

1 PRODUCT AND COMPANY IDENTIFICATION

Trade name: 979 VOC-Free No-Clean Liquid Flux

Relevant identified uses of the substance or mixture and uses advised against Soldering Flux

Application of the substance / the preparation: Soldering flux

Details of the supplier of the safety data sheet

This Safety Data Sheet has been updated in accordance with the Globally Harmonized System (GHS).

Manufacturer/Supplier:

Kester
800 West Throldale Ave.
Itasca, IL 60143
Tel (630) 616-4000
Fax (630) 616-4044

Kester Components Pte Ltd
500 Chai Chee Lane
Singapore 469024
Tel: 65-64491133

Information department: SDS Coordinator (630) 616-6844

Emergency telephone number:

CHEMTREC 24-Hour Emergency Response Telephone Number : (800) 424-9300

CHEMTREC 24-Hour Emergency Response (Outside US & Canada) Telephone Number : (703) 527-3887

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS07

Signal word Warning

Hazard statements

H315 Causes skin irritation.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P264 Wash thoroughly after handling.

P362 Take off contaminated clothing and wash before reuse.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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Classification system:**NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 0
Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 1
Fire = 0
Reactivity = 0

Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

3 COMPOSITION OF MIXTURE

Chemical characterization: Mixtures**Description:** Mixture of the substances listed below with nonhazardous additions.

CAS No.	Description	% Range
CAS: 110-15-6 EINECS: 203-740-4	succinic acid ⚠ Eye Irrit. 2A, H319	2.5-10%
CAS: 143-24-8 EINECS: 205-594-7	bis(2-(2-methoxyethoxy)ethyl) ether ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319	≤ 2.5%
CAS: 7732-18-5 EINECS: 231-791-2	Water	50-100%

Additional information:

This solder product does not contain any Substance of Very High Concern (SVHC) on the European Chemicals Agency (ECHA) candidate list.

4 FIRST AID MEASURES

Description of first aid measures**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.**After swallowing:** Seek immediate medical advice.**Information for doctor:**

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 FIREFIGHTING MEASURES

Extinguishing media**Suitable extinguishing agents:**CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

Nitrogen oxides (NO_x)

Carbon monoxide (CO)

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Advice for firefighters

Protective equipment: Wear self-contained respiratory protective device.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation

Environmental precautions: Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up:

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

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 HANDLING AND STORAGE

Handling:

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

Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Store in a cool location.

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

Further information about storage conditions: None.

Specific end use(s) No further relevant information available.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

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

Control parameters

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information:

PEL = Permissible Exposure Limit (OSHA)

TLV = Threshold Limit Value (ACGIH)

OSHA = Occupational Safety and Health Administration

ACGIH = American Conference of Governmental Industrial Hygienists

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Wash hands before breaks and at the end of work.

Breathing equipment:

Exposure Controls: Use appropriate engineering control such as process enclosures, local exhaust ventilation to control airborne levels below recommended exposure limits.

When ventilation is not sufficient to remove airborne levels from the breathing zone, a NIOSH safety approved respirator or self-contained breathing apparatus should be worn. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.

Protection of hands:



Protective gloves

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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:

Goggles recommended during refilling.

Safety Glasses with Sideshields

9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

General Information

Appearance:

<i>Form:</i>	<i>Liquid</i>
<i>Color:</i>	<i>Colorless</i>
<i>Odor:</i>	<i>Mild</i>

pH-value: *Not determined.*

Change in condition

<i>Melting point/Melting range:</i>	<i>0°C (32 °F)</i>
	<i>Undetermined.</i>
<i>Boiling point/Boiling range:</i>	<i>100°C (212 °F)</i>

Flash point: *Undetermined.*

Auto igniting: *Product is not selfigniting.*

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

Vapor pressure at 20°C (68 °F): *23 hPa (17 mm Hg)*

Density at 20°C (68 °F): *1.02 g/cm³ (8.512 lbs/gal)*

Solubility in / Miscibility with

Water: *Fully miscible.*

Solvent content:

<i>Organic solvents:</i>	<i>2.5 %</i>
<i>Water:</i>	<i>92.2 %</i>

Solids content: *5.3 %*

10 STABILITY AND REACTIVITY

Reactivity

Chemical stability

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

Possibility of hazardous reactions *No dangerous reactions known.*

Conditions to avoid *No further relevant information available.*

Incompatible materials: *Strong acids, strong oxidizers.*

Hazardous decomposition products:

When heated to soldering temperatures, solvents will be evaporated and organic material may release aliphatic aldehydes and acids.

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11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

110-15-6 succinic acid

Oral	LD50	2260 mg/kg (rat)
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143-24-8 bis(2-(2-methoxyethoxy)ethyl) ether

Oral	LD50	5140 mg/kg (rat)
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Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

through inhalation: May cause respiratory irritation.

through ingestion: May cause gastrointestinal irritation.

Additional toxicological information:

Carcinogenic categories

IARC (International Agency for Research on Cancer)
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None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

12 ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: No further relevant information available.

Additional ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation:

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

Disposal must be made according to official regulations.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 TRANSPORT INFORMATION

UN-Number

DOT, ADN, IMDG, IATA

ADR

Not applicable

Not applicable

Not regulated

UN proper shipping name

DOT, ADR, ADN

IMDG, IATA

Not applicable

Not regulated

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Transport hazard class(es)

DOT

Class

Not applicable
Not regulated.

ADR, ADN, IMDG, IATA

Class

Not applicable

Packing group

DOT, ADR, IMDG, IATA

Not applicable

Environmental hazards:

Marine pollutant:

No

Special precautions for user

Not applicable.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

15 REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

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

SARA (Superfund Amendments and Reauthorization Act)

Section 355 (extremely hazardous substances):

None of the ingredient is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act): Kester certifies that all components listed below for the subject finished product are on the TSCA Inventory of Chemical Substances and are not subject to any chemical specific regulation under TSCA Section 12(b) export notification requirements delineated at 40 CFR part 707, subpart D.

All ingredients are listed or exempt from listing.

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.

Carcinogenic categories

EPA (Environmental Protection Agency)

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: Not classified.

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS07

Signal word *Warning*

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Hazard statements*H315 Causes skin irritation.***Precautionary statements***P280 Wear protective gloves/protective clothing/eye protection/face protection.**P264 Wash thoroughly after handling.**P362 Take off contaminated clothing and wash before reuse.**P332+P313 If skin irritation occurs: Get medical advice/attention.**P302+P352 IF ON SKIN: Wash with plenty of soap and water.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

16 OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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.

Abbreviations and acronyms:*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**DOT: US Department of Transportation**IATA: International Air Transport Association**GHS: Globally Harmonized System of Classification and Labelling of Chemicals**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**WHMIS: Workplace Hazardous Materials Information System (Canada)**** Data compared to the previous version altered.**

USA