

Kit Revision Date: 15/09/2021

FLAME RETARDANT STRUCTURAL 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

Part	Product Name	Product Use
А	9200FR-A	Epoxy resin for use with hardeners
В	9200FR-B	Epoxy hardener for use 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 <u>all</u> parts listed above.

NOT REGULATED by ground, kits 9200FR-25ML and 9200FR-50ML.



(PART A)

9200FR-A Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: 9200FR-A

Other Means of Identification: Flame Retardant Structural Epoxy Adhesive (Part A) **Related Part #** 9200FR-25ML, 9200FR-50ML

Recommended Use and Restriction on Use

Use: Epoxy adhesive resin for use with hardeners

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-MAIL

 www.mgchemicals.com

留 Fax E-mail

+1-905-331-1396 +1-905-331-2682 info@mgchemicals.com

E-маіL (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
Sensitization	Skin	1	Warning	Exclamation
Eye Irritation		2	Warning	Exclamation
Skin Irritation		2	Warning	Exclamation
Acute Toxicity	Oral	4	Warning	Exclamation
Reproductive Toxicity		2	Warning	Health
Hazardous to the Aquatic Environment	Chronic	2	none	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		
	H315: Causes skin irritation		
•	H319: Causes serious eye irritation		
\mathbf{V}	H302: Harmful if swallowed		
H361: May damage fertility or the unborn child if swallowed			
¥2	H411: Toxic to aquatic life with long lasting effects		

Section continued on the next page

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Prevention	Precautionary Statements
P102	Keep out of reach of children.
P201, P202	Obtain special instructions before use. Do not handle all safety precautions have been read and understood.
P261	Avoid breathing fumes and vapors.
P272	Contaminated work clothing should not be allowed out of the workplace
P280	Wear protective gloves and eye protection.
P264	Wash hands thoroughly after handling.
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.
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.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P330	Rinse mouth.
P391	Collect spillage.
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



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Section 3: Composition/Information on Ingredients			
CAS # Chemical Name		%(weight)	
28064-14-4	phenol, polymer with formaldehyde, glycidyl ether	33%	
21645-51-2	aluminum trihydrate	20%	
68333-79-9	ammonium polyphosphate	19%	
25085-99-8	bisphenol-A epoxy resin (reaction product) ^{a)}	19%	
138265-88-0	zinc borate	6%	
60506-81-2	dipentaerythritol pentaacrylate	2%	

a) Average molecular weight of \leq 700

Section 4: First-Aid Measures

Exposure Condition	GHS Code/Symptoms/Precautionary Statements		
IF IN EYES	P305 + P351 + P338, P337 + P313		
Immediate Symptoms	redness, irritation, pain		
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, P308 + P313		
Immediate Symptoms	redness, irritation, dry skin, allergic contact dermatitis		
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 exposed or concerned. Get medical advice or attention.		
IF INHALED	P304 + P340, P308 + P313		
Immediate Symptoms	cough, irritation of the respiratory track		
Response	Remove person to fresh air and keep comfortable for breathing.		
	IF exposed or concerned. Get medical advice or attention.		

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Continued	
IF SWALLOWED P301 + P330 + P331, P308 + P313	
Immediate Symptoms abdominal discomfort, nausea, vomiting	
Response	Rinse mouth. Do NOT induce vomiting.
	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.
Specific Hazards	Not flammable or combustible, but burns if involved in a fire. Produces irritating smoke of unknown toxicity in fires.
	Inhalation of zinc oxide and aluminum oxide fumes may cause metal fever and irritate the respiratory tract. The flu-like symptoms of metal fever may be delayed, occurring 4 to 12 hours after exposure.
	Prevent fire-fighting wash from entering waterway or sewer system.
Combustion Products	Produces carbon oxides (CO, CO_2), ammonia, aluminum oxides, zinc oxides and other toxic fumes.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

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Section 6: Accidental Release Measures		
Personal Protection	See personal protection recommendations in Section 8.	
Precautions for Response	Avoid breathing the 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	Contain with inert and non-flammable absorbent such as soil, sand, or vermiculite.	
Cleaning Methods	Collect liquid in a sealable, chemical-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Use soap and water to remove the last traces of residue.	
Disposal Methods	Dispose of 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 all safety precautions have been read and understood.
	Avoid breathing fumes and vapors.
	Contaminated work clothing should not be allowed out of the workplace.
	Avoid release to the environment.
Handling	Wear protective gloves and eye protection.
	Take off contaminated clothing and wash it before reuse.
	Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.
	Collect spillage.
Storage	Store in a well-ventilated area.

