

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

**Trade name: 1544 Soldering Flux**

**Relevant identified uses of the substance or mixture and uses advised against**

Soldering Flux  
Professional use of solder

### 1.3 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 Inc.  
800 West Thorndale Avenue  
Itasca, IL 60143  
Tel 00+1 + 630 616 4000

ITW Specialty Materials (Suzhou) Co., Ltd.  
Hengqiao Road, Wujiang Economic Development Zone  
Suzhou, Jiangsu Province, China 215200  
Tel +86 512 82060807

**Further information obtainable from:** Product Compliance: EHS\_Kester@kester.com

#### 1.4 Emergency telephone number:

TRANSPORT EMERGENCY Phone: CHEMTREC (800) 424-9300 (Outside US & Canada): 00+1 +703 527 3887

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS08 health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

### 2.2 Label elements

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

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

#### Hazard pictograms



GHS02 GHS07 GHS08

**Signal word** Danger

(Continued on page 2)

## Trade name: 1544 Soldering Flux

(Continued from page 1)

### Hazard statements

- H225 Highly flammable liquid and vapour.  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

### Precautionary statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P303+P361+P353 IF ON SKIN (or hair): Remove/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.  
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### Additional information:

For use in industrial installations only.  
Restricted to professional users.

### 2.3 Other hazards

#### Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

## SECTION 3: Composition/information on ingredients

### 3.2 Chemical characterisation: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

#### Chemical components:

CAS: 8050-09-7 EINECS: 232-475-7	Rosin	⚠ Skin Sens. 1, H317	30-65%
CAS: 78-92-2 EINECS: 201-158-5	sec-butanol	⚠ Flam. Liq. 3, H226 ⚠ Eye Irrit. 2, H319; STOT SE 3, H335-H336	10-30%
CAS: 64-17-5 EINECS: 200-578-6	ethanol	⚠ Flam. Liq. 2, H225	10-30%
CAS: 67-63-0 EINECS: 200-661-7	Isopropanol	⚠ Flam. Liq. 2, H225 ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	1.0-3.0%
CAS: 67-56-1 EINECS: 200-659-6	methanol	⚠ Flam. Liq. 2, H225 ⚠ Acute Tox. 2, H330 ⚠ STOT SE 1, H370	1.0-3.0%

#### Additional information:

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

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General information: Follow general first aid procedures.

#### After inhalation:

In case of unconsciousness place patient stably in side position for transportation.  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
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.

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

(Continued on page 3)

**Trade name: 1544 Soldering Flux**

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

(Continued from page 2)

## **SECTION 5: Firefighting measures**

### **5.1 Extinguishing media**

**Suitable extinguishing agents:** CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**For safety reasons unsuitable extinguishing agents:** Water with full jet

### **5.2 Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

Carbon monoxide (CO)

Nitrogen oxides (NO<sub>x</sub>)

Carbon dioxide (CO<sub>2</sub>)

### **5.3 Advice for firefighters**

**Protective equipment:** Wear self-contained respiratory protective device.

## **SECTION 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:**

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

### **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.

## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

Prevent formation of aerosols.

Ensure good ventilation/exhaustion at the workplace.

### **Information about fire - and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect from heat.

Protect against electrostatic charges.

### **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 container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

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

Trade name: 1544 Soldering Flux

(Continued from page 3)

## SECTION 8: Exposure controls/personal protection

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

### 8.1 Control parameters

**Ingredients with limit values that require monitoring at the workplace:**

#### 67-63-0 Isopropanol

PEL	Short-term value: 1225 mg/m <sup>3</sup> , 500 ppm Long-term value: 980 mg/m <sup>3</sup> , 400 ppm
TWA	Short-term value: 1250 mg/m <sup>3</sup> , 500 ppm Long-term value: 980 mg/m <sup>3</sup> , 400 ppm
WEL	Short-term value: 1250 mg/m <sup>3</sup> , 500 ppm Long-term value: 999 mg/m <sup>3</sup> , 400 ppm

#### 67-56-1 methanol

WEL	Short-term value: 333 mg/m <sup>3</sup> , 250 ppm Long-term value: 266 mg/m <sup>3</sup> , 200 ppm Sk
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### 8.2 Exposure controls

#### Personal protective equipment:

##### General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

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.

##### Respiratory protection:

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:

Safety Glasses with Side Shields Required



Face Shield with Safety Glasses when refilling.

##### Body protection:



Apron

Trade name: 1544 Soldering Flux

(Continued from page 4)

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

##### Appearance:

Form: Liquid  
Colour: Amber coloured  
Odour: Alcohol-like

pH-value: Not determined.

