CHEMTRONICS®Technical Data Sheet

TDS # 1697

Flux-Off® Lead-Free Flux Remover

PRODUCT DESCRIPTION

Flux-Off® Lead-Free Flux Remover is an extra strength solvent that removes heavy and encrusted flux deposits resulting from high temperature lead-free soldering applications. This powerful cleaner quickly removes all types of flux, oxide particles, dust, grease and oil, and then evaporates quickly leaving no residues.

- Removes R, RA, RMA, and No Clean fluxes in lead-free and Tin/Lead applications
- Non-corrosive, safe for metals
- Flammable
- Extra-strength, fast drying
- Removes encrusted, baked-on fluxes
- All-Way Spray valve - even sprays upside down
- Available with BrushClean™ System
- RoHS compliant

TYPICAL APPLICATIONS

Flux-Off® Lead-Free Flux Remover effectively cleans flux residues from:

- Chip Carriers
- Heat Sinks
- Metal Housings and Chassis
- Printed Circuit Boards
- Plugs
- Relays and Contacts
- Sockets
- Surface Mount Device Pads
- Solenoids
- Switches

TYPICAL PRODUCT DATA AND PHYSICAL PROPERTIES

Flash Point	-20°F
Evaporation Rate (butyl acetate=1)	>1
Specific Gravity	0.706
Appearance	Clear, Colorless Liquid
Odor	Ethereal
Solubility in Water	Negligible
Kauri-Butanol (KB) Number	86
Shelflife	5 years
RoHS/WEEE Status	RoHS WEEE Compliant

COMPATIBILITY

Flux-Off® Lead-Free Flux Remover, like any cleaner, should be tested on a non-critical area to determine plastics compatibility prior to use. Not recommended for ABS, acrylics, polycarbonates, polystyrenes and PVC.

Material	Compatibility
ABS	Non-Compatible
Buna-N	Non-Compatible
EPDM	Excellent
Graphite	Excellent
HDPE	Excellent
LDPE	Good
Lexan™	Non-Compatible
Neoprene	Fair
Noryl®	Non-Compatible
Nylon™ 66	Excellent
Cross-Linked PE	Excellent
Polypropylene	Excellent
Polystyrene	Non-Compatible
PVC	Non-Compatible
Silicone Rubber	Non-Compatible
Teflon™	Excellent
Viton™	Non-Compatible

USAGE INSTRUCTIONS

For industrial use only.
Read MSDS carefully prior to use.
Spray 4-6" from surface to clean. Wash parts from top to bottom, allowing the liquid to flush away flux residue.
Flux-Off® Lead-Free Flux Remover can be used to remove all types of fluxes in batch cleaning applications, including ultrasonic systems specifically rated for use with flammable solvents.

AVAILABILITY

ES1697	12 oz. Aerosol
ES897B	8 oz. BrushClean™ System
ES197	1 Gal. (3.7 L) Liquid

ENVIRONMENTAL IMPACT DATA

ENVIRONMENTAL IMPACT DATA			
CFC	0.0%	VOC	51%
HCFC-141b	0.0%	HFC	0.0%
HCFC-225	0.0%	nPB	0.0%

CFC, HCFC-225, HCFC-141b, VOC, HFC, and nPB percentages shown are the content by weight.

NOTE:
This information is believed to be accurate. It is intended for professional end users having the skills to evaluate and use the data properly. ITW CHEMTRONICS® does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Information: 800-TECH-401

Product Identification

FLUX-OFF® LEAD-FREE

Product Code: ES1697, ES897B

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Wt. % Range
Isohexane, a mixture of:		
2-methylpentane	107-83-5	10.0-25.0
3-methylpentane	96-14-0	1.0-20.0
2,3-Dimethylbutane	79-29-8	1.0-20.0
2,2-Dimethylbutane	75-83-2	1.0-20.0
n-hexane	110-54-3	0.1-2.0
Acetone	67-64-1	20.0-50.0
Carbon dioxide	124-38-9	1.0-10.0
Methanol	67-56-1	1.0-2.0

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview:Clear, colorless liquid with mild hydrocarbon solvent. This product is extremely flammable. Liquid may irritate eyes and skin under repeated or prolonged exposure. Breathing high concentrations of product may produce drowsiness and a headache.

Potential Health Effects:

Eyes: Liquid, aerosols and vapors of this product may be irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation.

Skin: Contact may cause skin irritation.

Ingestion: Harmful if swallowed. Irritating to the mouth, throat and stomach. May cause vomiting. Inhalation: Harmful if inhaled. High concentrations in immediate area can displace oxygen and cause dizziness, unconsciousness and even death with longer exposure. Keep people away from such vapors without self-contained breathing apparatus. Pre-Existing Medical Conditions Aggravated by Exposure: Heart, lung, skin, eye.

SECTION 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 if irritation develops or persists.

Skin: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists. Wash clothing separately before reuse.

