



SN63 / PB37 NO CLEAN LEADED SOLDER PASTE

4860P

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier and Other Means of Identification

Product Name: Sn63 / Pb37 No Clean Leaded Solder Paste

SDS Code: 4860P

Related Part #: 4860P-35G

Recommended Use and Restriction on Use

Use: Solder paste

Uses Advised Against: Brazing (high temperature torch soldering/torch welding)

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

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FAX +1-800-340-0773

FAX +1-905-331-2682

E-MAIL: support@mgchemicals.com

E-MAIL: info@mgchemicals.com

WEB www.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 **TEL**: **+1-800-424-9300**

For emergencies involving dangerous goods; Collect 24/7

CANADA: Call CANUTEC **TEL**: **+1-613-996-6666** or ***666** on cellular phones

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Section 2: Hazards Identification

Classification of Hazardous Chemical

GHS Categories

Criteria	Category	Signal Word	Pictograms
Specific target organ toxicity Repeated exposure	1	Danger	Health
Reproductive Toxicity	1	Danger	Health
Carcinogenicity	2	Warning	Health
Eye Irritation	2A	Warning	Exclamation

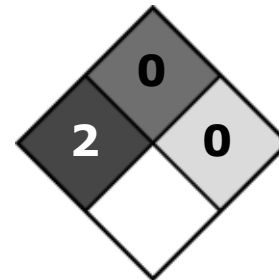
Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity), which is opposite to HMIS and NFPA conventions. Severity category rankings do not allow comparisons between classes.

Other Classifications

HMIS® RATING

HEALTH:	*	2
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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Label Elements

Signal Word	DANGER
Pictograms	Hazard Statements
	H360: May damage fertility or the unborn child H372: Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure H351: Suspected of causing cancer
	H319: Causes serious eye irritation
Prevention	Precautionary Statements
P102	Keep out of reach of children.
P201 + P202	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fumes
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/eye protection/face protection.
P270	Do not eat, drink or smoke when using this product.
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.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P391	Collect Spillage
Storage	Precautionary Statements
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents/container in accordance to local/regional/international regulations.



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Other Hazards

Not applicable.

Section 3: Hazardous Ingredients

CAS #	Chemical Name	Wt%
7440-31-5	tin (powder)	55-55.9%
7439-92-1	lead (powder)	32.1-33.0%
143-22-6	2-(2-(2-butoxyethoxy)ethoxy)ethanol	<2%

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</i>
Response	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.
IF INHALED	P304 + P340, P312, P308 + P313
Immediate Symptoms	<i>cough, irritation of the respiratory track (in extreme exposure cases: metallic taste, nausea, vomiting, and muscle cramps)</i>
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. If feeling unwell: Call a doctor. If exposed or concerned: Get medical advice/attention.
IF ON SKIN	P302 + P362 + P364, P352, P333 + P313
Immediate Symptoms	<i>Mild Irritation</i>
Response	IF ON SKIN: Take off contaminated clothing and wash it before reuse. Wash with plenty of water. If you feel unwell or skin irritation occurs: Get medical advice/attention.

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IF SWALLOWED	P301 + P330 + P331, P312, 308 +P313 (Not a likely route of exposure under normal use)
Immediate Symptoms	abdominal pain, nausea, headaches, vomiting, metallic taste, and muscle cramps
Response	Rinse mouth. Do NOT induce vomiting. If feeling unwell or concerned: Get medical advice.

Section 5: Fire Fighting Measures

Auto-ignition Temperature	Not available	Flash Point ^{a)}	≥98.3 °C [209 °F]	LFL [LEL] ^{b)}	Not applicable
UFL [UEL]					applicable
In case of fire	P370 + P378				
Extinguishing Media	Use extinguish media suitable for surrounding. Do Not use water on fires where molten metal is present.				
Specific Hazards	In a fire, this product can release metal oxide fumes and irritation flux fumes.				
Combustion Products	Produces CO and CO ₂ , oxides (SnO _x), lead oxides (PbO _x).				
Fire-Fighter	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

Personal Protection	See Section 8. Avoid breathing the mist/spray/vapors.
Containment	Avoid release to the environment. Prevent spill from entering drains and waterways.
Cleaning	Collect paste in a sealable waste 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.
Disposal	Dispose of spill waste according to Section 13.

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Keep out of reach of children.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

To prevent the formation of exposure to lead vapors, do not use soldering methods that exceed a 450 °C.

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.

Store locked up.

Section 8: Exposure Controls/Personal Protection**Routes of Entry**

Eyes, ingestion, inhalation

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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
lead	ACGIH	0.05 mg/m ³	Not established
	U.S.A. OSHA PEL	0.05 mg/m ³	Not established
	Canada AB	0.05 mg/m ³	Not established
	Canada BC	0.05 mg/m ³	Not established
	Canada ON	0.05 mg/m ³	Not established
	Canada QC	0.15 mg/m ³	Not established
2-(2-(2-butoxy ethoxy)ethoxy)ethanol	ACGIH	Not established	Not established
	U.S.A. OSHA PEL	Not established	Not established
	Canada AB	Not established	Not established
	Canada BC	Not established	Not established
	Canada ON	Not established	Not established
	Canada QC	Not established	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH², OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from by RTECS database¹ 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.

