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

1.1 Trade name: RF741 Rework Flux
1.2 Relevant identified uses of the substance or mixture and uses advised against
   No further relevant information available.

1.3 Details of the supplier of the safety data sheet
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
   Kester GmbH
   Ganghofer Strasse 45
   D-82216 Gerlininden Germany
   Tel +49 (0) 8142 4785 0

Further information obtainable from: 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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

GHS08 health hazard

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

GHS07

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

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

GHS07  GHS08

Signal word Danger

Hazard-determining components of labelling:
Halogenated organic diol

(Continued on page 2)
Trade name: RF741 Rework Flux

(Continued from page 1)

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/vapours/spray.
P280 Wear protective gloves.
P302+P352 IF ON SKIN: Wash with plenty of water.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
Additional information:
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

Description: Mixture of substances listed below with nonhazardous additions.

Chemical components:

<table>
<thead>
<tr>
<th>CAS: 872-50-4</th>
<th>N-methyl-2-pyrrolidone</th>
<th>1-3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 212-828-1</td>
<td>Repr. 1B, H360D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▶ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</td>
<td></td>
</tr>
<tr>
<td>Trade Secret</td>
<td>Halogenated organic diol</td>
<td>≥0.1-%</td>
</tr>
<tr>
<td></td>
<td>▶ Acute Tox. 4, H302; Eye Irrit. 2, H319; Skin Sens. 1B, H317</td>
<td></td>
</tr>
</tbody>
</table>

SVHC

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

SECTION 4: First aid measures

4.1 Description of first aid measures
General information: 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.
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.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents: CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture
Nitrogen oxides (NOx)
In case of fire, the following can be released:

(Continued on page 3)
5.3 Advice for firefighters
Protective equipment: No special measures required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
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:
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.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Prevent formation of aerosols.
Information about fire - and explosion protection:
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.

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:

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL</td>
<td>Short-term value: 80 mg/m³, 20 ppm</td>
</tr>
<tr>
<td></td>
<td>Long-term value: 40 mg/m³, 10 ppm</td>
</tr>
<tr>
<td></td>
<td>Sk</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:
The usual precautionary measures are to be adhered to when handling chemicals.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.

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.
Not necessary if room is well-ventilated.
Use suitable respiratory protective device in case of insufficient ventilation.

Protection of hands:

Protective gloves

(Continued on page 4)
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
General Information
Appearance:
  Form: Paste
  Colour: Amber coloured
  Odour: Mild
  pH-value: Not determined.
Change in condition
  Melting point/freezing point: Undetermined.
  Initial boiling point and boiling range: 204 °C
Flash point: 95 °C
Ignition temperature: 186 °C
Auto-ignition temperature: Product is not selfigniting.
Explosive properties: Product does not present an explosion hazard.
Density at 20 °C: 1 g/cm³
Solubility in / Miscibility with water: Not miscible or difficult to mix.
Solvent content:
  Organic solvents: 32.6 %
  Solids content: 57.7 %

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

LD/LC50 values relevant for classification:

| CAS: 55934-93-5 [(butoxymethylethoxy)methylethoxy]propan-1-ol |
|-----------------|-----------------|
| **Oral** | LD50 2,800 mg/kg (rat) |
| **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:
- 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 an allergic skin reaction.

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
- May damage fertility or the unborn child.

STOT-single exposure Based on available data, the classification criteria are not met.
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
Disposal must be made according to official regulations.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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

SECTION 14: Transport information

14.1 UN-Number
IMDG, IATA Void

(Continued on page 6)
14.2 UN proper shipping name
ADR, ADN
IMDG, IATA
Void
Void
Not regulated

14.3 Transport hazard class(es)
ADR, ADN, IMDG, IATA
Class
Void

14.4 Packing group
ADR, IMDG, IATA
Void

14.5 Environmental hazards:
Marine pollutant:
Not applicable.
No
Not applicable.

14.6 Special precautions for user
14.7 Transport in bulk according to Annex II of Marpol
and the IBC Code
UN "Model Regulation":
Not applicable.
Void

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

GHS07 GHS08

Signal word Danger

Hazard-determining components of labelling:
Halogenated organic diol
Hazard statements
H317 May cause an allergic skin reaction.
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P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 30

National 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

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 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
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
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1B: Skin sensitisation – Category 1B
Repr. 1B: Reproductive toxicity – Category 1B
Repr. 1B: Reproductive toxicity – Category 1B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

* Data compared to the previous version altered.

GB