

ROSIN FLUX PEN

835-PEN

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier and Other Means of Identification

Product Name: Rosin Flux Pen**SDS Code:** 835-Pen**Related Part #** 835-P

Recommended Use and Restriction on Use

Use: Activated rosin flux**Restriction on Use:** Not applicable

Details of Manufacturer or Importer

ManufacturerMG 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**Web** www.mgchemicals.com**☎** +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

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Section 2: Hazards Identification

Classification of Hazardous Chemical

GHS Categories

Criteria		Category	Signal Word	Pictograms
Flammable liquid		2	Danger	Flame
Sensitization	Respiratory	1	Danger	Health
Sensitization	Skin	1	Warning	Exclamation
Eye irritation		2	Warning	Exclamation
Specific Target Organ Toxicity	Single Exposure	3	Warning	Exclamation
Skin irritation		3 ^{a)}	Warning	none

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.
a) Category excluded from WHMIS 2015 and HCS2012, but included as additional information.

Label Elements

Signal Word	DANGER
Pictograms	Hazard Statements
	H225: Highly flammable liquid and vapour
	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

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Pictograms	Hazard Statements
	<p>H319: Causes serious eye irritation H317: May causes allergic skin reaction H335: May cause respiratory irritation H336: May cause drowsiness and dizziness (narcotic effect by inhalation)</p>
<p>No Pictograms Mandated</p>	<p>H316: Causes mild skin irritation</p>
Prevention	Precautionary Statements
<p>P102 P210 P233 P261 P271 P284 P264 P280</p>	<p>Keep out of reach of children. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Avoid breathing fumes/vapors. Use only outdoors or in well-ventilated area. In case of inadequate ventilation, wear respiratory protection. Wash hands thoroughly after handling. Wear protective gloves/eye protection/protective clothing.</p>
Response	Precautionary Statements
<p>P370 + P378 P305 + P351 + P338 P337 + P313 P304 + P340 P342 + P311 P303 + P361 + P352, P363 P333 + P313</p>	<p>In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Wash with plenty of water/shower. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention/advice.</p>

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Storage	Precautionary Statements
P403 + P235	Store in well-ventilated place. Keep cool.
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents/container in accordance to local/regional/national/international regulations.

Hazards Not Otherwise Classified

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Rosin Solder Fumes	Rosin-based solder fumes are capable of causing occupational asthma.	Warning	None
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None

Section 3: Hazardous Ingredients

CAS #	Chemical Name	%(weight)
8050-09-7	rosin ^{a)}	45-51%
78-92-2	butan-2-ol	25-28%
64-17-5	ethanol	23-26%

a) Also called colophony, gum rosin

Section 4: First Aid Measures

<i>Exposure Condition</i>	<i>GHS Code: Precautionary Statement</i>
IF ON SKIN (or hair)	P303 + P361 + P352, P363, P333 + P313
Immediate Symptoms	<i>irritation, dry or itchy skin, skin rash (dermatitis), skin cracking</i>
Response	Take off immediately all contaminated clothing. Wash with plenty of water/shower. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.

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IF INHALED	P304 + P340, P342 + P311
Immediate Symptoms	<i>serious irritation, runny or blocked nose, sore throat, drowsiness, dizziness, cough</i>
Response	Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
IF IN EYES	P305 + P351 + P338, P337 + P313
Immediate Symptoms	<i>irritation, redness, watering, eye prickling, swelling</i>
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/attention.
IF SWALLOWED	P301 + P330, P331, P312
Immediate Symptoms	<i>irritation, burning sensation, nausea (also see inhalation symptoms)</i>
Response	Rinse mouth. Do NOT induce vomiting. If feeling unwell: Call a POISON CENTRE/doctor.

