

DEVELOPER

418-LIQUID

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier and Other Means of Identification

Product Name: 418 Developer**SDS Code:** 418**Related Part #** 418-500ML

Recommended Use and Restriction on Use

Use: Developer for MG Chemicals pre-sensitized boards**Uses Advised Against:** Not available

Details of Manufacturer or Importer

Manufacturer

MG Chemicals
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA

MG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
CANADA

☎ +1-800-340-0772**☎** +1-905-331-1396**FAX** +1-800-340-0773**FAX** +1-905-331-2682**E-MAIL:** support@mgchemicals.com**E-MAIL:** info@mgchemicals.com**WEB** www.mgchemicals.com**E-MAIL** (Competent Person): sds@mgchemicals.com

Emergency Phone Number

For hazardous material incidents ONLY—leaks, spills, fires, exposures or accidents
USA or CANADA: Call CHEMTREC ☎: **+1-800-424-9300**

For emergencies involving dangerous goods; Collect 24/7
CANADA: Call CANUTEC ☎: **+1-613-996-6666** or ***666** on cellular phones

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Section 2: Hazards Identification

Classification of Hazardous Chemical

WHMIS Classification



E – Corrosive Material

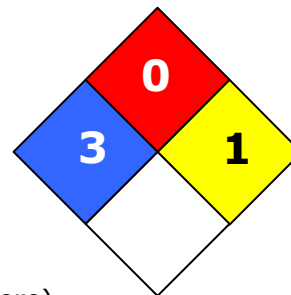
GHS Categories

Criteria	Category	Signal Word	Pictograms
Skin Corrosion	1A	Danger	Corrosion
Eye Corrosion	1	Danger	Corrosion
Corrosive to metals	1	Warning	Corrosion
Harmful to aquatic life Acute	3	None	No Symbol Mandated

HMIS® RATING

HEALTH:	3
FLAMMABILITY:	0
PHYSICAL HAZARD:	1
PERSONAL PROTECTION:	

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:


0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

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Label Elements

Signal Word	DANGER
Pictograms	Hazard Statements
	H314: Causes severe skin burns and eye damage H290: May be corrosive to metals
No Symbol Mandated	H402: Harmful to aquatic life
Prevention	Precautionary Statements
P260	Do not breathe dust or mist.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/eye protection/face protection.
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.
P304 + P340, P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTRE/doctor.
P303 + P361 + 353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P363	Wash contaminated clothing before reuse.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P273	Avoid release to the environment.
Storage	Precautionary Statements
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents/container in accordance to local/regional/international regulations.

Other Hazards

None known

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Section 3: Hazardous Ingredients

CAS #	Chemical Name	Wt%
1310-73-2	sodium hydroxide	7-11%

Note: de-ionized water is the main component.

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, pain, blurred vision, severe burns</i>
Response	Rinse cautiously with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing (also rinse during transport to hospital). Immediately call a POISON CENTRE/doctor.
IF ON SKIN (or hair)	P303 + P361 + P351, P310
Immediate Symptoms	<i>soapy sensation, redness, pain, burns, blisters</i>
Delayed Symptoms	<i>Delayed onset of pain by minutes or hours</i>
Response	Take off immediately contaminated clothing Rinse cautiously with water for several minutes Immediately call a POISON CENTRE/doctor
IF INHALED	P304 + P340, P310 (Unlikely route unless processing creates mist or dust form)
Immediate Symptoms	<i>coughing, wheezing, shortness of breath, inflammation, burning sensation</i>
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing Immediately call a POISON CENTRE/doctor
IF SWALLOWED	P301 + P330 + P331, P310
Immediate Symptoms	<i>mouth burns, burning sensation in throat and chest, abdominal pain, nausea, vomiting, shock or collapse</i>
Response	Rinse mouth Do NOT induce vomiting Immediately call a POISON CENTRE/doctor

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Section 5: Fire Fighting Measures

Auto-ignition Temperature	Not available	Flash Point	Not applicable	LFL [LEL]^{a)}	Not applicable
				UFL [UEL]	

In case of fire P370 + P378

Extinguishing Media Use appropriate media for surrounding material (dry chemical, carbon dioxide, chemical foam, or water spray).

