

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

Printing Date 06/21/2017

Version number 9

Reviewed on 06/21/2017

**1 Identification**

**Trade name: 5744 Solder Saver**

**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  
DROSS REDUCER

**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**



Health hazard

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



Acute Tox. 4 H302 Harmful if swallowed.

**Label elements**

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

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**Hazard pictograms**



GHS05 GHS07 GHS08

**Signal word** Danger

**Hazard statements**

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H372 Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

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

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

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 = 1  
Fire = 0  
Reactivity = 0

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



Health = 1  
Fire = 0  
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
CAS: 13826-83-0	ammonium tetrafluoroborate  STOT RE 1, H372  Met. Corr.1, H290; Skin Corr. 1A, H314; Eye Dam. 1, H318	55-70%
CAS: 14075-53-7	potassium tetrafluoroborate  Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	40-55%

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**4 First-aid measures**

**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. If symptoms persist, 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:**

CO<sub>2</sub>, 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<sub>x</sub>)

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:**

CAS: 13826-83-0	ammonium tetrafluoroborate	10 mg/m <sup>3</sup>
CAS: 14075-53-7	potassium tetrafluoroborate	12 mg/m <sup>3</sup>

**PAC-2:**

CAS: 13826-83-0	ammonium tetrafluoroborate	120 mg/m <sup>3</sup>
CAS: 14075-53-7	potassium tetrafluoroborate	140 mg/m <sup>3</sup>

**PAC-3:**

CAS: 13826-83-0	ammonium tetrafluoroborate	690 mg/m <sup>3</sup>
CAS: 14075-53-7	potassium tetrafluoroborate	830 mg/m <sup>3</sup>

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**7 Handling and storage**

**Handling:**

**Precautions for safe handling**

Store in cool, dry place in tightly closed receptacles.  
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:** Keep receptacle tightly sealed.

**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.

**Control parameters**

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

**CAS: 13826-83-0 ammonium tetrafluoroborate**

TWA Long-term value: 2.5 mg/m<sup>3</sup>

**CAS: 14075-53-7 potassium tetrafluoroborate**

PEL Long-term value: 2.5 mg/m<sup>3</sup>  
as F

REL Long-term value: 2.5 mg/m<sup>3</sup>  
as F

TLV Long-term value: 2.5 mg/m<sup>3</sup>  
as F, BEI

**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.

Avoid contact with the eyes and skin.

**Breathing equipment:**

Not necessary if room is well-ventilated.

Use suitable respiratory protective device in case of insufficient ventilation.

**Protection of hands:**



Protective gloves

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**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:**

<b>Form:</b>	Solid
<b>Color:</b>	White
<b>Odor:</b>	Mild
<b>pH-value:</b>	Not applicable.

**Change in condition**

**Melting point/Melting range:** > 300 °C (> 572 °F)  
Undetermined.

**Flash point:** Not applicable.

**Flammability (solid, gaseous):** Not determined.

**Auto igniting:** Product is not selfigniting.

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

**Vapor pressure:** Not applicable.

**Density at 20 °C (68 °F):** 1.66 g/cm<sup>3</sup> (13.853 lbs/gal)

**Vapor density:** Not applicable.

**Solubility in / Miscibility with**

**Water:** Partly soluble.

**Solvent content:**

**Organic solvents:** 0.0 %  
0.0 g/l / 0.00 lb/gl

**Solids content:** 100.0 %

**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:** No further relevant information available.

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**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:**

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

**CAS: 14075-53-7 potassium tetrafluoroborate**

Oral | LD50 | 500 mg/kg (ATE)

**Primary irritant effect:**

**on the skin:** Irritant to 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:

Harmful

Irritant

**Carcinogenic categories**

**IARC (International Agency for Research on Cancer)**

CAS: 14075-53-7 | potassium tetrafluoroborate

3

**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:**

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**

**UN-Number** UN3260  
**DOT, ADR, IMDG, IATA**  
**UN proper shipping name** Corrosive solid, acidic, inorganic, n.o.s. (Ammonia Tetrafluoroborate) (ammonium tetrafluoroborate, potassium tetrafluoroborate)  
**DOT**  
**ADR** 3260 Corrosive solid, acidic, inorganic, n.o.s. (Ammonia Tetrafluoroborate) (ammonium tetrafluoroborate, potassium tetrafluoroborate)  
**IMDG, IATA** CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ammonium tetrafluoroborate, potassium tetrafluoroborate)  
**Transport hazard class(es)**

**DOT**



**Class** 8 Corrosive substances

**ADR, IMDG, IATA**



**Class** 8 Corrosive substances

**Packing group** III  
**DOT, IMDG, IATA** III  
**Marine pollutant:** No  
**Special precautions for user** Not applicable.  
**EMS Number:** F-A,S-B  
**Segregation groups** Acids  
**Stowage Category** A  
**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

**Transport/Additional information:**

**DOT**  
**Quantity limitations** On passenger aircraft/rail: 25 kg  
On cargo aircraft only: 100 kg

**ADR**  
**Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 g  
Maximum net quantity per outer packaging: 1000 g

**IMDG**  
**Limited quantities (LQ)** 5 kg

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**Exempted quantities (EQ)  
UN "Model Regulation":**

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Maximum net quantity per inner packaging: 30 g  
UN 3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.  
(AMMONIA TETRAFLUOROBORATE) (AMMONIUM  
TETRAFLUOROBORATE, POTASSIUM  
TETRAFLUOROBORATE), 8, III

**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):**

None of the ingredients is listed.

**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: 13826-83-0	ammonium tetrafluoroborate	I (oral)
CAS: 14075-53-7	potassium tetrafluoroborate	I (oral)

**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.

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

**Hazard pictograms**



GHS05 GHS07 GHS08

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**Signal word** Danger**Hazard statements**

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H372 Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

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

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**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

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety &amp; Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Met. Corr.1: Corrosive to metals – Category 1

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

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

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STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1  
**\* Data compared to the previous version altered.**

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US