

4860P

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 4860P**Other Means of Identification:** Sn63Pb37 No Clean Solder Paste**Related Part #** 4860P-35G, 4860P-250G, 4860P-500G

Recommended Use and Restriction on Use

Use: Solder paste**Uses Advised Against:** Do not use brazing soldering methods such as high temperature torch soldering or torch welding.

Do NOT use to make joints and fittings in private or public potable water supplies (prohibited by the Federal Hazardous Substance Act).

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA +1-800-340-0772 +1-905-351-1396**Fax** +1-800-340-0773**E-mail** support@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 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
Specific Target Organ Toxicity	Repeated Exposure	1	Danger	Health
Reproductive Toxicity		1	Danger	Health
Lactation Effect		<i>additional</i>	<i>none</i>	<i>none</i>
Carcinogenicity		2	Warning	Health
Eye Irritation		2A	Warning	Exclamation
Hazardous to the Aquatic Environment	Acute	1	Warning	Environment
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	DANGER
Pictograms	Hazard Statements
	H372: Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure H360: May damage fertility or the unborn child H351: Suspected of causing cancer
	H319: Causes serious eye irritation
	H400: Very toxic to aquatic life H410: Very toxic to aquatic life with long lasting effects

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Pictograms	Hazard Statements
<i>No symbol</i>	H362: May cause harm to breast-fed children
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.
P263	Avoid contact during pregnancy and while nursing.
P260	Do not breathe vapors or fumes.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves, eye protection, and protective clothing.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
Response	Precautionary Statements
P308 + P313	IF exposed or concerned: Get medical advice or attention.
P314	Get medical advice or attention if you feel unwell.
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 or advice.
P391	Collect Spillage
Storage	Precautionary Statements
P405	Store locked up.
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
Child proofing measures	Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.	<i>None</i>	<i>None</i>

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Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
7440-31-5	tin (powder)	56%
7439-92-1	lead (powder)	33%
143-22-6	2-(2-(2-butoxyethoxy)ethoxy)ethanol	2%
98-55-5	p-menth-1-en-8-ol	1%

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 INHALED	P304 + P340, 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 and keep comfortable for breathing. If exposed or concerned: Get medical advice or attention.
IF ON SKIN	P302 + P352, P362 + P364, P332 + P313
Immediate Symptoms	<i>low toxicity: mild irritation</i>
Response	Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice or attention.

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IF SWALLOWED	P301 + P330, P308 + P313
Immediate Symptoms	<i>abdominal pain, nausea, headaches, vomiting, metallic taste, and muscle cramps</i>
Delayed Symptoms	<i>Developmental delays, high blood pressure, anemia, memory loss</i>
Response	Rinse mouth. If feeling unwell or concerned: Get medical advice or attention.

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. In a fire, this product can release metal oxide fumes and irritation flux fumes. Toxic for aquatic environment: Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Produces CO and CO ₂ , oxides (SnO _x), lead oxides (PbO _x).
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	Do not breathe vapors or fumes.
Environmental Precautions	Avoid release to the environment. Prevent spill from entering drains and waterways. Do not flush to sewer.
Containment Methods	None required—this product is not readily flowable.
Cleaning Methods	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.

4860P**Section 7: Handling and Storage****Prevention**

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 [842 °F].

Do not breathe fumes or vapors.

Do not eat, drink, or smoke when using this product. Remove contaminated clothing and protective equipment before entering eating areas.

Avoid contact during pregnancy and while nursing.

Handling

Avoid release to the environment. Collect spillage.

Wear protective gloves, protective clothing, and eye protection.

Take off contaminated clothing and wash it before reuse. Contaminated clothing should not be allowed out of the workplace.

Wash hands thoroughly after handling.

Storage

Store locked up.

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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
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

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, OSHA, 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 exposure limits.

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. For example, use fume cabinet, a hood on a flexible arm, or tip-mounted fume extraction system on the soldering iron.

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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, neoprene, PVC gloves, or other chemically resistant gloves.

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

Respiratory Protection

If exposed to vapors or dust above the exposure limit, a suitable wear respirator meeting local, regional, and 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. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

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Section 9: Physical and Chemical Properties

Physical State	Solid	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	Relative Density @25 °C	Not available
Freezing/Melting Point ^{a)}	≥98.3 °C [209 °F]	Solubility in Water ^{c)}	Slightly soluble flux mixture
Initial Boiling Point ^{a)}	≥219 °C [≥426 °F]	Partition Coefficient n-octanol/water	Not available
Flash Point ^{b)}	91 °C [196 °F]	Auto-ignition Temperature	Not available
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) Based on organic solvent component

c) Metal components are sparingly soluble

4860P**Section 10: Stability and Reactivity**

Reactivity	Tin may react violently in presence of disulfur dichloride and iodine bromide.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Extreme temperatures above 450 °C [842 °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 and serious eye irritation.
Skin	May cause a light skin irritation.
Inhalation	May cause coughing and irritation of the respiratory track. Overexposure to dust or metal fumes may lead to pneumoconiosis (or Stannosis), anemia, and central nervous system effects.
Ingestion	May cause abdominal pain, headache, nausea, vomiting or muscular pain (see chronic effects).
Chronic	Prolonged and repeated exposure to lead may cause hematological 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 fertility, developmental, and lactation effects. Overexposure to dust or metal fumes may lead to pneumoconiosis (or Stannosis), anemia and central nervous system effects.

