

**No CLEAN SAC305 LEAD FREE SOLDER PASTE****4900P**

# Safety Data Sheet

## Section 1: Product and Company Identification

### Product Identifier and Other Means of Identification

**Product Name:** No Clean SAC305 Lead Free Solder Paste**SDS Code:** 4900P**Related Part #:** 4900P-25G

### 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

**☎** +1-800-340-0772**☎** +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 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

**NO CLEAN SAC305 LEAD FREE SOLDER PASTE**

**4900P**

**Section 2: Hazards Identification**

**Classification of Hazardous Chemical**

**GHS Categories**

Criteria	Category	Signal Word	Pictograms
Eye Irritation	2	Warning	Exclamation

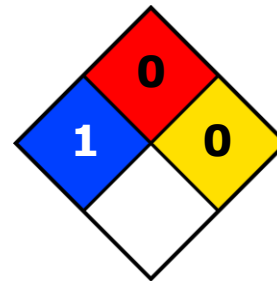
*Note:* The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity), which is opposite to HMIS and NFPA conventions. Severity category rankings do not allow comparisons between classes.

**Other Classifications**

**HMIS® RATING**

<b>HEALTH:</b>	* 1
<b>FLAMMABILITY:</b>	0
<b>PHYSICAL HAZARD:</b>	0
<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)

**Label Elements**

<b>Signal Word</b>	<b>WARNING</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H319: Causes serious eye irritation
<b>Prevention</b>	<b>Precautionary Statements</b>
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/eye protection/face protection.

*Continued on the next page*

**NO CLEAN SAC305 LEAD FREE SOLDER PASTE**

**4900P**

*Continued...*

<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
<b>Disposal</b>	<b>Precautionary Statements</b>
P501	Dispose of contents/container in accordance to local/regional/international regulations.

**Other Hazards**

Warning [Argyria Hazard]: Prolonged or repeated exposure by ingestion or inhalation can cause an irreversible blue-grey skin discoloration.

**Section 3: Hazardous Ingredients**

<b>CAS #</b>	<b>Chemical Name</b>	<b>Wt%</b>
7440-31-5	tin (powder)	83.6-86.3%
7440-22-4	silver	2.5-3.7%
65997-13-9	rosin, hydrogenated	<8%
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</i>
<b>Response</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>IF ON SKIN (or hair)</b>	P302 + P364
<b>Immediate Symptoms</b>	<i>mild skin irritation</i>
<b>Response</b>	IF ON SKIN: Wash with plenty of water.

*Continued on the next page*

**NO CLEAN SAC305 LEAD FREE SOLDER PASTE**

**4900P**

*Continued...*

<b>IF INHALED</b>	P304 + P340
<b>Immediate Symptoms</b>	<i>fume inhalation may cause cough, irritation</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 <i>(Not a likely route of exposure under normal use)</i>
<b>Immediate Symptoms</b>	<i>None known or expected</i>
<b>Response</b>	Rinse mouth. Do NOT induce vomiting.

**Section 5: Fire Fighting Measures**

<b>Auto-ignition <sup>a)</sup> Temperature</b>	≥305 °C [581 °F]	<b>Flash Point <sup>a)</sup></b>	≥140 °C [284 °F]	<b>LFL [LEL] <sup>b)</sup></b>	Not applicable
		<b>UFL [UEL]</b>			

<b>In case of fire</b>	P370 + P378
<b>Extinguishing Media</b>	Use extinguish media suitable for surrounding. Do Not use water on fires where molten metal is present.
<b>Specific Hazards</b>	In a fire, this product can release metal oxide fumes and irritation flux fumes.
<b>Combustion Products</b>	Produces CO and CO <sub>2</sub> , oxides (SnO <sub>x</sub> )
<b>Fire-Fighter</b>	Wear self-contained breathing apparatus for fire fighting

a) Based on organic solvent component

b) LFL = Lower Flammability [or Explosion] Limit (in volume %);

UFL = Upper Flammability [or Explosion] Limit (in volume %)

**Section 6: Accidental Release Measures**

<b>Personal Protection</b>	See Section 8. Avoid breathing the mist/spray/vapors.
<b>Containment</b>	Avoid release to the environment. Prevent spill from entering drains and waterways.
<b>Cleaning</b>	Collect paste in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the 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.

**NO CLEAN SAC305 LEAD FREE SOLDER PASTE**

**4900P**

**Section 7: Handling and Storage**

- Prevention**      Keep out of reach of children.  
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.  
Wash hands thoroughly after handling.  
Avoid release to the environment.
- Storage**          Store in a well-ventilated and dry area. Keep cool.

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

**Routes of Entry**

Eyes, ingestion, inhalation

**Substances with Occupational Exposure Limit Values**

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
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
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	3 mg/m <sup>3</sup>	Not established

*Continued on the next page*

**NO CLEAN SAC305 LEAD FREE SOLDER PASTE**

**4900P**

*Continued...*

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
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>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.

**Note:** Because soft soldering temperatures are generally too low to generate metal fumes, 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.

