



Kit Revision Date: 02 May 2023

SUPER THERMALLY CONDUCTIVE EPOXY ADHESIVE KIT

MG Chemicals Multipart Product Kit

This product is a kit made up of multiple parts. Each part is an independently packaged chemical component and has independent hazard assessments.

Kit Content

<i>Part</i>	<i>Product Name</i>	<i>Product Use</i>
A	8329HTC-A	Epoxy resin for use with hardeners
B	8329HTC-B	Epoxy hardener for uses with resins

Safety Data Sheets for each part listed above follow this cover sheet.

Transportation Instruction

Before offering this product kit for transport, read Section 14 for all parts listed above.

8329HTC

(PART A)

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 8329HTC-A**Other Means of Identification:** Super Thermally Conductive Epoxy Adhesive (Part A)**Related Part #** 8329HTC-50ML, 8329HTC-400ML

Recommended Use and Restriction on Use

Use: Epoxy resin for use with hardeners**Uses Advised Against:** Not for use as a spray coating

Details of Manufacturer or Importer

ManufacturerMG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
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

8329HTC**(PART A)****Section 2: Hazard(s) Identification****Classification of Hazardous Chemical****GHS Categories**

Criteria		Category	Signal Word	Pictograms
Sensitization	Skin	1	Warning	Exclamation
Eye Irritation		2	Warning	Exclamation
Skin 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
	H317: May cause an allergic skin reaction H319: Causes serious eye irritation H315: Causes skin irritation
	H410: Very toxic to aquatic life with long lasting effects

Section continued on the next page

8329HTC**(PART A)***Continued...*

Prevention	Precautionary Statements
P102	Keep out of reach of children.
P261	Avoid breathing fumes and vapors.
P280	Wear protective gloves and eye protection.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash hands thoroughly after handling.
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 advice or attention.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P333 + P313	If skin irritation or rash occurs: Get medical advice or attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
Storage	Precautionary Statements
Not applicable	Not applicable
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
None	None	None	None

8329HTC
(PART A)
Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)*
24304-00-5	aluminum nitride	30-50%
25068-38-6	bisphenol-A-(epichlorhydrin); epoxy resin	25-45%
7429-90-5	aluminum powder (pyrophoric)	25-45%
112945-52-5	silica, amorphous, fumed, crystal-free	1-5%

*The exact percentage (concentration) of composition has been withheld as a trade secret.

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>redness, irritation, pain</i>
Response	Rinse cautiously with water for at least 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, P333 + P313, P362 + P364
Immediate Symptoms	<i>redness, irritation, allergic contact dermatitis</i>
Response	Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse.
IF INHALED	P304 + P340, P312
Immediate Symptoms	<i>cough, irritation of the respiratory track</i>
Response	Remove person to fresh air and keep comfortable for breathing. If you feel unwell: Get medical advice.
IF SWALLOWED	P301 + P330, P331
Immediate Symptoms	<i>low toxicity: irritation</i>
Response	Rinse mouth. Do NOT induce vomiting.

8329HTC

(PART A)

Section 5: Fire-Fighting Measures

Extinguishing Media	In case of fire: Use extinguishing media suitable for surrounding materials.
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) and toxic 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 recommendations in Section 8.
Precautions for Response	Avoid breathing fumes and vapors. Remove or keep away all sources of extreme heat or open flames.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Containment Methods	Not applicable—not readily flowable
Cleaning Methods	Scoop the spill into the chemical-resistant container. Wipe off residues with paper towels and place the used towels in the waste container. Use soap and water to remove the last traces of residue.
Disposal Methods	Dispose of spill waste according to Section 13.

8329HTC**(PART A)****Section 7: Handling and Storage****Prevention**

Keep out of reach of children.
Avoid breathing fumes and vapors.
Avoid release to the environment.

Handling

Wear protective gloves and eye protection.
Take off contaminated clothing and wash it before reuse.
Contaminated work clothing should not be allowed out of the workplace.
Wash hands thoroughly after handling.
Collect spillage.

Storage

DO NOT FREEZE. Store in a clean and dry area between 5 to 35 °C.

