**835**

# Safety Data Sheet

## Section 1: Identification

### Product Identifier and Other Means of Identification

**Product Identifier:** Rosin Flux (835)

**Other Means of Identification:** Flux Colophane

**Related Part #** 835-100ML, 835-100MLCA, 835-1L, 835-4L, 835-20L

### Recommended Use and Restriction on Use

**Use:** Activated rosin flux

**Restriction on Use:** Not applicable

### Details of Manufacturer or Importer

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

| | | | |
|---|---|---|---|
| ☎ | +1-800-340-0772 | ☎ | +1-905-331-1396 |
| **Fax** | +1-800-340-0773 | **Fax** | +1-905-331-2682 |
| **E-mail** | support@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 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 |
| Specific Target Organ Toxicity Single Exposure | 3 | Warning | Exclamation |

*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 vapor |
|  | H319: Causes serious eye irritation<br>H335: May cause respiratory irritation<br>H336: May cause drowsiness and dizziness |

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| **Prevention** | **Precautionary Statements** |
|---|---|
| P102 | Keep out of reach of children. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P233 | Keep container tightly closed. |
| P241 | Use explosion-proof electrical, ventilating, and lighting equipment. |
| P243 | Take action to prevent static discharges. |
| P240 | Ground and bond container and receiving equipment. |
| P261 | Avoid breathing fumes or vapors. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P264 | Wash hands thoroughly after handling. |
| P280 | Wear protective gloves, protective clothing, and eye protection. |
| **Response** | **Precautionary Statements** |
| P370 + P378 | In case of fire: Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated. Rinse skin with plenty of water. |
| P304 + P340, P312 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. |
| 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, national, and international regulations. |

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## Hazards Not Otherwise Classified

| Other Criteria | Hazard Statements/Precautionary Statement | Signal Word | Pictograms |
|---|---|---|---|
| Rosin Solder Fumes | Oxidized rosin-based solder fumes are capable of inciting occupational asthma in some pre-sensitized individuals. | Warning | Not applicable |
| Defats skin | Repeated exposure may cause skin dryness or cracking. | Not applicable | Not applicable |

## Section 3: Hazardous Ingredients

| CAS # | Chemical Name | %(weight) |
|---|---|---|
| 65997-05-9 | rosin, polymerized [a)] | 45–51% |
| 78-92-2 | butan-2-ol | 25–28% |
| 64-17-5 | ethanol | 23–26% |

a) Based on available data, this substance is not classified as dangerous

## Section 4: First-Aid Measures

| *Exposure Condition* | *GHS Code: Precautionary Statement* |
|---|---|
| **IF ON SKIN (or hair)** | P303 + P361 + P353 |
| **Immediate Symptoms** | *mild irritation, dry or itchy skin, skin cracking* |
| **Response** | Take off immediately all contaminated clothing. Rinse with plenty of water. |
| **IF INHALED** | P304 + P340, P342 + P311, P312 |
| **Immediate Symptoms** | *irritation, runny or blocked nose, sore throat, drowsiness, dizziness, cough* |
| **Response** | Remove person to fresh air and keep comfortable for breathing.<br>Call a POISON CENTER or doctor if you feel unwell. |

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| | |
|---|---|
| **IF IN EYES** | P305 + P351 + P338, P337 + P313 |
| **Immediate Symptoms** | *irritation, redness, watering, eye prickling, swelling* |
| **Response** | Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>If eye irritation persists: Get medical advice or attention. |
| **IF SWALLOWED** | P301 + P330, P331 |
| **Immediate Symptoms** | *low toxicity: irritation, burning sensation, nausea* |
| **Response** | Rinse mouth. Do NOT induce vomiting. |

## Section 5: Fire-Fighting Measures

| | |
|---|---|
| **Extinguishing Media** | In case of fire: Use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray to extinguish.<br>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.<br>Prevent fire-fighting wash from entering waterway or sewer system. |
| **Combustion Products** | Produces carbon oxides (CO, $CO_2$) and by-products of pyrolysis of abietic resin acids. |
| **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 fumes or vapors. Remove or keep away all sources of ignition or extreme heat. |
| **Environmental Precautions** | Not applicable |
| **Containment Methods** | Contain with inert and non-flammable absorbent (such as soil, sand, vermiculite). |
| **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, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| | Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment. Take action to prevent static discharges. |
| | Avoid breathing fumes or vapors. Use only outdoors or in well-ventilated area. |
| | For frequent or prolonged soldering processes, use of a local exhaust system to avoid exposure to thermal decomposition products. For example, use fume cabinet, a hood on a flexible arm, or tip-mounted fume extraction system on the soldering iron. |
| **Handling** | Wear protective gloves, protective clothing, and eye protection. |
| | Wash hands thoroughly after handling. |
| **Storage** | Keep container tightly closed. To avoid oxidation, keep away from sunlight. |
| | Store in a well-ventilated area. Keep cool. |
| | Store locked up. |

