

SAC305 NO CLEAN SOLDER PASTE

4900P

# Safety Data Sheet

## Section 1: Identification

### Product Identifier and Other Means of Identification

**Product Identifier:** SAC305 No Clean Solder Paste**Other Means Of Identification:** SAC305 Pâte à Souder Sans Nettoyage**Related Part #** 4900P-25G, 4900P-250G

### Recommended Use and Restriction on Use

**Use:** Solder paste**Uses Advised Against:** Brazing (torch welding/soldering)

### Details of Manufacturer or Importer

#### Manufacturer

MG Chemicals  
1210 Corporate Drive  
Burlington, Ontario L7L 5R6  
CANADA

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

**TEL** +1-800-340-0772**TEL** +1-905-331-1396**FAX** +1-800-340-0773**FAX** +1-905-331-2682**E-MAIL** [support@mgchemicals.com](mailto:support@mgchemicals.com)**E-MAIL** [info@mgchemicals.com](mailto:info@mgchemicals.com)**WEB** [www.mgchemicals.com](http://www.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 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

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**4900P**
**Section 2: Hazard(s) Identification**
**Classification of Hazardous Chemical**
**GHS Categories**

Criteria	Category	Signal Word	Pictograms
Eye Irritation	2	Warning	Exclamation
Hazardous to the Aquatic Environment Chronic	1	Warning	Environment

*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>WARNING</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H319: Causes serious eye irritation
	H410: Very toxic to aquatic life with long lasting effects
<b>Prevention</b>	<b>Precautionary Statements</b>
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves and eye protection.
P273	Avoid release to the environment.
<b>Response</b>	<b>Precautionary Statements</b>
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical attention.
P391	Collect spillage

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Disposal	Precautionary Statements
P501	Dispose of contents in accordance to local, regional, national, and international regulations.

**Hazards Not Otherwise Classified**

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Argyria	Long term ingestion or inhalation of silver can lead to an irreversible blue-grey discoloration of the skin.	<i>Not applicable</i>	<i>Not applicable</i>

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

CAS #	Chemical Name	%(weight)
7440-31-5	tin (powder)	83.6-86.3%
65997-13-9	rosin, hydrogenated	<8%
7440-22-4	silver	2.5-3.7%
112-59-4	2-(2-hexyloxyethoxy)ethanol	<2%
7440-50-8	copper	0.3-0.8%

**Section 4: First-Aid Measures**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
<b>IF IN EYES</b>	P305 + P351 + P338, P337 + P313
<b>Immediate Symptoms</b>	<i>irritation, redness, pain</i>
<b>Response</b>	Rinse cautiously with water for 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
<b>IF ON SKIN</b>	P302 + P352
<b>Immediate Symptoms</b>	<i>low toxicity: mild irritation</i>
<b>Response</b>	Wash with plenty of water.

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<b>IF INHALED</b>	P304 + P340
<b>Immediate Symptoms</b>	<i>low toxicity: cough</i>
<b>Response</b>	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing.
<b>IF SWALLOWED</b>	P301 + P330 + P331
<b>Immediate Symptoms</b>	<i>low toxicity: abdominal pain, nausea, vomiting, diarrhea</i>
<b>Response</b>	Rinse mouth. Do NOT induce vomiting.

**Section 5: Fire-Fighting Measures**

<b>Extinguishing Media</b>	In case of fire: Use extinguish media suitable for surrounding. In presence of molten metal, do NOT use water on fires.
<b>Specific Hazards</b>	Not flammable or combustible, but burns if involved in a fire. Produces irritating and toxic fumes in fires.  Toxic for aquatic environment: Prevent fire-fighting wash from entering waterway or sewer system.
<b>Combustion Products</b>	May produce carbon oxides (CO, CO <sub>2</sub> ), tin oxides (SnO <sub>x</sub> ), and silver metal fumes.
<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 equipment 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 release to the environment. Do not flush to sewer.
<b>Containment Methods</b>	None required—this product is not readily flowable.
<b>Cleaning Methods</b>	Collect paste in a sealable, solvent-resistant container. Wipe up further residue with paper towel and place dirty towels in container. Wash spill area with soap and water to remove the last traces of residue.
<b>Disposal</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.  
     Avoid breathing fumes or dust.
- Handling**                      Wear protective gloves and eye protection.  
     Wash hands thoroughly after handling.  
     Avoid release to the environment. Collect spillage.
- Storage**                        Not applicable