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)
aluminum metal and insoluble compounds	ACGIH	1 mg/m ³	Not established
	U.S.A. OSHA PEL	10 mg/m ³	10 mg/m ³
	Canada AB	10 mg/m ³	Not established
	Canada BC	Not established	Not established
	Canada ON	1 mg/m ³	Not established
	Canada QC	5 mg/m ³	Not established

Note: The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from supplier SDSs were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

8329HTC**(PART A)****Engineering Controls****Ventilation**

General ventilation is adequate for normal use; keep overall exposure as low as possible.

Aluminum metal and insoluble compounds are bound in the matrix and are not available as a respiration hazard under normal conditions or foreseeable emergency conditions.

Due to low product vapor pressures, general ventilation should be adequate for normal use. 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.

Personal Protective Equipment**Eye protection**

Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Ensure that glasses have side shields for lateral protection (side shields).

Skin Protection

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

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

Respiratory Protection

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

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 or half 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.

8329HTC
(PART A)
Section 9: Physical and Chemical Properties

Physical State	Paste, solid	Lower Flammability Limit	Not available
Appearance	Noir	Upper Flammability Limit	Not available
Odor	Aromatic	Vapor Pressure @20 °C	Not available
Odor Threshold	Not available	Vapor Density	Not available
pH	Not available	Relative Density @25 °C	>1.8
Freezing/Melting Point	Not available	Solubility in Water	Negligible
Initial Boiling Point	Not available	Partition Coefficient n-octanol/water	Not available
Flash Point ^{a)}	200 °C [392 °F]	Auto-ignition Temperature ^{b)}	Not available
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Non flammable	Viscosity @25 °C	Not available

a) value based on supplier SDS

Section 10: Stability and Reactivity

Reactivity	Reacts exothermically with amines.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, open flames, and incompatible substances
Incompatibilities	Strong oxidizing agents, strong acids, alkali
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

8329HTC**(PART A)****Section 11: Toxicological Information****Summary of Effects and Symptoms by Routes of Exposure**

Eyes	May cause redness, severe irritation, or pain.
Skin	May cause skin redness, irritation, dry skin, or allergic contact dermatitis.
Inhalation	May cause cough and respiratory irritation.
Ingestion	Low toxicity: may cause irritation.
Chronic	Prolonged and repeated exposure may lead to skin sensitization.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
aluminum nitride	>2 000 mg/kg Rat	Not available	Not available
bisphenol-A-(epichlorhydrin); epoxy resin	>2 000 mg/kg Rat	>2 000 mg/kg Rat	Not available
aluminum powder (pyrophoric)	>5 000 mg/kg Rat	Not available	Not available
silica, amorphous, crystal- free	Not available	Not available	Not available
Mixture ATE	>2 000 mg/kg	>2 000 mg/kg	Not available

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

Section continued on the next page

8329HTC**(PART A)****Other Toxicological Effects**

Skin corrosion/irritation	Based on tests on rabbits, the epoxy resins are skin irritants.
Serious eye damage/irritation	Based on tests on rabbits, the epoxy resins are eye irritant.
Sensitization (allergic reactions)	Based on animal studies on the epoxy resins, this product is a skin sensitizer
Carcinogenicity (risk of cancer)	None of the ingredients are 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.

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.

Aluminum nitride is an acute and chronic category 1 (M=1) environmental toxicant with a minimal LC50 96h of 0.57 mg/L for *Oncorhynchus mykiss* (rainbow trout) and a chronic NOEC value of 0.22 ug/L for fishes.

In Europe, similar epoxy resin mixtures with CAS# 25068-38-6 and average molecular weight of less than 700 are generally classified as chronic category 2 marine pollutant due to LC50 96 h of >1 mg/L but ≤10 mg/L.

Section continued on the next page

8329HTC**(PART A)****Acute Ecotoxicity**

See chronic ecotoxicity.

Chronic Ecotoxicity

Category 1

Very toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Biodegradability

Not available

Bioaccumulation

Not available

Other Effects

Not available

Section 13: Disposal Considerations

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

8329HTC
(PART A)
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
Part A of 8329HTC-50ML, 8329HTC-400ML kits

NOT REGULATED in TDG
per Special Provisions 99(2)

49 CFR: Sizes 5 kg and under
Part A of 8329HTC-50ML, 8329HTC-400ML kits

NOT REGULATED in 49 CFR
per exception 171.4 (c)(2)

49 CFR: Sizes greater than 5 kg
FOR REFERENCE ONLY

UN number: UN3077

Shipping Name:
ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S.
(Aluminum Nitride)

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:

(2) 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.

