

SAFETY DATA SHEET (SDS)

According to 1907/2006/EC, Article 31

Printing Date 01/11/2017

Version number 8

Reviewed on 01/10/2017

1 PRODUCT AND COMPANY IDENTIFICATION**Trade name:** 1630 Soldering Flux**Article number:** C4-00-1630**Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.**Application of the substance / the preparation:** Soldering flux**1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**Kester Inc.
800 West Thorndale Avenue
Itasca, IL 60143 USA
Tel (630) 616-4000
Tel International 00 1 630 616-4000ITW Specialty Materials (Suzhou) Co., Ltd.
Heng Qiao Road
Wujiang Economic Development Zone
Suzhou, Jiangsu 215200 China
Tel +86 512 82060808Kester GmbH
Ganghofer Strasse 45
D-82216 Gernlinden Germany
Tel +49 (0) 8142 4785 0**Information department:** Product Compliance: EHS_Kester@kester.com**1.4 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**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Aquatic Acute 2 H401 Toxic to aquatic life.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008**

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

(Contd. on page 2)

SAFETY DATA SHEET (SDS)

According to 1907/2006/EC, Article 31

Printing Date 01/11/2017

Version number 8

Reviewed on 01/10/2017

Trade name: 1630 Soldering Flux

(Contd. of page 1)

Hazard pictograms



GHS05 GHS07

Signal word Danger

Hazard statements

H302+H312 Harmful if swallowed or in contact with skin.

H318 Causes serious eye damage.

H401 Toxic to aquatic life.

Precautionary statements

P280 Wear protective gloves / eye protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P402+P404 Store in a dry place. Store in a closed container.

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

Hazard description:

WHMIS Symbols



Classification system:

NFPA ratings (scale 0 - 4)



Health = 3

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 3

Fire = 0

Reactivity = 0

2.3 Other hazards



Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 COMPOSITION OF MIXTURE

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

CAS No.	Description	% Range
CAS: 7699-45-8 EINECS: 231-718-4	zinc bromide	 Skin Corr. 1B, H314; Eye Dam. 1, H318  Aquatic Acute 1, H400; Aquatic Chronic 1, H410 5-<10%
CAS: 56-81-5 EINECS: 200-289-5	glycerol	3.0-5.0%

(Contd. on page 3)





SAFETY DATA SHEET (SDS)
According to 1907/2006/EC, Article 31

Printing Date 01/11/2017

Version number 8

Reviewed on 01/10/2017

Trade name: 1630 Soldering Flux

CAS: 10035-10-6 EINECS: 233-113-0	Hydrobromic acid	 Skin Corr. 1A, H314; Eye Dam. 1, H318  Acute Tox. 4, H332; STOT SE 3, H335	(Contd. of page 2) 1.0-3.0%
CAS: 1336-21-6 EINECS: 215-647-6	ammonia	 Skin Corr. 1B, H314; Eye Dam. 1, H318  Aquatic Acute 1, H400	0.1-<0.25%

4 FIRST AID MEASURES

4.1 Description of first aid measures

General information:

Immediately remove any clothing soiled by the product.
Follow general first aid procedures.

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.
Seek immediate medical advice.

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

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing agents:

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

5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Hydrogen bromide
Zinc oxide

5.3 Advice for firefighters

Protective equipment: No special measures required.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

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

6.3 Methods and material for containment and cleaning up:

Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

6.4 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.

Protective Action Criteria for Chemicals

PAC-1:

CAS: 7699-45-8	zinc bromide	6 mg/m ³
CAS: 56-81-5	glycerol	45 mg/m ³

(Contd. on page 4)

SAFETY DATA SHEET (SDS)

According to 1907/2006/EC, Article 31

Printing Date 01/11/2017

Version number 8

Reviewed on 01/10/2017

Trade name: 1630 Soldering Flux

(Contd. of page 3)

CAS: 10035-10-6	Hydrobromic acid	1.0 ppm
CAS: 1336-21-6	ammonia	61 ppm
PAC-2:		
CAS: 7699-45-8	zinc bromide	66 mg/m3
CAS: 56-81-5	glycerol	180 mg/m3
CAS: 10035-10-6	Hydrobromic acid	40 ppm
CAS: 1336-21-6	ammonia	330 ppm
PAC-3:		
CAS: 7699-45-8	zinc bromide	400 mg/m3
CAS: 56-81-5	glycerol	1,100 mg/m3
CAS: 10035-10-6	Hydrobromic acid	120 ppm
CAS: 1336-21-6	ammonia	2,300 ppm

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Store in cool, dry place in tightly closed receptacles.
Prevent formation of aerosols.

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

7.2 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: Keep receptacle tightly sealed.

7.3 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.

8.1 Control parameters

Components with limit values that require monitoring at the workplace:

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

CAS: 56-81-5 glycerol

PEL	Long-term value: 15* 5** mg/m ³ mist; *total dust **respirable fraction
TLV	TLV withdrawn-insufficient data human occup. exp.

CAS: 10035-10-6 Hydrobromic acid

PEL	Long-term value: 10 mg/m ³ , 3 ppm
REL	Ceiling limit value: 10 mg/m ³ , 3 ppm
TLV	Ceiling limit value: 6.8 mg/m ³ , 2 ppm

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

(Contd. on page 5)

SAFETY DATA SHEET (SDS)

According to 1907/2006/EC, Article 31

Printing Date 01/11/2017

Version number 8

Reviewed on 01/10/2017

Trade name: 1630 Soldering Flux

(Contd. of page 4)

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

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.

