4900-18G **SAC305 LEAD-FREE SOLDER**

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 4900-18G

Other Means of Identification: SAC305 No Clean Solder Wire

Related Part # 4900-18G (solder packs size only)

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 Verisk 3E at ***+1-866-519-4752*** or ***+1-760-476-3962***
(Service access code: 335388)

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

Section 2: Hazard(s) Identification

Classification of Hazardous Chemical

GHS Categories

Criteria		Category	Signal Word	Pictograms
Sensitization	Respiratory	1B	Danger	Health
Sensitization	Skin	1	Warning	Exclamation

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

Signal Word	**DANGER**
Pictograms	**Hazard Statements**
	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled H317: May cause an allergic skin reaction
Prevention	**Precautionary Statements**
P102	Keep out of reach of children.
P261	Avoid breathing vapors/fumes.
P284	In case of inadequate ventilation, wear respiratory protection.
P280	Wear protective gloves.
P272	Contaminated work clothing should not be allowed of the workplace.
Response	**Precautionary Statements**
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

Section continued on the next page

Continued…

Response	**Precautionary Statements**
P362 + P364	Take off contaminated clothing and wash it before reuse.
Disposal	**Precautionary Statements**
P501	Dispose of contents/container in accordance to local/regional/international regulations.

Hazards Not Otherwise Classified

Other Criteria	**Hazard Statements/Precautionary Statement**	**Signal Word**	**Pictograms**
Rosin Solder Fumes	Rosin-based solder fumes are capable of causing occupational asthma.	Warning	None
Argyria Hazard	Long term exposure to silver powder or compounds can lead to an irreversible blue-grey discoloration of the skin.	Warning	None

Section 3: Composition/Information on Ingredients

CAS #	**Chemical Name**	**%(weight)**
7440-31-5	tin	94%
7440-22-4	silver	3%
8050-09-7	rosin	0.9%
7440-50-8	copper	0.5%

Section 4: First-Aid Measures

Exposure Condition	*GHS Code/Symptoms/Precautionary Statements*
IF INHALED	P304 + P340, P342 + P311
Immediate Symptoms	*IF exposed to solder fumes: coughing, sore throat, wheezing, difficulty breathing*
Response	Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Section continued on the next page

Continued…

IF ON SKIN	P302 + P352, P333 + P313, P362 + P364
Immediate Symptoms	*redness, mild irritation, rash, allergic dermatitis*
Response	Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	*low toxicity: no symptoms known or expected*
Response	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED	P301 + P330, P331
Immediate Symptoms	*low toxicity: no symptoms known or expected*
Response	Rinse mouth. Do not induce vomiting.

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use extinguish media suitable for surrounding material. In presence of molten metal, do NOT use water on fires.
Specific Hazards	In a fire, this product can release metal oxide fumes and irritating flux fumes.
Combustion Products	Produces carbon oxides (CO, CO_2), rosin solder pyrolysis products, tin oxides (SnO_x), and silver metal fumes.
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 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 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 vapors/fumes. In case of inadequate ventilation, wear respiratory protection.
Handling	Wear protective gloves. Contaminated work clothing should not be allowed of the workplace. Take off contaminated clothing and wash it before reuse.
Storage	Not applicable.

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^3	Not established
	U.S.A. OSHA PEL	2 mg/m^3	Not established
	Canada AB	2 mg/m^3	Not established
	Canada BC	2 mg/m^3	Not established
	Canada ON	2 mg/m^3	Not established
	Canada QC	2 mg/m^3	Not established

Section continued on the next page

Continued…

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
silver *(metal dust, mist)* *(metal)* *(Ag and its compounds)* *(metal, dust, fumes)*	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	0.1 mg/m^3 0.01 mg/m^3 0.1 mg/m^3 0.01 mg/m^3 0.1 mg/m^3 0.1 mg/m^3	Not established Not established Not established 0.03 mg/m^3 Not established Not established
rosin, colophony *(thermal decomposition)*	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	(L) Not established Not established (L) (L) Not established	Not established Not established Not established Not established Not established Not established
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[1], OSHA, and Canadian provinces exposure limits were consulted. Limits from the RTECS database[2] and from suppliers' SDS were also consulted. Short term exposure limits (STEL) are usually for 15 min and long term permissible exposure limits (PEL) for 8 h.