Section continued on next page

8329HTC
(PART A)
Air
Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 5 kg and under

Part A of 8329HTC-50ML, 8329HTC-400ML kits

NOT REGULATED

On air waybill write:

"Not Restricted, as per Special Provisions A197"

Sizes greater than 5 kg

FOR REFERENCE ONLY

UN number: UN3077

Shipping Name:

ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S.
(Aluminum Nitride)

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.

Section continued on the next page

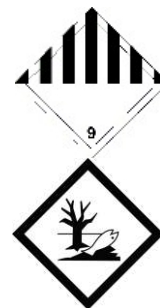
8329HTC**(PART A)****Sea****Refer to IMDG regulations.**

Sizes 5 kg and under

*Part A of 8329HTC-50ML, 8329HTC-400ML kits***NOT REGULATED**

per 2.10.2.7

Sizes greater than 5 kg

UN number: UN3077**Shipping Name:**ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S.
(Aluminum Nitride)**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.

Temperature sensitive—Keep between 5 °C and 35 °C.

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.

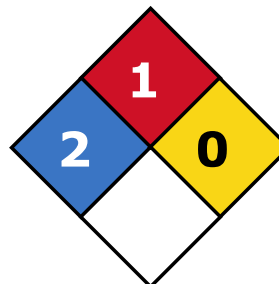
Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

Section continued on the next page

8329HTC**(PART A)****USA****Other Classifications****HMIS[®] RATING**

HEALTH:	* 2
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 does not contain substances 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 substances on the California Proposition 65 list.

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.

8329HTC**(PART A)****Section 16: Other Information**

SDS Prepared by	MG Chemical's Regulatory Department
Date of Review	12 April 2023
Supersedes	Not applicable
Reason for Changes:	First version SDS for 8329htc-part a.

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).

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

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8329HTC**(PART A)**

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

Phone: +1-905-331-1396

Mailing Addresses *Manufacturing & Support*
1210 Corporate Drive
Burlington, Ontario, Canada
L7L 5R6

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.

8329HTC

(PART B)

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: 8329HTC (Part B)**Other Means of Identification:** Super Thermally Conductive Epoxy Adhesive (Part B)**Related Part #** 8329HTC-50ML, 8329HTC-400ML

Recommended Use and Restriction on Use

Use: Epoxy hardener for use with resins**Uses Advised Against:** Not for use as a spray coating

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-MAILsupport@mgchemicals.com**WEB**www.mgchemicals.com

+1-905-331-1396

FAX

+1-905-331-2682

E-MAILinfo@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

8329HTC
(PART B)
Section 2: Hazard(s) Identification
Classification of the Chemical Material
GHS Categories

Criteria		Category	Signal Word	Pictograms
Serious Eye Damage		1	Danger	Corrosion
Sensitization	Skin	1	Warning	Exclamation
Skin 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	DANGER
Pictograms	Hazard Statements
	H318: Causes serious eye damage
	H317: May cause an allergic skin reaction H315: Causes skin irritation
	H410: Very toxic to aquatic life with long lasting effects

Section continued on the next page

8329HTC
(PART B)
Continued...

Prevention	Precautionary Statements
P102	Keep out of reach of children.
P261	Avoid breathing fumes and vapors.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves and eye protection.
P272	Contaminated work clothing should not be allowed out of the workplace.
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.
P310	Immediately call a POISON CENTER or doctor.
P303 + P352	IF ON SKIN: Wash with plenty of water or shower.
P333 + P313	If skin irritation or rash occurs: Get medical advice or attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
Storage	Precautionary Statements
Not Applicable	Not Applicable
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
None	None	None	None

8329HTC
(PART B)
Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)*
24304-00-5	aluminum nitride	30–50%
68082-29-1	fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine	25–45%
7429-90-5	aluminum (fume or dust only)	25–45%
112945-52-5	silica, amorphous, fumed, cryst.-free	1–5%

*The exact percentage (concentration) of composition has been withheld as a trade secret.

