

## 1: PRODUCT AND COMPANY IDENTIFICATION

**Trade name:** TSF 6522RH

**Article number:** T5-00-TSF6522RH

### 1.3 Details of the supplier of the safety data sheet

**Manufacturer/Supplier:**

Kester Inc.  
800 West Thorndale Avenue  
Itasca, IL 60143  
Tel (630) 616-4000

ITW Specialty Materials (Suzhou) Co., Ltd.  
Heng Qiao Road  
Wujiang Economic Development Zone  
Suzhou, Jiangsu 215200 China  
Tel +86 512 82060808

**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



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.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Aquatic Acute 3 H402 Harmful 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.

**Hazard pictograms**



GHS07 GHS08

**Signal word** Danger

**Hazard-determining components of labeling:**

bis(2-butoxyethyl) ether

Aliphatic hydroxyl diol

**Hazard statements**

Harmful if swallowed or in contact with skin.

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

May cause an allergic skin reaction.

Harmful to aquatic life.

**Precautionary statements**

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

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

IF ON SKIN: Wash with plenty of acid soap and water.

Store in a well-ventilated place. Keep cool.

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

**Hazard description:****WHMIS Symbols****Classification system:****NFPA ratings (scale 0 - 4)**

Health = 2  
Fire = 1  
Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = *2
FIRE	1	Fire = 1
REACTIVITY	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
	Rosin ⚠ Skin Sens. 1, H317	25-40%
	Rosin ⚠ Skin Sens. 1, H317	25-40%
CAS: 112-73-2 EINECS: 204-001-9	bis(2-butoxyethyl) ether ⚠ Acute Tox. 3, H311	25-40%
	Aliphatic hydroxyl diol ⚠ Eye Irrit. 2A, H319 Flam. Liq. 4, H227	3.0-5.0%
CAS: 27136-73-8 EINECS: 248-248-0	1H-Imidazole-1-ethanol, 2-(heptadecenyl)-4,5-dihydro- ⚠ Acute Tox. 3, H301 ⚠ Aquatic Chronic 2, H411 ⚠ Aquatic Acute 2, H401	1.0-3.0%

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CAS: 872-50-4 EINECS: 212-828-1	N-methyl-2-pyrrolidone Repr. 1B, H360 Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335 Flam. Liq. 4, H227	1.0-3.0%
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**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****4.1 Description of first aid measures****General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

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:** 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:** Use fire fighting measures that suit the environment.

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

In case of fire, the following can be released:

Carbon monoxide (CO)

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

Aliphatic aldehydes

**5.3 Advice for firefighters**

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

**6: ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures** Ensure adequate ventilation

**6.2 Environmental precautions:**

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

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.

**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.

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## 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Prevent formation of aerosols.

Wash hands after handling paste and before eating or smoking. Care should be taken to remove paste from under fingernails.

**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:** None.

### 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:

#### 872-50-4 N-methyl-2-pyrrolidone

WEEL	Long-term value: 10 ppm
	Skin

#### 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

### 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.

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**Eye protection:**  
Safety glasses



Face Shield with Safety Glasses when refilling.

## 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

#### General Information

#### Appearance:

Form:	Pasty
Color:	Silver grey
Odor:	Mild
pH-value:	Not determined.

#### Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	198 °C (388 °F)

Flash point:	> 93 °C (> 199 °F)
Ignition temperature:	190 °C (374 °F)
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Vapor pressure:	Not applicable.
Density:	Not determined.
Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
Solvent content:	
Organic solvents:	28.9 %
Solids content:	69.5 %

## 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:

Carbon monoxide and carbon dioxide

When heated to soldering temperatures, the solvents are evaporated and rosin may be thermally degraded to liberate aliphatic aldehydes and acids.

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## 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity:

Harmful if swallowed or in contact with skin.

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

##### Rosin

Oral	LD50	> 4000 mg/kg (Rat)
Dermal	LD50	>2500 mg/kg (rabbit)

##### 112-73-2 bis(2-butoxyethyl) ether

Oral	LD50	3900 mg/kg (rat)
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#### Primary irritant effect:

**on the skin:** Possible local irritation by contact with flux or fumes.

**on the eye:** Smoke during soldering can cause eye irritation.

#### through inhalation:

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

#### Sensitization:

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

May cause an allergic skin reaction.

#### 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.

#### Ecotoxicological effects:

**Remark:** Harmful to fish

#### Additional ecological information:

#### General notes:

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

Danger to drinking water if even small quantities leak into the ground.

Harmful to aquatic organisms

#### 12.5 Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Recommendation:

Disposal must be made according to official regulations.

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

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**Uncleaned packagings:**

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

**14: TRANSPORT INFORMATION**

**14.1 UN-Number**  
DOT, ADR, ADN, IMDG, IATA Not applicable

**14.2 UN proper shipping name**  
DOT, ADN Not applicable  
ADR Not applicable  
IMDG, IATA Not regulated

**14.3 Transport hazard class(es)**  
DOT Not applicable  
Class Not regulated.

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**ADR, ADN, IMDG, IATA**  
Class Not applicable

**14.4 Packing group**  
DOT, IMDG, IATA Not applicable

**Marine pollutant:** No

**14.6 Special precautions for user** Not applicable.

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.  
UN "Model Regulation": Not applicable

**15: REGULATORY INFORMATION**

**15.1 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):**

112-73-2 bis(2-butoxyethyl) ether

872-50-4 N-methyl-2-pyrrolidone

**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:**

**WARNING:** This product contains a chemical(s) known to the State of California to cause cancer.

None of the ingredients is listed.

**Chemicals known to cause reproductive toxicity:**

**WARNING:** This product contains a chemical(s) known to the State of California to cause birth defects and/or other reproductive harm.

N-methyl-2-pyrrolidone

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**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.

**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.

**Hazard pictograms**

GHS07 GHS08

**Signal word** Danger**Hazard-determining components of labeling:**

bis(2-butoxyethyl) ether

Aliphatic hydroxyl diol

**Hazard statements**

Harmful if swallowed or in contact with skin.

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

May cause an allergic skin reaction.

Harmful to aquatic life.

**Precautionary statements**

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

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

IF ON SKIN: Wash with plenty of acid soap and water.

Store in a well-ventilated place. Keep cool.

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** 02/09/2016 / 11**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

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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)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 SVHC: Substances of Very High Concern  
 vPvB: very Persistent and very Bioaccumulative  
 Flam. Liq. 4: Flammable liquids, Hazard Category 4  
 Acute Tox. 4: Acute toxicity, Hazard Category 4  
 Acute Tox. 3: Acute toxicity, Hazard Category 3  
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
 Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A  
 Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1  
 Skin Sens. 1: Sensitisation - Skin, Hazard Category 1  
 Repr. 1B: Reproductive toxicity, Hazard Category 1B  
 STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3  
 Aquatic Acute 2: Hazardous to the aquatic environment - AcuteHazard, Category 2  
 Aquatic Acute 3: Hazardous to the aquatic environment - AcuteHazard, Category 3  
 Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2  
 \* **Data compared to the previous version altered.**