

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

# Safety Data Sheet

## Section 1: Identification

### Product Identifier and Other Means of Identification

**Product Name:** Flux Remover Pen**SDS Code:** 4140A-Pen**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  
CANADAMG Chemicals (Head Office)  
9347-193 Street  
Surrey, British Columbia V4N 4E7  
CANADA +1-800-340-0772**FAX** +1-800-340-0773**E-MAIL** [support@mgchemicals.com](mailto:support@mgchemicals.com)**WEB** [www.mgchemicals.com](http://www.mgchemicals.com) +1-905-331-1396**FAX** +1-905-331-2682**E-MAIL** [info@mgchemicals.com](mailto:info@mgchemicals.com)**E-MAIL** (Competent Person): [sds@mgchemicals.com](mailto:sds@mgchemicals.com)

### Emergency Phone Number

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

**4140A FLUX REMOVER PEN**

**4140A-PEN**

**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**

<b>Signal Word</b>	<b>DANGER</b>
<b>Pictograms</b>	<b>Hazard Statements</b>
	H225: Highly flammable liquid and vapour
	H319: Causes serious eye irritation
	H361: Suspected of damaging fertility or the unborn child

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**4140A FLUX REMOVER PEN**

**4140A-PEN**

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<b>Prevention</b>	<b>Precautionary Statements</b>
P102	Keep out of reach of children.
P201, P202	Obtain special instructions 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.
<b>Response</b>	<b>Precautionary Statements</b>
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.
<b>Storage</b>	<b>Precautionary Statements</b>
P403 + P235	Store in well-ventilated place. Keep cool.
P405	Store locked up.
<b>Disposal</b>	<b>Precautionary Statements</b>
P501	Dispose of contents and container in accordance to local, regional, and international regulations.

**Hazards Not Otherwise Classified**

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

**4140A FLUX REMOVER PEN**

**4140A-PEN**

**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**

<i>Exposure Condition</i>	<i>GHS Code/Symptoms/Precautionary Statements</i>
<b>IF IN EYES</b>	P305 + P351 + P338, P337 + P313
<b>Immediate Symptoms</b>	<i>redness, irritation, pain</i>
<b>Response</b>	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/attention.
<b>IF ON SKIN (or hair)</b>	P303 + P361 + P353, P308 + P313
<b>Immediate Symptoms</b>	<i>redness, dry skin</i>
<b>Response</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. IF exposed or concerned: Get medical advice/attention.
<b>IF INHALED</b>	P304 + P340, P308 + P313
<b>Immediate Symptoms</b>	<i>cough, fatigue, headache, sore throat</i>
<b>Response</b>	Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention.
<b>IF SWALLOWED</b>	P301 + P310, P308 + P313
<b>Immediate Symptoms</b>	<i>nausea, vomiting, abdominal pain</i>
<b>Response</b>	Rinse mouth. Do NOT induce vomiting. IF exposed or concerned: Get medical advice/attention.

**4140A FLUX REMOVER PEN****4140A-PEN****Section 5: Fire-Fighting Measures**

<b>Extinguishing Media</b>	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.  Use water spray to cool containers.
<b>Specific Hazards</b>	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.
<b>Combustion Products</b>	Produces carbon oxides (CO, CO <sub>2</sub> ), silicon oxides, and formaldehyde.
<b>Fire-Fighter</b>	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

**Section 6: Accidental Release Measures**

<b>Personal Protection</b>	See personal protection recommendations in Section 8.
<b>Precautions for Response</b>	Avoid breathing the vapors. Remove or keep away all sources of extreme heat or open flames.
<b>Environmental Precautions</b>	Prevent spill from entering drains and waterways.
<b>Containment Methods</b>	Not applicable
<b>Cleaning Methods</b>	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.
<b>Disposal Methods</b>	Dispose of spill waste according to Section 13.

**Section 7: Handling and Storage**

<b>Prevention</b>	Keep out of reach of children.  Obtain special instructions 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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## 4140A FLUX REMOVER PEN

## 4140A-PEN

**Handling**                      Wear protective gloves and eye protection.

Wash hands thoroughly after handling.

**Storage**                      Store in 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<sup>1</sup>, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from RTECS database<sup>2</sup> 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.

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**4140A FLUX REMOVER PEN****4140A-PEN****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:** 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/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.

**4140A FLUX REMOVER PEN**
**4140A-PEN**
**Section 9: Physical and Chemical Properties**

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

a) Tag closed cup value

b) Estimates based on Raoult'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**

<b>Reactivity</b>	Not available
<b>Chemical Stability</b>	Chemically stable at normal temperatures and pressures
<b>Conditions to Avoid</b>	Avoid flames, sparks, other ignition sources and incompatible substances.
<b>Incompatibilities</b>	Oxidizing agents, strong acids, strong bases
<b>Polymerization</b>	Will not occur
<b>Decomposition</b>	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

**4140A FLUX REMOVER PEN**

**4140A-PEN**

**Section 11: Toxicological Information**

**Summary of Effects and Symptoms by Routes of Exposure**

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

**Acute Toxicity (Lethal Exposure Concentrations)**

<b>Chemical Name</b>	<b>LD50 oral</b>	<b>LD50 dermal</b>	<b>LC50 inhalation</b>
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 <sup>3</sup> 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<sup>2</sup> and ECHA databases were consulted. The data from supplier (M)SDS were also consulted.

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

<b>Teratogenicity</b> (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.
<b>STOT-single exposure</b>	Based on available data, the classification criteria are not met.
<b>STOT-repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	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 *Ceriodaphnia* 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 algae).

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

**Acute Ecotoxicity**

Available toxicity data does not meet classification thresholds.

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**4140A FLUX REMOVER PEN****4140A-PEN****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***Section continued on the next page*

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

**4140A FLUX REMOVER PEN**

**4140A-PEN**

**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.

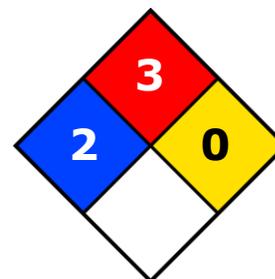
**USA**

**Other Classifications**

**HMIS® RATING**

<b>HEALTH:</b>	<b>2</b>
<b>FLAMMABILITY:</b>	<b>3</b>
<b>PHYSICAL HAZARD:</b>	<b>0</b>
<b>PERSONAL PROTECTION:</b>	

**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 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.

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

<b>SDS Prepared by</b>	Regulatory Department
<b>Date of Review</b>	07 November 2018
<b>Supersedes</b>	03 October 2018
<b>Reason for Changes:</b>	Modifications to section 14.

**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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**4140A FLUX REMOVER PEN****4140A-PEN****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](http://www.mgchemicals.com).

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