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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)
aluminum metal	ACGIH	1 mg/m ³	Not established
and insoluble	U.S.A. OSHA PEL	15 mg/m ³	Not established
compounds ^{a)}	Canada AB	10 mg/m ³	Not established
·	Canada BC	1 mg/m^3	Not established
	Canada ON	1 mg/m^3	Not established
	Canada QC	10 mg/m^3	Not established

Note: The ACGIH¹, OSHA (Table Z-1), 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.

a) Respirable airborne particulate matter

Engineering Controls

Ventilation

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

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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 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 mist and 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.

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ISO 9001:2015 Quality Management System SAI Global File #004008

Burlington, Ontario, Canada

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Section 9: Physical and Chemical Properties	
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Physical State	Liquid	Lower Flammability Limit	Not available
Appearance	Off-white	Upper Flammability Limit	Not available
Odor	Mild	Vapor Pressure @20 °C	Not available
Odor Threshold	Not available	Vapor Density	Not available
рН	Not available	Relative Density @25 °C	1.3
Freezing/Melting Point	Not available	Solubility in Water	Slightly Soluble
Initial Boiling Point ^{a)}	≥150 °C [≥302 °F]	Partition Coefficient n-octanol/water	Not available
Flash Point ^{b)}	113 °C [>235 °F]	Auto-ignition Temperature	Not available
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Non Flammable	Viscosity @25 °C	>20.5 mm²/s

a) Component with the lowest value—bisphenol-A epoxy resin (reaction product)b) Component with the lowest value—dipentaerythritol pentaacrylate

Section 10: Stability and Reactivity

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



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Section 11: Toxicological Information

Summary of Effects and Symptoms by Routes of Exposure

Eyes	May cause redness, irritation, or pain.
Skin	May cause skin redness, irritation, dry skin, or allergic contact dermatitis.
Inhalation	Low toxicity—May cause cough and irritation of the respiratory track.
Ingestion	May cause abdominal discomfort, nausea, and vomiting.
Chronic	Prolonged and repeated exposure may lead to skin sensitization.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50	LD50	LC50
	oral	dermal	inhalation
phenol, polymer with	4 000 mg/kg	Not	6 000 mg/kg
formaldehyde, glycidyl ether	Rabbit ^{a)}	available	Rabbit ^{a)}
aluminum trihydrate	Not	Not	Not
	available	available	available
ammonium polyphosphate	>300 mg/kg	Not	Not
	Rat	available	available
reaction products: bisphenol-A-(epichlor- hydrin) and epoxy resin	>15 000 mg/kg Rat ^{a)}	23 000 mg/kg Rat ^{a)}	Not available
zinc borate	>10 000 mg/kg	10 000 mg/kg	Not
	Rat ^{a)}	Rat ^{a)}	available
dipentaerythritol	Not	Not	Not
pentaacrylate	available	available	available

Note: Toxicity data from the ECHA database and supplier safety data sheets were consulted. a) Supplier SDS

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Other Toxicological Effects

Skin corrosion/irritation	Based on the epoxy component data, the mixture is a skin irritant.
Serious eye damage/irritation	Based on component data, the mixture causes serious eye irritation.
Sensitization (allergic reactions)	Based on component data, the mixture is a skin sensitizer based on animal studies.
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)	Animal ingestion studies show that high doses of zinc borate cause reproductive and developmental effects.
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 mm ² /s at 40 °C.

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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 (<u>http://echa.europa.eu</u>), and other reliable sources.

In Europe, similar epoxy resin mixtures with CAS# 28064-14-4 and 25085-99-8 have an average molecular weight of less than 700 are generally classified as chronic category 2 aquatic pollutant due to LC50 96 h of >1 mg/L but \leq 10 mg/L.

Zinc borate is a category 1 chronic aquatic pollutant with a LC50 96 h 2.4 mg/L for Oncorhynchus mykiss (rainbow trout); 76 mg/L 48 h Daphnia magna (water flea).

Based on available data, aluminum trihydrate, ammonium polyphosphate and dipentaerythritol pentaacrylate are not classified as environmental hazards according to GHS criteria.

