

8330-B

(PART B)

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 8330-B**Other Means of Identification:** Silver Conductive Epoxy Adhesive**Related Part #** 8330-19G, 8330-50ML, 8330-200ML

Recommended Use and Restriction on Use

Use: Silver filled electrically conductive adhesive for cold soldering and circuit repair**Uses Advised Against:** Not available

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADAMG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA**☎** +1-800-340-0772**FAX** +1-800-340-0773**E-MAIL** support@mgchemicals.com**WEB** www.mgchemicals.com**☎** +1-905-331-1396**FAX** +1-905-331-2682**E-MAIL** info@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 the Chemical Material
GHS Categories

Criteria	Category	Signal Word	Pictograms
Serious Eye Damage	1	Danger	Corrosion
Skin Corrosion	1B	Danger	Corrosion
Sensitization Skin	1	Warning	Exclamation
Reproductive Toxicity	2	Warning	Health
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
	H314: Causes severe skin burns and eye damage
	H317: May cause an allergic skin reaction
	H361: Suspected of damaging fertility or the unborn child
	H410: Toxic to aquatic life with long lasting effects

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Prevention	Precautionary Statements
P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe fumes/vapors.
P280	Wear protective gloves/eye protection.
P264	Wash hands thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
Response	Precautionary Statements
P305 + P351 + P338, P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
P301+ P330 + P331, P310	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.
P304 + P340, P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
P308 + P313	If exposed or concerned: Get medical advice.
P303 + P361 + P353, P310	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
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.

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Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Argyria	Long term exposure to silver powder or compounds can lead to an irreversible blue-grey discoloration of the skin.	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
7440-22-4	silver	70-80%
84852-15-3	4-nonyl phenol, branched	15-30%
140-31-8	1-piperazineethanamine	3-6%
111-40-0	diethylene triamine	0.1-1%
80-05-7	4,4'-isopropylidenediphenol	0.1-0.5%

Section 4: First-Aid Measures

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
IF IN EYES	P305 + P351 + P338, P310
Immediate Symptoms	<i>redness, severe irritation, pain, burns</i>
Response	Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
IF ON SKIN	P303 + P361+ P353, P310, P313 +P313
Immediate Symptoms	<i>redness, rash, severe irritation, pain, burns, blistering</i>
Response	Wash with plenty of water/shower. Take off immediately all contaminated clothing. Immediately call a POISON CENTRE or doctor. If skin irritation or rash occurs: Get medical advice or attention.

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IF INHALED	P304 + P340, P310, P308 + P313
Immediate Symptoms	<i>cough, severe irritation or burns of the respiratory track</i>
Response	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTRE or doctor. IF exposed or concerned: Get medical advice or attention.
IF SWALLOWED	P301 + P330 + P331, P310, P308 + P313
Immediate Symptoms	<i>severe irritation, burns to mouth, throat, stomach</i>
Response	Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTRE or doctor. IF exposed or concerned: Get medical advice or attention.

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish. COUNTER INDICATION: Avoid use of water jet as extinguishing media. Material can form a very toxic aqueous solution with water. If possible, prevent run-off from entering drains and waterways.
Specific Hazards	Not flammable or combustible, but burns if involved in a fire. Produces irritating smoke of unknown toxicity in fires. Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Produces carbon oxides (CO, CO ₂), nitrogen oxides (NO _x), amines, toxic fumes, and smoke.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	Use personal protection recommended in Section 8.
Precautions for Response	Do not breathe fumes/vapors. Keep away from extreme heat or open flames.
Environmental Precautions	Avoid releasing 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 liquid in a sealable container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe remaining residue with a paper towel wetted with alcohol (or other suitable organic solvent) and place dirty towels in container. Wash spill area with soap and water to remove the last traces of residue. RECOMMENDATION: Use a plastic, stainless steel, or carbon steel container. Avoid containers with copper, aluminum, zinc, or galvanized surfaces since the waste mater can slowly oxidize them.
Disposal Methods	Dispose spill waste according to Section 13.

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. Contaminated work clothing should not be allowed out of the workplace. Take off contaminated clothing and wash it before reuse. Do not breathe fumes or vapors. Do not eat, drink, or smoke when using this product.
Handling	Wear protective gloves and eye protection. Wash hands thoroughly after handling. Collect spillage.
Storage	Keep container tightly closed. Store locked up.

