

Material Safety Data Sheet

acc. to ISO/DIS 11014

Kester

Printing date 08/28/2003

Reviewed on 06/09/2003

1 Identification of substance

Product details

Trade name: 817

Application of the substance / the preparation: Soldering flux

Manufacturer/Supplier:

Northrop Grumman Kester
515 E. Touhy Ave.
Des Plaines, IL 60018

Tel.(847) 297-1600
Fax.(847) 390-9338

Information department:

MSDS Coordinator

Tel. (847) 699-5755

Emergency information:

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

2 Composition/Data on components

Chemical characterization

Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:

7646-85-7	zinc chloride	25-50%
7647-01-0	hydrogen chloride	2.5-10%
12125-02-9	ammonium chloride	2.5-10%

3 Hazards identification

WHMIS Hazard Symbols



Information pertaining to particular dangers for man and environment:

The product has to be labelled due to the calculation procedure of international guidelines.

Causes burns.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Classification system:

NFPA ratings (scale 0 - 4)



Health = 3

Fire = 0

Reactivity = 0

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HMIS-ratings (scale 0 - 4)

HEALTH	3	Health = 3
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

4 First aid measures

General information: Immediately remove any clothing soiled by the product.

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing: Drink copious amounts of water and provide fresh air. Immediately call a doctor.

5 Fire fighting measures

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

Formation of toxic gases is possible during heating or in case of fire.

Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

Person-related safety precautions: Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection: Do not allow product to reach sewage system or any water course.

Measures for cleaning/collecting:

Use neutralizing agent.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

7 Handling and storage

Handling:

Information for safe handling: Store in cool, dry place in tightly closed receptacles.

Information about protection against explosions and fires: Keep respiratory protective device available.

Storage:

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.

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8 Exposure controls and personal protection

Additional information about design of technical systems: *No further data; see item 7.*

Components with limit values that require monitoring at the workplace:

7646-85-7 zinc chloride

PEL	1 mg/m ³
REL	Short-term value: 2 mg/m ³ Long-term value: 1 mg/m ³
TLV	Short-term value: 2 mg/m ³ Long-term value: 1 mg/m ³ fume

7647-01-0 hydrogen chloride

PEL	Short-term value: C 7 mg/m ³ , C 5 ppm
REL	Short-term value: C 7 mg/m ³ , C 5 ppm
TLV	Short-term value: C 7.5 mg/m ³ , C 5 ppm NIC-C 2; C 2.98; NIC-A4

12125-02-9 ammonium chloride

REL	Short-term value: 20 mg/m ³ Long-term value: 10 mg/m ³
TLV	Short-term value: 20 mg/m ³ Long-term value: 10 mg/m ³

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

Breathing equipment:

When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self-contained breathing apparatus should be worn.

Protection of hands:



Protective gloves

Material of gloves:

Nitrile rubber, NBR

Natural rubber, NR

Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Tightly sealed goggles

Safety glasses

Body protection: Apron

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9 Physical and chemical properties

General Information

Form: Liquid
Color: Colorless to light yellow
Odor: Mild

Change in condition

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 113°C (235°F)

Flash point: Not applicable.

Danger of explosion: Product does not present an explosion hazard.

Vapor pressure at 20°C (68°F): 24 hPa (18 mm Hg)

Density at 20°C (68°F): 1.422 g/cm³

Solubility in / Miscibility with
Water: Fully miscible.

pH-value at 20°C (68°F): < 1.0

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Materials to be avoided: Strong acids, strong oxidizers.

Dangerous reactions No dangerous reactions known.

Dangerous products of decomposition:

Hydrogen chloride (HCl)

Ammonia

Zinc oxide

Zinc chloride

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:

7646-85-7 zinc chloride

Oral | LD50 | 350 mg/kg (rat)

Primary irritant effect:

on the skin: Caustic effect on skin and mucous membranes.

on the eye: Strong irritant with the danger of severe eye injury.

through inhalation:

Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.

through ingestion: May be harmful if swallowed.

Sensitization: No sensitizing effects known.

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Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

General notes:

Do not allow product to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Very toxic for aquatic organisms

13 Disposal considerations

Product:

Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packagings:

Recommendation: *Disposal must be made according to official regulations.*

14 Transport information

DOT regulations:

Hazard class: 8

Identification number: UN3264

Packing group: III

Proper shipping name (technical name): CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID, ZINC CHLORIDE)

Label: 8

Land transport ADR/RID (cross-border):

ADR/RID class: 8 Corrosive substances

Danger code (Kemler): 80

UN-Number: 3264

Packaging group: III

Description of goods: 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID, ZINC CHLORIDE)

Maritime transport IMDG:

IMDG Class: 8

UN Number: 3264

Label: 8

Packaging group: III

EMS Number: F-A,S-B

Marine pollutant: No

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Propper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID, ZINC CHLORIDE)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 8

UN/ID Number: 3264

Label 8

Packaging group: III

Propper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID, ZINC CHLORIDE)

15 Regulations

USA The following information relates to product regulation specific to the USA.

SARA (Superfund Amendments and Reauthorization Act)

Section 355 (extremely hazardous substances):

7647-01-0 | hydrogen chloride

Section 313 (Specific toxic chemical listings):

7647-01-0 | hydrogen chloride

TSCA (Toxic Substances Control Act):

All ingredients are listed.

California Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity:

None of the ingredients is listed.

Carcinogenicity categories

EPA (Environmental Protection Agency)

7646-85-7 | zinc chloride | D

IARC (International Agency for Research on Cancer)

7647-01-0 | hydrogen chloride | 3

NTP (National Toxicology Program)

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

CANADA: The following information relates to product regulation specific to Canada.

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Workplace Hazardous Materials Identification (WHMIS):

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS Classification:

E
D1B
D2A
D2B

Components on Ingredient List for WHMIS:

zinc chloride
ammonium chloride
hydrogen chloride

EUROPEAN UNION

The following information relates to product regulation specific to the directives of the European Union.

Risk phrases:

Causes burns.
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

Keep locked up and out of the reach of children.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16 Other information

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Northrop Grumman 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.

Department issuing MSDS: Product Safety
Contact: Heather Holich, MSDS Coordinator

Tel. (847)699-5755