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

**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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<b>Chemical Name</b>	<b>Country</b>	<b>Long Term Exposure Limits (PEL)</b>	<b>Short Term Exposure Limits (STEL)</b>
silver (metal dust, mist) (metal) (Ag and its compounds) (metal, dust, fumes)	ACGIH	0.1 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	0.01 mg/m <sup>3</sup>	Not established
	Canada AB	0.1 mg/m <sup>3</sup>	Not established
	Canada BC	0.01 mg/m <sup>3</sup>	0.03 mg/m <sup>3</sup>
	Canada ON	0.1 mg/m <sup>3</sup>	Not established
	Canada QC	0.1 mg/m <sup>3</sup>	Not established
copper (dust and mist)	ACGIH	1.0 mg/m <sup>3</sup>	Not established
	U.S.A. OSHA PEL	1.0 mg/m <sup>3</sup>	Not established
	Canada AB	1.0 mg/m <sup>3</sup>	Not established
	Canada BC	1.0 mg/m <sup>3</sup>	Not established
	Canada ON	1 mg/m <sup>3</sup>	Not established
	Canada QC	1 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' 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 the occupational exposure limits (OEL).

Soft soldering temperatures (<450 °C) are generally too low to generate significant amounts of metal vapors, but dust, metal oxide, 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. Reflow oven are typically vented outside or use a specially designed filtered recirculation system.

**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 disposable nitrile or other chemically resistant gloves.

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

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**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.

**General Hygiene Considerations**

Wash hands thoroughly with water and soap after handling.

**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Solid, paste	<b>Lower Flammability Limit</b>	Not applicable
<b>Appearance</b>	Metallic Grey	<b>Upper Flammability Limit</b>	Not applicable
<b>Odor</b>	Mild	<b>Vapor Pressure @20 °C</b>	Not available
<b>Odor Threshold</b>	Not available	<b>Vapor Density</b>	Not available
<b>pH</b>	Not available	<b>Relative Density @25 °C</b>	Not available
<b>Freezing/Melting Point</b>	Not available	<b>Solubility in Water</b>	Slightly soluble <sup>b)</sup>
<b>Initial Boiling Point <sup>a)</sup></b>	≥260 °C [≥500 °F]	<b>Partition Coefficient n-octanol/water</b>	Not available
<b>Flash Point <sup>a)</sup></b>	≥140 °C [≥284 °F]	<b>Auto-ignition Temperature <sup>a)</sup></b>	≥305 °C [≥581 °F]
<b>Evaporation Rate</b>	Not available	<b>Decomposition Temperature</b>	Not available
<b>Flammability</b>	Non Flammable	<b>Viscosity @40 °C</b>	>20.5 mm <sup>2</sup> /s

a) Lowest literature value for organic solvent component

b) Metal components and the flux mixture are sparingly soluble

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**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>	Avoid extreme temperatures above 450 °C [542 °F], 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**
**Summary of Effects and Symptoms by Routes of Exposure**

<b>Eyes</b>	Causes redness, serious eye irritation and pain.
<b>Skin</b>	Low toxicity: may cause mild skin irritation.
<b>Inhalation</b>	Low toxicity: may cause coughing.  Overexposure to dust or metal fumes may lead to pneumoconiosis (or Stannosis), anemia and central nervous system effects.
<b>Ingestion</b>	Low toxicity: may cause abdominal pain, nausea, vomiting, diarrhea (See also chronic symptoms.)
<b>Chronic</b>	Prolonged or repeated exposure to silver or silver compounds by ingestion or inhalation can cause an irreversible blue-grey skin discoloration.

**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
rosin, hydrogenated	>2 000 mg/kg Rat	>2 000 mg/kg Rabbit	Not available

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<b>Chemical Name</b>	<b>LD50 oral</b>	<b>LD50 dermal</b>	<b>LC50 inhalation</b>
silver	>2 000 mg/kg Rat	>2 000 mg/kg Rat	5.16 mg/L 4 h Rat (dust)
2-(2-hexyloxyethoxy) ethanol	3 488 mg/kg Rat	2 216 mg/kg Rabbit	Not available
copper	>5 000 mg/kg Mouse	Not available	5.11 mg/m <sup>3</sup> Rat 4 h

*Note:* Toxicity data from the RTECS<sup>2</sup> and ECHA databases were consulted. The data from supplier SDSs were also consulted.