Acute Ecotoxicity

Available toxicity data does not meet classification thresholds.

Chronic Ecotoxicity

Category 2

Toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Biodegradability

Not available

Bioaccumulation

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.**

Sizes under 5 L	FOR REFERENCE ONLY
9200FR-25ML, 9200FR-50ML	UN number: UN3082
NOT REGULATED in TDG	Shipping Name: ENVIRONMENTALLY
per Special Provisions 99(2)	HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
	(phenol, polymer with formaldehyde,
	glycidyl ether, bisphenol-A, zinc borate)
Sizes 5 L and under	Class: 9
NOT REGULATED in 49 CFR	Packing Group: III
per exception 171.4 (c)(2)	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.

Air

Refer to ICAO-IATA regulations.

Sizes 5 L and under 9200FR-25ML, 9200FR-50ML **NOT REGULATED** Not Restricted, as per Special Provisions A197

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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Sea

Refer to IMDG regulations.

Sizes 5 L and under 9200FR-25ML, 9200FR-50ML NOT REGULATED per 2.10.2.7

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.

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:	*	2
FLAMMABILITY:		1
PHYSICAL HAZARD:		2
PERSONAL PROTECTION:		

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:

0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe) Section continued on the next page

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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 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.

Section 16: Other Information

SDS Prepared by	Regulatory Department		
Date of Review	14 July 2023		
Supersedes	20 March 2020		
Reason for Changes:	Minor chanages		

Section continued on the next page

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Reference

1) ACGIH 2023 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 (2023).

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
- **Technical Queries** Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at <u>www.mgchemicals.com</u>.

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.



(PART B)

9200FR-B Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Name: 9200FR-B

Other Means of Identification: Flame Retardant Structural Epoxy Adhesive (Part B) **Related Part #** 9200FR-25ML, 9200FR-50ML

Recommended Use and Restriction on Use

Use: Epoxy adhesive 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-MAIL
 [•] support@mgchemicals.com

 WEB
 www.mgchemicals.com

奮 Fax E-mail +1-905-331-1396 +1-905-331-2682 info@mgchemicals.com

E-маіL (Competent Person): <u>sds@mgchemicals.com</u>

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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(PART B)

Section 2: Hazard(s) Identification

Classification of Hazardous Chemical

GHS Categories

Criteria		Category	Signal Word	Pictograms
Serious Eye Damage		1	Danger	Corrosion
Specific Target Organ Toxicity	Repeated Exposure	1	Danger	Health
Reproductive Toxicity		2	Warning	Health
Sensitization	Skin	1	Warning	Exclamation
Irritation	Skin	2	Warning	Exclamation
Acute Toxicity	Oral	4	Warning	Exclamation
Hazardous to the Aquatic Environment	Chronic	2	none	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
	H372: Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation H361: May damage fertility or the unborn child if swallowed
	H317: May cause an allergic skin reaction H315: Causes skin irritation H302: Harmful if swallowed

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Pictograms	Hazard Statements
¥2	H411: Toxic to aquatic life with long lasting effects
Prevention	Precautionary Statements
P102	Keep out of reach of children.
P201, P202	Obtain special instructions before use. Do not handle all safety precautions have been read and understood.
P260	Do not breathe fumes and vapors.
P270	Do not eat, drink or smoke when using this product.
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
P308 + P313	IF exposed or concerned. Get medical advice or attention.
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.
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.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P330	Rinse mouth.
P304 + P314	IF INHALED: Get medical advice or attention if you feel unwell.
P391	Collect spillage.
<u>.</u>	Precautionary Statements
Storage	recould only statements

Section continued on the next page

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(PART B)

Continued	
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

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
68683-29-4	ATBN polymer	23%
21645-51-2	aluminum trihydrate	22%
68333-79-9	ammonium polyphosphate	20%
68410-23-1	fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	18%
68082-29-1	fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine	7%
138265-88-0	zinc borate	6%
140-31-8	2-piperazin-1-ylethylamine (AEP)	1%



(PART B)

