

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 06/08/2018

Version number 9

Reviewed on 06/08/2018

1 Identification

Trade name: TSF-6502 JCR**Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

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 1 630 616-4000

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

Kester GmbH
Ganghofer Strasse 45
D-82216 Gernlinden Germany
Tel +49 (0) 8142 4785 0

Information department: Product Compliance: EHS_Kester@kester.com**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 Hazard(s) identification

Classification of the substance or mixture

Health hazard

Repr. 1A H360 May damage fertility or the unborn child.



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

Label elements**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).**Hazard pictograms**

GHS07 GHS08

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

Modified Rosin
N-methyl-2-pyrrolidone

(Contd. on page 2)

US

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 06/08/2018

Version number 9

Reviewed on 06/08/2018

Trade name: TSF-6502 JCR

(Contd. of page 1)

Halogenated organic diol

Hazard statements

H317 May cause an allergic skin reaction.
H360 May damage fertility or the unborn child.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with plenty of water.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)



Health = 2
Fire = 1
Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 2
Fire = 1
Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

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

CAS No.	Description	% Range
Trade Secret	Glycol ether	10-25%
Trade Secret	Modified Rosin ⚠ Skin Sens. 1, H317	55-70%
CAS: 872-50-4	N-methyl-2-pyrrolidone ⚠ Repr. 1B, H360 ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335 Flam. Liq. 4, H227	3-5%
Trade Secret	Halogenated organic diol ⚠ Acute Tox. 4, H302; Eye Irrit. 2A, H319; Skin Sens. 1B, H317	0.1-<1%

SVHC

CAS: 872-50-4 | N-methyl-2-pyrrolidone

Additional information:

This product will be heated to a temperature of 217C (Celsius) during soldering. All volatile substances will evaporate and not remain on the finished circuit board.

4 First-aid measures

Description of first aid measures

General information: Follow general first aid procedures.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 06/08/2018

Version number 9

Reviewed on 06/08/2018

Trade name: TSF-6502 JCR

(Contd. of page 2)

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 Fire-fighting 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
 Nitrogen oxides (NO_x)
 In case of fire, the following can be released:
Advice for firefighters
Protective equipment: No special measures required.

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: Dispose contaminated material as waste according to item 13.
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:

	Glycol ether	9.6 mg/m ³
CAS: 872-50-4	N-methyl-2-pyrrolidone	30 ppm

PAC-2:

	Glycol ether	110 mg/m ³
CAS: 872-50-4	N-methyl-2-pyrrolidone	32 ppm

PAC-3:

	Glycol ether	630 mg/m ³
CAS: 872-50-4	N-methyl-2-pyrrolidone	190 ppm

7 Handling and storage

Handling:
Precautions for safe handling Prevent formation of dust.
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.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 06/08/2018

Version number 9

Reviewed on 06/08/2018

Trade name: TSF-6502 JCR

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

(Contd. of page 3)

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 following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

CAS: 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

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.

Breathing equipment:

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

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

- Form: Viscous
- Color: Opaque

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 06/08/2018

Version number 9

Reviewed on 06/08/2018

Trade name: TSF-6502 JCR

(Contd. of page 4)

Odor: Mild

pH-value: Not applicable.

Change in condition
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 202 °C (395.6 °F)

Flash point: >188 °C (>370.4 °F)

Flammability (solid, gaseous): Not determined.

Ignition temperature: 270 °C (518 °F)

Auto igniting: Product is not selfigniting.

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

Explosion limits:
Lower: 1.1 Vol %
Upper: 7 Vol %

Vapor pressure: Not applicable.

Density at 20 °C (68 °F): 1.1 g/cm³ (9.18 lbs/gal)
Vapor density Not applicable.

Solubility in / Miscibility with Water: Insoluble.

Solvent content:
Organic solvents: 4.2 %
Solids content: 63.3 %

10 Stability and reactivity

Reactivity No further relevant information available.
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: No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:

Glycol ether

Oral	LD50	3,200 mg/kg (rat)
Dermal	LD50	>20,000 mg/kg (rab)

Modified Rosin

Oral	LD50	>4,000 mg/kg (Rat)
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(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 06/08/2018

Version number 9

Reviewed on 06/08/2018

Trade name: TSF-6502 JCR

(Contd. of page 5)

Dermal	LD50	>2,500 mg/kg (rabbit)
CAS: 872-50-4 N-methyl-2-pyrrolidone		
Oral	LD50	3,914 mg/kg (rat)
Dermal	LD50	8,000 mg/kg (rabbit)

Primary irritant effect:

on the skin: No irritant effect.

on the eye: Irritating effect.

Sensitization:

Sensitization possible through inhalation.

Sensitization possible through skin contact.

Additional toxicological information:

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

Harmful

Irritant

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

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:

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.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number

DOT, ADR, ADN, IMDG, IATA

Not applicable

UN proper shipping name

DOT, ADR, ADN, IMDG, IATA

Not applicable

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 06/08/2018

Version number 9

Reviewed on 06/08/2018

Trade name: TSF-6502 JCR

(Contd. of page 6)

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA Class	Not applicable
Packing group	
DOT, IMDG, IATA	Not applicable
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.
UN "Model Regulation":	Not applicable

15 Regulatory information

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

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

TSCA new (21st Century Act) (Substances not listed)

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:

N-methyl-2-pyrrolidone

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:

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.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 06/08/2018

Version number 9

Reviewed on 06/08/2018

Trade name: TSF-6502 JCR

(Contd. of page 7)

Hazard pictograms



GHS07 GHS08

Signal word Danger

Hazard-determining components of labeling:

Modified Rosin
N-methyl-2-pyrrolidone
Halogenated organic diol

Hazard statements

H317 May cause an allergic skin reaction.
H360 May damage fertility or the unborn child.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with plenty of water.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other regulations, limitations and prohibitive regulations

Substances of very high concern (SVHC) according to REACH, Article 57

CAS: 872-50-4 | N-methyl-2-pyrrolidone

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

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)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
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
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS 29CFR1910.1200

Printing Date 06/08/2018

Version number 9

Reviewed on 06/08/2018

Trade name: TSF-6502 JCR

(Contd. of page 8)

SVHC: Substances of Very High Concern
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
Flam. Liq. 4: Flammable liquids – Category 4
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1B: Skin sensitisation – Category 1B
Repr. 1A: Reproductive toxicity – Category 1A
Repr. 1B: Reproductive toxicity – Category 1B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
*** Data compared to the previous version altered.**

US