**Skin Protection**

Use of protective gloves chemically resistant gloves if skin contact is likely.

**Respiratory Protection**

If exposed to vapors or dust above the exposure limit, a suitable wear respirator meeting local/regional/national guidelines.

**RECOMMENDATION:** Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this MSDS, and that the respirator is fitted to the employee by a professional.

**General Hygiene Considerations**

Wash hands thoroughly with water and soap after handling.

**NO CLEAN SAC305 LEAD FREE SOLDER PASTE**
**4900P**
**Section 9: Physical and Chemical Properties**

<b>Physical State</b>	Liquid	<b>Lower Flammability Limit</b>	Not available
<b>Appearance</b>	Paste, Metallic Grey	<b>Upper Flammability Limit</b>	Not available
<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>Specific Gravity @25 °C</b>	8.4
<b>Freezing/Melting Point</b>	Not available	<b>Solubility in Water <sup>b)</sup></b>	Slightly soluble flux mixture
<b>Boiling Point <sup>a)</sup></b>	≥260 °C [≥500 °F]	<b>Partition Coefficient</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 (solid, gas)</b>	Not available	<b>Viscosity @40 °C</b>	>>20.5 mm <sup>2</sup> /s

a) Lowest literature value for organic solvent component

b) Metal components are sparingly soluble

**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, 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

**NO CLEAN SAC305 LEAD FREE SOLDER PASTE**

**4900P**

**Section 11: Toxicological Information**

**Routes of Exposure**

ingestion, inhalation

**Symptoms Summary**

- Eyes** Causes serious eye irritation.
- Skin** May cause mild skin irritation.
- Inhalation** May cause nose, throat and lung irritation.  
Overexposure to dust or metal fumes may lead to pneumoconiosis (or Stannosis)
- Ingestion** No known effect
- 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	TCLo inhalation
tin	>2 000 mg/kg Rat	>2 000 mg/kg Rabbit	4.75 mg/m <sup>3</sup> Rat 4 h	Not available
rosin, hydrogenated	>2 000 mg/kg Rat	>2 000 mg/kg Rabbit	Not available	Not available
silver	>5 g/kg Guinea Pig	Not available	Not available	Not available
2-(2-hexyloxyethoxy) ethanol	3 488 mg/kg Rat	2 216 mg/kg Rabbit	Not available	Not available
copper	>5000 mg/kg Mouse	Not available	5.11 mg/m <sup>3</sup> Rat	Not available

*Note:* Representative toxicity from RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS)<sup>1</sup> data from supplier MSDS were consulted. Because data from these sources were inconclusive, the toxicity data from the ECHA database was used instead.

*Continued on the next page*



**NO CLEAN SAC305 LEAD FREE SOLDER PASTE****4900P****Other Toxicological Effects**

<b>Skin corrosion/irritation</b>	Mild irritant
<b>Serious eye damage/irritation</b>	Causes serious eye irritation and lesions. Contains mechanically abrasive particles.
<b>Sensitization</b> (allergic reactions)	No sensitization effects known
<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)	Not available
<b>Reproductive Toxicity</b> (risk to sex functions)	Not available
<b>Teratogenicity</b> (risk of fetus malformation)	Not available
<b>STOT-single exposure</b>	Not available
<b>STOT-repeated exposure</b>	Not available
<b>Aspiration hazard</b>	Not applicable. There is no evidence of aspiration hazard toxicity, and the material doesn't contain any known class 1 aspiration hazard components.

**Section 12: Ecological Information**

Insufficient information for classification on ecological toxicity at this time.

**Acute Ecotoxicity**

Not available

**Chronic Ecotoxicity**

Not available

**Biodegradability**

Non biodegradable.

**Other Effects**

Not available

**Section 13: Disposal Information**

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

**NO CLEAN SAC305 LEAD FREE SOLDER PASTE****4900P****Section 14: Transport Information****Ground**

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

Not Regulated

**Air**

**Refer to ICAO-IATA Dangerous Goods Regulations.**

Not Regulated

**Sea**

**Refer to ICAO-IATA Dangerous Goods Regulations.**

Not Regulated

**Section 15: Regulatory Information****Canada****WHMIS 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/NDSL.

**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.

*Continued on the next page*

**NO CLEAN SAC305 LEAD FREE SOLDER PASTE****4900P****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 contains toluene (CAS# 108-88-3; reportable quantity = 1000 lb), copper (CAS# 7440-22-4; reportable quantity = 5000 lb), and silver (CAS# 7440-22-4; reportable quantity = 1000 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, Sept 2, 2011 revision, USA).

This product does not contain any of the listed substances.

**Europe****RoHS**

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

**WEEE**

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

**Section 16: Other Information****MSDS Prepared by** Michel Hachey**Date of Issue** 06 May 2014**Supersedes** Not applicable**Reason for Changes:** New product

*Continued on the next page*

**NO CLEAN SAC305 LEAD FREE SOLDER PASTE****4900P****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
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).

Email: [support@mgchemicals.com](mailto: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 material 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.