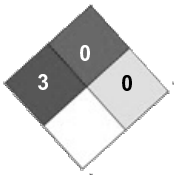
Personal Protective Equipment				WHMIS Pictograms		DOT Pictograms
						
Chemical Splash Goggles	Safety Glasses	Protective Gloves	Face shield	Corrosive Material	D2B Toxic	Corrosive

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**715**
Product Code:	715
MSDS Manufacturer Number:	715
Product Use/Restriction:	Soldering flux
Manufacturer Name:	Kester
Address:	800 W. Thorndale Avenue Itasca, IL 60143
General Phone Number:	(630)-616-4000
Customer Service Phone Number:	(800)-2KESTER (253-7837)
CHEMTREC:	CHEMTREC 24-Hour Emergency Telephone Number: (800)424-9300 CHEMTREC 24-Hour Emergency Telephone Number: ((Outside of the U.S. and Canada):): (703)527-3887
Website:	msds@kester.com
MSDS Creation Date:	August 15, 2008
MSDS Revision Date:	September 30, 2012

NFPA



HMIS

Health Hazard	**3**
Fire Hazard	**0**
Reactivity	**0**
Personal Protection	**X**

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Ingredient Percent	EC Num.
Non Hazardous	N/A	60 - 100 by weight	
Zinc Chloride	7646-85-7	30 - 60 by weight	
Ammonium chloride	12125-02-9	1 - 5 by weight	
Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	0.1 - 1 by weight	

SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview:	DANGER! Corrosive. Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.
Route of Exposure:	Eyes. Skin. Inhalation. Ingestion.
Potential Health Effects:	
Acute Health Effects:	Corrosive. Causes burns.
Eye:	Corrosive. Will cause eye burns and permanent tissue damage.
Skin:	Contact causes severe skin irritation and possible burns. may cause permanent skin damage.
Inhalation:	May cause severe respiratory system irritation.
Ingestion:	Harmful if swallowed. Corrosive to the gastrointestinal tract. Causes irritation, a burning sensation of the mouth, throat and gastrointestinal tract and abdominal pain.
Chronic Health Effects:	Prolonged skin contact causes burns. Repeated or prolonged inhalation may cause toxic effects.
Signs/Symptoms:	Overexposure can cause headaches, dizziness, nausea, and vomiting.
Target Organs:	Eyes. Skin. Respiratory system. Digestive system.
Aggravation of Pre-Existing Conditions:	May aggravate pre-existing respiratory disorders, allergy, eczema, or skin conditions.

SECTION 4 - FIRST AID MEASURES

Skin Contact:	Immediately wash skin with plenty of soap and water for 15 to 20 minutes, while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.
Ingestion:	If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point:	Not applicable.
Lower Flammable/Explosive Limit:	Not applicable.
Upper Flammable/Explosive Limit:	Not applicable.
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, dry chemical, or water fog or spray when fighting fires involving this material.
Unsuitable Media:	Do not use a solid water stream as it may scatter and spread fire.
Protective Equipment:	As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/NIOSH (approved or equivalent) and full protective gear.
Hazardous Combustion Byproducts:	Oxides of carbon, oxides of nitrogen, aliphatic aldehydes, and other organic substances may be formed during combustion..

NFPA Ratings:

NFPA Health:	3
NFPA Flammability:	0
NFPA Reactivity:	0
NFPA Other:	

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personnel Precautions:	Evacuate area and keep unnecessary and unprotected personnel from entering the spill area. Avoid breathing vapor, aerosol or mist. Avoid contact with skin, eyes and clothing.
Environmental Precautions:	Avoid runoff into storm sewers, ditches, and waterways.
Methods for containment:	Contain spills with an inert absorbent material such as soil, sand or oil dry.
Methods for cleanup:	Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Provide ventilation. Clean up spills immediately observing precautions in the protective equipment section.

SECTION 7 - HANDLING and STORAGE

Handling:	Corrosive. Use proper personal protective equipment as listed in section 8. Use with adequate ventilation. Avoid breathing vapor and fumes. Use only in accordance with directions.
Storage:	Store in a cool, dry, well ventilated area away from sources of heat and incompatible materials. Keep container tightly closed when not in use.
Hygiene Practices:	Wash thoroughly after handling. Avoid inhaling vapors, mists, or fumes.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION - EXPOSURE GUIDELINES

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Eye/Face Protection:	Tightly fitting safety goggles. Wear a face shield also when splash hazard exist.
Hand Protection Description:	Wear appropriate protective gloves. Consult glove manufacturer's data for permeability data. Nitrile rubber or natural rubber gloves are recommended.
Respiratory Protection:	A NIOSH approved air-purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive

protection.