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 30 minutes or more. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
IF ON SKIN	P303 + P352, P333 + P313, P362 + P364
Immediate Symptoms	<i>redness, irritation, rash (allergic contact dermatitis)</i>
Response	Wash with plenty of water or shower. Immediately call a POISON CENTRE or doctor. If skin irritation or rash occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse.
IF INHALED	P304 + P340, P310
Immediate Symptoms	<i>cough, irritation of the respiratory track</i>
Response	Remove person to fresh air and keep comfortable for breathing.
IF SWALLOWED	P301 + P330 + P331, P310
Immediate Symptoms	<i>irritation, abdominal pain, nausea, vomiting</i>
Response	Rinse mouth. Do not induce vomiting.

8329HTC**(PART B)****Section 5: Fire-Fighting Measures**

Extinguishing Media	In case of fire: Use extinguishing media suitable for surrounding materials.
Specific Hazards	Not flammable or combustible, but burns if involved in a fire. Produces irritating and toxic fumes in fires or in contact with hot surfaces. Inhalation of toxic smoke during fire may have delayed effects. Exposed person may need to be put under surveillance for 48 h. Toxic for aquatic environment: Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Produces carbon oxides (CO, CO ₂) and nitrogen oxides (NO _x).
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	Avoid breathing fumes and vapors. Remove or keep away all sources of extreme heat.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Containment Methods	Not applicable—not easily flowable.
Cleaning Methods	Collect liquid in a sealable container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe residue with a paper towel, and place dirty towels in container. Wash spill area with soap and water to remove the last traces of residue.
Disposal Methods	Dispose spill waste according to Section 13.

8329HTC**(PART B)****Section 7: Handling and Storage****Prevention**

Keep out of reach of children.

Avoid breathing fumes and vapors. Avoid contact with skin or eyes.

Contaminated work clothing should not be allowed out of the workplace.

Avoid release to the environment.

Handling

Wear protective gloves, protective clothing, eye protection, and face protection. Take off contaminated clothing and wash it before reuse.

Wash hands thoroughly after handling.

Collect spillage.

Storage

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)
aluminum metal and insoluble compounds	ACGIH	1 mg/m ³	Not established
	U.S.A. OSHA PEL	10 mg/m ³	10 mg/m ³
	Canada AB	10 mg/m ³	Not established
	Canada BC	Not established	Not established
	Canada ON	1 mg/m ³	Not established
	Canada QC	5 mg/m ³	Not established

Note: The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from supplier SDSs were also consulted. Short term exposure limits (STEL) are for 15 min and long-term permissible exposure limits (PEL) for 8 h.

Section continued on the next page

8329HTC**(PART B)****Engineering Controls****Ventilation**

General ventilation is adequate for normal use; keep overall exposure as low as possible.

Aluminum metal and insoluble compounds are bound in the matrix and are not available as a respiration hazard under normal conditions or foreseeable emergency conditions.

Due to low product vapor pressures, general ventilation should be adequate for normal use. 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.

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 or other chemically resistant gloves.

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

Respiratory Protection

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

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.

8329HTC
(PART B)
Section 9: Physical and Chemical Properties

Physical State	Paste, solid	Lower Flammability Limit	Not available
Appearance	Grey	Upper Flammability Limit	Not available
Odor	Amine-Like	Vapor Pressure @20 °C	Not available
Odor Threshold	Not available	Vapor Density	Not available
pH	Not available	Relative Density @25 °C	>1.6 g/cm ³
Freezing/Melting Point	Not available	Solubility in Water	Slightly soluble
Initial Boiling Point	Not available	Partition Coefficient n-octanol/water	Not available
Flash Point ^{a)}	>180 °C [>356 °F]	Auto-ignition Temperature	>400 °C [>752 °F]
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Not available	Viscosity @25 °C	Not available

a) value based on supplier SDS

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Avoid ignition sources, open flames, and incompatible substances.
Incompatibilities	strong acids, strong oxidants, epoxides, ketones
Polymerization	Will not occur
Decomposition	Does not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

8329HTC**(PART B)****Section 11: Toxicological Information****Summary of Effects and Symptoms by Routes of Exposure**

Eyes	May cause redness, severe irritation, pain, or eye damage.
Skin	May cause skin redness, irritation, dry skin, or allergic contact dermatitis.
Inhalation	May cause cough and respiratory irritation.
Ingestion	Low toxicity: may cause irritation.
Chronic	Prolonged and repeated exposure may lead to skin sensitization.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
aluminum nitride	>2 000 mg/kg Rat	Not available	Not available
fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine	>2 000 mg/kg Rat	>2 000 mg/kg Rat	Not available
aluminum (fume or dust only)	>5 000 mg/kg Rat	Not available	Not available
silica, amorphous, fumed, cryst.-free	Not available	Not available	Not available
Mixture ATE	>2 000 mg/kg	>5 000 mg/kg	Not available

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

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8329HTC**(PART B)****Other Toxicological Effects****Skin corrosion/irritation**

Based on available data, the epoxy hardener causes eye damage.

