4140A FLUX REMOVER PEN **4140A-PEN**

Safety Data Sheet

Section 1: Identification

Product Identifier and Other Means of Identification

Product Identifier: Flux Remover Pen

Other Means of Identification: Stylo Nettoyeur de Flux

Related Part # 4140A–P

Recommended Use and Restriction on Use

Use: Plastic-safe flux remover

Uses Advised Against: Not available

Details of Manufacturer or Importer

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

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FAX +1-800-340-0773
E-MAIL support@mgchemicals.com
WEB www.mgchemicals.com

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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

Section 2: Hazard(s) Identification

Classification of Hazardous Chemical

GHS Categories

Criteria	Category	Signal Word	Pictograms
Flammable Liquid	2	Danger	Flame
Eye Irritation	2	Warning	Exclamation
Reproductive Toxicity	2	Warning	Health

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**
	H225: Highly flammable liquid and vapour
	H319: Causes serious eye irritation
	H361: Suspected of damaging fertility or the unborn child

Section continued on the next page

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Prevention	Precautionary Statements
P102	Keep out of reach of children.
P201, P202	Obtain special instuctions before use. Do not handle until all safety precautionary have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves and eye protection.
P264	Wash hands thoroughly after handling.
P233	Keep container tightly closed.
P243	Take action to prevent static discharges.
Response	**Precautionary Statements**
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
P308 + P313	IF exposed or concerned: Get medical advice or attention.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
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.
Storage	**Precautionary Statements**
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
Disposal	**Precautionary Statements**
P501	Dispose of contents in accordance to local, regional, and international regulations.

Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None

Section 3: Composition/Information on Ingredients

CAS #	Chemical Name	%(weight)
64-17-5	ethanol	67%
541-02-6	decamethylcyclopentasiloxane	25%
67-63-0	propan-2-ol	5%
141-78-6	ethyl acetate	2%
556-67-2	octamethylcyclotetrasiloxane	0.3%

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 (or hair)	P303 + P361 + P353, P308 + P313
Immediate Symptoms	*redness, dry skin*
Response	Take off immediately all contaminated clothing. Rinse skin with water. IF exposed or concerned: Get medical advice ou attention.
IF INHALED	P304 + P340, P308 + P313
Immediate Symptoms	*cough, fatigue, headache, sore throat*
Response	Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice or attention.
IF SWALLOWED	P301 + P310, P308 + P313
Immediate Symptoms	*nausea, vomiting, abdominal pain*
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. Use water spray to cool containers.
Specific Hazards	Produces irritating and toxic fumes in fires or in contact with hot surfaces. The vapors are heavier than air and may accumulate in low-lying areas. Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion.
Combustion Products	Produces carbon oxides (CO, CO_2), silicon oxides, and formaldehyde.
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 the vapors. Remove or keep away all sources of extreme heat or open flames.
Environmental Precautions	Prevent spill from entering drains and waterways.
Containment Methods	Not applicable
Cleaning Methods	Place inert absorbent pads directly on the spill. Let absorb and wipe clean. Collect the contaminated pad in a sealable, solvent-resistant container. Wash the spill area with soap and water to remove remaining residues.
Disposal Methods	Dispose of spill waste according to Section 13.

Section 7: Handling and Storage

Prevention	Keep out of reach of children. Obtain special instuctions before use. Do not handle until all safety precautionary have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take action to prevent static discharges.

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Handling Wear protective gloves and eye protection.
Wash hands thoroughly after handling.

Storage Store in a well-ventilated place. Keep cool.
Keep cap on when not in use.
Store locked up.

Section 8: Exposure Controls/Personal Protection

Substances with Occupational Exposure Limit Values

Chemical Name	Country/ Provinces	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
ethanol	ACGIH	1 000 ppm	Not established
	U.S.A. OSHA PEL	1 000 ppm	Not established
	Canada AB	1 000 ppm	Not established
	Canada BC	Not established	1 000 ppm
	Canada ON	Not established	1 000 ppm
	Canada QC	1 000 ppm	500 ppm
propan-2-ol	ACGIH	200 ppm (TWA)	400 ppm
	U.S.A. OSHA PEL	400 ppm	Not established
	Canada AB	200 ppm	400 ppm
	Canada BC	200 ppm	400 ppm
	Canada ON	200 ppm	400 ppm
	Canada QC	400 ppm	500 ppm
ethyl acetate	ACGIH	400 ppm	Not established
	U.S.A. OSHA PEL	400 ppm	Not established
	Canada AB	400 ppm	Not established
	Canada BC	150 ppm	Not established
	Canada ON	Not established	Not established
	Canada QC	400 ppm	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH[1], OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from RTECS database[2] and 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.