Other Protective: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

PPE Pictograms:

EXPOSURE GUIDELINES

Zinc Chloride :

Guideline ACGIH: TLV-TWA: 1 mg/m3
TLV-STEL: 2 mg/m3

Guideline OSHA: PEL-TWA: 1 mg/m3

Ammonium chloride :

Guideline ACGIH: TLV-TWA: 10 mg/m3
TLV-STEL: 20 mg/m3

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance:	Liquid.
Color:	Clear to pale yellow
Odor:	Odorless
Boiling Point:	104 °C (219 °F)
Melting Point:	Not determined.
Density:	1.510 g/cm³ @ 20°C (68°F)
Vapor Pressure:	24 mm Hg @ 20°C (68°F)
pH:	< 1.0 @ 20°C (68°F)
Flash Point:	Not applicable.

SECTION 10 - STABILITY and REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not reported.
Conditions to Avoid:	Heat, flames, incompatible materials, freezing or temperatures below 32 deg. F.
Incompatible Materials:	Oxidizing agents. Strong acids and alkalis.
Special Decomposition Products:	Hydrogen chloride (HCl) Zinc oxides

SECTION 11 - TOXICOLOGICAL INFORMATION

Non Hazardous :

RTECS Number: ZC0110000

Ingestion: Oral - Rat LD50 : >90 mL/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

Zinc Chloride :

RTECS Number: ZH1400000

Ingestion: Oral - Rat LD50: 350 mg/kg [Details of toxic effects not reported other than lethal dose value]
Oral - Mouse LD50: 329 mg/kg [Details of toxic effects not reported other than lethal dose value] (RTECS)

Ammonium chloride :

RTECS Number: BP4570000

Hydrochloric Acid (Hydrogen Chloride) :

RTECS Number: MW4031000

Inhalation: Inhalation - Rat LC50: 45000 mg/m3/5M [Lungs, Thorax, or Respiration - Acute pulmonary edema]
Inhalation - Rat LC50: 8300 mg/m3/30M [Lungs, Thorax, or Respiration - Acute pulmonary edema]
Inhalation - Mouse LC50: 8300 mg/m3/30M [Lungs, Thorax, or Respiration - Acute pulmonary edema] (RTECS)

SECTION 12 - ECOLOGICAL INFORMATION

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal:	Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.

SECTION 14 - TRANSPORT INFORMATION

DOT Shipping Name:	Corrosive liquid, acidic, inorganic, n.o.s. (Zinc chloride, Hydrochloric acid)
DOT UN Number:	UN3264
DOT Hazard Class:	8
DOT Packing Group:	III
IATA Shipping Name:	Corrosive liquid, acidic, inorganic, n.o.s. (Zinc chloride, Hydrochloric acid)
IATA UN Number:	UN3264
IATA Hazard Class:	8
IATA Packing Group:	III
DOT Pictograms:	
IMDG UN NUmber :	UN3264
IMDG Shipping Name :	Corrosive liquid, acidic, inorganic, n.o.s. (Zinc chloride, Hydrochloric acid)
IMDG Hazard Class :	8
IMDG Packing Group :	III
RID UN Number :	UN3264
RID Shipping Name :	Corrosive liquid, acidic, inorganic, n.o.s. (Zinc chloride, Hydrochloric acid)
RID Hazard Class :	8
RID Packing Group :	III

SECTION 15 - REGULATORY INFORMATION

Canada Reg. Status:	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.
Canada WHMIS:	Controlled - Class E - Corrosive material Controlled - Class: D2B Toxic

Non Hazardous :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Zinc Chloride :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Ammonium chloride :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Hydrochloric Acid (Hydrogen Chloride) :

TSCA Inventory Status:	Listed
Canada DSL:	Listed
GHS Pictograms:	

SECTION 16 - ADDITIONAL INFORMATION

General Use:	Soldering flux

HMIS Reactivity:	0
HMIS Personal Protection:	X
MSDS Creation Date:	August 15, 2008
MSDS Revision Date:	September 30, 2012
Disclaimer:	The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Kester extends no warranties, makes no representations and assumes no responsibilty as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Material Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Material Safety Data Sheet as a source for hazard information.