

SN60/PB40 LEADED SOLDER

4890-4898

# Safety Data Sheet

## Section 1: Identification

### Product Identifier and Other Means of Identification

**Product Name:** Sn60/Pb40 Leaded Solder**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/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 ☎: **+1-800-424-9300****For emergencies involving dangerous goods;** Collect 24/7  
CANADA: Call CANUTEC ☎: **+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

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 H351: Suspected of causing cancer
<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.
P280	Wear protective gloves/eye protection/face protection.
P264	Wash hands thoroughly after handling.
<b>Prevention</b>	<b>Precautionary Statements</b>
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.

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<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**

Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.

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

CAS #	Chemical Name	%(weight)
7440-31-5	tin	58.3%
7439-92-1	lead	39.5%
65997-05-9	rosin, polimerized	2.2%

**Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
<b>IF INHALED</b>	P304 + P340, P312, 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 you feel unwell: Get medical advice/attention.  IF exposed or concerned: Get medical advice/attention.
<b>IF IN EYES</b>	P305 + P351 + P338, P337 + P313
<b>Immediate Symptoms</b>	<i>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.

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<b>IF ON SKIN</b>	P302 + P352, P333 + P313
<b>Immediate Symptoms</b>	<i>mild irritation</i>
<b>Response</b>	Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention.
<b>IF SWALLOWED</b>	P301 + P330, P331, P308 + P313
<b>Immediate Symptoms</b>	<i>abdominal pain, nausea, headaches, vomiting, metallic taste, and muscle cramps</i>
<b>Response</b>	Rinse mouth. Do NOT induce vomiting. If feeling unwell or concerned: Get medical advice. IF exposed or concerned: Get medical advice/attention.

**Section 5: Fire-Fighting Measures**

<b>In case of fire</b>	P370 + P378
<b>Extinguishing Media</b>	Use extinguish media suitable for surrounding.
<b>Specific Hazards</b>	In a fire, this product can release metal oxide fumes and irritation flux fumes. Do NOT use water on fires where molten metal is present.
<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 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.

**SN60/PB40 LEADED SOLDER****4890-4898****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 a 450 °C.
- Do not breathe fumes.
- Do not eat, drink, or smoke when using this product. Remove contaminated clothing and protective equipment before entering eating areas.
- Handling** Wear protective gloves/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****Routes of Entry**

Inhalation, Ingestion, and Eye Contact

**Substances with Occupational Exposure Limit Values**

<b>Chemical Name</b>	<b>Country</b>	<b>Long Term Exposure Limits (PEL)</b>	<b>Short Term Exposure Limits (STEL)</b>
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

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Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
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>2</sup>, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from by RTECS database<sup>1</sup> of the Canadian Centre for Occupational Health and Safety (CCOHS) a data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

**Engineering Controls**

**Ventilation**

Keep airborne concentrations below exposure limits.

**Manufacturer's Note:** Because soft soldering temperatures are generally too low to generate metal vapors, fumes or dust, the risks of metal or metal compound generation are negligible. However, the use of a local exhaust system is highly recommended.

The iron soldering temperatures are high enough to generate potentially toxic fumes due to the volatilization or degradation of the flux and of the coating material on the soldered surface.

**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.

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**Respiratory Protection** If exposed to fumes or dust above the exposure limit, a suitable wear 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.

**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<sup>a)</sup></b>	~1.3 hPa [~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>	8.52
<b>Freezing/Melting Point</b>	183 °C [361 °F]	<b>Solubility in Water</b>	Negligible <sup>b)</sup>
<b>Boiling Point</b>	1380 °C [2516 °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

**SN60/PB40 LEADED SOLDER****4890-4898****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.

**Section 11: Toxicological Information****Routes of Exposure**

Inhalation, Ingestion, and Eye Contact

**Symptoms Summary**

<b>Eyes</b>	May cause redness, mild irritation
<b>Skin</b>	May cause mild irritation.
<b>Inhalation</b>	May cause nose, throat and lung irritation. Overexposure to dust or metal fumes may lead to pneumoconiosis (or Stannosis), anemia, central nervous system effects
<b>Ingestion</b>	Harmful if swallowed. (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, and muscle cramps. Ingestion or inhalation have developmental effects.

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**Acute Toxicity (Lethal Exposure Concentrations)**

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
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 the RTECS database accessed through the Canadian Centre for Occupational Health and Safety (CCOHS)<sup>2</sup> were consulted. The data from supplier (M)SDS were also consulted.

**Other Toxicological Effects**

**Skin corrosion/irritation**

Based on available data, the classification criteria are not met

**Serious eye damage/irritation**

Based on available data, the classification criteria are not met

**Sensitization**  
(allergic reactions)

Based on available data, the classification criteria are not met

**Carcinogenicity**  
(risk of cancer)

Carcinogen based on animal studies and North American guidelines and regulation.

**Lead [CAS# 13463-67-7]**

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

**Mutagenicity**  
(risk of heritable genetic effects)

Based on available data, the classification criteria are not met

**Reproductive Toxicity**  
(risk to sex functions)

Lead is believed to decrease fertility in males and females.

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<b>Teratogenicity</b> (risk of fetus malformation)	Lead present 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 Cat 1 ingredients and has a viscosity >>20 mm/s <sup>2</sup> .

**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 one 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**

Non hazardous

**Chronic Ecotoxicity**

Non hazardous

**Biodegradability**

Not available

**Bioaccumulation**

Not available

**Other Effects**

Not available

**SN60/PB40 LEADED SOLDER****4890-4898****Section 13: Disposal Information**

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

**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.

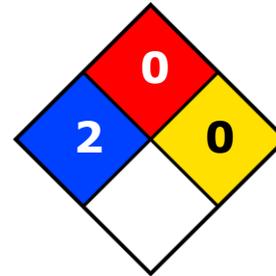
**Industry and Science Canada**

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

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**SN60/PB40 LEADED SOLDER****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, or PBDE's.

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

This product is subject to the WEEE regulation.

**Section 16: Other Information****SDS Prepared by** Michel Hachey**Date of Review** 17 May 2016**Supersedes** 20 April 2015**Reason for Changes:** Minor format changes and verification of HCS 2012 and WHMIS 2015 compliance.**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)
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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