Section 4: First-Aid Measures		
Exposure Condition	GHS Code: Precautionary Statement	
IF IN EYES	P305 + P351 + P338, P310	
Immediate Symptoms	redness, severe irritation, pain, burns	
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	P302 + P352, P362 + P364, P333 + P313, P308 + P313	
Immediate Symptoms	redness, irritation, rash (allergic contact dermatitis)	
Response	Wash with plenty of water.	
	Take off immediately all contaminated clothing and wash it before reuse.	
	If skin irritation or rash occurs: Get medical advice or attention.	
	IF exposed or concerned. Get medical advice or attention.	
IF SWALLOWED	P301 + P330 + P331, P312, P308 + P313	
Immediate Symptoms	irritation, abdominal pain, nausea, vomiting	
Response	Rinse mouth. Do not induce vomiting.	
	Call a POISON CENTER or doctor if you feel unwell.	
	IF exposed or concerned. Get medical advice or attention.	
IF INHALED	P304 + P340, P314	
Immediate Symptoms	cough, irritation of the respiratory track	
Response	Remove person to fresh air and keep comfortable for breathing.	
	Get medical advice or attention if you feel unwell.	

Advice to Physicians

In case of over exposure to nitrogen oxides (NOx) combustion products or triethylenetetramine vapors during a fire, the symptoms may be delayed. For significant exposures, the exposed person should be kept under medical surveillance for 48 hours.



(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 aluminum oxide and zinc oxide fumes may cause metal fever and irritate the respiratory tract. The flu-like symptoms of metal fever may be delayed, occurring 4 to 12 hours after exposure.
	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), nitrogen oxides (NO _x), aluminum oxides and ammonia.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Personal Protection	Use personal protection recommended in Section 8.
Precautions for Response	Avoid breathing fumes and vapors.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
Containment Methods	Contain with inert and non-flammable absorbent (such as soil, sand, vermiculite).
Cleaning Methods	Collect liquid in a sealable container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wipe off residues with paper towels and place the used towels in the waste container. Wash spill area with soap and water to remove the last traces of residue.
Disposal Methods	Dispose spill waste according to Section 13.

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Section 7: Handling and Storage	
Prevention	Keep out of reach of children.
	Obtain special instructions before use. Do not handle all safety precautions have been read and understood.
	Do not breathe fumes and vapors. Do not eat, drink or smoke when using this product.
	Contaminated work clothing should not be allowed out of the workplace.
	Avoid release to the environment.
Handling	Wear protective gloves and eye 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	ACGIH	1 mg/m ³	Not established
and insoluble	U.S.A. OSHA PEL	15 mg/m ³	Not established
compounds ^{a)}	Canada AB	10 mg/m ³	Not established
-	Canada BC	1 mg/m^3	Not established
	Canada ON	1 mg/m^3	Not established
	Canada QC	10 mg/m ³	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 suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long-term permissible exposure limits (PEL) for 8 h.

a) Respirable particulate mater

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Engineering Controls	
Ventilation	Keep airborne concentrations below the occupational exposure limits (OEL).
Personal Protective Equ	uipment
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, neoprene, 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 mist and 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.



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Section 9: Physical and Chemical Properties

Physical State	Liquid	Lower Flammability Limit	Not available
Appearance	Light yellow	Upper Flammability Limit	Not available
Odor	Ammonia-like	Vapor Pressure @20 °C ^{b)}	<0.001 kPa [<0.01 mmHg]
Odor Threshold	Not available	Vapor Density	Not available
рН	Not available	Relative Density @25 °C	1.27
Freezing/Melting Point	Not available	Solubility in Water	Slightly soluble
Initial Boiling Point	≥150 °C [≥302 °F]	Partition Coefficient n-octanol/water	Not available
Flash Point ^{a)}	99 °C [210 °F]	Auto-ignition Temperature	Not available
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability	Non Flammable	Viscosity @25 °C	>20.5 mm ² /s

a) Literature value for 2-piperazin-1-ylethylamine

b) Calculated based on Raoult's Law and Le Chatelier's principle

Section 10: Stability and Reactivity

Reactivity	Reacts exothermically with amine substances.
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, strong bases
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.



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Section 11: Toxicological Information

Summary of Effects and Symptoms by Routes of Exposure		
Eyes	Causes redness, severe irritation, pain, or burns.	
Skin	May cause redness, serious skin irritation and allergic contact dermatitis.	
Inhalation	May cause cough and irritation of the respiratory track.	
Ingestion	May cause irritation, abdominal pain, nausea, and vomiting.	
Chronic	Prolonged and repeated exposure to may lead to skin sensitization.	