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	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 CO and CO ₂ .
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

ROSIN FLUX PEN**835-PEN****Section 6: Accidental Release Measures**

Personal Protection	See personal protection recommendations in Section 8.
Precautions for Response	Avoid breathing fumes/vapors. Remove or keep away all sources of ignition or extreme heat.
Environmental Precautions	Avoid releasing to the environment.
Containment Methods	Not applicable
Cleaning Methods	Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wash spill area with water to remove the last traces of residue.
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. Take precautionary measures against static discharge. Avoid breathing fumes/vapors. Use only outdoors or in well-ventilated area. In case of inadequate ventilation, wear respiratory protection. Contaminated clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.
Handling	Wear protective gloves/protective clothing/eye protection. Wash hands thoroughly after handling.
Storage	Keep container tightly closed. Store in a well-ventilated area. Keep cool. Store locked up.

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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)	Notation
rosin colophony (solder thermal decomposition)	ACGIH	Keep low	Not established	L, S, asthma
	U.S.A. OSHA PEL	Not established	Not established	
	Canada AB	Not established	Not established	
	Canada BC	Keep low	Not established	
	Canada ON	Keep low	Not established	
Canada QC	0.1 mg/m ³	Not established	L	
butan-2-ol	ACGIH	100 (TWA)	Not established	URT irr, CNS
	U.S.A. OSHA PEL	150 ppm	Not established	
	Canada AB	100 ppm	Not established	
	Canada BC	100 ppm	Not established	
	Canada ON	100 ppm	150 ppm	
Canada QC	100 ppm	Not established		
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		

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, OSHA (Table Z-1), and Canadian provinces exposure limits were consulted. Limits from the RTECS database² 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.

(L) Exposure by all routes should be carefully controlled to levels as low as possible.

(S) Sensitizer

(URT irr) Upper respiratory system irritant

(CNS) Central nervous system impairment

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ROSIN FLUX PEN**835-PEN****Engineering Controls****Ventilation**

Keep airborne concentrations below the occupational exposure limits (OEL).

RECOMMENDATION: For frequent or prolonged soldering processes, we recommend the use of a local exhaust system. For example, use a hood on a flexible arm, fume cabinet, or tip-mounted fume extraction system on the soldering iron.

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 likely contacts, use of protective nitrile gloves or other chemically resistant gloves.

Respiratory Protection

For over-exposures up to 10 x OEL of fumes/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.

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 ^{b)}	3%
Appearance	Light amber	Upper Flammability Limit ^{b)}	19%
Odor	Mild alcohol	Vapor Pressure ^{b)} @ 20 °C	5.3 kPa [40 mmHg]
Odor threshold	Not available	Vapor Density	>1.9 (Air =1)
pH	Not available	Specific Gravity @25 °C	0.93
Freezing/Melting Point	Not available	Solubility in Water	Partially miscible
Boiling Point	≥78 °C [≥172 °F]	Partition Coefficient	Not available
Flash Point ^{a)}	12 °C [54 °F]	Auto-ignition Temperature	Not available
Evaporation Rate	1.9 (ButAc = 1)	Decomposition Temperature	Not available
Flammability (solid, gas)	Not applicable	Viscosity @40 °C	Not available

a) Closed cup value

b) Calculated from components using Raoult's Law and Le Chatelier's principle

Section 10: Stability and Reactivity

Reactivity	Rosin may oxidize rapidly due to soldering heat or slowly due to air infiltration during prolonged storage. The oxidation product may lead to skin or respiratory sensitization.
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Ignition sources, excessive heat, and incompatible substances
Incompatibilities	Strong oxidizing agents, strong acids
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

Routes of Entry

Inhalation, Ingestion, Eye contact, Skin contact

Symptoms Summary

- Eyes** Causes redness, serious eye irritation, watering, eye prickling and/or swelling.
- Skin** Causes irritation, dry or itchy skin, skin rash (dermatitis), or skin cracking.
- Inhalation** Inhalation of vapors or mist may cause upper respiratory tract irritation, cough, runny nose or blocked nose, sore throat, dizziness or drowsiness.
- Ingestion** May cause an irritation, burning sensation and/or nausea (*also see inhalation symptoms*).
- Chronic** Repeated or prolonged inhalation exposure may cause dry skin, cracking, as well as defatting the skin.
Repeated or prolonged skin contact may cause allergic skin reaction.

