

SN60PB40 RA SOLDER WIRE

4890-4898

# Safety Data Sheet

## Section 1: Identification

### Product Identifier and Other Means of Identification

**Product Name:** Sn60Pb40 RA Solder Wire**SDS Code:** 4890-4898**Related Part #** 4890-18G, 4894-227G, 4894-454G, 4895-227G, 4895-454G, 4896-227G, 4896-454G, 4897-227G, 4897-454G, 4898-227G, 4898-454G

### Recommended Use and Restriction on Use

**Use:** leaded solder wire**Uses Advised Against:** Do NOT use to make joints and fittings in private or public potable water supplier (prohibited by the Federal Hazardous Substance Act).

Do not use brazing soldering methods such as high temperature torch soldering or torch welding.

### Details of Manufacturer or Importer

**Manufacturer**MG Chemicals  
1210 Corporate Drive  
Burlington, Ontario L7L 5R6  
CANADAMG Chemicals (Head Office)  
9347-193 Street  
Surrey, British Columbia V4N 4E7  
CANADA**☎** +1-800-340-0772**FAX** +1-800-340-0773**E-MAIL** [support@mgchemicals.com](mailto:support@mgchemicals.com)**WEB** [www.mgchemicals.com](http://www.mgchemicals.com)**☎** +1-905-331-1396**FAX** +1-905-331-2682**E-MAIL** [info@mgchemicals.com](mailto:info@mgchemicals.com)**E-MAIL** (Competent Person): [sds@mgchemicals.com](mailto:sds@mgchemicals.com)

### Emergency Phone Number

**For hazardous material incidents ONLY** (leaks, spills, fires, exposures or accidents)  
USA or CANADA—Call CHEMTREC at **+1-800-424-9300****For emergencies involving the transport of dangerous goods;** 24/7 service  
CANADA—Call CANUTEC collect at **+1-613-996-6666** or **\*666** on cellular phones

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**Section 2: Hazard(s) Identification**


**Classification of Hazardous Chemical**

**GHS Categories**

Criteria	Category	Signal Word	Pictograms
Specific Target Organ Toxicity Repeated Exposure	1	Danger	Health
Reproductive Toxicity	1	Danger	Health
Carcinogenicity	2	Warning	Health
Lactation Effect	<i>additional</i>	<i>none</i>	<i>none</i>

*Note:* The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity), which is opposite to HMIS and NFPA conventions. Severity category rankings do not allow comparisons between classes.

**Label Elements**

<b>Signal Word</b>	<b>DANGER</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H360: May damage fertility or the unborn child H372: Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure by ingestion or inhalation H351: Suspected of causing cancer
<i>No symbol</i>	H362: May cause harm to breast-fed children
<b>Prevention</b>	<b>Precautionary Statements</b>
P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fumes.
P263	Avoid contact during pregnancy and while nursing.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection.
P264	Wash hands thoroughly after handling.

*Section continued on the next page*

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<b>Response</b>	<b>Precautionary Statements</b>
P308 + P313	IF exposed or concerned: Get medical advice/attention.
<b>Storage</b>	<b>Precautionary Statements</b>
P405	Store locked up.
<b>Disposal</b>	<b>Precautionary Statements</b>
P501	Dispose of contents/container in accordance to local/regional/international regulations.

**Hazards Not Otherwise Classified**

<b>Other Criteria</b>	<b>Hazard Statements/Precautionary Statement</b>	<b>Signal Word</b>	<b>Pictograms</b>
Child proofing measures	Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.	None	None

**Section 3: Composition/Information on Ingredients**

<b>CAS #</b>	<b>Chemical Name</b>	<b>%(weight)</b>
7440-31-5	tin	59%
7439-92-1	lead	39%
65997-05-9	rosin, polymerized <sup>a)</sup>	2%