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 incidental contacts, use nitrile or other chemically resistant gloves.
Respiratory Protection	For over-exposures up to 10 x OEL of mist, vapors, or spray, 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. **RECOMMENDATION:** Consult your local safety supply store to ensure that your respirator has a NIOSH (U.S.) approved filter cartridges appropriate for the ingredients listed in Section 3. The respirator should be fitted to the employee by a professional. Ensure vapor cartridges are stored in sealed plastic bags when not being used.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

Section 9: Physical and Chemical Properties

Physical State	Liquid	**Lower Flammability Limit** [b]	3%
Appearance	Colorless	**Upper Flammability Limit** [b]	18%
Odor	Alcohol-like	**Vapor Pressure @20 °C** [a]	57 hPa [43 mmHg]
Odor Threshold	Not available	**Vapor Density**	≥1.6 (Air =1)
pH	Not available	**Relative Density @25 °C**	0.83
Freezing/Melting Point	Not available	**Solubility in Water**	Miscible
Initial Boiling Point	≥78 °C [≥174 °F]	**Partition Coefficient n-octanol/water**	Not available
Flash Point [a]	13 °C [55 °F]	**Auto-ignition Temperature** [c]	363 °C [685 °F]
Evaporation Rate	Not available	**Decomposition Temperature**	Not available
Flammability	Highly Flammable	**Viscosity @40 °C**	<20.5 mm^2/s

a) Tag closed cup value
b) Estimates based on Raoults's Law and Le Chatelier principle
c) Values based on ethanol, which is the component with the lowest auto-ignition value.

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Avoid flames, sparks, other ignition sources and incompatible substances.
Incompatibilities	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.

Section 11: Toxicological Information

Summary of Effects and Symptoms by Routes of Exposure

Eyes	Causes redness, irritation, and pain.
Skin	May cause redness and dry skin.
Inhalation	May cause cough, fatigue, headache, and sore throat.
Ingestion	May cause nausea, vomiting, and abdominal pain.
Chronic	Prolonged or repeated exposure may cause skin dryness, cracking, as well as defatting the skin.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
ethanol	7 060 mg/kg Rat	Not available	117 mg/L 4 h Rat
decamethylcyclopentasiloxane	>5 000 mg/kg Rat	>2 000 mg/kg Rat	8.67 mg/L 4 h Rat
propan-2-ol	5 840 mg/kg Rat	12 800 mg/kg Rabbit	16 000 ppm 8 h Rat
ethyl acetate	5 620 mg/kg Rat	>20 000 μL/kg Rabbit	45 g/m^3 2 h Mouse
octamethylcyclotetrasiloxane	4 800 mg/kg Rat	2 400 mg/kg Rat	36 mg/L 4 h Rat

Note: Toxicity data from the RTECS[2] and ECHA databases were consulted. The data from supplier SDS were also consulted.

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Other Toxicological Effects

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Ethanol, propan-2-ol, and ethyl acetate are known serious eye irritants.
Sensitization (allergic reactions)	Based on available data, the classification criteria are not met.
Carcinogenicity (risk of cancer)	**Ethanol [64-17-5]** Except for ethanol, none of the ingredients are classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP. Evidence of carcinogenicity of ethanol relates to excessive alcoholic beverage consumption, and doesn't relate to exposure risks when used in the workplace or as a non-comestible consumer product. IARC Group 1: Carcinogenic to human when consumed as beverage. ACGIH A3: Confirmed animal carcinogen with unknown relevance to humans CA Prop 65: Listed as a carcinogen when consumed as a beverage NTP: Not listed
Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.
Reproductive Toxicity (risk to sex functions)	**Ethanol [64-17-5]** Evidence of reproductive toxictiy of ethanol relates to excessive alcoholic beverage consumption, and doesn't relate to exposure risks when used in the workplace or as a consumer product. By inhalation, no fertility or developmental effects are observed for exposures of up to 16 000 ppm. CA Prop 65: Listed as a reproductive hazard when consumed as a beverage **Octamethylcyclotetrasiloxane [556-67-2]** Based on inhalation study on rats, octamethylcyclotetrasiloxane may have effects on fertility. It is not CA Prop 65 listed.

