

(PART 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

**WEB** www.mgchemicals.com

**E-MAIL** (Competent Person): <a href="mailto:sds@mqchemicals.com">sds@mqchemicals.com</a>

# **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
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

# **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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<sup>1 (</sup>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.



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Pictograms	Hazard Statements
***	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.
Storage	Precautionary Statements
P405	Store locked up.

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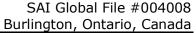
Disposal	Precautionary Statements
P501	Dispose of contents in accordance to local, regional, national, and international regulations.

# **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%





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Section 4: First-Aid Me	asures
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.

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# **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<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>),

aluminum oxides and ammonia.

**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.

**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 <sup>3</sup>	Not established
and insoluble	U.S.A. OSHA PEL	15 mg/m <sup>3</sup>	Not established
compounds <sup>a)</sup>	Canada AB	10 mg/m <sup>3</sup>	Not established
	Canada BC	1 mg/m <sup>3</sup>	Not established
	Canada ON	1 mg/m <sup>3</sup>	Not established
	Canada QC	10 mg/m <sup>3</sup>	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH<sup>1</sup>, 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 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, 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 <sup>b)</sup>	<0.001 kPa [<0.01 mmHg]
Odor Threshold	Not available	Vapor Density	Not available
pH	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 <sup>2</sup> /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** Ignition sources, open flames, and incompatible substances

Avoid

**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 <sup>a)</sup>	>5 000 mg/kg <sup>a)</sup>	Not available
fatty acids, C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine	>5 000 mg/kg <sup>a)</sup>	>5 000 mg/kg <sup>a)</sup>	Not available
zinc borate	>10 000 mg/kg	>10 000 mg/kg	Not
	Rat <sup>a)</sup>	Rat <sup>a)</sup>	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 RTECS<sup>2</sup> 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** The epoxy hardener components may cause skin

**sensitization** (allergic reactions) sensitization according to animal studies.

**Carcinogenicity**None of the ingredients are classified or listed as a (risk of cancer)

None of the ingredients are classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP.

**Mutagenicity** Based on available data, the classification criteria are

(risk of heritable genetic effects) not met.

**Reproductive Toxicity** Animal ingestion studies show that high doses of zinc

(risk to sex functions) borate cause reproductive effects.

**Teratogenicity** Animal ingestion studies show that high doses of zinc

(risk of fetus malformation) 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<sup>2</sup>/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 (<a href="http://echa.europa.eu">http://echa.europa.eu</a>), 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

NOT REGULATED in TDG

per Special Provisions 99(2)

Sizes 5 L and under

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

FOR REFERENCE ONLY UN number: UN3082

**Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (fatty acids, C18-unsatd., dimers, zinc borate)

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.

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#### Air

# 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. Marina pollutante packagad in single	ar combination packagings containing a

**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 Revision14 July 2023Supersedes20 March 2020Reason for Changes:Reclassification

#### 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 www.mgchemicals.com.

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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.