Ingestion: If swallowed, do not induce vomiting. Keep head below knees to minimize chance of aspirating material into the lungs. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: -20 F (-29C) (isohexane) LEL/UEL: 1.2/7.7 (% by volume in air)

Extinguishing Media: Use alcohol foam, carbon dioxide or water spray when fighting fires involving this material. Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus (pressure demand, MSHA/NIOSH approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Large Spills: Shut off leak if possible and safe to do so. Wear self-contained breathing apparatus and appropriate personal protective equipment. Absorb spill with inert material (i.e. dry sand or earth), then place in a chemical waste container for proper disposal. Do not flush to sewer. Avoid runoff into storm sewers and ditches that lead to waterways. Small Spills: Absorb spill with inert material (i.e. dry sand or earth), then place in a chemical waste container for proper disposal.

SECTION 7: HANDLING AND STORAGE

Avoid prolonged or repeated contact with skin, eyes or clothing. Wash hands before eating. Use with adequate ventilation. Avoid breathing product vapor. Do not reuse this container. Store in a cool dry place, away from heat, sparks or flames. Do not store in direct sunlight.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

CHEMICAL NAME	ACGIH TLV	OSHA PEL	ACGIH STEL
2-methylpentane	500 ppm	NA	1000 ppm
3-methylpentane	500 ppm	NA	1000 ppm
2,3-Dimethylbutane	500 ppm	NA	1000 ppm
2,2-Dimethylbutane	500 ppm	NA	1000 ppm
n-hexane	50 ppm	500 ppm	NA
Acetone	500 ppm	1000 ppm	750 ppm
Methanol	200 ppm	200 ppm	

Work/Hygienic Practices: Good general ventilation should be sufficient to control airborne levels. Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. If vapor concentration exceeds TLV, use NIOSH approved organic vapor cartridge respirator. Wear safety glasses with side shields (or goggles) and rubber or other chemically resistant gloves when handling this material.

NFPA and HMIS Codes:	NFPA	HMIS
Health	1	1
Flammability	3	3
Reactivity	1	1
Personal Protection	-	B

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Clear, colorless liquid
Odor: Mild hydrocarbon solvent
pH: NA
Vapor Pressure: 214 mm Hg @ 68 F (liquid)
Vapor Density: 3 (isohexanes) (Air 1)
Solubility in Water: Negligible
Specific Gravity: 0.71 @ 68F
Evaporation Rate: >1 (Butyl acetate=1)
Percent Volatile: 100
Boiling Point: 122 F (50C)

SECTION 10: STABILITY AND REACTIVITY

Stability: This product is stable. Conditions to Avoid: Do not spray near open flames, red hot surfaces or other sources of ignition.
Incompatibility; Do not mix powdered alkali and alkaline earth metals or strong oxidizing agents.
Products of Decomposition: Thermal decomposition may release carbon monoxide, carbon dioxide and incompletely burned hydrocarbons.
Hazardous Polymerization: Will not occur. Conditions to avoid: NA

SECTION 11: TOXICOLOGICAL INFORMATION

Inhalation:			Ingestion:		
acetone	LC50 rats	50,100 mg/m3/8hr	acetone	LD50	5800 mg/kg
methanol	LC50 rats	64,000ppm/4hr	methanol	LD50 rats	5,628 mg/kg
Skin:			Eyes:		
acetone	Rabbit	MLD	acetone	20 mg/rabbit	SEV
methanol	20mg/24 hr	MLD	methanol	40 mg/rabbit	MOD

Cancer Information: No ingredients listed as human carcinogens by NTP or IARC
Reproductive effects: none Teratogenic effects: none Mutagenic effects: none

SECTION 12: ECOLOGICAL INFORMATION

Environmental Impact Information
Avoid runoff into storm sewers and ditches which lead to waterways. Water runoff can cause environmental damage.
REPORTING
US regulations require reporting spills of this material that could reach any surface waters. The toll free number for the US Coast Guard National Response Center is: **1-800-424-8802**

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with all federal, state and local regulations.

SECTION 14: TRANSPORTATION INFORMATION

	Proper Shipping Name	UN Number	Class	Sub. Risk	Pkg. Group	Hazard Label	Pkg. Instr.	Max. Quantity
Air:	Aerosols Flammable	UN 1950	2.1	NA	NA	Flammable Gas	203/ Y203	75/ 30 kg
Ground:	Consumer Commodity ORM-D	NA	NA	NA NA	ORM-D	Pkg. Auth.	173.306	

SECTION 15: REGULATORY INFORMATION

SECTION 313 SUPPLIER NOTIFICATION
This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To- Know Act of 1986 (40CFR372). This information should be included on all MSDSs copied and distributed for this material.

Chemical Name	CAS No.	Wt. % Range
n-hexane	110-54-3	0.1-2.0
methanol	67-56-1	1.0-2.0

TOXIC SUBSTANCES CONTROL ACT (TSCA). All ingredients of this product are listed on the TSCA Inventory.
WHMIS: Class A; Class B5; Class D2B
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16: OTHER INFORMATION

Product is a Level 3 aerosol. Do not puncture or incinerate containers. Normal ventilation for standard manufacturing practices is usually adequate. Local exhaust should be used when large amounts are released.

To the best of our knowledge, the information contained herein is accurate. However, all materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist.