HEAVY DUTY FLUX REMOVER **413B-AEROSOL**

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier and Other Means of Identification

Product Name: Heavy Duty Flux Remover **SDS Code:** 413B-Aerosol

Related Part #: 413B-425G

Recommended Use and Restriction on Use

Use: Flux remover solvent

Uses Advised Against: Not available

Details of Manufacturer or Importer

Manufacturer

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

☎ 1-800-340-0772
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
CANADA

☎ 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 Aerosol		2	Danger	Flame
Gas Under Pressure	Liquefied Gas	Liquefied Gas	Warning	Gas cylinder
Eye Irritation		2	Warning	Exclamation
Specific Target Organ Toxicity	Single Exposure	3	Warning	Exclamation

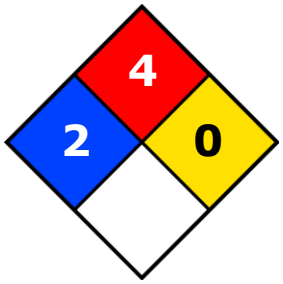
Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity). Severity categories do not allow comparisons between classes.

Other Classifications

HMIS® RATING

HEALTH:	**2**
FLAMMABILITY:	**4**
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**
	H223: Flammable aerosol
	H280: Contains gas under pressure; may explode if heated
	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.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing mist/vapors/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/eye protection.
P264	Wash hands thoroughly after handling.
Response	**Precautionary Statements**
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	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.

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Storage	Precautionary Statements
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F].
P403	Store in a well-ventilated place.
P405	Store locked up.
Disposal	**Precautionary Statements**
P501	Dispose of contents/container in accordance to local/regional/national/international regulations.

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)
75-37-6	1,1-difluoroethane	30%
141-78-6	ethyl acetate	44%
67-64-1	acetone	17%
67-63-0	propan-2-ol [a)]	9%

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*
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 INHALED	P304 + P340, P312
Immediate Symptoms	*Cough, dizziness, drowsiness, headaches, weakness, unconsciousness*
Response	Remove person to fresh air and keep comfortable for breathing. If feeling unwell: Call a POISON CENTRE/doctor.
IF SWALLOWED	P301 +P330, P331, P312
Immediate Symptoms	*nausea, headache, dizziness, drowsiness, weakness, abdominal pain, unconsciousness*
Response	Rinse mouth. Do NOT induce vomiting. If feeling unwell: Call a POISON CENTRE/doctor.
IF ON SKIN (or hair)	P302 + P353
Immediate Symptoms	*mild irritation*
Response	Rinse skin with water/shower.

Section 5: Fire-Fighting Measures

In case of fire	P370 + P378
Extinguishing Media	Use dry chemical, carbon dioxide, chemical foam, or water spray to extinguish. Use water spray to cool containers.
Specific Hazards	Aerosols containers may erupt with force at temperatures above 50 °C [122 °F]. 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) halogenated compounds, and hydrogen fluorides
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	Do not breathe the mist/spray/vapors. Remove or keep away all sources of extreme heat or open flames.
Environmental Precautions	Avoid releasing to the environment. Prevent spill from entering drains and waterways.
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 soap and 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 away from heat/sparks/open flames/hot surfaces. No smoking.

Do not spray on an open flame or other ignition source.

Do not pierce or burn, even after use.

Avoid breathing fume/vapors. Use only outdoors or in a well-ventilated area. In cases of inadequate ventilation wear respiratory protection.

Handling

Wear protective gloves/clothing/eye protection.

Wash hands thoroughly after handling.

Storage

Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F]

Store in a well-ventilated place.

Store locked up.

Section 8: Exposure Controls/Personal Protection

Routes of Entry

Eyes, ingestion, inhalation, and skin

Substances with Occupational Exposure Limit Values

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
1,1-difluoroethane	ACGIH U.S.A. OSHA PEL Canada	Not established Not established Not established	Not established Not established Not established
ethyl acetate	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	400 ppm 400 ppm 400 ppm 150 ppm Not established 400 ppm	Not established Not established Not established Not established Not established Not established
acetone	ACGIH U.S.A. OSHA PEL Canada AB Canada BC Canada ON Canada QC	500 ppm 1000 ppm 500 ppm 250 ppm 500 ppm 750 ppm	750 ppm Not established 750 ppm 500 ppm 750 ppm 1000 ppm

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

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.

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 SDS, and that the respirator is fitted to the employee by a professional.

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.

Section 9: Physical and Chemical Properties

Physical State	Liquid in aerosol format	**Lower Flammability Limit**	2%
Appearance	Colorless	**Upper Flammability Limit**	13%
Odor	Ethereal	**Vapor Pressure** [b] **@20 °C**	102 mmHg [13.6 kPa]
Odor Threshold	Not available	**Vapor Density**	2.7 (Air =1)
pH	Not available	**Specific Gravity @25 °C**	0.83
Freezing/Melting Point	Not available	**Solubility in Water**	Partially soluble
Boiling Point [a]	≥56 °C [132 °F]	**Partition Coefficient**	Not available
Flash Point [a]	-18 °C [-0.4 °F]	**Auto-ignition Temperature** [c]	425 °C [797 °F]
Evaporation Rate	Not available	**Decomposition Temperature**	Not available
Flammability (solid, gas)	Not available	**Viscosity @20 °C**	Not available

a) Based on acetone boiling point and closed cup value
b) Calculated value using Raoult's Law
c) Propan-2-ol auto-ignition value, which is the lowest among the mixture components.

