

**MATERIAL SAFETY DATA SHEET- C-FLUX®**

MSDS0121

Ver. No.1

Ver. Date December 15, 1998

**SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** C-Flux®  
**CHEMICAL FAMILY:** Organic/Inorganic  
**USE:** Flux  
**MANUFACTURE / SUPPLIER**  
 The RectorSeal Corporation  
 2601 Spenwick  
 Houston, Texas 77055 USA

**EMERGENCY TELEPHONE NUMBERS:**  
 Chemtrac 24 hours: (800) 424-9300  
 The RectorSeal Corporation: (713) 283-8001

**NON EMERGENCY TELEPHONE NUMBERS:**  
 Technical Service: (800) 231-3345

**SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS**

<b>HAZARDOUS COMPONENTS</b>	<b>CAS NO.</b>	<b>APPROX</b>		<b>OSHA PEL</b>	<b>ACGIH TLV</b>	<b>OTHER LIMITS</b>	<b>HMS</b>	<b>NEPA</b>
		<b>%</b>	<b>mg/m<sup>3</sup></b>					
Zinc Chloride	7646-85-7	<20	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup> STEL	N/D	N/D
Ammonium Chloride	12125-02-9	<1	10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup> STEL	N/D	H1,F0,R0
Zinc Oxide	1314-13-2	<10	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	N/D	N/D
Tin	7440-31-5	-	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	N/D	N/D	N/D
Antimony	7440-35-0	<1	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	N/D	N/D	N/D

**SECTION 3 HAZARDS IDENTIFICATION**

**SUMMARY OF ACUTE HAZARDS** Irritation to respiratory system from fumes evolved during soldering.  
 Eye contact may cause intense irritation and injury.

<b>ROUTE OF EXPOSURE</b>	<b>SIGNS AND SYMPTOMS</b>	<b>PRIMARY ROUTE(S)</b>
<b>INHALATION:</b>	Irritation to respiratory system from fumes evolved during soldering.	Yes
<b>EYE CONTACT:</b>	Contact may cause intense irritation and injury.	Yes
<b>SKIN CONTACT:</b>	May cause skin irritation.	Yes
<b>INGESTION:</b>	Chemical burns to digestive system and mucosal surface. May be fatal.	No

**SUMMARY OF CHRONIC HAZARDS:** Short term effects to liver and kidneys can occur. Chemical irritation from continued skin contact can occur. Continuous industrial use in small unventilated areas may result in sufficient inhalation of solder and flux fumes to cause lung damage and irritation of respiratory tract.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver, or kidneys may have increased susceptibility to excessive exposure.

**SECTION 4 FIRST AID MEASURES**

<b>INHALATION:</b>	If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
<b>EYE CONTACT:</b>	Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.
<b>SKIN CONTACT:</b>	Immediately flush with large amounts of water; use soap if available. Remove contaminated clothing
<b>INGESTION:</b>	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

**SECTION 5 FIRE FIGHTING MEASURES**

**FLASH POINT:** >230°F (110°C) **FLAMMABILITY LIMITS:** LEL: N/A UEL: N/A  
**EXTINGUISHING MEDIA:** Foam, dry chemical, carbon dioxide or water fog.  
**SPECIAL FIRE FIGHTING PROCEDURES:** Wear self-contained full face piece breathing apparatus and other protective clothing. Hazardous decomposition products possible (see Section 10). May release ZnO and HCl fumes.  
**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Heat may build up pressure and rupture closed containers.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

**SECTION 7 STORAGE AND HANDLING**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:** Keep container closed and upright when not in use. Store flux at ambient conditions; keep under extremely dry and controlled conditions. Wash thoroughly after handling to remove all residue.  
**OTHER PRECAUTIONS:** Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues and vapors; treat as if full and observe all products precautions. Do not breathe soldering fumes. Do not reuse empty containers. Keep out of reach of children.

**MATERIAL SAFETY DATA SHEET- C-FLUX®**

MSD00121

Ver. No.1

Ver. Date December 15, 1998

**SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

**RESPIRATORY PROTECTION (SPECIFY TYPE):** In confined, poorly ventilated areas, use MIOSH/MSHA approved air purifying or supplied air respirators during soldering operations until fumes have dissipated.

