

MATERIAL SAFETY DATA SHEET

Finished Product



Date Issued: 07/01/2002

MSDS No: ms1631A

Date Revised: 12/07/2009

Revision No: 10

Flux Remover G3™

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Flux Remover G3™

GENERAL USE: General Purpose Flux Remover

PRODUCT DESCRIPTION: Flux Remover G3

PRODUCT CODE: 1631/CAN/EUR-5S, 6S, 10S, 16S (Aerosols)

ACTIVE INGREDIENT(S): 1,2-transdichloroethylene; 1,1,1,3,3-Pentafluoropropane; Methanol; Ethyl Hydroxy Propionate; 1,1,1,2-Tetrafluoroethane; Carbon dioxide

MANUFACTURER

Techspray, L.P.
1001 N.W. 1st Street
P.O. Box 949
Amarillo TX 79107

Emergency Contact: Chemtrec

Product Stewardship: 1-800-858-4043

Service Number: 1-800-858-4043

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (US Transportation) :(800) 424 - 9300

CANUTEC (Canadian Transportation) :(613) 996 - 6666

Emergency Phone :(800) 858 - 4043

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Transparent, colorless liquid.

IMMEDIATE CONCERNS: Warning! High concentrations of vapor can reduce oxygen available for breathing. Harmful if inhaled. May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products.

POTENTIAL HEALTH EFFECTS

EYES: Substance causes substantial eye irritation.

SKIN: Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INGESTION: Substance may be harmful if swallowed.

INHALATION: High concentrations in immediate area can displace oxygen and can cause dizziness, unconsciousness, and possibly death with longer exposure. Keep people away from such vapors without self-contained breathing apparatus.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Liquid splashed in the eye may cause redness, irritation and conjunctivitis.

SKIN: Prolonged exposure causes redness, pain, drying and cracking of the skin.

INGESTION: For large amounts; abdominal pain, nausea and vomiting.

INHALATION: High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness).

ACUTE TOXICITY: Overexposure may cause dizziness and loss of concentration. At higher levels, CNS depression and cardiac arrhythmia may result.

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Flux Remover G3™**REPRODUCTIVE TOXICITY**

TERATOGENIC EFFECTS: Contains Methanol which has been established as a teratogen by inhalation. See Sec.11 for details.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS	EINECS
1,2-transdichloroethylene	30 - 90	156-60-5	205-860-2
1,1,1,3,3-Pentafluoropropane	10 - 50	460-73-1	4191706
Methanol	1 - 5	67-56-1	200-659-6
Ethyl Hydroxy Propionate	< 1	97-64-3	202-598-0
1,1,1,2-Tetrafluoroethane	10 - 25	811-97-2	212-337-0
Carbon dioxide	1 - 10	124-38-9	

4. FIRST AID MEASURES

EYES: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel.

SKIN: Immediately flush skin with plenty of water. Remove clothing. Get medical attention immediately. Wash clothing separately before reuse.

INGESTION: If swallowed, gently wipe or rinse the inside of the mouth with water. DO NOT induce vomiting. Sips of water may be given if person is fully conscious. Never give anything by mouth to an unconscious or convulsing person. Immediately contact a poison control center, emergency room or physician as further treatment may be necessary.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: None : ASTM D-56 (Tag C.C.)

EXTINGUISHING MEDIA: Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

FIRE FIGHTING PROCEDURES: Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

FIRE FIGHTING EQUIPMENT: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

HAZARDOUS DECOMPOSITION PRODUCTS: Toxic oxides of carbon and corrosive vapors of hydrogen chloride.

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6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Contain spill with dike to prevent entry into sewers.

LARGE SPILL: If this material is released into a work area, evacuate the area immediately.

GENERAL PROCEDURES: Dike area to contain spill. Take precautions as necessary to prevent contamination of ground and surface waters. Recover spilled material on adsorbent, such as sawdust or vermiculite, and sweep into closed containers for disposal. After all visible traces, including vapors, have been removed thoroughly wet vacuum the area. Do not flush to sewer. If area of spill is porous, remove as much contaminated earth, gravel, etc. as necessary and place in closed containers for disposal.

SPECIAL PROTECTIVE EQUIPMENT: Only personnel equipped with proper respiratory and skin/eye protection should be permitted in area. See Section 8 for details.

7. HANDLING AND STORAGE

HANDLING: Use with sufficient ventilation to keep employee exposure below recommended limits. Provide adequate ventilation for storage, handling and use, especially for enclosed or low spaces. Avoid contact of liquid with eyes and prolonged skin exposure. Do not allow product to contact open flame or electrical heating elements because dangerous decomposition products may form.

