MATERIAL SAFETY DATA SHEET

Date-Issued: 07/01/2002
MSDS Ref. No: ms1631A
Date-Revised: 07/17/2002
Revision No: 1

Flux Remover G3™

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Flux Remover G3™
GENERAL USE: General Purpose Flux Remover
PRODUCT CODE: 1631-A

MANUFACTURER

Tech Spray, L.P.
1001 N.W. 1st Ave.
P.O. Box 949
Amarillo, TX 79105
Contact: Chemtrec
Product Stewardship: 1-800-858-4043

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (U.S.): (800) 424-9300
CANUTEC: (613) 996-6666
Emergency Phone: 1-800-858-4043

2. 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	
1,1,1,2-Tetrafluoroethane	10 - 20	811-97-2	223770
Carbon dioxide	1 - 10	124-38-9	

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Transparent, colorless liquid.

IMMEDIATE CONCERNS: Warning! Vapor reduces 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.

REPRODUCTIVE TOXICITY

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

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 will be necessary.

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

NOTES TO PHYSICIAN: Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution and only in situations of emergency life support. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions.

5. FIRE FIGHTING MEASURES

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.

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 in a cool, well-ventilated area of low fire risk. Storage in subsurface locations should be avoided. If container temperature exceeds boiling point, cool the container before opening.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	
		ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3
1,2-transdichloroethylene	**TWA**	[1]		200		75	
1,1,1,3,3-Pentafluoropropane	**TWA**			[2]		300	
Methanol	**TWA**	S 200[3]	260	S 200	262	NL	NL
	STEL	250	310	250	328	NL	NL
Ethyl Hydroxy Propionate	**TWA**	[4]					
	STEL			[5]			
1,1,1,2-Tetrafluoroethane	**TWA**	NONE	NONE	NONE		1000[6]	

OSHA TABLE COMMENTS:
1. NOT ESTABLISHED
2. NONE
3. S = Skin
4. NA=NOT APPLICABLE
5. NOT APPLICABLE
6. Limit established by supplier

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: Wear safety glasses with side shields (or goggles) and a face shield.

SKIN: Where contact is likely, wear chemical resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield.

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

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)
EVAPORATION RATE: >1 (TCE=1)
SPECIFIC GRAVITY: 1.236 @ 20°C/20°C
(VOC): 855.2 g/L (non-exempt VOC)

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

CONDITIONS TO AVOID: Stable. However, may decompose if heated.

STABILITY: Stable.

POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: May form hydrochloric and hydrofluoric acids - possibly carbonyl halides, when exposed to high temperatures.

INCOMPATIBLE MATERIALS: Oxidizing agents, alkalies and bases.

11. TOXICOLOGICAL INFORMATION

ACUTE

EYES: Moderately to severely irritating

DERMAL LD_{50}: Mildly to moderately irritating.

ORAL LD_{50}: Slight to very low toxicity.

INHALATION LC_{50}: 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.

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 of high pH on aquatic and terrestrial species. Due care should be taken to avoid te accidental release of this material to these environments.

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.

RCRA/EPA WASTE INFORMATION: Waste trans and contaminated soils/materials from spill cleanup are U079 hazardous waste as per 40 CFR 261.33 and must be disposed of accordingly under RCRA.

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

AIR (ICAO/IATA)
PROPER SHIPPING NAME: CONSUMER COMMODITY ID8000
PRIMARY HAZARD CLASS/DIVISION: 9
UN/NA NUMBER: ID8000
PACKING GROUP: N/A
IATA NOTE: Domestic shipments only. When shipping International contact TechSpray shipping department.

VESSEL (IMO/IMDG)
PROPER SHIPPING NAME: AEROSOLS IN LIMITED QUANTITIES OF CLASS 2
PRIMARY HAZARD CLASS/DIVISION: 2.2
UN/NA NUMBER: UN1950
PACKING GROUP: N/A
IMDG NOTE: Page 2102

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

313 REPORTABLE INGREDIENTS: Methanol (3.55%)

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.

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)

TSCA REGULATORY: This product is listed on the TSCA Inventory.

RCRA STATUS: U079

CANADA

WHMIS CLASS: Class D2B - Toxic Materials

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

GENERAL COMMENTS: Pertinent regulations are found at 40 CFR Part 721. Restrictions are stated in 40 CFR 721.80(j) and (p).

16. OTHER INFORMATION

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

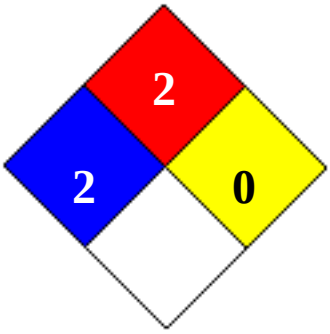
PREPARED BY: D.M. Morelos

REVISION SUMMARY Revision #: 1
This MSDS replaces the July 16, 2002 MSDS. Any changes in information are as follows:
In Section 1
Product Code

HMIS RATING

HEALTH:	**2**
FLAMMABILITY:	**2**
REACTIVITY:	**0**
PERSONAL PROTECTION:	

NFPA CODES



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.