**Other Toxicological Effects**

<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.
<b>Serious eye damage/irritation</b>	Causes serious eye irritation. Contains mechanically abrasive particles.
<b>Sensitization</b> (allergic reactions)	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b> (risk of cancer)	Not classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP.
<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)	Based on available data, the classification criteria are not met.
<b>Teratogenicity</b> (risk of fetus malformation)	Based on available data, the classification criteria are not met.
<b>STOT-single exposure</b>	Based on available data, the classification criteria are not met.
<b>STOT-repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met. The material doesn't contain any known class 1 aspiration hazard components and it is a high viscosity material.

**SAC305 No CLEAN SOLDER PASTE****4900P****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.

Contains particles of silver and copper of less than a 1 mm but more than 100 nm (larger than nanoparticles), which release ionic levels that is very toxic to the environment. While massive silver and copper are insoluble in water, their powders is considered sufficiently soluble to give rise to an ecological hazard by EU regulations. The classification that follows takes into account to chronic aqueous toxicity of category 1 (M = 10 for silver and M = 1 for copper) in EU.

Based on available data for tin, 2-(2-hexyloxyethoxy) ethanol, and hydrogenated rosin, the GHS aqueous toxicity classification criteria are not met.

**Acute Ecotoxicity**

Category 1

Very toxic to aquatic life

**Chronic Ecotoxicity**

Category 1

Very toxic to aquatic life with long lasting effect

Avoid release to the environment. Collect spillage.

**Biodegradability**

Not readily biodegradable

**Other Effects**

Not available

**Section 13: Disposal Information**

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

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**Section 14: Transport Information**

**Ground**

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

<p>Sizes under 450 kg <b>NOT REGULATED</b> in TDG per Special Provisions 99</p>	<p><i>FOR REFERENCE ONLY</i> <b>UN number:</b> UN3077 <b>Shipping Name:</b> ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (silver particles &lt;1 mm)</p>
<p>Sizes 5 kg and under <i>4900P-25G, 4900P-250G</i> <b>NOT REGULATED</b> in 49 CFR per exception 171.4 (c)(2)</p>	<p><b>Class:</b> 9 <b>Packing Group:</b> III <b>Marine Pollutant:</b> Yes</p>

**Special Provision 99 (2):** These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.

**Air**

**Refer to ICAO-IATA regulations.**

Sizes 5 kg and under  
*4900P-25G, 4900P-250G*  
**NOT REGULATED**  
On the air waybill, write  
"Not Restricted, as per Special  
Provisions A197"

**Special Provision A197:** These substances when transported in single or combination packagings containing net quantity per single or inner packaging of less than 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

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**Sea**

**Refer to IMDG regulations.**

Sizes 5 kg and under  
4900P-25G, 4900P-250G

**NOT REGULATED**  
per 2.10.2.7

**2.10.2.7:** Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provision of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this Code relevant to any additional hazards continue to apply.

**Section 15: Regulatory Information**

**Canada**

**Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

All hazardous ingredients are listed on the DSL/NDSL.

**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.

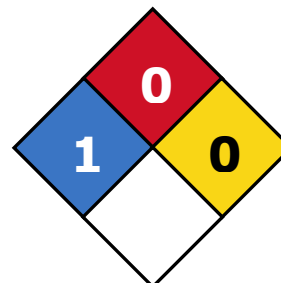
**USA**

**Other Classifications**

**HMIS® RATING**

<b>HEALTH:</b>	<b>*</b>	<b>1</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)

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**SAC305 No CLEAN SOLDER PASTE****4900P****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 copper (CAS# 7440-22-4; reportable quantity = 5 000 lb) and silver (CAS# 7440-22-4; reportable quantity = 1 000 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**

<b>Prepared by the</b>	Regulatory Affairs Department
<b>Date of Issue</b>	06 March 2020
<b>Supersedes</b>	13 January 2020
<b>Reason for Changes:</b>	Update to the emergency phone number information.

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- 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
NOELR	No observable effect loading ratio
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
PEL	Permissible Exposure Limit
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](http://www.mgchemicals.com).

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**Disclaimer**

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