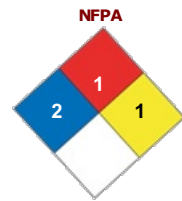


| Personal Protective Equipment | WHMIS Pictograms | DOT Pictograms |
|---|---|----------------------|
|    |  | Not Regulated |
| Chemical Splash Goggles Safety Glasses Protective Gloves | D2B Toxic | |

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name: 970-S
Product Code: 970-S
MSDS Manufacturer Number: 970-S
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: March 04, 2010



| HMIS | |
|---------------------|---|
| Health Hazard | 2 |
| Fire Hazard | 1 |
| Reactivity | 1 |
| Personal Protection | X |

* Chronic Health Effects

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS# | Ingredient Percent | EC Num. |
|---------------|----------|--------------------|---------|
| Non Hazardous | N/A | 60 - 100 by weight | |
| Adipic acid | 124-04-9 | 1 - 5 by weight | |
| Succinic acid | 110-15-6 | 1 - 5 by weight | |

SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview: WARNING! Severe Irritant. Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.
Route of Exposure: Eyes. Skin. Inhalation. Ingestion.
Eye: Smoke during soldering can cause eye irritation.
Skin: Prolonged exposure can cause severe irritation.
Inhalation: Inhalation of vapors, fumes or mists of the product causes severe respiratory system irritation.
Ingestion: Ingestion of the product may produce gastrointestinal irritation and disturbances.
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

Eye Contact: Immediately flush eyes with plenty of water for 15 to 20 minutes. Get medical attention, if irritation or symptoms of overexposure persists.
Skin Contact: Immediately wash skin with plenty of soap and water for 15 to 20 minutes, while removing contaminated clothing and shoes.

| | |
|-------------|---|
| Inhalation: | Get medical attention if irritation develops or persists. |
| | 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: | 2 |
| NFPA Flammability: | 1 |
| NFPA Reactivity: | 1 |
| 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: | 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 pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. |
| Other Protective: | Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. |

EXPOSURE GUIDELINES

| | |
|----------------------|-------------------|
| Adipic acid : | |
| Guideline ACGIH: | TLV-TWA : 5 mg/m3 |

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

| | |
|----------------------------|------------|
| Physical State Appearance: | Liquid. |
| Color: | Colorless. |
| Odor: | Odorless |

| | |
|-----------------|---------------------------|
| Boiling Point: | 100 °C (212 °F) |
| Melting Point: | 0 °C (32 °F) |
| Density: | 1.008 g/cm³ @ 20°C (68°F) |
| Vapor Pressure: | 19 mm Hg @ 20°C (68°F) |
| pH: | 3.0 @ 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: | Carbon monoxide and carbon dioxide |

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) |

Adipic acid :

| | |
|---------------|---|
| RTECS Number: | AU8400000 |
| Eye: | Eye - Rabbit Standard Draize test: 20 mg/24H [Moderate] (RTECS) |
| Ingestion: | Oral - Rat LD50 : >11 gm/kg [Details of toxic effects not reported other than lethal dose value.] Oral - Mouse LD50: 1900 mg/kg [Gastrointestinal - other changes] (RTECS) |

Succinic acid :

| | |
|---------------|--|
| RTECS Number: | WM4900000 |
| Eye: | Eye - Rabbit Standard Draize test: 750 ug [severe] (RTECS) |
| Ingestion: | Oral - Rat LD50 : 2260 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS) |

SECTION 12 - ECOLOGICAL INFORMATION

| | |
|---------------------|--|
| Ecotoxicity: | No ecotoxicity data was found for the product. |
| Environmental Fate: | No environmental information found for this product. |

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: | Not Regulated. |
| DOT UN Number: | Not Regulated. |
| IATA Shipping Name: | Not Regulated. |
| IATA UN Number: | Not Regulated. |
| IMDG UN Number : | Not Regulated. |
| IMDG Shipping Name : | Not Regulated. |
| RID UN Number : | Not Regulated. |
| RID Shipping Name : | Not Regulated. |

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: D2B Toxic |
| <u>Non Hazardous :</u> | |
| TSCA Inventory Status: | Listed |
| Canada DSL: | Listed |
| <u>Adipic acid :</u> | |
| TSCA Inventory Status: | Listed |
| Canada DSL: | Listed |
| <u>Succinic acid :</u> | |
| TSCA Inventory Status: | Listed |
| Canada DSL: | Listed |



SECTION 16 - ADDITIONAL INFORMATION

General Use: Soldering flux
 HMIS Health Hazard: 2
 HMIS Fire Hazard: 1
 HMIS Reactivity: 1
 HMIS Personal Protection: X
 MSDS Creation Date: August 15, 2008
 MSDS Revision Date: March 04, 2010

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 responsibility 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.

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