## 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<br>colophony<br>*(solder thermal decomposition)*<br>a) | ACGIH<br>U.S.A. OSHA PEL<br>Canada AB<br>Canada BC<br>Canada ON<br>Canada QC | Keep low<br>Not established<br>Not established<br>Keep low<br>Keep low<br>0.1 mg/m$^3$ | Not established<br>Not established<br>Not established<br>Not established<br>Not established<br>Not established | L, S, asthma<br><br><br>L, S<br>L<br> |
| butan-2-ol | ACGIH<br>U.S.A. OSHA PEL<br>Canada AB<br>Canada BC<br>Canada ON<br>Canada QC | 100 ppm (TWA)<br>150 ppm<br>100 ppm<br>100 ppm<br>100 ppm<br>100 ppm | Not established<br>Not established<br>Not established<br>Not established<br>150 ppm<br>Not established | URT irr, CNS |
| ethanol | ACGIH<br>U.S.A. OSHA PEL<br>Canada AB<br>Canada BC<br>Canada ON<br>Canada QC | 1 000 ppm<br>1 000 ppm<br>1 000 ppm<br>Not established<br>Not established<br>1 000 ppm | Not established<br>Not established<br>Not established<br>1 000 ppm<br>1 000 ppm<br>500 ppm | URT irr |

*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 suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

S—Sensitizer
L—Keep exposure levels as low as possible.
2A—Probably carcinogenic to humans
URT irr—Upper respiratory system irritant
CNS—Central nervous system impairment
a) This substance is a chemically modified form of rosin colophony, but we nonetheless encourage users to follow these thresholds due to unmodified rosin colophony residuals.

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## Engineering Controls

**Ventilation**

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

**RECOMMENDATION:** For frequent or prolonged soldering processes, use of a local exhaust system to avoid exposure to thermal decomposition products. For example, use fume cabinet, a hood on a flexible arm, 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 incidental contacts, use disposable nitrile, neoprene, or other chemically resistant gloves.

**Respiratory Protection**

For over-exposures up to 10 x OEL of fumes, vapors, and 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** | Light amber | **Upper Flammability Limit** [b] | 16% |
| **Odor** | Mild alcohol | **Vapor Pressure** [b] **@ 20 °C** | 4.2 kPa [32 mmHg] |
| **Odor threshold** | Not available | **Vapor Density** | >1.5 (Air =1) |
| **pH** | Not available | **Relative Density @25 °C** | 0.93 |
| **Freezing/Melting Point** | Not available | **Solubility in Water** | Partially miscible |
| **Initial Boiling Point** | ≥78 °C [≥172 °F] | **Partition Coefficient n-octanol/water** | Not available |
| **Flash Point** [a] | 13 °C [55 °F] | **Auto-ignition Temperature** | Not available |
| **Evaporation Rate** | 1.9 (ButAc = 1) | **Decomposition Temperature** | Not available |
| **Flammability** | Highly Flammable | **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** | Polymerized rosin is oxidation resistant but may contains residual unmodified resin acids that can be auto-oxidize in contact with air and sunlight. Some slow auto-oxidation can also occur after long storage durations. The oxidation by-products may cause sensitization. |
| **Chemical Stability** | Chemically stable at normal temperatures and pressures |
| **Conditions to Avoid** | Avoid excessive heat, sunlight, ignition sources, and incompatible substances. |
| **Incompatibilities** | Strong oxidizing agents, strong acids |
| **Polymerization** | Will not occur |

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**Decomposition** Will not decompose under normal conditions of storage. At soldering temperatures, it may generate pyrolysis products that include acetone, aliphatic aldehydes, methyl alcohol, methane, ethane, various abietic acids (the major components of rosin), CO and $CO_2$.

## Section 11: Toxicological Information

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

**Eyes** Causes redness, severe eye irritation, watering, eye prickling, and swelling.

**Skin** Causes redness, dry or itchy skin, 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** Low toxicity: May cause an irritation, burning sensation, 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 inhalation exposure to solder pyrolysis by-products may cause certain sensitive individuals to develop asthma and eczema symptoms.