a) Based on available data, this substance is not classified as dangerous

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**Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
<b>IF INHALED</b>	P304 + P340, P308 + P313
<b>Immediate Symptoms</b>	<i>cough, irritation of the respiratory track (in extreme exposure cases: metallic taste, nausea, vomiting, and muscle cramps)</i>
<b>Response</b>	Remove person to fresh air and keep comfortable for breathing.  IF exposed or concerned: Get medical advice/attention.
<b>IF SWALLOWED</b>	P301 + P330, P308 + P313
<b>Immediate Symptoms</b>	<i>abdominal pain, muscle cramps, joint pain, headaches, mood swings, nausea, vomiting</i>
<b>Response</b>	Rinse mouth. Do NOT induce vomiting.  IF exposed or concerned: Get medical advice/attention.
<b>IF ON SKIN</b>	P302 + P352, P333 + P313
<b>Immediate Symptoms</b>	<i>low toxicity: mild irritation</i>
<b>Response</b>	Wash with plenty of water.  If skin irritation or rash occurs: Get medical advice/attention.
<b>IF IN EYES</b>	P305 + P351 + P338, P337 + P313
<b>Immediate Symptoms</b>	<i>low toxicity: redness, mild irritation</i>
<b>Response</b>	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  If eye irritation persists: Get medical advice/attention.

**SN60PB40 RA SOLDER WIRE****4890-4898****Section 5: Fire-Fighting Measures**

<b>Extinguishing Media</b>	In case of fire: Use extinguish media suitable for surrounding materials.  In presence of molten metal, do NOT use water on fire.
<b>Specific Hazards</b>	In a fire, this product can release metal oxide fumes and irritating flux fumes.
<b>Combustion Products</b>	Produces CO and CO <sub>2</sub> , tin oxides (SnO <sub>x</sub> ), lead oxides (PbO <sub>x</sub> ).
<b>Fire-Fighter</b>	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

**Section 6: Accidental Release Measures**

<b>Personal Protection</b>	See personal protection recommendations in Section 8.
<b>Precautions for Response</b>	Avoid breathing the dust/fumes. Remove or keep away all sources of extreme heat.
<b>Environmental Precautions</b>	Avoid releasing to the environment.
<b>Containment Methods</b>	Not applicable
<b>Cleaning Methods</b>	Collect waste in a sealable waste container. Reuse molten material if it is not contaminated.
<b>Disposal Methods</b>	Dispose of spill waste according to Section 13.

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**Section 7: Handling and Storage**

**Prevention**

Keep out of reach of children.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

To prevent the formation of exposure to lead vapors, do not use soldering methods that exceed 450 °C [842 °F].

Do not breathe fumes or dust.

Do not eat, drink, or smoke when using this product. Remove contaminated clothing and protective equipment before entering eating areas. Avoid contact during pregnancy and while nursing.

**Handling**

Wear protective gloves/protective clothing/eye protection.

Take off contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace.

Wash hands thoroughly after handling.

**Storage**

Store locked up.

**Section 8: Exposure Controls/Personal Protection**

**Substances with Occupational Exposure Limit Values**

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
tin	ACGIH	2 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	2 mg/m <sup>3</sup>	Not established
	Canada AB	2 mg/m <sup>3</sup>	Not established
	Canada BC	2 mg/m <sup>3</sup>	Not established
	Canada ON	2 mg/m <sup>3</sup>	Not established
	Canada QC	2 mg/m <sup>3</sup>	Not established
lead	ACGIH	0.05 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	0.05 mg/m <sup>3</sup>	Not established
	Canada AB	0.05 mg/m <sup>3</sup>	Not established
	Canada BC	0.05 mg/m <sup>3</sup>	Not established
	Canada ON	0.05 mg/m <sup>3</sup>	Not established
	Canada QC	0.15 mg/m <sup>3</sup>	Not established

*Note:* Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH<sup>1</sup>, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS database<sup>2</sup> and from suppliers' SDSs were also consulted. Short term exposure limits (STEL) are usually for 15 min and long term permissible exposure limits (PEL) for 8 h.

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**SN60PB40 RA SOLDER WIRE****4890-4898****Engineering Controls****Ventilation**

Keep airborne concentrations below exposure limits.

Soft soldering temperatures (<450 °C) are generally too low to generate significant amounts of metal vapors, however, metal oxide fumes/dust or flux decomposition fumes can occur.

**RECOMMENDATION:** For frequent or prolonged soldering processes, use of a local exhaust system to avoid exposure to thermal decomposition products. For example, use fume cabinet, a hood on a flexible arm, or tip-mounted fume extraction system on the soldering iron.

**Personal Protective Equipment****Eye protection**

Wear appropriate protective eyeglasses or chemical safety goggles.

**RECOMMENDATION:** Ensure that glasses have side shields for lateral protection.

**Skin Protection**

For incidental contacts, use nitrile or other chemically resistant gloves. Thermal resistant gloves should be worn instead if contact with molten metal is expected.