Section 8: Exposure Controls/Personal Protection
Substances with Occupational Exposure Limit Values

Chemical Name	Country or Vendor	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	3 mg/m ³	Not established
diethylene triamine	ACGIH	1 ppm ^{a)}	Not established
	U.S.A. OSHA PEL	Not established	Not established
	Canada AB	1 ppm ^{a)}	Not established
	Canada BC	1 ppm ^{a)} (S)	Not established
	Canada ON	1 ppm ^{a)}	Not established
	Canada QC	1 ppm ^{a)}	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 the RTECS database² and from suppliers' SDSs were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) Danger of cutaneous absorption

S—Skin sensitizer

Engineering Controls
Ventilation

Keep airborne concentrations below the occupational exposure limits (OEL).

RECOMMENDATION: If the product is heated, use of local exhaust or full mask with organic vapor cartridge/independent air supply.

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(PART B)**Personal Protective Equipment****Eye protection**

Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Use safety glasses with lateral protection (side shields).

Skin Protection

For likely contacts, use of protective butyl rubber, latex, neoprene, or other chemically resistant gloves.

For incidental contacts, use nitrile, latex, neoprene or other chemically resistant gloves.

Respiratory Protection

For over-exposures up to 10 x OEL of vapors, wear respirator such as a half-mask respirator with organic vapor cartridges.

Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus.

If the product is heated or worker has a known allergic reaction, consider using a full mask with organic vapor cartridge or with an independent air supply.

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.

Section 9: Physical and Chemical Properties

Physical State	Solid	Lower Flammability Limit	Not available
Appearance	Silver grey	Upper Flammability Limit	Not available
Odor	Amine-like	Vapor Pressure @25 °C	Not available
Odor Threshold	Not available	Vapor Density	Not available
pH	Not available	Relative Density @25 °C	2.92
Freezing/Melting Point	Not available	Solubility in Water	Practically insoluble
Initial Boiling Point	Not available	Partition Coefficient n-octanol/water	Not available
Flash Point ^{a)}	>93.3 °C [>200 °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) Setaflashed closed cup for hardener components

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Incompatible substances and excessive heat
Incompatibilities	Strong oxidizing agents, acids, acetylene, hydrogen peroxides.
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 severe eye damage. Contains mechanically abrasive particles.
Skin	Causes skin burns.
Inhalation	Severe respiratory irritant. May be destructive to tissue of the mucous membranes, upper respiratory tract (nose, throat, lungs).
Ingestion	Severe irritant. May cause burns to mouth, throat, and stomach. (See inhalation symptoms.)
Chronic	Prolonged and repeated exposure may lead to skin sensitization.

Lethal Exposure Concentrations

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
silver	>5 g/kg Guinea Pig	>2 000 mg/kg Rabbit	>5 000 mg/m ³ Rat
4-nonyl phenol, branched	1 300 mg/kg Rat	>3 160 mg/kg	Not available
1-piperazineethanamine	2 140 µl/kg Rat	866 mg/kg Rabbit	Not available
diethylene triamine	1 080 mg/kg Rat	1 090 mg/kg Rabbit	Not available
4,4'-isopropylidenediphenol	2 400 mg/kg Rat	3 mL/kg Rabbit	>170 mg/m ³ Rat 6 h

Note: Toxicity data from the RTECS² and ECHA databases were consulted. The data from supplier SDS were also consulted.

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8330-B**(PART B)****Other Toxicological Effects**

Skin corrosion/irritation	Causes skin burns.
Serious eye damage/irritation	Causes serious eye damage.
Respiratory and skin sensitization (allergic reactions)	Diethylene triamine, 1-piperazineethanamine, and 4,4'-isopropylidenediphenol may cause skin sensitization.
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 animal studies 2-piperazin-1-ylethylamine (CAS# 140-31-8) has been shown to be a developmental toxicant if swallowed.
Teratogenicity (risk of fetus malformation)	The 4-nonyl-phenol, branched (CAS# 84852-15-13) and 4,4'-isopropylidenediphenol (CAS# 80-05-7) are suspected of being reproductive toxicants.
STOT-single exposure	Does not meet classification criteria. Diethylene triamine (CAS# 111-40-0) is a category 3 respiratory irritant but it is present at only 1%.
STOT-repeated exposure	No known classifiable effects. See hazards not otherwise specified Argiria warning in Section 2.
Aspiration hazard	There are no category 1 components, and the kinematic viscosity is >20.5 mm ² /s at 40 °C.

