

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

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

 +1-905-331-1396
FAX +1-905-331-2682
E-MAIL support@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

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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

Signal Word	WARNING
Pictograms	Hazard Statements
	H319: Causes serious eye irritation
	H410: Very toxic to aquatic life with long lasting effects
Prevention	Precautionary Statements
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves and eye protection.
P273	Avoid release to the environment.
Response	Precautionary Statements
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>
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	<i>irritation, redness, pain</i>
Response	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.
IF ON SKIN	P302 + P352
Immediate Symptoms	<i>low toxicity: mild irritation</i>
Response	Wash with plenty of water.

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

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use extinguish media suitable for surrounding. In presence of molten metal, do NOT use water on fires.
Specific Hazards	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.
Combustion Products	May produce carbon oxides (CO, CO ₂), 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 equipment in Section 8.
Precautions for Response	Avoid breathing the fumes. Remove or keep away all sources of extreme heat.
Environmental Precautions	Avoid release to the environment. Do not flush to sewer.
Containment Methods	None required—this product is not readily flowable.
Cleaning Methods	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.
Disposal	Dispose of spill waste according to Section 13.

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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**

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

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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	0.1 mg/m ³	Not established
	U.S.A. OSHA PEL	0.01 mg/m ³	Not established
	Canada AB	0.1 mg/m ³	Not established
	Canada BC	0.01 mg/m ³	0.03 mg/m ³
	Canada ON	0.1 mg/m ³	Not established
	Canada QC	0.1 mg/m ³	Not established
copper (dust and mist)	ACGIH	1.0 mg/m ³	Not established
	U.S.A. OSHA PEL	1.0 mg/m ³	Not established
	Canada AB	1.0 mg/m ³	Not established
	Canada BC	1.0 mg/m ³	Not established
	Canada ON	1 mg/m ³	Not established
	Canada QC	1 mg/m ³	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits 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/m³, 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, paste	Lower Flammability Limit	Not applicable
Appearance	Metallic Grey	Upper Flammability Limit	Not applicable
Odor	Mild	Vapor Pressure @20 °C	Not available
Odor Threshold	Not available	Vapor Density	Not available
pH	Not available	Relative Density @25 °C	Not available
Freezing/Melting Point	Not available	Solubility in Water	Slightly soluble ^{b)}
Initial Boiling Point ^{a)}	≥260 °C [≥500 °F]	Partition Coefficient n-octanol/water	Not available
Flash Point ^{a)}	≥140 °C [≥284 °F]	Auto-ignition Temperature ^{a)}	≥305 °C [≥581 °F]
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Non Flammable	Viscosity @40 °C	>20.5 mm ² /s

a) Lowest literature value for organic solvent component

b) Metal components and the flux mixture are sparingly soluble

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Reactivity	Not available.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Avoid extreme temperatures above 450 °C [542 °F], 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**Summary of Effects and Symptoms by Routes of Exposure**

Eyes	Causes redness, serious eye irritation and pain.
Skin	Low toxicity: may cause mild skin irritation.
Inhalation	Low toxicity: may cause coughing. Overexposure to dust or metal fumes may lead to pneumoconiosis (or Stannosis), anemia and central nervous system effects.
Ingestion	Low toxicity: may cause abdominal pain, nausea, vomiting, diarrhea (See also chronic symptoms.)
Chronic	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)

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

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Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
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 ³ Rat 4 h

Note: Toxicity data from the ECHA databases were consulted. The data from supplier SDSs were also consulted.

Other Toxicological Effects

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Causes serious eye irritation. Contains mechanically abrasive particles.
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	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.**

Sizes under 450 kg
NOT REGULATED in TDG
per Special Provisions 99

Sizes 5 kg and under
4900P-25G, 4900P-250G
NOT REGULATED in 49 CFR
per exception 171.4 (c)(2)

FOR REFERENCE ONLY

UN number: UN3077

Shipping Name: ENVIRONMENTALLY
HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(silver particles <1 mm)

Class: 9

Packing Group: III

Marine Pollutant: Yes

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)

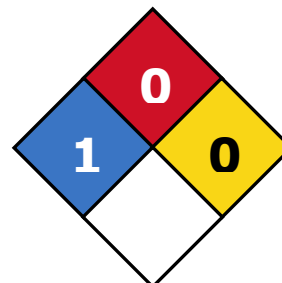
All hazardous ingredients are listed on the DSL/NDSL.

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

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)

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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

Prepared by the	Regulatory Affairs Department
Date of Issue	04 April 2024
Supersedes	06 March 2020
Reason for Changes:	Update to the emergency phone number information.

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1) ACGIH 2024 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 (2024).

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.

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