Specific Hazards Will not burn. Highly caustic material—avoid skin or eye contact or inhalation of fumes or mist. Solution may react violently with acids and metals to form flammable explosive gases.

Combustion Products Produces sodium oxides.

Fire-Fighter Wear self-contained breathing apparatus for fire fighting

a) LFL = Lower Flammability [or Explosion] Limit (in volume %);
UFL = Upper Flammability [or Explosion] Limit (in volume %)

Section 6: Accidental Release Measures

Personal Protection See Section 8. Avoid breathing the mist/spray/vapors.

Containment Avoid release to the environment. Prevent spill from entering drains and waterways. Contain with inert absorbent (such as soil, sand, vermiculite).

Cleaning Sprinkle inert absorbent compound onto spill, then sweep into the container. You may neutralize residues with low concentration acetic acid (also known as vinegar). Rinse spill area water to remove the last traces.

Recommendation: Use a grounded stainless steel or carbon steel container.

Disposal Dispose of spill waste according to Section 13.

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Section 7: Handling and Storage

Prevention

- Keep out of reach of children.
- Do not get in eye, on skin, or on clothing.
- Do not breathe mist/spray.
- Do not eat, drink, or smoke when using this product.

Handling

- Wear protective gloves/clothing/eye protection.
- Specific Recommendations:* Wear neoprene, butyl rubber, nitrile or other impervious gloves with breakthrough time greater than intended use period.
- Wash hands thoroughly after handling.

Storage

- Do not store together with acids.
- Keep tightly closed.
- Store locked up.

Section 8: Exposure Controls/Personal Protection

Routes of Entry

Eyes, ingestion, inhalation, and skin

Substances with Occupational Exposure Limit Values

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
sodium hydroxide	ACGIH TWA	2 mg/m ³	—
	U.S.A. OSHA PEL	2 mg/m ³	—
	Canada AB	2 mg/m ³	—
	Canada BC	2 mg/m ³	—
	Canada ON	2 mg/m ³	—
	Canada QC	2 mg/m ³	—

Note: The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from by RTECS database² of the Canadian Centre for Occupational Health and Safety (CCOHS) a data 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.

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DEVELOPER**418-LIQUID****Engineering Controls**

Ventilation Keep airborne concentrations below exposure limits.

Personal Protective Equipment

Eye protection Wear appropriate protective eyeglasses or chemical safety goggles.

RECOMMENDATION: Use safety goggles.

Skin Protection Wear appropriate protective clothing to prevent skin contact.

RECOMMENDATION: Use of protective gloves in butyl rubber, latex, neoprene, or other chemically resistant gloves.

Respiratory Protection If exposed to mist, wear air-purifying respirator with a full-face mask.

RECOMMENDATION: Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this MSDS, and that the respirator is fitted to the employee by a professional.

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 applicable
Appearance	Clear	Upper Flammability Limit	Not applicable
Odor	odorless	Vapor Pressure @20 °C	1.5 mmHg [0.2 kPa]
Odor Threshold	Not applicable	Vapor Density	Not available
pH	14	Specific Gravity @25 °C	1.1
Freezing/Melting Point	Not available	Solubility in Water ^{a)}	111 g NaOH in 100 g H ₂ O
Boiling Point	≥100 °C [≥212 °F]	Partition Coefficient	Not available
Flash Point	Not applicable	Auto-ignition Temperature	Not applicable
Evaporation Rate	Not available	Decomposition Temperature	Not available
Flammability (solid, gas)	Not applicable	Viscosity @40 °C	Not available

a) NaOH solubility is 111 g / 100 g water

Section 10: Stability and Reactivity

Reactivity	Reacts with acids. Reacts with alkaline earth metals. Corrosive to aluminum alloys, carbon steel, and other metals.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Incompatible substances.
Incompatibilities	Strong oxidizing agents, strong acids, metals (zinc, aluminum, tin, and so on), ammonium salts
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5

DEVELOPER**418-LIQUID****Section 11: Toxicological Information****Routes of Exposure**

Eyes, ingestion, inhalation, and skin

Symptoms Summary

Eyes	Causes serious eye burns. Permanent damage including blindness can result.
Skin	Causes serious skin burns. May lead to deep ulcers. Permanent scarring can result.
Inhalation	Can cause severe irritation of the nose and throat. Can damage tissue of the mucous membrane and upper respiratory tract.
Ingestion	May be harmful if swallowed. Causes burns to the gastrointestinal tract.
Chronic	Prolonged or repeated skin contact may cause dermatitis (dry, red, cracked skin).