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 silver particles less than a 1 mm in size but >100 nm (larger than nanoparticles), which are category 1 marine pollutant in ionic form. While very sparingly soluble in water in its massive form, weight of evidence suggests that small particles are more readily dissolved yielding to classifiable toxic levels.

The 4 nonyl phenol, branched, ingredient is a category 1 marine pollutant according to available data with a minimal 96 h LC50 of 0.135 mg/L *Lepomis macrochiru*.

The 4,4'-isopropylidenediphenol ingredient is a category 2 marine pollutant according to available data (with minimal 96 h LC50 of 4.6 mg/L for *Pimephales promelas* (fathead minnow); 48 h EC50 of 10.2 mg/L *Daphnia Magna* (water flea); and 96 h EC50 of 2.73 for *Pseudokirchneriella subcapitata* (green algae).

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The 1-piperazineethanamine (CAS# 140-31-8) is a category 4 marine pollutant according to available data (with minimal 96 h LC50 of 2190 mg/L for *Pimephales promelas* (fathead minnow); 48 h EC50 of 58 mg/L *Daphnia Magna* (water flea); 72 EC50 of 465 mg/L for *Pseudokirchneriella subcapitata* (*Selenastrum capricornutum*)).

Diethylene triamine (CAS# 111-40-0) is not classified as marine pollutant according to available data.

Acute Ecotoxicity

Category 1

Very toxic to aquatic life

Chronic Ecotoxicity

Category 1

Toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Persistence and Biodegradability

Not available

Bioaccumulative Potential

Not available

Mobility in Soil

Not available

Other Effects

Not available

Section 13: Disposal Considerations

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

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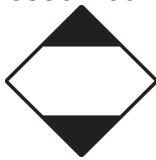
Section 14: Transport Information

Ground

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

Sizes 5 kg and under

8330-19G, 8330-50ML, 8330-200ML
Limited Quantity



Sizes greater than 5 kg

FOR REFERENCE ONLY

UN number: UN3263

Shipping Name:

CORROSIVE SOLID, BASIC,
ORGANIC N.O.S. (4-nonyl phenol,
branched; aminoethylpiperazine)

Class: 8

Packing Group: II

Marine Pollutant: Yes



Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 5 kg and under

8330-19G, 8330-50ML, 8330-200ML
Limited Quantity



Sizes greater than 5 kg up to 15 kg

FOR REFERENCE ONLY

UN number: UN3263

Shipping Name:

CORROSIVE SOLID, BASIC,
ORGANIC N.O.S. (4-nonyl phenol,
branched; aminoethylpiperazine)

Class: 8

Packing Group: II

Marine Pollutant: Yes



Excepted Quantity E2 ≤30 g

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Sea

Refer to IMDG regulations.

Sizes 1 kg and under

8330-19G, 8330-50ML, 8330-200ML

Limited Quantity



Sizes greater than 1 kg

FOR REFERENCE ONLY

UN number: UN3263

Shipping Name:

CORROSIVE SOLID, BASIC,
ORGANIC N.O.S. (4-nonyl phenol,
branched; aminoethylpiperazine)

Class: 8

Packing Group: II

Marine Pollutant: Yes



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

Section 15: Regulatory Information

Canada

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

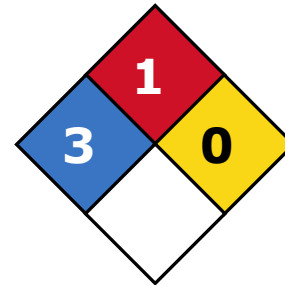
All hazardous ingredients are listed on the DSL.

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:	* 3
FLAMMABILITY:	1
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 silver (CAS# 7440-22-4; reportable quantity = 1 000 lb), which is subject to the reporting requirements of CERCLA and section 313 of SARA Title III.

This product contains 4,4'-isopropylidenediphenol (CAS# 80-05-7), which is subject to the reporting requirements of section 313 of the SARA Title III.

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 contains 4,4'-isopropylidenediphenol (CAS# 80-05-7), which is listed as a reproductive hazard.

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8330-B**(PART B)****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

SDS Prepared by	MG Chemical's Regulatory Department
Date of Revision	21 December 2020
Supersedes	09 March 2020
Reason for Changes:	Update to the emergency phone number information.

Reference

- 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

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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.

Email: support@mgchemicals.com

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Disclaimer This 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.