Serious eye damage/irritation

Based on available data, the epoxy hardener causes skin irritation.

Respiratory and skin sensitization (allergic reactions)

Based on animal studies on the epoxy hardener, this product causes skin sensitization.

Carcinogenicity
(risk of cancer)

None of the ingredients are 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. There is no category 1 components, and the kinematic viscosity is $>20.5 \text{ mm}^2/\text{s}$ at $40 \text{ }^\circ\text{C}$.

8329HTC**(PART B)****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.

Aluminum nitride is an acute and chronic category 1 (M=1) environmental toxicant with a minimal LC50 96h of 0.57 mg/L for *Oncorhynchus mykiss* (rainbow trout) and a chronic NOEC value of 0.22 ug/L for fishes.

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

Bioaccumulation

Not available

Other Effects

Not available

Section 13: Disposal Information

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

8329HTC
(PART B)
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

*Part B of 8329HTC-50ML,
8329HTC-400ML kits*

NOT REGULATED in TDG
per Special Provisions 99(2)

49 CFR: Sizes greater than 5 kg

FOR REFERENCE ONLY

UN number: UN3077

Shipping Name:
ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S.
(aluminum nitride)

Class: 9

Packing Group: III

Marine Pollutant: Yes



49 CFR: Sizes 5 kg and under

*Part B of 8329HTC-50ML,
8329HTC-400ML kits*

NOT REGULATED in 49 CFR
per exception 171.4 (c)(2)

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:

(2) 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.

Section continued on the next page

8329HTC
(PART B)
Air
Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 5 kg and under

*Part B of 8329HTC-50ML,
8329HTC-400ML kits*

NOT REGULATED

On air waybill write:

"Not Restricted, as per
Special Provisions A197"

Sizes greater than 5 kg

FOR REFERENCE ONLY

UN number: UN3077

Shipping Name:
ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S.
(aluminum nitride)

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.

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8329HTC

(PART B)

Sea

Refer to IMDG regulations.

Sizes 5 kg and under

Part B of 8329HTC-50ML, 8329HTC-400ML kits

NOT REGULATED

per 2.10.2.7

Sizes greater than 5 kg

FOR REFERENCE ONLY

UN number: UN3077

Shipping Name:
ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S.
(aluminum nitride)

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.

Section 15: Regulatory Information

Canada

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

All hazardous ingredients are listed on the DSL/NDSL.

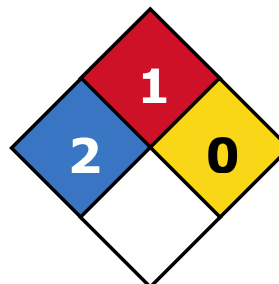
Hazardous Products Act (R.S.C., 1985, c. H-3)

The safety data sheet and label comply with the Hazardous Product Act and WHMIS 2015.

Section continued on the next page

8329HTC
(PART B)
USA
Other Classifications
HMIS® RATING

HEALTH:	* 2
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 does not contain substances that 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)

This product does not contain any listed substances in California.

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.

8329HTC**(PART B)****Section 16: Other Information**

SDS Prepared by	Regulatory Department
Date of Revision	21 April 2023
Supersedes	Note applicable
Reason for Changes:	First version of SDS.

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).

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
EC50	Half maximal effective concentration
EL50	Half maximal effective loading
IARC	International Agency for Research on Cancer
NOELR	No observable effect loading ratio
NTP	National Toxicology Program
GHS	Globally Harmonized System of Classification of Labeling of Chemicals
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
SDS	Safety Data Sheet
STEL	Short-Term Exposure Limit
TCLo	Lowest published toxic concentration
TWA	Time Weighted Average
VOC	Volatile Organic Content

Section continued on the next page

8329HTC**(PART B)**

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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