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures
Conditions to Avoid	Temperatures above 50 °C [122 °F], open flames, and incompatible substances
Incompatibilities	Strong oxidizing agents and strong acids
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

Eyes, ingestion, inhalation, and skin

Symptoms Summary

Eyes	Causes redness, severe irritation, or pain.
Skin	May cause skin redness, mild irritation, and dry skin.
Inhalation	May cause dizziness, drowsiness, cough, headaches, or nausea.
Ingestion	May cause nausea, sore throat, diarrhea, or vomiting (see inhalation symptoms).
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
1,1-difluoroethane	Not available	Not available	1 500 g/m^3 4 h Rat
ethyl acetate	5 620 mg/kg Rat	>20 000 μL/kg Rabbit	45 g/m^3 2 h Mouse
acetone	5 800 mg/kg Rat	20 mL/kg Rabbit [a)]	16 000 ppm 6h Rat
isopropyl alcohol	3 600 mg/kg Rat	12 800 mg/kg Rabbit	16 000 ppm 8 h Rat

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.

a) Supplier MSDS

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Other Toxicological Effects

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Ethyl acetate, acetone, and propan-2-ol are known serious eye irritants.
Sensitization (allergic reactions)	No known effects
Carcinogenicity (risk of cancer)	Not classified or listed as a carcinogen by IARC, ACGIH, CA Prop 65, or NTP
Mutagenicity (risk of heritable genetic effects)	No known effects
Reproductive Toxicity (risk to sex functions)	No known effects
Teratogenicity (risk of fetus malformation)	No known effects
STOT-single exposure	Ethyl acetate, acetone, and propan-2-ol can affect the central nervous system by inhalation causing drowsiness or dizziness.
STOT-repeated exposure	No known effects
Aspiration hazard	Based on available data, the classification criteria are not met.

Section 12: Ecological Information

The ecotoxicity of the mixture was estimated by the calculation method using the summation of classified ingredients. The IMDG Code criteria and the raw-material MSDS along with supporting data for the classification of registered substances from the European Chemical Agency database (http://echa.europa.eu) were used.

Ethyl acetate is not classifiable as an environmental toxicant (with minimal LC50 of ≥220 mg/L 96 h for Pimephales promelas (fathead minnow); 2 300 mg/L 24 h Daphnia magna (water flea); 4 200 mg/L 72 h green algae).

Acetone is not classifiable as an environmental toxicant (with minimal LC50 of 5 540 mg/L 96 h for Oncorhynchus mykiss (rainbow trout); 13 500 mg/L 24 h Daphnia magna (water flea).

The propan-2-ol substance is not classifiable as an environmental toxicant (with minimal LC50 of 9 640 mg/L 96 h for Pimephales promelas (fathead minnow); 5 102 mg/L 24 h Daphnia magna (water flea); >2 000 mg/L 24 h green algae).

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Acute Ecotoxicity

Available toxicity data does not meet classification thresholds

Chronic Ecotoxicity

Available toxicity data does not meet classification thresholds

Biodegradability

Not available

Other Effects

Actual VOC (Volatile Organic Compounds) content according to the US (EPA) and Canadian (CEPA) authorities.

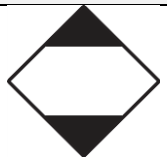
VOC = 53% [437 g/L]

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 regulations (Canadian Transportation of Dangerous Goods regulations); **USA DOT 49 CFR** (Parts 100 to 185) **Regulations.**	
Limited Quantity 	**UN number**: UN1950 **Shipping Name:** AEROSOL, flammable **Class:** 2.1 **Packing Group**: Not applicable **Marine Pollutant:** No

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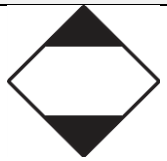
Air

Refer to ICAO-IATA Dangerous Goods Regulations.	
	UN number: UN1950 **Shipping Name:** AEROSOL, flammable **Class:** 2.1 **Packing Group**: Not applicable **Marine Pollutant:** No

Sea

Refer to IMDG regulations.	
Limited Quantity	**UN number**: UN1950 **Shipping Name:** AEROSOL, flammable **Class:** 2.1 **Packing Group**: Not applicable **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

WHMIS 1988 Classification

A – Aerosol Container; B5 – Flammable Aerosols;
D2B – Toxic Other (Eye Irritant)

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

All hazardous ingredients are listed on the DSL/NDSL.

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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.

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 9% 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 ethyl acetate (CAS# 141-78-6) and acetone (CAS# 67-64-1), which are subject to the CERCLA reporting requirements at the 5000 lb (2268 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, Sept 2, 2011 revision, USA).

This product does not contain any of the listed substances.

Europe

RoHS

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

WEEE

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

Section 16: Other Information

MSDS Prepared by	Michel Hachey
Date of Revision	23 April 2015
Supersedes	16 October 2013
Reason for Changes:	Change to meet HCS 2012 and WHMIS 2015 format.

References

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®)

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

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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.

Email: support@mgchemicals.com

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