STORAGE: Store away from heat.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)							
		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		SupplierOEL	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1,2-transdichloroethylene	TWA	NE [1]	[1]	200 ppm		NE	
	STEL	NE		200 ppm			
1,1,1,3,3-Pentafluoropropane	TWA	NONE		NONE		300 ppm	
	STEL	NONE		NONE			
Methanol	TWA	S 200 ppm [2]	260 mg/m ³ [2]	S 200 ppm	262 mg/m ³	NL ppm	NL mg/m ³
	STEL	250 ppm	310 mg/m ³	250 ppm	328 mg/m ³	NL ppm	NL
Ethyl Hydroxy Propionate	TWA	[3]	[3]	[4]	[4]		
	STEL	[4]	[4]	[4]	[4]		
1,1,1,2-Tetrafluoroethane	TWA	NE		NE		1,000 ppm [5]	[5]

OSHA TABLE COMMENTS:

1. NOT ESTABLISHED
2. S = Skin
3. NA=NOT APPLICABLE
4. NOT APPLICABLE
5. * (AEL)=Acceptable Exposure Limit as established by the manufacture

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles.

SKIN: The glove(s) listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection. Viton, Solvex, Butyl, Buna, Neoprene.

RESPIRATORY: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

OTHER USE PRECAUTIONS: Emergency shower and eyewash facility should be in close proximity.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Chemical Name	Flash Point (°C)	Boiling Point (°C)	Freezing Point (°C)	Solubility in Water	Specific Gravity
1,2-transdichloroethylene	36	48	-50	slight	1.257
1,1,1,3,3-Pentafluoropropane		15	-160	7.18 g/l @ ambient temperature	1.32
Ethyl Hydroxy Propionate	139	139.67			1.03
1,1,1,2-Tetrafluoroethane		-26.4	-101	NEGLIGIBLE	1.21

ODOR: Faint ethereal odor**APPEARANCE:** Clear, Colorless liquid**PERCENT VOLATILE:** 100 at 20°C (68°F)**VAPOR PRESSURE:** 17.75 psi at 20°C (68°F)**FLASHPOINT AND METHOD:** None : ASTM D-56 (Tag C.C.)**EVAPORATION RATE:** > 1 (TCE=1)**SPECIFIC GRAVITY:** 1.236 (water=1)**(VOC):** 60.700 % by weight (EPA)**Notes:** 75% weight VOC (CARB)**COMMENTS:** Product manufactured after 1 December 2007 conforms to California VOC regulations for Category Electronic Cleaners with a cap of 75 wt %.**10. STABILITY AND REACTIVITY****STABLE:** Yes**HAZARDOUS POLYMERIZATION:** No**STABILITY:** Stable.**POLYMERIZATION:** Will not occur.**CONDITIONS TO AVOID:** Stable. However, may decompose if heated.**HAZARDOUS DECOMPOSITION PRODUCTS:** When exposed to high temperatures or flames this product may form hydrochloric and hydrofluoric acids - possibly carbonyl halides.**INCOMPATIBLE MATERIALS:** Oxidizing agents, alkalies and bases.**11. TOXICOLOGICAL INFORMATION**

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Flux Remover G3™**ACUTE**

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)	INHALATION LC ₅₀ (rat)
1,2-transdichloroethylene		> 5000 mg/kg	24100 ppm
1,1,1,3,3-Pentafluoropropane		> 2000 mg/kg	> 200000 ppm
Methanol	6.2 to 12.98 mg/kg	16 g/kg	64000 ppm
Ethyl Hydroxy Propionate	4090 mg/kg	> 2000 mg/kg	> 5400 ppm
1,1,1,2-Tetrafluoroethane			> 500000 ppm

EYES: Moderately to severely irritating**DERMAL LD₅₀:** Mildly to moderately irritating.**ORAL LD₅₀:** Slight to very low toxicity.**INHALATION LC₅₀:** Slight to very low toxicity.**SKIN EFFECTS:** Based on human exposure reports, prolonged and repeated skin contact with Methanol has produced toxic effects including vision effects and death.**CARCINOGENICITY**

Chemical Name	NTP Status	IARC Status	OSHA Status
1,2-transdichloroethylene	NOT LISTED	NOT LISTED	NOT LISTED
1,1,1,3,3-Pentafluoropropane	NOT LISTED	NOT LISTED	NOT LISTED
Methanol	NOT LISTED	NOT LISTED	NOT LISTED
Ethyl Hydroxy Propionate	NOT LISTED	NOT LISTED	NOT LISTED
1,1,1,2-Tetrafluoroethane	NOT LISTED	NOT LISTED	NOT LISTED

12. ECOLOGICAL INFORMATION**ENVIRONMENTAL DATA:** There is limited information available on the environmental fate and effects of this material. The primary environmental concern for release is the impact on aquatic and terrestrial species. Due care should be taken to avoid the accidental release of this material into the environment.

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ECOTOXICOLOGICAL INFORMATION: Invertebrate toxicity: LC50 (30 min) Photobacterium phosphoreum = 1540 ppm Microtoxicity test.

