FLUX PEN: WATER SOLUBLE, LEAD FREE **837-P**

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier and Other Means of Identification

Product Name: Flux Pen: Water Soluble, Lead Free **SDS Code:** 837-Pen

Related Part # 837-P

Recommended Use and Restriction on Use

Use: Water soluble flux pen

Uses Advised Against: Not applicable

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

MG Chemicals (Head Office)
9347-193 Street
Surrey, British Columbia V4N 4E7
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☎ +1-905-331-1396
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 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

Section 2: Hazards Identification

Classification of Hazardous Chemical

GHS Categories

Criteria	Category	Signal Word	Pictograms
Flammable Liquid	2	Danger	Flame
Eye irritation Specific Target Organ Toxicity Single Exposure	2 3	Warning Warning	Exclamation Exclamation

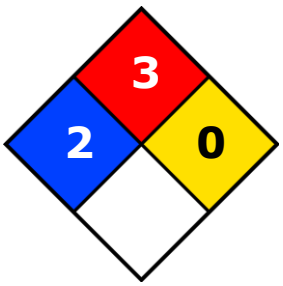
Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity). Severity categories rankings do not allow comparisons between classes.

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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Label Elements

Signal Word	**DANGER**
Pictograms	**Hazard Statements**
	H225: Highly flammable liquid and vapor
	H319: Causes serious eye irritation H336: May cause drowsiness and dizziness
Prevention	**Precautionary Statements**
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261	Avoid breathing vapors.
P271	Use only outdoors or in well ventilated area.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/eye protection.
Response	**Precautionary Statements**
P370 + P378	In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish.
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/attention.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
P302 + P353	IF ON SKIN: Rinse skin with water.
Storage	**Precautionary Statements**
P403 + P235	Store in well ventilated place. Keep cool.
Disposal	**Precautionary Statements**
P501	Dispose of contents/container in accordance to local/regional/international regulations.

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Other Hazards

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

Section 3: Hazardous Ingredients

CAS #	Chemical Name	%(weight)
67-63-0	propan-2-ol [a)]	75%
56-81-5	glycerol	2%

a) Commonly known as isopropyl alcohol (IPA)

Section 4: First-Aid Measures

Exposure Condition	*GHS Code: Precautionary Statement*
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	*irritation, tearing, redness, pain*
Response	Rinse cautiously with water for 15 minutes or more. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN	P302 + P353
Immediate Symptoms	*redness, mild irritation*
Response	Rinse skin with water.
IF INHALED	P304 + P340 + P312
Immediate Symptoms	*cough, dizziness, drowsiness, headaches, weakness*
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing. If feeling unwell: Call a POISON CENTRE/doctor.

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IF SWALLOWED	P301 + P330 + P331
Immediate Symptoms	*nausea, dizziness, weakness, headaches*
Response	Rinse mouth. Do NOT induce vomiting.

Section 5: Fire-Fighting Measures

Response	In case of fire: Use dry chemical, carbon dioxide, water fog, or chemical foam to extinguish. Use water spray to cool containers.
Specific Hazards	Vapors 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)
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	See personal protection equipment in Section 8.
Precautions for Response	Remove or keep away all sources of ignition or extreme heat. Avoid breathing vapors.
Environmental Precautions	Not applicable
Containment	Not applicable
Cleaning	Collect wipes in a sealable, solvent-resistant container.
Disposal Methods	Dispose of spill waste according to Section 13.

Section 7: Handling and Storage

Prevention Keep out of reach of children.

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Avoid breathing vapors. Use only outdoors or in a well-ventilated area.

Handling Wear protective gloves/eye protection.

Wash hands thoroughly after handling.

Storage Store in a well-ventilated area. Keep cool.

RECOMMENDATION: Keep in a dry and clean area, away from incompatible substances.

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)
propan-2-ol	ACGIH	200 ppm	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
glycerin mist	ACGIH	*Withdrawn 2013*	Not established
	U.S.A. OSHA PEL	10 mg/m^3	Not established
	Canada AB	10 mg/m^3	Not established
	Canada BC	10 mg/m^3	Not established
	Canada ON	10 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 ACGIH[1], OSHA, and Canadian provinces exposure limits were consulted. Limits from by RTECS database[2] of the Canadian Centre for Occupational Health and Safety (CCOHS) a data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are usually for 15 min and long term permissible exposure limits (PEL) for 8 h.