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50 oral	LD50 dermal	LC50 inhalation
rosin	7 600 mg/kg Rat	>2 000 mg/kg Rabbit	Not available
butan-2-ol	2 193 mg/kg Rat	>2 000 mg/kg Rabbit	16 000 ppm 4h Rat
ethanol	7 060 mg/kg Rat	Not available	124 700 mg/m ³ 6 h Rat

Note: Toxicity data from by RTECS² and ECHA databases 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. May cause a mild skin irritation based on Draize tests on rabbits.
- Serious eye damage/irritation** Causes a serious eye irritation according to Draize tests on rabbits.

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Sensitization
(allergic reactions)

Pure rosin is not a skin sensitizer according to reliable animal studies; however, its oxidation products are sensitizers. Inhalation of rosin soldering fumes is a recognized cause of occupational asthma.

Carcinogenicity
(risk of cancer)

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.

Ethanol [CAS# 64-17-5]

IARC Group 1: Possibly carcinogenic to humans in the form of alcoholic beverages (not ethanol)

ACGIH A4: Not classified as a human carcinogen

CA Prop 65: Listed as a carcinogen when consumed as a beverage

NTP: When in alcoholic beverage consumption, it is listed as a known carcinogen

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

Butan-2-ol can affect the central nervous system by inhalation causing drowsiness or dizziness. Inhalation also cause respiratory irritation.

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.

ROSIN FLUX PEN**835-PEN****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.

Rosin, acetone, ethanol, and butan-2-ol are not classifiable as toxic for the aquatic environment (with minimal LC50 of >100 mg/L).

- Butan-2-ol has a minimal LC50 96 h of 3 670 mg/L for Pimephales promelas (fathead minnow); EC50 48 h of 2 300 mg/L for Daphnia magna (water flea).
- Ethan-2-ol is biodegradable and has a minimal LC50 >1 000 mg/L for fish, invertebrates, and algae.

Acute Ecotoxicity

Based on available data, the classification criteria are not met.

Chronic Ecotoxicity

Based on available data, the classification criteria are not met.

Biodegradability

The volatile constituents will oxidize rapidly in air by photochemical reaction.

Other Effects

VOC (Actual Volatile Organic Compound) = 50% [456 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 (Canadian Transportation of Dangerous Goods regulations) and USA DOT 49 CFR (Parts 100 to 185) Regulations.

Sizes 1 L and under

Limited Quantity



Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Sizes 30 mL and under

Excepted Quantity
Document as class **E2**

Max Net Qty/Pkg =
500 mL



FOR REFERENCE ONLY

UN number: UN1987
Shipping Name: ALCOHOLS,
N.O.S. (Ethanol, Butan-2-ol)
Class: 3
Packing Group: II
Marine Pollutant: No
Flash Point = 12 °C [54 °F]

Sea

Refer to IMDG regulations.

Sizes 30 mL and under

Excepted Quantity
Document as class **E2**

Max Net Qty/Pkg =
500 mL



FOR REFERENCE ONLY

UN number: UN1987
Shipping Name: ALCOHOLS, N.O.S.
(Ethanol, Butan-2-ol)
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.

ROSIN FLUX PEN**835-PEN****Section 15: Regulatory Information****Canada****Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)**

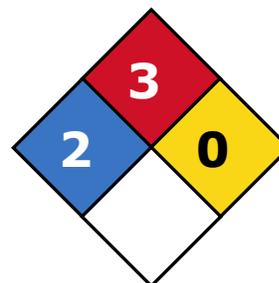
All hazardous ingredients are listed on the DSL/NDSL.

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:	*	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)

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 28% butan-2-ol (CAS # 78-92-2) 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.

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ROSIN FLUX PEN**835-PEN**

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

This product contains ethanol, which is listed as reproductively toxic. It is also listed 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, 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 Review 20 March 2017

Supersedes 31 August 2016

Reason for Changes: Updates to the classification according to HCS 2012 and WHMIS 2015

Reference

- 1) ACGIH 2011 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 (2011).
- 2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

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ROSIN FLUX PEN**835-PEN****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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