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Teratogenicity (risk of fetus malformation)	Based on available data, the classification criteria are not met. Evidence of reproductive toxicity of ethanol is insufficient and relates to excessive consumption of alcoholic beverages. There is no risk of exposure when used in the workplace or as a non-edible product.
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.

Based on available data, ethanol, propan-2-ol, and ethyl acetate are not are not classifiable as toxic for the aquatic environment with LC50 and EC50 >100 mg/L.

- Ethanol is biodegradable and has a minimal LC50 96 h of 12 000 mg/L for Oncorhynchus mykiss (rainbow trout) and EC50 of 5 770 mg/L for Pimephales promelas (fathead minnow); LC50 48 h of 5 012 mg/L for Cerodaphnia sp.
- Propan-2-ol has a minimal LC50 96 h of 9 640 mg/L for Pimephales promelas (fathead minnow); EC50 24 h of 5 102 mg/L for Daphnia magna (water flea); EC50 24 h of >2 000 mg/L for Pseudokirchneriella subcapitata (green algae).
- Ethyl acetate is biodegradable and has a minimal LC50 96 h of 220 mg/L for Pimephales promelas (fathead minnow); LC50 24 h of 560 mg/L and an EC50 48 h of 2 300 mg/L for Daphnia magna (water flea); and an EC50 72 h of 1 800 mg/L for Selenastrum (green algea).

Based on available data, decamethylcyclopentasiloxane and octamethylcyclotetrasiloxane are not classifiable as an environmental toxicant.

Acute Ecotoxicity

Available toxicity data does not meet classification thresholds.

Section continued on the next page

Chronic Ecotoxicity

Available toxicity data does not meet classification thresholds.

Biodegradability

Not available

Other Effects

Regulated Volatile Organic Content (VOC) = 75% (415 g/L)

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

Sizes 30 mL and under

Cat. No. 4140A-P
Excepted Quantity
Code **E2**

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 30 mL and under

Cat. No. 4140A-P
Excepted Quantity
Code **E2**

On air waybill, write: "Dangerous Goods in Excepted Quantities".

FOR REFERENCE ONLY
UN number: UN1987
Shipping Name: ALCOHOLS, N.O.S. (Ethanol, Isopropanol)
Class: 3
Packing Group: II
Marine Pollutant: No

Section continued on the next page

Sea

Refer to IMDG regulation.

Sizes 30 mL and under

Cat. No. 4140A-P
Excepted Quantity Code **E2**

In transport document, write:
"Dangerous Goods in Excepted Quantities".

FOR REFERENCE ONLY
UN number: UN1987
Shipping Name: ALCOHOLS, N.O.S. (Ethanol, Isopropanol)
Class: 3
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.

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.

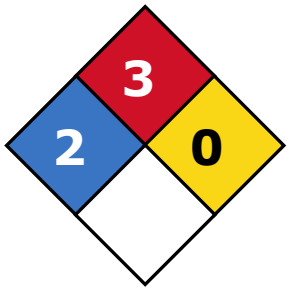
USA

Other Classifications

HMIS® RATING

HEALTH:	**2**
FLAMMABILITY:	**3**
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)

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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 products that are listed as hazardous air pollutants.

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

This product contains up to 5% propan-2-ol (CAS# 67-63-0) which is subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372.

This product contains 2% ethyl acetate (CAS# 141-78-6), which is subject to the CERCLA reporting requirements at the 5 000 lb (2 268 kg) threshold.

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 contains ethanol, which is listed as reproductively toxic and as a carcinogen when in an alcoholic beverage.

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 the	Regulatory Affairs Department
Date of Review	05 March 2020
Supersedes	07 November 2018
Reason for Changes:	Update to the emergency phone number information.

Reference

1) ACGIH *2017 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices*, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2017).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

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Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists (USA)
ECHA	European Chemicals Agency
EU	European Union
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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