SN 99 LEAD FREE SOLDER **4901**

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: Sn99 Lead Free Solder **SDS Code:** 4901

Related Part # 4901-112G, 4901-227G, 4901-454G, 4901-2LB

Recommended Use and Restriction on Use

Use: Lead free solder wire

Uses Advised Against: 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
CANADA

☎ +1-800-340-0772
FAX +1-800-340-0773
E-MAIL support@mgchemicals.com
WEB www.mgchemicals.com

MG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA

☎ +1-905-331-1396
FAX +1-905-331-2682
E-MAIL info@mgchemicals.com

E-MAIL (Competent Person): 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

Section 2: Hazard(s) Identification

Classification of Hazardous Chemical

GHS Categories

Based on available data, this product does not meet the HCS 2012 or WHMIS 2015 classification criteria.

Other Classifications

HMIS® RATING

HEALTH:	**1**
FLAMMABILITY:	**0**
PHYSICAL HAZARD:	**0**
PERSONAL PROTECTION:	

NFPA® 704 CODES

Approximate HMIS and NFPA Risk Ratings Legend:
0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

Label Elements

Signal Word	*None Mandated*
Pictograms	**Hazard Statements**
None mandated	None

Hazards Not Otherwise Classified

Not applicable

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(wt/wt)
7440-31-5	tin	97%
7440-50-8	copper	0.5%

Note: Also contains 2.2% non hazardous, hydrogenated rosin flux

Section 4: First-Aid Measures

Exposure Condition	*GHS Code/Symptoms/Precautionary Statements*
IF INHALED	P304 + P340
Immediate Symptoms	*cough, irritation of the respiratory track*
Response	Remove person to fresh air and keep comfortable for breathing.
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	*redness, mild irritation*
Response	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.
IF ON SKIN	P302 + P352
Immediate Symptoms	*mild irritation*
Response	Wash with plenty of water.
IF SWALLOWED	P301 + P330, P331
Immediate Symptoms	None known
Response	Rinse mouth. Do NOT induce vomiting.

Section 5: Fire-Fighting Measures

In case of fire	P370 + P378
Extinguishing Media	Use extinguish media suitable for surrounding.
Specific Hazards	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.
Combustion Products	Produces CO and CO_2, and tin oxides (SnO_x).
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

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

Section 7: Handling and Storage

Prevention Keep out of reach of children.
Avoid breathing fumes.
Do not eat, drink, or smoke when using this product.

Handling Wear protective gloves/clothing/eye protection.
Wash hands thoroughly after handling.
Avoid release to the environment.

Storage Not applicable.

Section 8: Exposure Controls/Personal Protection

Routes of Entry

Inhalation, Ingestion, and Eye Contact

Substances with Occupational Exposure Limit Values

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

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Continued…

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
copper *(dust and mist)*	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	1.0 mg/m^3 1.0 mg/m^3 1.0 mg/m^3 1.0 mg/m^3 1 mg/m^3 1 mg/m^3	Not established Not established Not established Not established Not established Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH[2], OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from by RTECS database[1] 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.

Section continued on the next page

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 0.01 mg/m^3, 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 your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this SDS, and that the respirator is fitted to the employee by a professional.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

Section 9: Physical and Chemical Properties

Physical State	Solid	**Lower Flammability Limit**	Not applicable
Appearance	Silver grey	**Upper Flammability Limit**	Not applicable
Odor	None	**Vapor Pressure @20 °C**	Not available
Odor Threshold	Not available	**Vapor Density**	Not applicable
pH	Not available	**Specific Gravity @25 °C**	7.4
Freezing/Melting Point	228 °C [442 °F]	**Solubility in Water**	Negligible [a)]
Boiling Point	Not available	**Partition Coefficient**	Not available
Flash Point	Not applicable	**Auto-ignition Temperature**	Not available
Evaporation Rate	Not available	**Decomposition Temperature**	Not available
Flammability (solid, gas)	Not applicable	**Viscosity @25 °C**	Not applicable

a) Metal components are sparingly soluble

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Extreme temperatures above 450 °C, such as those due to welding
Incompatibilities	Oxidizing agents, strong acids
Polymerization	Will not occur
Decomposition	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

Eyes	May cause redness, mild irritation
Skin	May cause mild irritation.
Inhalation	May cause nose, throat and lung irritation.
	Overexposure to dust or metal fumes may lead to pneumoconiosis (or Stannosis), anemia, central nervous system effects
Ingestion	No effect known
Chronic	No effect known

Section continued on the next page

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^3 Rat 4 h
copper	>5 000 mg/kg Mouse	Not available	>5.11 mg/L Rat 4 h

Note: Toxicity data from the RTECS database accessed through the Canadian Centre for Occupational Health and Safety (CCOHS)[2] 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)	Not classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP
Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not met
Reproductive Toxicity (risk to sex functions)	Based on available data, the classification criteria are not met
Teratogenicity (risk of fetus malformation)	Based on available data, the classification criteria are not met
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	Not applicable. This product doesn't contain any Cat 1 ingredients and has a viscosity >>20 mm/s^2.

Section 12: Ecological Information

The IMDG Code criteria, the raw-material safety data sheets, and supporting data from the European Chemical Agency database (http://echa.europa.eu) were used to support the classification.

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

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

Acute Ecotoxicity

Non hazardous

Chronic Ecotoxicity

Non hazardous

Biodegradability

Not available

Bioaccumulation

Not available

Other Effects

Not available

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

WHMIS 1988 Classification

This mixture doesn't contain any ingredient giving rise to a classification under WHMIS.

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.

Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

Section continued on the next page

USA

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 does not contain ingredients that 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 does not contain any of the listed substances.

Europe

RoHS (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

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	20 April 2015
Supersedes	03 June 2014

Reason for Changes: Change over to HCS 2012 and WHMIS 2015 requirements.

Section continued on the next page

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

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.

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