SAFETY DATA SHEET

1. Chemical and company identification
Name of chemical (Product name) KE-45-T

MANUFACTURER
COMPANY NAME Shin-Etsu Chemical Co., Ltd.
CONTACT Quality Assurance Department (Gunma Complex)
ADDRESS 13-1, Isobe 2-chome, Annaka-shi, Gunma 379-0195, JAPAN
TELEPHONE 027-385-2172
NUMBER
FAX NUMBER 027-385-2753

SUPPLIER
COMPANY NAME Shin-Etsu Chemical Co., Ltd.
CONTACT Planning & Administration Department Silicone Division
ADDRESS 6-1, Ohtemachi 2-chome, Chiyoda-ku, Tokyo 100-0004, JAPAN
TELEPHONE 03-3246-5121
NUMBER
FAX NUMBER 03-3246-5381
EMERGENCY 027-385-2172 (Holiday/Nighttime: 027-385-2111)

Recommended use of the chemical and restrictions on use
Intended use RTV rubbers
RTV rubber for electrical, electronic and general industry (gluing and sealing)
Restrictions on use Industrial use only.

2. Hazards identification
GHS classification

Physical hazards The product is not classified according to GHS.
Health hazards Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 1
Sensitization, skin Category 1B

Environmental hazards The product is not classified according to GHS.

*Hazards not stated here are "Not classified", "Not applicable" or "Classification not possible".

GHS label elements
Symbols

Signal words Danger

Hazard statement Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction.

Precautionary statement
Prevention Avoid breathing dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
Response IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Take off contaminated clothing and wash it before reuse.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards This product reacts with water, moisture or humid air to evolve following compounds: Methylthioketozone
Emergency overview Causes serious eye damage. Causes skin irritation. May cause an allergic skin reaction.
3. Composition/information on ingredients

Substance or mixture: Mixture (Silicone mixture)

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Number</th>
<th>ENCS no.</th>
<th>ISHL no.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyloximesilane</td>
<td>22984-54-9</td>
<td>(2)-2039</td>
<td>(2)-2039</td>
<td>3 - 10</td>
</tr>
<tr>
<td>Vinyloximesilane</td>
<td>2224-33-1</td>
<td>(2)-2038</td>
<td>(2)-2038</td>
<td>1 - 3</td>
</tr>
<tr>
<td>Alkoxy silane</td>
<td>919-30-2</td>
<td>(2)-2061</td>
<td>(2)-2061</td>
<td>1 - 3</td>
</tr>
<tr>
<td>Methylethylketoxime(impurity)</td>
<td>96-29-7</td>
<td>(2)-546</td>
<td>(2)-546</td>
<td>&lt; 1</td>
</tr>
</tbody>
</table>

4. First aid measures

Move to fresh air. Call a physician if symptoms develop or persist.

If inhaled

Remove contaminated clothing immediately and wash skin with soap and water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

If on skin

Rinse immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

If in eyes

Rinse mouth. Get medical attention immediately.

If swallowed

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures


Extinguishing media to avoid: None known.

Specific hazards: By heating and fire, harmful vapors/gases may be formed. Nitrogen oxides. (corrosive)

Special fire fighting procedures: Move containers from fire area if you can do so without risk.

Protection of fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots, and self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency measures: Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Do not touch or walk through spilled material. Ensure adequate ventilation. Wear appropriate personal protective equipment.

Environmental precautions: Prevent further leakage or spillage if safe to do so.

Methods or materials for containment and cleaning up: Eliminate sources of ignition.

Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use.

7. Handling and storage

Handling: Provide adequate ventilation.

Technical measures (e.g. Local and general ventilation):
Safe handling advice
Use care in handling/storage. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Do not breathe mist or vapor. Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure.

Contact avoidance measures
Refer to section 10: stability and reactivity.

Hygiene measures
Do not get in eyes. Avoid contact with skin. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Handle in accordance with good industrial hygiene and safety practice.

Storage
Safe storage conditions
Keep container tightly closed. Keep out of the reach of children. Store in a cool, dry place out of direct sunlight.

Safe packaging materials
Keep in original container.

8. Exposure controls/personal protection

Occupational exposure limits
Vendor guide Components

<table>
<thead>
<tr>
<th>Vendor guide</th>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyleneethylketoimine (Impurity) (CAS 96-29-7)</td>
<td>STEL</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Decomposition</td>
<td>TWA</td>
<td>3 ppm</td>
<td></td>
</tr>
</tbody>
</table>

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</tr>
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</table>

Engineering measures
Provide adequate general and local exhaust ventilation. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and/or door open for at least 24 hours after application.

Personal protective equipment
Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection
Wear protective gloves.

Eye protection
Wear safety glasses with side shields (or goggles).

Skin and body protection
Wear suitable protective clothing.

