

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 07/24/2003

Reviewed on 07/23/2003

1 Identification of substance**Product details****Trade name: 450-B***Application of the substance / the preparation: Soldering flux***Manufacturer/Supplier:**Kester
515 E. Touhy Ave.
Des Plaines, IL 60018Tel.(847) 297-1600
Fax.(847) 390-9338**Information department:**

MSDS Coordinator

Tel. (847) 699-5755

Emergency information:

CHEMTREC 24-Hour Emergency Telephone Number:

(800)424-9300

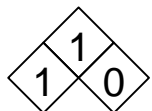
CHEMTREC 24-Hour Emergency Telephone Number (Outside of the U.S. and Canada):

(703)527-3887

2 Composition/Data on components**Chemical characterization***Description: Mixture of the substances listed below with nonhazardous additions.***Dangerous components:**

12124-97-9 ammonium bromide

≤ 2.5%

3 Hazards identification**WHMIS Hazard Symbols****Information pertaining to particular dangers for man and environment:***The product does not have to be labelled due to the calculation procedure of international guidelines.***Classification system:****NFPA ratings (scale 0 - 4)**

Health = 1

Fire = 1

Reactivity = 0

HMIS-ratings (scale 0 - 4)

HEALTH	1
FIRE	1
REACTIVITY	0

Health = 1

Fire = 1

Reactivity = 0

4 First aid measures**After inhalation:** *Supply fresh air; consult doctor in case of complaints.*

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After skin contact: *Rinse with warm water.***After eye contact:** *Rinse opened eye for several minutes under running water.***After swallowing:** *Drink copious amounts of water and provide fresh air. Immediately call a doctor.***5 Fire fighting measures****Suitable extinguishing agents:***CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.***Special hazards caused by the material, its products of combustion or resulting gases:***In case of fire, the following can be released:**Carbon monoxide (CO)**Carbon dioxide (CO₂)**Aliphatic aldehydes***Protective equipment:** *Wear self-contained respiratory protective device.***6 Accidental release measures****Person-related safety precautions:** *Ensure adequate ventilation***Measures for environmental protection:** *Do not allow to enter sewers/ surface or ground water.***Measures for cleaning/collecting:***Absorb with clay, dry sand, or other inert material. Do not use combustible materials such as sawdust. Place in a chemical waste container.***7 Handling and storage****Handling:****Information for safe handling:** *Ensure good ventilation/exhaustion at the workplace.***Information about protection against explosions and fires:** *Keep respiratory protective device available.***Storage:****Requirements to be met by storerooms and receptacles:** *No special requirements.***Information about storage in one common storage facility:** *Not required.***Further information about storage conditions:** *Store in cool, dry conditions in well sealed receptacles.***8 Exposure controls and personal protection****Additional information about design of technical systems:** *No further data; see item 7.***Components with limit values that require monitoring at the workplace:***The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.***Personal protective equipment:****General protective and hygienic measures:***Keep away from foodstuffs, beverages and feed.**Immediately remove all soiled and contaminated clothing.**Wash hands before breaks and at the end of work.*

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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.

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:

Tightly sealed goggles

Safety glasses

9 Physical and chemical properties**General Information**

Form: Liquid
Color: Blue
Odor: Mild

Change in condition

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 104°C (219°F)

Flash point: 239°C (462°F)

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

Vapor pressure at 20°C (68°F): 19 mm Hg

Density at 20°C (68°F): 1.076 g/cm³

Solubility in / Miscibility with

Water: Fully miscible.

pH-value at 20°C (68°F): 6.0

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Materials to be avoided: Strong acids, strong oxidizers.

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Dangerous reactions *No dangerous reactions known.***Dangerous products of decomposition:***Carbon monoxide and carbon dioxide**Aldehydes***11 Toxicological information****Acute toxicity:****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: May cause respiratory irritation.**through ingestion: May cause gastrointestinal irritation.***Sensitization:** *No sensitizing effects known.***12 Ecological information****General notes:** *Do not allow product to reach ground water, water course or sewage system.***13 Disposal considerations****Product:****Recommendation:** *Disposal must be made according to official regulations.***Uncleaned packagings:****Recommendation:** *Disposal must be made according to official regulations.***14 Transport information****DOT regulations:***Hazard class: -**Not regulated.***Land transport ADR/RID (cross-border):****ADR/RID class:** -*Not regulated.***Maritime transport IMDG:****IMDG Class:** -*Not regulated.***Marine pollutant:** *No***Air transport ICAO-TI and IATA-DGR:****ICAO/IATA Class:** -*Not regulated.*

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15 Regulations*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.***TSCA (Toxic Substances Control Act):***All ingredients are listed.***California Proposition 65***Chemicals known to cause cancer:**WARNING: This product may contain a chemical in trace amounts known to the State of California to cause cancer.*

7439-92-1	lead
7440-47-3	chromium
7440-43-9	cadmium
7440-02-0	nickel

*Chemicals known to cause reproductive toxicity:**WARNING: This product may contain a chemical in trace amounts known to the State of California to cause birth defects or other reproductive harm.*

872-50-4	N-methyl-2-pyrrolidone
7440-43-9	cadmium
7439-92-1	lead

Carcinogenicity categories*EPA (Environmental Protection Agency)**None of the ingredients is listed.**IARC (International Agency for Research on Cancer)**None of the ingredients is listed.**NTP (National Toxicology Program)**None of the ingredients is listed.**TLV (Threshold Limit Value established by ACGIH)**None of the ingredients is listed.**NIOSH-Ca (National Institute for Occupational Safety and Health)**None of the ingredients is listed.**OSHA-Ca (Occupational Safety & Health Administration)**None of the ingredients is listed.**CANADA: The following information relates to product regulation specific to 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 MSDS contains all of the information required by the CPR.*

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*WHMIS Classification: D2B***EUROPEAN UNION***The following information relates to product regulation specific to the directives of the European Union.***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 MSDS: *Product Safety***Contact:** *Heather Holich, MSDS Coordinator**Tel. (847)699-5755*

USA