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- Skin Protection** Use of protective gloves chemically resistant gloves.
- Respiratory Protection** If exposed to vapors or dust above the exposure limit, a suitable wear 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 your respirator has filter cartridges appropriate for the ingredients listed in section 3. Ensure 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	Liquid	Lower Flammability Limit	Not available
Appearance	Paste, Metallic Grey	Upper Flammability Limit	Not available
Odor	Mild	Vapor Pressure @20 °C	Not available
Odor Threshold	Not available	Vapor Density	Not available
pH	Not available	Specific Gravity @25 °C	8.3
Freezing/Melting Point ^{a)}	≥98.3 °C [209 °F]	Solubility in Water ^{c)}	Slightly soluble flux mixture
Boiling Point ^{a)}	≥300 °C [≥572 °F]	Partition Coefficient	Not available
Flash Point ^{b)}	≥98.3 °C [209 °F]	Auto-ignition Temperature	Not available
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability (solid, gas)	Not available	Viscosity @40 °C	>20.5 mm ² /s

a) Lowest literature value for organic solvent component

b) Based on organic solvent component

c) Metal components are sparingly soluble

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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**

Eye, ingestion, inhalation

Symptoms Summary

Eyes	Causes serious eye irritation.
Skin	May causes skin 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	Harmful if swallowed. (See chronic effects)
Chronic	Prolonged and repeated exposure to lead may cause hemeatological effects, high blood pressure, and adverse central and peripheral nervous systems effects. Symptoms of lead poisoning include metallic taste, colic, nausea, vomiting, and muscle cramps. Ingestion or inhalation have developmental effects.

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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 ³ Rat 4 h	Not available
lead	>2 000 mg/kg Rat	>2 000 mg/kg Rat	5.05 mg/m ³ Rat 4 h	273 mg/m ³ Human
2-(2-(2-butoxyethoxy)ethoxy)ethanol	3 540 mg/kg Rat	2 505 mg/kg Rabbit	Not available	Not available

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

Other Toxicological Effects

- Skin corrosion/irritation** Evidence doesn't give rise to classification.
- Serious eye damage/irritation** Causes serious eye irritation. Metal powder is mechanically abrasive.
- Sensitization**
(allergic reactions) No sensitization effects known
- Carcinogenicity**
(risk of cancer) Carcinogen based on animal studies and North American guidelines and regulation.
Lead [CAS# 13463-67-7]
IARC (Supl. 7, 1987) Group 2B: Possibly carcinogenic to humans
ACGIH A3: Confirmed animal carcinogen with unknown relevance to human
CA Prop 65: Listed as a carcinogen
NTP (2011 Report): Reasonably anticipated to be a human carcinogen
- Mutagenicity**
(risk of heritable genetic effects) No effects known
- Reproductive Toxicity**
(risk to sex functions) Lead is believed to decrease fertility in males and females.

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Teratogenicity (risk of fetus malformation)	Lead present a reproductive and developmental hazard based on epidemiological and animal studies.
STOT-single exposure	No effects known
STOT-repeated exposure	Epidemiological and animal studies confirmed neurodevelopmental, neurodegenerative, peripheral nervous system, haematological, cardiovascular, kidney and renal effects.
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

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. Contaminated absorbent material and other contaminated materis must be disposed in an approved waste disposal facility. If possible, recover and reuse is recommended.

Section 14: Transport Information**Ground**

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

Not Regulated

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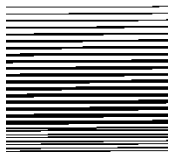
Refer to ICAO-IATA Dangerous Goods Regulations.

Not Regulated

Sea

Refer to IMDG Dangerous Goods Regulations.

Not Regulated

Section 15: Regulatory Information**Canada****WHMIS Classification**D2A – Very Toxic Material
(Teratogenicity/Embryotoxicity; Chronic Toxicity; Mutagenicity; and Carcinogenicity)**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.

SN63 / PB37 NO CLEAN LEADED SOLDER PASTE**4860P****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 lead (CAS# 7439-92-1; reportable quantity = 10 lb), which is 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 contains lead, which is listed as a carcinogen and a reproductive toxicant.

Europe**RoHS**

This product contains lead and is therefore restricted with respect to RoHS.

It does not contain any cadmium, mercury, hexavalent chromium, PBB's, or PBDE's.

WEEE

This product is subject to the WEEE regulation.

Section 16: Other Information**MSDS Prepared by** Michel Hachey**Date of Issue** 13 May 2014**Supersedes** Not applicable**Reason for Changes:** New product.

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- 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.

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