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50	LD50	LC50
	oral	dermal	inhalation
ATBN polymer	Not	Not	Not
	available	available	available
aluminum trihydrate	>2 000 mg/kg	Not	Not
	Rat	available	available
ammonium polyphosphate	>300 mg/kg	Not	Not
	Rat	available	available
fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines	>5 000 mg/kg ^{a)}	>5 000 mg/kg ^{a)}	Not available
fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine	>5 000 mg/kg ^{a)}	>5 000 mg/kg ^{a)}	Not available
zinc borate	>10 000 mg/kg	>10 000 mg/kg	Not
	Rat ^{a)}	Rat ^{a)}	available
triethylenetetramine	2 500 mg/kg	805 mg/kg	Not
	Rat	Rabbit	available
2-piperazin-1-ylethylamine (AEP)	2 097 mg/kg	866 mg/kg	Not
	Rat	Rabbit	available

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

a) Supplier SDS

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Other Toxicological Effects	
Skin corrosion/irritation	Based on concentrations, 2-piperazin-1-ylethylamine causes skin irritation.
Serious eye damage/irritation	Fatty acids, C18-unsatd., dimers, (CAS# 68410-23-1 and CAS# 68082-29-1) causes severe eye damage.
Respiratory and skin sensitization (allergic reactions)	The epoxy hardener components may cause skin sensitization according to animal studies.
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)	Animal ingestion studies show that high doses of zinc borate cause reproductive effects.
Teratogenicity (risk of fetus malformation)	Animal ingestion studies show that high doses of zinc borate cause developmental effects.
	Based on animal studies 2-piperazin-1-ylethylamine has been shown to be a developmental toxicant if swallowed.
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 are no category 1 components, and the kinematic viscosity is >20.5 mm ² /s at 40 °C.

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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 (<u>http://echa.europa.eu</u>), and other reliable sources.

The fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines (CAS# 68410-23-1) and fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids (CAS# 68082-29-1) are classified as a chronic category 2 environmental toxicants (not readily biodegradable, LC50 range of 1—10 mg/L for fish; EC0 bacterial >10 and \leq 100 mg/L).

Zinc borate is a category 1 chronic marine pollutant with a LC50 96h 2.4 mg/L for Oncorhynchus mykiss (rainbow trout); 76 mg/L 48 h daphnia magna (water flea).

The 2-piperazin-1-ylethylamine component is a category 3 chronic environmental hazard with a LC50 96h 2 190 mg/L for fathead minnows; 58 mg/L 48h Daphnia magna (water flea), and >1 000 mg/L (EC50 for algae based on growth rate).

Based on available data, aluminum trihydrate and ammonium polyphosphate are not classified as environmental hazards according to GHS criteria.

Acute Ecotoxicity

Based on available data, the classification criteria are not met.

Chronic Ecotoxicity

Category 2

Toxic to aquatic life with long lasting effects

Avoid release to the environment. Collect spillage.

Biodegradability

Not readily biodegradable

Bioaccumulation

Not available

Other Effects

Not available

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Section 13: Disposal Information

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

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 under 5 L	
Part B of 9200FR-25ML, 9200FR-50ML kits	FOR REFERENCE ONLY
NOT REGULATED in TDG	UN number: UN3082
per Special Provisions 99(2)	Shipping Name: ENVIRONMENTALLY
Sizes 5 L and under	HAZARDOUS SUBSTANCE, LIQUID,
	N.O.S. (fatty acids, C18-unsatd.,
	dimers, zinc borate)
NOT REGULATED in 49 CFR	Class: 9
per exception 171.4 (c)(2)	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.

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Air

Refer to ICAO-IATA regulations.

Sizes 5 L and under *Part B of 9200FR-25ML, 9200FR-50ML kits* **NOT REGULATED** Not Restricted, as per Special Provisions A197

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 L and under Part B of 9200FR-25ML, 9200FR-50ML kits **NOT REGULATED** per 2.10.2.7

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 <u>trained and certified</u> 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:	* 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 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, USA).

This product does not contain any listed substances in California.

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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	Regulatory Department
Date of Revision	14 July 2023
Supersedes	20 March 2020
Reason for Changes:	Reclasssification

Reference

1) ACGIH 2023 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 (2023).

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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

Technical Queries Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at <u>www.mgchemicals.com</u>.

Email: support@mgchemicals.com

Phone: +1-905-331-1396

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

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