CHEMTRONICS®
Technical Data Sheet

TDS # CW9400

CircuitWorks® Lead-Free Flux Remover Pen

PRODUCT DESCRIPTION

CircuitWorks® Lead-Free Flux Remover Pen is designed specifically to remove flux used in Lead-Free applications. The Lead-Free Flux Remover Pen quickly cleans type R, RMA, and RA rosin flux residues as well as No Clean Fluxes containing both organic and synthetic no clean fluxes.

- Removes rosin and no clean flux residues
- Can be used after soldering with lead-free or Tin/Lead solders
- Penetrates hard to reach areas
- Pen dispenser provides controlled and exact application of cleaning solvent
- Removes ionic and non-ionic residues
- Excellent material compatibility
- Fast drying
- RoHS compliant

TYPICAL APPLICATIONS

CircuitWorks® Lead-Free Flux Remover Pen removes flux residues on:

- Printed Circuit Boards
- Chip Carriers
- Heat Sinks
- Surface Mount Device Pads
- Switches
- Sockets

TYPICAL PRODUCT DATA AND PHYSICAL PROPERTIES

Lead-Free Flux Remover Pen - CW9400	
Flash Point (TCC)	102 °F (39 °C)
Vapor Density (air=1)	> 1
Surface Tension	17.7 dyne/cm
Appearance	Clear Liquid
Odor	Mild
Shelflife	5 years
RoHS/WEEE Status	RoHS WEEE Compliant

COMPATIBILITY

CircuitWorks® Lead-Free Flux Remover Pen is generally compatible with most materials used in the electronics industry. As with any cleaning agent, material compatibility should be determined on a non-critical area prior to use.

USAGE INSTRUCTIONS

For industrial use only.
Read MSDS carefully prior to use.

Hold pen vertically and briefly depress tip to start liquid flow. Rub pen tip over residues on surface to be cleaned. Wipe area clean with a ControlWipe™ dry wipe to remove loosened residues.

AVAILABILITY

CW9400	9 gm (0.32 oz)

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 INFORMATION

Product Information: 800-TECH-401

Product Identification

CIRCUITWORKS® LEAD-FREE FLUX REMOVER PEN

Product Code: CW9400

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Wt. % Range
Hexamethyldisiloxane	107-46-0	60.0-80.0
Propylene glycol methyl ether	107-98-2	3.0-10.0
Acetone	67-64-1	20.0-25.0
N-methyl pyrrolidone	872-50-4	1.0-5.0

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview:Clear, colorless liquid with a mild sweet odor. This product is flammable. Liquid will 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 and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation.

Skin: Contact causes skin irritation. Symptoms may include redness and burning.

Ingestion: Harmful if swallowed. Large amounts may be 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.

Preexisting Medical Conditions Aggravated by exposure: Skin, eyes, liver, kidneys

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 persist. Wash clothing separately before reuse.

Ingestion: If swallowed, do not induce vomiting. Give lukewarm water to victim (pint) if victim is conscious and alert. 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: 102 °F (39C) LEL/UEL: Not established (% 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, OSHA/NIOSH approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Large Spills: Not likely to occur.

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. Keep container tightly closed when not in use. 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	OTHER
Hexamethyldisiloxane	NA	NA	200 ppm*
Propylene glycol methyl ether	100 ppm	100 ppm	150 ppm STEL
Acetone	500 ppm	1000 ppm	750 ppm STEL
N-Methyl pyrrolidone	NA	NA	NA

*Manufacturer's Occupational Exposure Limit (OEL)

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	0	0
Personal Protection	-	B

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Clear, colorless liquid

Odor: Mild solvent

pH: NA

Viscosity: >1 (Water =1)

Percent Volatile: 100 %

Solubility in Water: Negligible

Specific Gravity: 0.79 @75°F

Evaporation Rate: <1 (Butyl acetate=1)

Vapor Density: >1 (Air = 1)

Boiling Point:: 208F (98C) (Hexamethyldisiloxane)

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:

N-Methyl pyrrolidone	rat TCLo	150 ppm/6H

Ingestion:

Acetone	(rat) LD50	5800 mg/kg
N-Methyl pyrrolidone	(rat) LD50	3914 mg/kg
Propylene Glycol Methyl Ether	(rat) LD50	5135 mg/kg

Skin:

Acetone		500 mg/24H MLD
N-Methyl pyrrolidone	(rbt) LD50	8000 mg/kg
Propylene Glycol Methyl Ether	(rbt) LD50	9500 mg/kg

Eye:

N-Methyl pyrrolidone	(rabbit)	100 mg MOD
Propylene Glycol Methyl Ether	(human)	8 mg MLD
Acetone	(human)	500 ppm

Cancer Information: No ingredients listed as human carcinogens by NTP or IARC.
Reproductive effects: N-Methyl pyrrolidone 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	Hazard Class	Sub. Risk	Pkg. Group	Hazard Label	Pkg. Instr./Auth.	Max. Quantity
Air:	Flammable liquids, n.o.s. (Acetone)	UN 1993	3	NA	II	Flammable Liquid	305	5L
Ground:	Consumer Commodity ORM-D	NA	NA	--	NA	ORM-D	173.150	

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 (40 CFR 372).

N-Methyl pyrrolidone CAS# 872-50-4 1.0-5.0%

This information should be included on all MSDSs copied and distributed for this material.

CALIFORNIA PROPOSITION 65: This product contains N-methyl pyrrolidone, a chemical known to the state of California to cause birth defects or other reproductive harm.

TOXIC SUBSTANCES CONTROL ACT (TSCA). All ingredients of this product are listed on the TSCA Inventory.

WHMIS: Class B3; 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

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.