#### Change in condition

Melting point/Melting range: Undetermined.

Flash point: 18 °C

Ignition temperature: 390 °C

Self-igniting: Product is not selfigniting.

Danger of explosion: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

#### Explosion limits:

Lower: 1.7 Vol %  
Upper: 15.0 Vol %

Vapour pressure at 20 °C: 59 hPa

Density at 20 °C: 0.93 g/cm<sup>3</sup>

Solubility in / Miscibility with water: Partly soluble.

#### Solvent content:

Organic solvents: VOC Content 459 g/L

## SECTION 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: No dangerous decomposition products known.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Harmful if swallowed, in contact with skin or if inhaled.

#### LD/LC50 values relevant for classification:

##### 78-92-2 sec-butanol

Oral	LD50	6480 mg/kg (rat)
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##### 64-17-5 ethanol

Oral	LD50	7060 mg/kg (rat)
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(Continued on page 6)

**Trade name: 1544 Soldering Flux**

(Continued from page 5)

Inhalative	LC50/4 h	20000 mg/l (rat)
<b>67-63-0 Isopropanol</b>		
Oral	LD50	5045 mg/kg (rat)
Dermal	LD50	12800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)
<b>67-56-1 methanol</b>		
Oral	LD50	5628 mg/kg (rat)
Dermal	LD50	15800 mg/kg (rabbit)

**Primary irritant effect:**
**Skin corrosion/irritation** Based on available data, the classification criteria are not met.

**Serious eye damage/irritation** Based on available data, the classification criteria are not met.

**Respiratory or skin sensitisation**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

**Carcinogenicity** Based on available data, the classification criteria are not met.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**STOT-single exposure**

May cause respiratory irritation. May cause drowsiness or dizziness.

**STOT-repeated exposure** Based on available data, the classification criteria are not met.

**Aspiration hazard** Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information**
**12.1 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.

**12.5 Results of PBT and vPvB assessment**
**PBT:** Not applicable.

**vPvB:** Not applicable.

**SECTION 13: Disposal considerations**
**13.1 Waste treatment methods**
**Recommendation**

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

Disposal must be made according to official regulations.

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

**SECTION 14: Transport information**
**14.1 UN-Number**

IMDG, IATA

UN1987

**14.2 UN proper shipping name**

ADR, IMDG, IATA

UN1987, ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), BUTANOLS), 3, II

(Continued on page 7)

Trade name: 1544 Soldering Flux

(Continued from page 6)

#### 14.3 Transport hazard class(es)

ADR, IMDG, IATA



<b>Class</b>	3 Flammable liquids.
<b>Label</b>	3
<b>14.4 Packing group</b>	
<b>ADR, IMDG, IATA</b>	II
<b>14.5 Environmental hazards:</b>	Not applicable.
<b>Marine pollutant:</b>	No
<b>14.6 Special precautions for user</b>	Not applicable.
<b>EMS Number:</b>	F-E,S-D
<b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.

#### Transport/Additional information:

ADR

Limited quantities (LQ)  
Excepted quantities (EQ)

1L  
Code: E2  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 500 ml

IMDG

Limited quantities (LQ)  
Excepted quantities (EQ)

1L  
Code: E2  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 500 ml  
UN1987, ALCOHOLS, N.O.S. (ETHANOL (ETHYL ALCOHOL), BUTANOLS), 3, II

UN "Model Regulation":

## SECTION 15: Regulatory information

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

All ingredients are listed on the following Government Inventories:

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

### Labelling according to Regulation (EC) No 1272/2008

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

#### Hazard pictograms



GHS02 GHS07 GHS08

**Signal word** Danger

#### Hazard statements

H225 Highly flammable liquid and vapour.

(Continued on page 8)



**Trade name: 1544 Soldering Flux**

(Continued from page 7)

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H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P303+P361+P353 IF ON SKIN (or hair): Remove/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.

P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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.

**SECTION 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 Safety Data Sheet (SDS) 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 Safety Data Sheet (SDS) as a source for hazard information.

**Department issuing MSDS:** Product Compliance / EHS Department

**Contact:** EHS\_Kester@kester.com

**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

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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids, Hazard Category 2

Flam. Liq. 3: Flammable liquids, Hazard Category 3

Acute Tox. 4: Acute toxicity, Hazard Category 4

Acute Tox. 2: Acute toxicity, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

STOT SE 1: Specific target organ toxicity - Single exposure, Hazard Category 1

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

\* Data compared to the previous version altered.