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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 glasses with lateral protection (side shields).
Skin Protection	Wear appropriate protective clothing to prevent skin contact. **RECOMMENDATION:** Use of protective gloves in butyl rubber, nitrile rubber, 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 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. 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**	2%
Appearance	Amber color	**Upper Flammability Limit**	12%
Odor	Alcohol like, ethereal	**Vapor Pressure @20 °C**	4.2 kPa [32 mmHg]
Odor Threshold	Not established	**Vapor Density**	2.1 (Air =1)
pH	Not available	**Specific Gravity @25 °C**	0.85
Freezing/Melting Point	Not available	**Solubility in Water**	Partially miscible
Boiling Point	≥81.8 °C [≥179 °F]	**Partition Coefficient**	Not available
Flash Point [a)]	12 °C [54 °F]	**Auto-ignition Temperature**	425 °C [797 °F]
Evaporation Rate	≤1.5 (ButAc = 1)	**Decomposition Temperature**	Not available
Flammability (solid, gas)	Not available	**Viscosity @20 °C**	Not available

a) Tag closed cup value

Section 10: Stability and Reactivity

Reactivity	At elevated temperatures, may react with aluminum and generate hydrogen gas.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Avoid Ignition sources, excessive heat, and incompatible substances.
Incompatibilities	Strong oxidizing agents, strong acids, strong bases, halogenated compounds, aluminum at temperatures ≥ 49 °C [>120 °F]
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

Section 11: Toxicological Information

Routes of Exposure

Eye contact, Inhalation, Skin contact, and Ingestion

Symptoms Summary

Eyes	Causes serious eye irritation, tearing, redness or pain.
Skin	Causes dry mild skin or redness.
Inhalation	May cause drowsiness or dizziness. Excessive exposure may cause narcotic effects, weakness, and headaches.
Ingestion	See inhalation symptoms.
Chronic	Prolonged or repeated exposure may defat skin and cause skin dryness and cracking, and local redness and discomfort.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
propan-2-ol	3 600 mg/kg Rat	12 800 mg/kg Rabbit	16 000 ppm 8 h Rat
glycerol	12 600 mg/kg Rat	10 000 mg/kg Rabbit	Not available

Note: Toxicity data from the RTECS database accessed through the Canadian Centre for Occupational Health and Safety (CCOHS)[2] were consulted. The data from supplier (M)SDS were also consulted.

Other Toxicological Effects

Skin corrosion/irritation	Based on available data, the classification criteria are not met. Causes mild skin irritation based on Draize tests on rabbits.
Serious eye damage/irritation	Causes severe eye irritation: propan-2-ol is a severe irritant based on Draize tests on rabbits.
Sensitization (allergic reactions)	Based on available data, the classification criteria are not met.
Carcinogenicity (risk of cancer)	Propan-2-ol is 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)	Based on available data, the classification criteria are not met.
Reproductive Toxicity (risk to sex functions)	Based on available data, the classification criteria are not met.
Teratogenicity (risk of fetus malformation)	Based on available data, the classification criteria are not met.
STOT-single exposure	Propan-2-ol can affect the central nervous system by inhalation causing drowsiness or dizziness.
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. The ecotoxicity of the mixture was estimated by the calculation method using the summation of classified ingredients.

Based on available data, propan-2-ol does not meet the environmental toxicant classification with LC50 and EC50 >100 mg/L.

- Propan-2-ol has a minimal LC50 96 h of 9 640 mg/L for Pimephales promelas (fathead minnow); an EC50 24 h of 5 102 mg/L Daphnia magna (water flea); and an EC50 72 h of 2 000 mg/L Desmodesmus subspicatus (green algae)).

Acute Ecotoxicity

Available toxicity data does not meet classification thresholds

Chronic Ecotoxicity

Available toxicity data does not meet classification thresholds

Biodegradability

The constituents are volatile.

Other Effects

Not available

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 5 liters and under

Limited Quantity

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 30 mL and under

Excepted Quantity
Document as class **E2**

UN number: UN1219
Shipping Name: ISOPROPANOL solution
Class: 3
Packing Group: II
Marine Pollutant: No
Flash Point = 12 °C [54 °F]

Section continued on the next page

Sea

Refer to IMDG regulations.	
Sizes 30 mL and under **Excepted Quantity** Document as class **E2**  	**UN number**: UN1219 **Shipping Name:** ISOPROPANOL solution **Class:** 3 **Packing Group**: II **Marine Pollutant:** No Flash Point = 12 °C [54 °F]

Note: **Shipper must be appropriately trained and certified before involvement with the transport of dangerous goods.**

Section 15: Regulatory Information

Canada

WHMIS 1988 Classification

B2 – Flammable Liquid; D2B – Toxic Material (Eye Irritant)

Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL.

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.

Section continued on the next page

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 up to ≥75% 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.

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.

Europe

RoHS (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, 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 Michel Hachey

Date of Revision 12 June 2015

Supersedes Not applicable

Reason for Changes: New product classified according to HCS 2012 and WHMIS 2015.

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®)

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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
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
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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