050-09-7)	Sensitizer through skin contact

Canada - Quebec OELs: Respiratory sensitization

Rosin (CAS 8050-09-7)	Respiratory tract sensitization

Respiratory sensitisation Not classified.

Skin sensitisation Not classified.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not relevant, due to the form of the product.

Chronic effects Repeated or prolonged inhalation of rosin fumes from rosin cored solders can cause allergic reaction (symptoms include wheezing and asthma). 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. Long-term exposure to copper compounds may cause anemia.

12. Ecological information

Ecotoxicity Harmful to aquatic life.

Components		Species	Test Results
Rosin (CAS 8050-09-7)			
Acute			
	EC50	Activated sludge	> 10000 mg/l, 3 Hours
Aquatic			
Acute			
Algae	EL50	Raphidocelis subcapitata	> 1000 mg/l, 72 Hours
	NOELR	Raphidocelis subcapitata	1000 mg/l, 72 Hours
Crustacea	EL50	Daphnia magna	911 mg/l, 48 Hours
Fish	LL50	Danio rerio	> 1 - 10 mg/l, 96 Hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Rosin (CAS 8050-09-7)	3 - 6.2

Mobility in soil The product is insoluble in water. Not expected to be mobile in soil.

Other adverse effects No data available for this product.

13. Disposal considerations

Disposal instructions Recover and reclaim or recycle, if practical. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Canada Controlled Drugs and Substances Act, Schedule I

Not regulated.

Canada Controlled Drugs and Substances Act, Schedule II

Not regulated.

Canada Controlled Drugs and Substances Act, Schedule III

Not regulated.

Canada Controlled Drugs and Substances Act, Schedule IV

Not regulated.

Canada Controlled Drugs and Substances Act, Schedule V

Not regulated.

Canada Controlled Drugs and Substances Act, Schedule VI

Not regulated.

Canada Controlled Drugs and Substances Act, Schedule VII

Not regulated.

Canada Controlled Drugs and Substances Act, Schedule VIII

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations

Stockholm Convention

Not listed.

Rotterdam Convention

Not listed.

Kyoto Protocol

Not listed.

Montreal Protocol

Not listed.

Basel Convention

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	07-August-2025
Revision date	-
Version No.	01

Disclaimer

Worthington Enterprises cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.