1 Identification

Trade name: 1429 Soldering Flux

Article number: C4-00-1429

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

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
Wujiang Economic Development Zone
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

Corrosion

Eye Dam. 1 H318 Causes serious eye damage.

Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.

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

GHS05 GHS07

(Contd. on page 2)
Signal word Danger

Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary statements
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:
NFPA ratings (scale 0 - 4)

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS-ratings (scale 0 - 4)

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FIRE</th>
<th>REACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Description</th>
<th>% Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 57-13-6</td>
<td>urea</td>
<td>🌈 Skin Irrit. 2, H315; Eye Irrit. 2A, H319</td>
</tr>
</tbody>
</table>

4 First-aid measures

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: 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.
Special hazards arising from the substance or mixture
Nitrogen oxides (NOx)
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
Wear protective equipment. Keep unprotected persons away.
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.
Ensure adequate ventilation.
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

<table>
<thead>
<tr>
<th>PAC-1:</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 57-13-6</td>
<td>urea</td>
<td>30 mg/m3</td>
</tr>
<tr>
<td>CAS: 7647-01-0</td>
<td>Hydrochloric Acid</td>
<td>1.8 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 57-13-6</td>
<td>urea</td>
<td>280 mg/m3</td>
</tr>
<tr>
<td>CAS: 7647-01-0</td>
<td>Hydrochloric Acid</td>
<td>22 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 57-13-6</td>
<td>urea</td>
<td>1,700 mg/m3</td>
</tr>
<tr>
<td>CAS: 7647-01-0</td>
<td>Hydrochloric Acid</td>
<td>100 ppm</td>
</tr>
</tbody>
</table>

7 Handling and storage

Handling:
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.

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:
Protect from frost.
Keep receptacle tightly sealed.

(Contd. on page 4)
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:

- CAS: 57-13-6 urea
- WEEL Long-term value: 10 mg/m³

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 any 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

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:
- Form: Liquid
- Color: Colorless
## 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:** When heated to soldering temperatures, solvents will be evaporated and organic material may release aliphatic aldehydes and acids.

## 11 Toxicological information

**Information on toxicological effects**

**Acute toxicity:**

- **Primary irritant effect:**
  - **on the skin:** Caustic effect on skin and mucous membranes.
  - **on the eye:** Irritating effect.
  - **through inhalation:** May cause respiratory irritation.
  - **through ingestion:** May cause gastrointestinal irritation.

**Sensitization:** Sensitization possible through inhalation.

**Additional toxicological information:**

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

- **Corrosive**
  - Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
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.
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.

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: Not applicable
IMDG, IATA: Not regulated

Transport hazard class(es)
DOT, ADR, ADN, IMDG, IATA: Not applicable

Class
Packing group
DOT, IMDG, IATA: Not applicable
Marine pollutant: No
Special precautions for user
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.
Safety Data Sheet
acc. to OSHA HCS 29CFR1910.1200

Printing Date 08/30/2017  Version number 7  Reviewed on 08/30/2017

Trade name: 1429 Soldering Flux

UN "Model Regulation": Not applicable

(Contd. of page 6)

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):
CAS: 7647-01-0 Hydrochloric Acid

Section 313 (Specific toxic chemical listings):
CAS: 7647-01-0 Hydrochloric Acid

California Proposition 65

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: 57-13-6 urea

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).

Hazard pictograms

GHS05  GHS07

Signal word Danger

Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary statements
P270 Do not eat, drink or smoke when using this product.

(Contd. on page 8)
**Trade name:** 1429 Soldering Flux

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<td>P501</td>
<td>Dispose of contents/container in accordance with local/regional/national/international regulations.</td>
</tr>
</tbody>
</table>

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

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**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)

ICAO: International Civil Aviation Organisation

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)

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 Irrit. 2: Skin corrosion/irritation – Category 2

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

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

* Data compared to the previous version altered.