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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
lead	>2 000 mg/kg Rat	>2 000 mg/kg Rat	5.05 mg/m ³ Rat 4 h
2-(2-(2-butoxyethoxy)ethoxy)ethanol	3 540 mg/kg Rat	2 505 mg/kg Rabbit	Not available
p-menth-1-en-8-ol	4 300 mg/kg Rat	2 000 mg/kg Rat	Not available
Mixture ATE	2 098 mg/kg	2 148 mg/kg	15 mg/m ³

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. Metal powder is mechanically abrasive.
Sensitization (allergic reactions)	Based on available data, the classification criteria are not met.
Carcinogenicity (risk of cancer)	<p>Carcinogen based on animal studies and North American guidelines and regulation.</p> <p>Lead [CAS# 7439-92-1]</p> <p>IARC (Supl. 7, 1987) Group 2B: Possibly carcinogenic to humans</p> <p>ACGIH A3: Confirmed animal carcinogen with unknown relevance to human</p> <p>CA Prop 65: Listed as a carcinogen</p> <p>NTP (2011 Report): Reasonably anticipated to be a human carcinogen</p>

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Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
Reproductive Toxicity (risk to sex functions)	Lead is believed to decrease fertility in males and females.
Teratogenicity (risk of fetus malformation)	Lead presents a reproductive and developmental hazard based on epidemiological and animal studies.
STOT-single exposure	Based on available data, the classification criteria are not met.
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 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.

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

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

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Acute Ecotoxicity

Category 1

Very toxic to aquatic life.

Chronic Ecotoxicity

Category 1

Very toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Biodegradability

Non biodegradable.

Bioaccumulation

Lead is bioaccumulable

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.**

TDG: Sizes 5 kg and under
4860P-35G, 4860P-250G, 4860P-500G
NOT REGULATED in TDG
per Special Provisions 99

49 CFR: Sizes 5 kg and under
NOT REGULATED in 49 CFR
per exception 171.4 (c)(2)

49CFR: Sizes over 5 kg (USA)

FOR REFERENCE ONLY

UN number: UN3077

Shipping Name: ENVIRONMENTALLY
HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (lead powder)

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.

171.4 (c) Exceptions: 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 of 5 kg or less for solids, are not subject to any other requirements of this subchapter provided the packagings meet the general requirements in §§ 173.24 and 173.24a. This exception does not apply to marine pollutants that are a hazardous waste or a hazardous substance. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this subchapter relevant to any additional hazards continue to apply.

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Air

Refer to ICAO-IATA regulations.

Sizes 5 kg and under
4860P-35G, 4860P-250G, 4860P-500G
NOT REGULATED
On the air waybill, write
"Not Restricted, as per
Special Provisions A197"

Sizes over 5 kg
FOR REFERENCE ONLY
UN number: UN3077
Shipping Name: ENVIRONMENTALLY
HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(lead powder)
Class: 9
Packing Group: III
Marine Pollutant: Yes



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.

Sea

Refer to IMDG regulations.

Sizes 5 kg and under
4860P-35G, 4860P-250G, 4860P-500G
NOT REGULATED
per 2.10.2.7

Sizes over 5 kg
FOR REFERENCE ONLY
UN number: UN3077
Shipping Name: ENVIRONMENTALLY
HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(lead powder)
Class: 9
Packing Group: III
Marine Pollutant: Yes



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.

Note: Shipper must be appropriately trained and certified before involvement with the transport of dangerous goods.

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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.

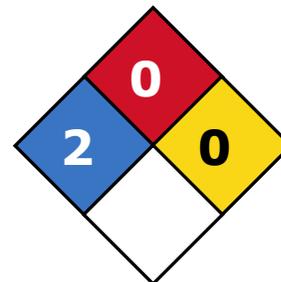
USA

Other Classifications

HMIS® RATING

HEALTH:	* 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)

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.

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California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, USA).

This product contains lead, which is listed as a carcinogen and a reproductive toxicant.

Europe

RoHS (Restriction of Hazardous Substances Directive)

This product contains lead and is therefore subject to restricted uses with respect to the RoHS directive.

It does not contain any 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 Revision	01 February 2023
Supersedes	06 March 2020
Reason for Changes:	Update to composition information.

Reference

1) ACGIH 2022 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 (2022).

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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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