Engineering Controls

Ventilation

Keep airborne concentrations below the occupational exposure limits (OEL).

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. The volatilization and degradation of the rosin flux during soldering may lead to respiratory sensitization.

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.

Section continued on the next page

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. If contact with molten metal is likely, wear thermally resistant gloves.
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 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.

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	**Relative Density @25 °C**	7.39
Freezing/Melting Point	217–221 °C [423–430 °F]	**Solubility in Water**	Negligible [a)]
Initial Boiling Point	Not available	**Partition Coefficient n-octanol/water**	Not available
Flash Point	Not applicable	**Auto-ignition Temperature**	Not available
Evaporation Rate	Not available	**Decomposition Temperature**	Not available
Flammability	Non Flammable	**Viscosity @40°C**	Not applicable

a) Metal components are sparingly soluble

Section 10: Stability and Reactivity

Reactivity	Rosin forms oxidized pyrolysis products in contact with air and soldering temperatures, which may lead to respiratory sensitization. Skin sensitization may occur following oxidation of the chemicals after prolonged storage.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, excessive heat, and incompatible substances
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

Summary of Effects and Symptoms by Routes of Exposure

Eyes	Low toxicity: no symptoms known or expected.
Skin	May cause redness, rash, mild irritation and allergic dermatitis.
Inhalation	Exposure to the rosin flux fumes may cause coughing, sore throat and wheezing.
Ingestion	Low toxicity: no symptoms known or expected.
Chronic	Prolonged or repeated exposure to the oxidized rosin flux fumes may lead to skin sensitization and provoke asthma.

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
silver	>2 000 mg/kg Rat	>2 000 mg/kg Rabbit	>5.16 mg/L Rat 4 h
rosin	2 800 mg/kg Rat	≥2 000 mg/kg Rat	Not available
copper	>5 000 mg/kg Mouse	Not available	>5.11 mg/L Rat 4 h

Note: Toxicity data from the RTECS[2] and ECHA 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)	The oxidized form of the rosin component causes skin and respiratory sensitization.
Carcinogenicity (risk of cancer)	None of the ingredients are classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP.

Section continued on the next page

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 is a solid.

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 silver nor massive copper.

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

Acute Ecotoxicity

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

Chronic Ecotoxicity

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

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

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.

Section continued on the next page

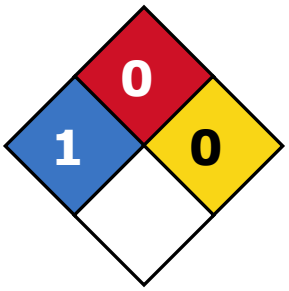
USA

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)

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 silver (CAS# 7440-22-4; reportable quantity = 1 000 lb) and copper (CAS# 7440-50-8; reportable quantity = 5 000 lb), which are 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, 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, PBDE's, DEHP, BBP, DBP, or DIBP and complies with European RoHS regulations.

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.

Section 16: Other Information

SDS Prepared by MG Chemical's Regulatory Department

Date of Review 06 March 2020

Supersedes 12 June 2018

Reason for Changes: Update to the emergency phone number information

Reference

1) ACGIH *2017 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 (2017).

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

Section continued on the next page

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.

Email: support@mgchemicals.com

Mailing Addresses

Manufacturing & Support
1210 Corporate Drive
Burlington, Ontario, Canada
L7L 5R6

Head Office
9347–193rd Street
Surrey, British Columbia, Canada
V4N 4E7

Disclaimer This safety data sheet is provided as an information resource only. *M.G. Chemicals, Ltd.* believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to query and verify any information seeming suspect where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, regional, national, and international regulations.