MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Product Name:	50/50 Paste Solder	CAS number:	N/A - mixture
Chemical Name & Synonyms:	N/A - mixture		
Appearance:	Gray paste with no noticeable odor		
Use:	General purpose soldering flux, corrosive residue		
Manufacturer:	Force Industries Division Tel. 610-647-3575		
EMERGENCY PHONE No.	CALL CHEMTREC (800) 424-9300 * Available 24 Hours		

II. CHEMICAL COMPOSITION

Material	SARA III	CAS Number	OSHA PEL	ACGIH TLV
Zinc chloride	---	7646-85-7	1.0 mg/m^3	1.00 mg/m^3
Ammonium chloride	---	12125-02-9	10 mg/m^3	10 mg/m^3
Zinc oxide	---	1314-13-2	5 mg/m^3	5 mg/m^3
Tin	<40.0%	7440-31-5	2 mg/m^3	2 mg/m^3
Lead	<40.0 %	7439-92-1	0.50 mg/m^3	0.15 mg/m^3

Others, if any, are non-hazardous and are claimed as trade secret.

Hazard Rating: HMIS: (H =3 F=0 R=0 PE=C) NFPA: (H=3 F=0 R=0)

III. POTENTIAL HEALTH EFFECTS AND HEALTH HAZARD DATA

Target organ statement: **DANGER!** Causes severe burns to skin, eyes, and respiratory system. May be fatal if swallowed or inhaled. **WARNING: LEAD POISONING HAZARD**

Effects of Chronic Exposure: Dermatitis and contact burns to skin, eyes, and respiratory system. Scarring of skin tissues.

Effects of Acute Overexposure

Swallowing:	May be fatal. Can cause damage to digestive system. Corrosive to mucous membranes.
Skin Absorption:	None currently known.
Inhalation:	May be fatal! Irritation to respiratory system. Coughing and sneezing. Existing lung disorders will be aggravated.
Skin Contact:	Dermatitis; possible chemical burns; corrosive to skin. Existing disorders will be aggravated.
Eye Contact:	Irritation to eyes, tearing, burn of eye surfaces, and corrosive to eyes.

IV. EMERGENCY AND FIRST AID PROCEDURES

Swallowing:	Corrosive to mucous membranes. Call a physician or your Poison Control Center at once.
Skin:	Promptly flush with water to remove all residue. If rash or burn develops, consult a physician. Material is corrosive.
Inhalation:	Remove to fresh air. If fumes are inhaled, call a physician. Over inhalation may be fatal!
Eyes:	Flush with water for at least 15 minutes to remove all residue. Get medical help NOW! Blindness can result!

V. FIRE AND EXPLOSION DATA

Flashpoint (^{o}F):	> 230			
Flammable limits in air:	LOWER:	N/A	UPPER: N/A	(% by volume)
Extinguishing media:	Water, fog, or foam			
Special firefighting procedures:	Full protective equipment is required. May release zinc oxide ammonia and HCl fumes. Toxic metal halide fumes produced. Lead oxide generated.			
Unusual fire and explosion hazards:	Dense smoke may be generated.			

VI. REACTIVITY INFORMATION

Stability considerations/Conditions to avoid:	Stable/None
Hazardous polymerization/Conditions to avoid:	Will not occur/None
Incompatibility/Materials to avoid:	Strong nitric, sulfuric acids, cyanide
Hazardous combustion or, Decomposition products:	In presence of water and heat; ammonia, HCl and zinc oxide

VII. SPILL AND LEAK RESPONSE

Steps to be taken if material is released or spilled:	Contain, absorb, sweep-up and dispose. Flush area to chemical sewer.
Waste disposal method:	Dispose of in accordance with all state, local and federal regulations.

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VIII. SPECIAL PROTECTION EQUIPMENT

Respiratory protection:	If the work station is not properly ventilated to exhaust all fumes and dusts, use a NIOSH approved mask.
Ventilation:	Maintain air flow away from user to remove all fumes and dusts, so that the PEL is never exceeded. Adhere to environmental regulations for exhausts.
Protective gloves:	Chemical and acid impervious
Eye protection:	Chemical tight safety goggles. DO NOT wear contact lenses.
Other protective equipment:	Full protective equipment normally used in a soldering operation so as to prevent any contact.

IX. STORAGE, HANDLING AND SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage:	Store flux at ambient conditions, keep under extremely dry and controlled conditions. Wash thoroughly after handling to remove all residues.
Other precautions:	DO NOT breathe fumes. May be fatal! Professionally wash contaminated clothing before re-use. Existing lung disorders will have increased toxic susceptibility.

X. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (^{o}F @ 760 mmHg):	>212	Specific gravity (H_2O = 1 @ 72^{o}F):	4.22
Percent volatiles by volume:	N/E	Solubility in water:	Negligible
Evaporation rate (butyl acetate = 1):	N/A	VOC:	N/E

XI. OPTIONAL INFORMATION

Department of Transportation:	DOMESTIC GROUND
Proper shipping name:	Zinc Chloride solution, mixture
Hazard Class:	8
ID & Packing Group Number:	UN 1840, PG III
ERG Guide Number:	154 R Q (Lead), (Note: RQ Pkg 110 lbs.)

Toxic Substance Control Act: All active components of this compound are listed within the TSCA.

SARA Title III Program: This product contains the following toxic chemicals subject to the reporting requirements of EPCRA of 1986 and 40 CFR 372. This information must be included in all MSDS that are copied and distributed for this material.

Chemical Name	CAS No.	Concentration
Zinc compounds	NA	<17%
Tin	7440-31-5	<40%
Lead	7439-92-1	<40%

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Hazard Communication Program: Hazard warnings and training requirements as mandated for contact irritants.

State Right-to-Know Programs:

Pennsylvania:	This product contains the following chemicals listed in PA Code Title 34, Hazardous Substance List: zinc chloride, ammonium chloride, tin and lead
California:	This product contains the following compounds subject to the reporting and labeling requirements of Proposition 65: lead
Miscellaneous:	This product contains the following marine pollutants listed under 49 CFR 172.101 Appendix B: lead <40%

NOTES: NA=Not Applicable NE=Not Established H=Health
F=Fire R=Reactivity PE=Personal Equipment