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation	TCLo inhalation
sodium hydroxide	Not established	Not established	Not established	Not established

Note: Representative toxicity data from by RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS)¹ data from supplier MSDS were also consulted.

Other Toxicological Effects

Skin corrosion/irritation	Causes severe skin burns. Prolonged or repeated skin contact may cause dermatitis.
Serious eye damage/irritation	Causes severe eye damage.
Sensitization (allergic reactions)	No data available
Carcinogenicity (risk of cancer)	Not classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP

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Mutagenicity (risk of heritable genetic effects)	No data available
Reproductive Toxicity (risk to sex functions)	No data available
Teratogenicity (risk of fetus malformation)	No data available
STOT-single exposure	No data available.
STOT-repeated exposure	No data available.
Aspiration hazard	The mixture is not classified as a aspiration hazard because it doesn't contain an aspiration toxicant.

Section 12: Ecological Information

The IMDG Code criteria and the raw-material MSDS along with supporting data for the classification of registered substances from the European Chemical Agency database (<http://echa.europa.eu>) were used.

Acute Ecotoxicity

Category 3

GHS Code: Hazard Statement

H402: Harmful to aquatic life

Chronic Ecotoxicity

Not data available

Biodegradability

Not data available

Other Effects

VOC (EPA, WHIMS, and Europe) = 0% (0 g/L)

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 49CFR Regulations (Parts 100 to 185).

Sizes 1 liter and under

Limited Quantity



Sizes greater than 1 liter

UN number: UN1824

Shipping Name:

SODIUM HYDROXIDE SOLUTION

Class: 8

Packing Group: II

Marine Pollutant: No



Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 0.5 liter and under

Limited Quantity



Packing Instr. Y840

Sizes greater than 0.5 to 1 liter

UN number: UN1824

Shipping Name:

SODIUM HYDROXIDE SOLUTION

Class: 8

Packing Group: II

Marine Pollutant: No

Packing Instr. 851 (Max Net Qty: 1L).



NOTE: Avoid shipping by air if possible.

Sea

Refer to IMDG regulations.

Sizes 1 liter and under

Limited Quantity



Sizes greater than 1 liter

UN number: UN1824

Shipping Name:

SODIUM HYDROXIDE SOLUTION

Class: 8

Packing Group: II

Marine Pollutant: No



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.

Industry and Science Canada

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

USA**CAA** (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product does not contain substances that are listed as hazardous air pollutants.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45)

This product contains any substances subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

Sodium hydroxide has a CERCLA reporting quantity of 1000 lb.

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, Sept 2, 2011 revision, USA).

This product does not contain any of the listed substances.

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DEVELOPER**418-LIQUID****Europe****RoHS**

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

WEEE

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

Section 16: Other Information

MSDS Prepared by Michel Hachey
Date of Issue 04 February 2014
Supersedes 30 January 2013
Reason for Changes: Change to Hazcom 2012 format

Reference

- 1) ACGIH 2013 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 (2013).
- 2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

Abbreviations

ACGIH American Conference of Governmental Industrial Hygienists (USA)
EC50 Half maximal effective concentration
EL50 Half maximal effective loading
NOELR No observable effect loading ratio
GHS Globally Harmonized System of Classification of Labeling of Chemicals
LC50 Lethal Concentration 50%
LCLo Lowest published lethal concentration
LD50 Lethal Dose 50%
PEL Permissible Exposure Limit
STEL Short-Term Exposure Limit
TCLo Lowest published toxic concentration
TWA Time Weighted Average
VOC Volatile Organic Content

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

Email: support@mgchemicals.com

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