13. DISPOSAL CONSIDERATIONS

FOR LARGE SPILLS: Contaminated sawdust, vermiculite, or porous surfaces must be disposed of in a permitted hazardous waste management facility. Recovered liquids may be reprocessed or incinerated or must be treated in a permitted hazardous waste management facility.

GENERAL COMMENTS: Dispose of in a manner consistent with federal, state, and local regulations.

14. TRANSPORT INFORMATION**DOT (DEPARTMENT OF TRANSPORTATION)**

PROPER SHIPPING NAME: CONSUMER COMMODITY ORM-D

PRIMARY HAZARD CLASS/DIVISION: No classification

UN/NA NUMBER: N/A

PACKING GROUP: N/A

ROAD AND RAIL (ADR/RID)

KEMLER NUMBER: UN1950

HAZARD CLASS: 2.3

AIR (ICAO/IATA)

SHIPPING NAME: CONSUMER COMMODITY ID8000

UN/NA NUMBER: ID8000

PRIMARY HAZARD CLASS/DIVISION: 9

PACKING GROUP: N/A

VESSEL (IMO/IMDG)

SHIPPING NAME: AEROSOLS IN LIMITED QUANTITIES OF CLASS 2

UN/NA NUMBER: UN1950

PRIMARY HAZARD CLASS/DIVISION: 2.2

PACKING GROUP: N/A

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15. REGULATORY INFORMATION**UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

311/312 HAZARD CATEGORIES: IMMEDIATE / DELAYED

FIRE: No **PRESSURE GENERATING:** Yes **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes

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Flux Remover G3™**313 REPORTABLE INGREDIENTS:** Methanol (3.55%)**EPCRA SECTION 313 SUPPLIER NOTIFICATION**

Chemical Name	Wt. %	CAS
Methanol	1 - 5	67-56-1
Ethyl Hydroxy Propionate	< 1	97-64-3

TITLE III NOTES: Not listed as an Extremely Hazardous Substance.**302/304 EMERGENCY PLANNING****EMERGENCY PLAN:** Methanol (#67-56-1)**CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)****CERCLA REGULATORY:** Releases to air, land, or water which exceed the RQ must be reported to the National Response Center [(800)424-8802] and to your Local Emergency Planning Committee.

Chemical Name	Wt. %	CERCLA RQ
1,2-transdichloroethylene	30 - 90	1000 lbs.
Methanol	1 - 5	5000 lbs.

CERCLA RQ: Trans-1,2-dichloroethylene is listed in Table 302.4 of 40 CFR Part 302 as a hazardous substance. Reportable Quantity = 1,000 lbs.**EPA****EPA RQ INGREDIENT:** trans-1,2-dichloroethylene (# 156-60-5)**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

Chemical Name	CAS
1,2-transdichloroethylene	156-60-5
1,1,1,3,3-Pentafluoropropane	460-73-1
Methanol	67-56-1
Ethyl Hydroxy Propionate	97-64-3
1,1,1,2-Tetrafluoroethane	811-97-2

TSCA REGULATORY: This product is listed on the TSCA Inventory.**CLEAN AIR ACT**

Chemical Name	Wt. %	CAS
1,1,1,2-Tetrafluoroethane	10 - 25	811-97-2

CALIFORNIA PROPOSITION 65: This product does not contain any chemicals known to the State of California to cause cancer.

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CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM): This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS CLASS: Class A, Class D2B.

GENERAL COMMENTS: Product manufactured after 1 December 2007 conforms to California VOC regulations for Category Electronic Cleaners with a cap of 75 wt %.

16. OTHER INFORMATION

APPROVED BY: Dana M. Morelos **TITLE:** Chemist

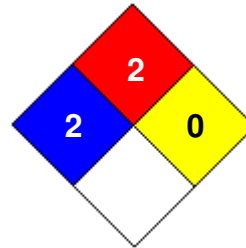
PREPARED BY: D.M. Morelos

REVISION SUMMARY: Revision #: 10. This MSDS replaces the December 06, 2007 MSDS. Any changes in information are as follows: In Section 15: EEC Symbol Id., EEC Risk Phrase Codes

HMIS RATING

HEALTH:	2
FLAMMABILITY:	2
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA CODES



MANUFACTURER SUPPLEMENTAL NOTES: The use of this product for cleaning is subject to U.S. Patent no. 5,902,412 and use is restricted by Tech Spray, L.P.

DATA SOURCES: Code of Federal Regulations (CFR) The Sigma-Aldrich Library of Regulatory and Safety Data OSHA Hazard Communication Standard (29CFR1910.1200) Various Federal, State and Local Regulations

MANUFACTURER DISCLAIMER: To the best of our knowledge, the information contained herein is accurate. However, neither Tech Spray, L.P., or any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.