**Respiratory Protection**

If exposed to fumes or dust above the exposure limit, wear a suitable respirator meeting local/regional/national guidelines.

Generally, for emergencies and exposure above 0.5 mg/m<sup>3</sup>, use a self-contained breathing apparatus with full face piece operated in a pressure positive mode.

**RECOMMENDATION:** Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

**General Hygiene Considerations**

Wash hands thoroughly with water and soap after handling.

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**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Solid	<b>Lower Flammability Limit</b>	Not applicable
<b>Appearance</b>	Silver grey	<b>Upper Flammability Limit</b>	Not applicable
<b>Odor</b>	None	<b>Vapor Pressure @20 °C</b>	~1.3 hPa <sup>a)</sup> [~1 mmHg]
<b>Odor Threshold</b>	Not available	<b>Vapor Density</b>	Not applicable
<b>pH</b>	Not available	<b>Specific Gravity @25 °C</b>	8.5
<b>Freezing/Melting Point</b>	183 °C [361 °F]	<b>Solubility in Water</b>	Negligible <sup>b)</sup>
<b>Boiling Point</b>	1 380 °C [2 516 °F]	<b>Partition Coefficient</b>	Not available
<b>Flash Point</b>	Not applicable	<b>Auto-ignition Temperature</b>	Not available
<b>Evaporation Rate</b>	Not available	<b>Decomposition Temperature</b>	Not available
<b>Flammability (solid, gas)</b>	Not applicable	<b>Viscosity @25 °C</b>	Not applicable

a) For rosin flux

b) Metal components are sparingly soluble

**Section 10: Stability and Reactivity**

<b>Reactivity</b>	Not available
<b>Chemical Stability</b>	Chemically stable at normal temperatures and pressures
<b>Conditions to Avoid</b>	Extreme temperatures above 450 °C, such as those due to welding
<b>Incompatibilities</b>	Oxidizing agents, strong acids
<b>Polymerization</b>	Will not occur
<b>Decomposition</b>	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.



**SN60PB40 RA SOLDER WIRE****4890-4898****Section 11: Toxicological Information****Summary of Effects and Symptoms by Routes of Exposure**

<b>Eyes</b>	May cause redness and mild irritation
<b>Skin</b>	May cause mild irritation.
<b>Inhalation</b>	May cause coughing and irritation of the nose, throat, and lungs.  Overexposure to dust or metal fumes may lead to metallic taste, nausea, vomiting, muscle cramps, pneumoconiosis (or Stannosis), anemia, central nervous system effects.
<b>Ingestion</b>	May cause abdominal pain, muscle cramps, joint pain, high blood pressure, headaches, and mood swings. (See chronic effects)
<b>Chronic</b>	Prolonged and repeated exposure to lead may cause hematological effects, high blood pressure, and adverse central and peripheral nervous systems effects. Symptoms of lead poisoning include metallic taste, colic, nausea, vomiting, muscle cramps, memory loss, and learning problems.  Ingestion or inhalation have fertility, developmental, and lactation effects.

**Acute Toxicity (Lethal Exposure Concentrations)**

<b>Chemical Name</b>	<b>LD50 oral</b>	<b>LD50 dermal</b>	<b>LC50 inhalation</b>
tin	>2 000 mg/kg Rat	>2 000 mg/kg Rabbit	4.75 mg/m <sup>3</sup> Rat 4 h
lead	>2 000 mg/kg Rat	>2 000 mg/kg Rat	5.05 mg/m <sup>3</sup> Rat 4 h
rosin, polymerized	>5 000 mg/kg Rat	>2 000 mg/kg Rat	Not available

*Note:* Toxicity data from RTECS<sup>2</sup> and ECHA were consulted. The data from supplier (M)SDS were also consulted.