**VENTILATION - LOCAL EXHAUST:** Maintain air flow away from user to exhaust soldering fumes and vapors.

**MECHANICAL (GENERAL):** Acceptable

Special: N/A

OTHER: N/A

**PROTECTIVE GLOVES:** Wear non-permeable gloves **EYE PROTECTION:** Chemical splash goggles (ANSI Z-87.1 or equivalent)

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Full protective equipment normally used in soldering operation so as to prevent any contact. Review operations to avoid contact with the hazardous gas, liquids or solids.

**WORK/HYGIENIC PRACTICES:** Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

**BOILING POINT:** 212°F (100°C) @ 760mm Hg

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** 1.59

**VAPOR PRESSURE (mm Hg):** 0.55 @ 68°F (20°C)

**MELTING POINT:** N/D

**VAPOR DENSITY (AIR = 1):** <1

**EVAPORATION RATE (ETHYL ACETATE = 1):** N/A

**SOLUBILITY IN WATER:** Slightly

**APPEARANCE/ODOR:** Gray Paste/ No Odor

**SECTION 10 STABILITY AND REACTIVITY**

**STABILITY:** Stable

**CONDITIONS TO AVOID:** N/D

**INCOMPATIBILITY (MATERIALS TO AVOID):** Strong bases.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Ethylene Oxide, HCl, ZnO and NOx may be evolved during soldering.

**HAZARDOUS POLYMERIZATION:** Will not occur.

**SECTION 11 TOXICOLOGY INFORMATION**

<b>CARCINOGENICITY:</b>	NTP: No	<b>IARC MONOGRAPHS:</b> No	<b>OSHA REGULATED:</b> No
<b>SUBSTANCE</b>	<b>CAS NO.</b>	<b>LD50</b>	<b>LC50</b>
Zinc Chloride	7648-85-7	Oral-Rat LD50:350 mg/kg	Inhalation-Rat LCLo:1960 mg/m <sup>3</sup> /10M
Ammonium Chloride	12125-02-9	Oral-Rat LD50:1850 mg/kg	N/D
Zinc Oxide	1314-13-2	Oral-Rat TDLo:6846 mg/kg	Inhalation-Mouse LC50:2500 mg/m <sup>3</sup>
Tin	7440-31-6	N/D	N/D
Antimony	7440-36-0	Oral-Rat LD50:7 g/kg	Inhalation-Rat TCLo:50 mg/m <sup>3</sup> /7H/52W-I

**SECTION 12 ECOLOGICAL INFORMATION**

	<b>FOOD CHAIN</b>	<b>WATERFOWL</b>		
<b>SUBSTANCE</b>	<b>CON POTENTIAL</b>	<b>TOXICITY</b>	<b>BOD</b>	<b>AQUATIC TOXICITY</b>
Zinc Chloride	None	N/A	None	7.2 ppm/96 hr/medium bluegill/TLm
Ammonium Chloride	N/A	N/A	N/A	6 ppm/96 hr/aunfish TLm
Zinc Oxide	N/D	N/D	N/D	N/D
Tin	N/D	N/D	N/D	N/D
Antimony	N/D	N/D	N/D	N/D

**SECTION 13 DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL METHOD:** Dispose of material in accordance with all local, state and federal regulations.

**SECTION 14 TRANSPORTATION INFORMATION**

**DOT:** Non-Regulated  
**OCEAN (IMDG):** Non-Regulated  
**AIR (IATA):** Non-Regulated  
**WHMIS (CANADA):** Non-Regulated

**SECTION 15 REGULATORY INFORMATION**

<b>SUBSTANCE</b>	<b>SARA 313</b>	<b>TSCA INVENTORY</b>	<b>CECLA RQ</b>	<b>RCRA CODE</b>
Zinc Chloride	Yes	Yes	1,000 lb.	N/A
Ammonium Chloride	No	Yes	N/A	N/A
Zinc Oxide	Yes	Yes	N/A	N/A
Tin	No	Yes	N/A	N/A
Antimony	Yes	Yes	5,000 lb.	N/A

California Safe Drinking Water and Toxic Enforcement Act of 1988 - Proposition 65  
 This product may contain trace amounts of ethylene oxide known to the state of California to cause cancer and/or birth defects or reproductive harm.

**SECTION 16 OTHER INFORMATION**

This document is prepared pursuant to the OSHA Hazardous Communication Standard (29CFR 1910.1200). The information herein is given in good faith, but no warranty, express or implied is made. Consult The RectorSeal Corporation for further information: (713) 263-8001