### Acute Toxicity (Lethal Exposure Concentrations)

| Chemical Name | LD50 oral | LD50 dermal | LC50 inhalation |
|---|---|---|---|
| rosin, polymerized | >5 000 mg/kg Rat | >2 000 mg/kg Rabbit | 4.75 mg/m$^3$ 4 h Rat |
| butan-2-ol | 2 193 mg/kg Rat | >2 000 mg/kg Rabbit | 16 000 ppm 4 h Rat |
| ethanol | 7 060 mg/kg Rat | >20 000 mg/kg Rabbit | 124 700 mg/m$^3$ 6 h Rat |

*Note:* Toxicity data from the ECHA databases were consulted. The data from supplier SDSs 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** | Causes serious eye irritation based on Draize tests on rabbits. |
| **Sensitization** (allergic reactions) | Based on available data, the classification criteria are not met. |
| **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.<br><br>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.<br><br>**Ethanol [CAS# 64-17-5]**<br><br>IARC Group 1: Possibly carcinogenic to humans in the form of alcoholic beverages (not ethanol)<br><br>ACGIH A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans<br><br>CA Prop 65: Listed as a carcinogen when consumed as a beverage<br><br>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** | None of the ingredients are classified as an aspiration hazard. |

## 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, 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).
- Ethanol is biodegradable and has a minimal LC50 >1 000 mg/L for fish, invertebrates, and algae.

### Acute Ecotoxicity

Available toxicity data does not meet classification thresholds.

### Chronic Ecotoxicity

Available toxicity data does not meet classification thresholds.

**Biodegradability**

Not data available

### Other Effects

VOC *(*Regulated Volatile Organic Content) = 50% [460 g/L]

## Section 13: Disposal Information

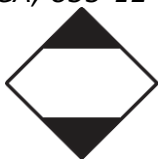
Dispose of contents in accordance with all local, regional, national, and international regulations.

## 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 1 L and under | Sizes greater than 1 L |
|---|---|
| *835-100ML, 835-100MLCA, 835-1L*<br>**Limited Quantity** | *835-4L, 835-20L*<br>**UN number**: UN1987<br>**Shipping Name:** ALCOHOLS, N.O.S. (Ethanol, Butan-2-ol)<br>**Class:** 3<br>**Packing Group**: II<br>**Marine Pollutant:** No |






### Air

**Refer to ICAO-IATA Dangerous Goods Regulations.**

| Sizes 2 × 0.5 L and under [a)] | Sizes up to 5 L (passenger), 60 L (cargo) |
|---|---|
| *835-100ML, 835-100MLCA*<br>**Limited Quantity** | *835-1L, 835-4L, 835-20L*<br>**UN number:** UN1987<br>**Shipping Name:** ALCOHOLS, N.O.S. (Ethanol, Butan-2-ol)<br>**Class:** 3<br>**Packing Group:** II<br>**Marine Pollutant:** No |







a) ***Packing Instructions***: Single packaging are not permitted. Use combination packaging with net quantity per inner packaging of 0.5 L to a total net quantity per package of 1.0 L.

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## Sea

| **Refer to IMDG regulations.** | |
|---|---|
| Sizes 1 L and under<br>*835-100ML, 835-100MLCA, 835-1L*<br>**Limited Quantity**  | Sizes greater than 1 L<br>*835-4L, 835-20L*<br>**UN number:** UN1987<br>**Shipping Name:** ALCOHOLS, N.O.S. (Ethanol, Butan-2-ol)<br>**Class:** 3<br>**Packing Group:** II<br>**Marine Pollutant:** No  |

*Note:* **Shipper must be appropriately <u>trained and certified</u> 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.

**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.

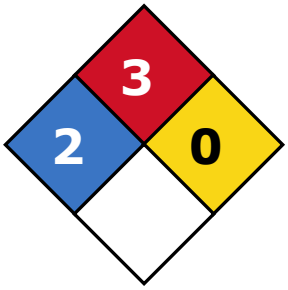
## USA

### 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 substances that are listed as hazardous air pollutants.

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

This product contains 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.

**California Proposition 65** (Chemicals known to cause cancer or reproductive toxicity, USA)

While ethanol is present in this product, the Proposition 65 warning does NOT apply since this product is not 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

| | |
|---|---|
| **Prepared by the** | Regulatory Affairs Department |
| **Date of Issue** | 10 May 2024 |
| **Supersedes** | 14 October 2020 |
| **Reason for Changes:** | Addition of new Part Number. |

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## Reference

1) ACGIH *2024 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 (2024).

## 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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