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**SN60PB40 RA SOLDER WIRE****4890-4898****Other Toxicological Effects**

<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.
<b>Serious eye damage/irritation</b>	Based on available data, the classification criteria are not met.
<b>Sensitization</b> (allergic reactions)	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b> (risk of cancer)	Carcinogen based on animal studies and North American guidelines and regulation. <b>Lead [CAS# 7439-92-1]</b> IARC (Supl. 7, 1987) Group 2B: Possibly carcinogenic to humans ACGIH A3: Confirmed animal carcinogen with unknown relevance to human CA Prop 65: Listed as a carcinogen NTP (2011 Report): Reasonably anticipated to be a human carcinogen
<b>Mutagenicity</b> (risk of heritable genetic effects)	Based on available data, the classification criteria are not met
<b>Reproductive Toxicity</b> (risk to sex functions)	Lead is believed to decrease fertility in males and females.
<b>Teratogenicity</b> (risk of fetus malformation)	Lead presents a reproductive and developmental hazard based on epidemiological and animal studies.
<b>STOT-single exposure</b>	Based on available data, the classification criteria are not met
<b>STOT-repeated exposure</b>	Epidemiological and animal studies confirmed neurodevelopmental, neurodegenerative, peripheral nervous system, haematological, cardiovascular, kidney and renal effects.
<b>Aspiration hazard</b>	Not applicable. This product doesn't contain any Category 1 ingredients and is a solid.

**SN60PB40 RA SOLDER WIRE****4890-4898****Section 12: Ecological Information**

Ecological classifications are based on the IMDG/GHS criteria in conjunction with ecotoxicological data from our suppliers, the European Chemical Agency database (<http://echa.europa.eu>), and other reliable sources.

Based on transformation/dissolution data published by ECHA registrants, the classification threshold is not met for massive lead.

Based on available data for tin and hydrogenated rosin, the GHS aqueous toxicity classification criteria are not met.

**Acute Ecotoxicity**

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

**Chronic Ecotoxicity**

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

**Biodegradability**

Not available

**Bioaccumulation**

Lead bioaccumulates

**Other Effects**

Not available

**Section 13: Disposal Information**

Dispose of contents in accordance with all local, regional, national, and international regulations.

**SN60PB40 RA SOLDER WIRE****4890-4898****Section 14: Transport Information****Ground**

**Refer to TDG regulations** (Canadian Transportation of Dangerous Goods regulations);  
**USA DOT 49 CFR** (Parts 100 to 185) **Regulations.**

Non Regulated

**Air**

**Refer to ICAO-IATA Dangerous Goods Regulations.**

Non Regulated

**Sea**

**Refer to IMDG regulations.**

Non Regulated

**Section 15: Regulatory Information****Canada****Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

All hazardous ingredients are listed on the DSL.

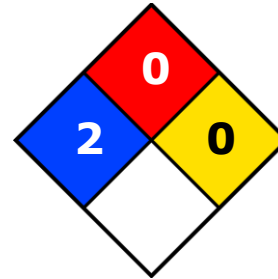
**Hazardous Products Act (R.S.C., 1985, c. H-3)**

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

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**SN60PB40 RA SOLDER WIRE****4890-4898****USA****Other Classifications****HMIS® RATING**

<b>HEALTH:</b>	<b>*</b>	<b>2</b>
<b>FLAMMABILITY:</b>		<b>0</b>
<b>PHYSICAL HAZARD:</b>		<b>0</b>
<b>PERSONAL PROTECTION:</b>		

**NFPA® 704 CODES**

*Approximate HMIS and NFPA Risk Ratings Legend:*

0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

**CAA** (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

**EPCRA** (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product contains lead (CAS# 7439-92-1; reportable quantity = 10 lb), which is subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

**TSCA** (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

**California Proposition 65** (Chemicals known to cause cancer or reproductive toxicity, June 06, 2014 revision, USA).

This product contains lead, which is listed as a carcinogen and a reproductive toxicant.

**Europe****RoHS** (Restriction of Hazardous Substances Directive)

This product contains lead and is therefore restricted with respect to RoHS.

It does not contain any cadmium, mercury, hexavalent chromium, PBB's, PBDE's, DEHP, BBP, DBP, or DIBP.

**WEEE** (Waste Electrical and Electronic Equipment Directive)

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

**SN60PB40 RA SOLDER WIRE****4890-4898****Section 16: Other Information****SDS Prepared by** Michel Hachey**Date of Review** 25 July 2017**Supersedes** 17 May 2017**Reason for Changes:** Reclassification based on new scientific evidence.**Reference**

1) ACGIH 2013 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2013).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

**Abbreviations**

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
BBP	Butyl benzyl phthalate
DBP	Dibutyl phthalate
DEHP	Bis(2-ethylhexyl) phthalate
DIBP	Diisobutyl phthalate
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

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**Technical Queries** Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at [www.mgchemicals.com](http://www.mgchemicals.com).

Email: [support@mgchemicals.com](mailto:support@mgchemicals.com)

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