Not necessary if room is well-ventilated.

Use suitable respiratory protective device in case of insufficient ventilation.

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:



Safety glasses

Body protection:



Apron

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:	Liquid
Color:	Colorless
Odor:	Mild

pH-value at 20 °C (68 °F): 1.5

Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	100 °C (212 °F)

Flash point: Not applicable.

Auto igniting: Product is not selfigniting.

(Contd. on page 6)

SAFETY DATA SHEET (SDS)
According to 1907/2006/EC, Article 31

Printing Date 01/11/2017

Version number 8

Reviewed on 01/10/2017

Trade name: 1630 Soldering Flux

(Contd. of page 5)

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):** 1.09 g/cm³ (9.096 lbs/gal)**Solubility in / Miscibility with Water:** Not miscible or difficult to mix.**Solvent content:**
Organic solvents: 4.8 %
Water: 84.2 %**Solids content:** 9.8 %**10 STABILITY AND REACTIVITY****10.1 Reactivity** No further relevant information available.**10.2 Chemical stability****Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.**10.3 Possibility of hazardous reactions** No dangerous reactions known.**10.4 Conditions to avoid** No further relevant information available.**10.5 Incompatible materials:** Strong acids, strong oxidizers.**10.6 Hazardous decomposition products:** Hydrogen bromide**11 TOXICOLOGICAL INFORMATION****11.1 Information on toxicological effects****Acute toxicity:**

Harmful if swallowed or in contact with skin.

Primary irritant effect:**on the skin:** Based on available data, the classification criteria are not met.**on the eye:**

Causes serious eye damage.

through ingestion: May be harmful if swallowed.**Sensitization:** Based on available data, the classification criteria are not met.**Additional toxicological information:****Carcinogenic categories****IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 ECOLOGICAL INFORMATION**12.1 Toxicity****Aquatic toxicity:** No further relevant information available.

(Contd. on page 7)

SAFETY DATA SHEET (SDS)
According to 1907/2006/EC, Article 31

Printing Date 01/11/2017

Version number 8

Reviewed on 01/10/2017

Trade name: 1630 Soldering Flux

(Contd. of page 6)

Additional ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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

14.1 UN-Number

DOT, ADR, IMDG, IATA

UN3264

14.2 UN proper shipping name

DOT

Corrosive liquid, acidic, inorganic, n.o.s. (Hydrogen bromide, zinc bromide)

ADR

3264 Corrosive liquid, acidic, inorganic, n.o.s. (Hydrogen bromide, zinc bromide)

IMDG, IATA

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROGEN BROMIDE, zinc bromide)

14.3 Transport hazard class(es)

DOT



Class

8 Corrosive substances

Label

8

ADR, IMDG, IATA



Class

8 Corrosive substances

Label

8

14.4 Packing group

DOT, IMDG, IATA

III

Marine pollutant:

No

14.6 Special precautions for user

Not applicable.

EMS Number:

F-A,S-B

(Contd. on page 8)

SAFETY DATA SHEET (SDS)
According to 1907/2006/EC, Article 31

Printing Date 01/11/2017

Version number 8

Reviewed on 01/10/2017

Trade name: 1630 Soldering Flux

(Contd. of page 7)

Segregation groups Acids
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

Transport/Additional information:

ADR
Excepted quantities (EQ) Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml
UN "Model Regulation": UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROGEN BROMIDE, ZINC BROMIDE), 8, III

15 REGULATORY INFORMATION

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

- China: Inventory of Existing Chemical Substances in China (IECSC)
- Korea: Korea Existing Chemicals List (ECL)
- Europe: European Inventory of Existing Commercial Chemical Substances (EINECS)
- Japan: Inventory of Existing and New Chemical Substances (ENCS)
- Philippines: Philippine Inventory of Chemicals and Chemical Substances (PICCS)
- USA: TSCA (Toxic Substances Control Act) TSCA Inventory of Chemical Substances

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):

CAS: 7699-45-8	zinc bromide
CAS: 1336-21-6	ammonia

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)

CAS: 7699-45-8	zinc bromide	D, I, II
----------------	--------------	----------

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

None of the ingredients is listed.

CANADA:

Not classified.
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 Safety Data Sheet (SDS) contains all of the information required by the CPR.

Labelling according to Regulation (EC) No 1272/2008

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

(Contd. on page 9)

SAFETY DATA SHEET (SDS)
According to 1907/2006/EC, Article 31

Printing Date 01/11/2017

Version number 8

Reviewed on 01/10/2017

Trade name: 1630 Soldering Flux

(Contd. of page 8)

Hazard pictograms



GHS05 GHS07

Signal word Danger

Hazard statements

H302+H312 Harmful if swallowed or in contact with skin.

H318 Causes serious eye damage.

H401 Toxic to aquatic life.

Precautionary statements

P280 Wear protective gloves / eye protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P402+P404 Store in a dry place. Store in a closed container.

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

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 OTHER INFORMATION

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.

Department issuing Safety Data Sheet (SDS): Product Compliance / EHS Department

Contact: EHS_Kester@kester.com

Date of preparation / last revision 01/11/2017 / 7

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 Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Acute 2: Hazardous to the aquatic environment - acute aquatic hazard – Category 2

(Contd. on page 10)

SAFETY DATA SHEET (SDS)
According to 1907/2006/EC, Article 31

Printing Date 01/11/2017

Version number 8

Reviewed on 01/10/2017

Trade name: 1630 Soldering Flux

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

(Contd. of page 9)

*** Data compared to the previous version altered.**

US