9. Physical and chemical properties

Appearance

| Appearance | Paste. |
| Form | Milk-white Translucent. |
| Color | Oxime odor |
| pH | Not measurable (Refer to water solubility) |

Melting point/Freezing point
No data

Boiling point, initial boiling point, and boiling range
Not applicable

Flash point
152.6 °F (67 °C) Closed Cup (Does not sustain combustion)

Auto-ignition temperature
Not available.

Flammability limit - lower (%)
No data

Flammability limit - upper (%)
No data

Vapor pressure
Negligible (25 °C)

Vapor density
> 1 (air=1)

Evaporation rate
< 1 (Butyl Acetate=1)

Specific gravity
1.05 (25 °C)

Solubility (Water)
Not soluble

Partition coefficient (n-octanol/water)
Not applicable

Decomposition temperature
Not available.

Viscosity
Not applicable
### 10. Stability and reactivity

**Reactivity**
No hazardous reaction known under normal conditions of use, storage and transport.

**Chemical stability**
Stable at normal conditions.

**Possibility of hazardous reactions**
Hazardous polymerization does not occur.

**Conditions to avoid**
None specific.

**Incompatible materials**
Strong oxidizing agents. Water, moisture.

**Hazardous decomposition products**
This product reacts with water, moisture or humid air to evolve following compounds:
Methylethylketoxime.
Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product:

### 11. Toxicological information

#### Acute toxicity

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alkoxysilane (CAS 919-30-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Rabbit</td>
<td>4290 mg/kg</td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>1570 - 3650 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1780 mg/kg</td>
</tr>
<tr>
<td>Methylethylketoxime (Impurity) (CAS 96-29-7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Rabbit</td>
<td>&gt; 1000 mg/kg (Male and female)</td>
</tr>
<tr>
<td>Inhalation vapor LC50</td>
<td>Rat</td>
<td>&gt; 4.83 mg/l, 4 hours (Male and female)</td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>&gt; 900 mg/kg (Male and female)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2326 mg/kg (Male)</td>
</tr>
</tbody>
</table>

#### Decomposition

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#### Skin corrosion/irritation

SKIN-RABBIT : 5mg/24Hr SEVERE [Alkoxysilane]

#### Serious eye damage/eye irritation

Causes serious eye damage. [Vinlyoximesilane]

#### Respiratory or skin sensitization

Skin sensitization
May cause an allergic skin reaction. [Vinlyoximesilane] [Vinlyoximesilane] [Alkoxysilane] [Methylethylketoxime]

Germ cell mutagenicity
Negative (Ames Test) [Alkoxysilane]

Carcinogenicity
Suspected of causing cancer. [Methylethylketoxime]
Specific target organ toxicity - repeated exposure

May cause damage to the following organs through prolonged or repeated exposure:

- Hematopoietic system. [Methyloximesilane]
- Hematopoietic system. [Vinylloximesilane]
- Hematopoietic system. [Methylethylketoxime]

Other information

Additional Information

- Methyl Ethyl Ketoxime (MEKO). Material will generate MEKO on exposure to humid air gradually. Male rodents exposed to MEKO vapor at high concentration throughout their lifetime developed liver cancer. But relevance to humans is uncertain now. Please read the detail information to MEKO below

  Skin Irritation ; Causes mild irritation. Can be absorbed through the skin.

  Eyes Irritation ; Causes severe irritation.

  Acute Oral Tox. ; LD50(rat)= >900mg/kg.

  Acute Dermal Tox. ; LD50(rabbit)= >1000mg/kg.

  Acute Inhalation Tox. ; LC50(rat) > 4.83mg/l/4Hr

  Inhalation Tox. ; Shows narcotic action at high concentration. May produce blood effects

  Skin Sensitization ; Positive(guinea pig)

  Neurotoxicity ; High dose can produce transient and reversible change in neurobehavioral function.

  Carcinogenicity ; Liver carcinomas were observed in a lifetime inhalation study (ca.2 years) in which mice and rats were exposed.

  Other Chronic Study ; Degenerative effects on the olfactory epithelium of nasal passages occurred in a concentration related manner in males and females of mice and rats at MEKO concentration of 15, 75 and 375ppm. The significant change in hematological parameters were observed at 404ppm concentration.

  Workplace Environmental Exposure Level; Vendor guide ; 3ppm(TWA), 10ppm(STEL), AIHA WEEL ; 10ppm(TWA)

12. Ecological information

Ecotoxicological data

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</tr>
<tr>
<td>Aquatic Fish</td>
<td>LC50</td>
<td>Oryzias latipes</td>
</tr>
<tr>
<td>Methyleneketoxime(Impurity) (CAS 96-29-7)</td>
<td></td>
<td></td>
</tr>
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<td>Aquatic Fish</td>
<td>LC50</td>
<td>Fathead minnow (Pimephales promelas)</td>
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</table>

Ecotoxicity Harmful to aquatic life. [Methyleneketoxime]

Persistence and degradability Causes easily hydrolysis in water or atmosphere. [Alkoxysilane]

13. Disposal considerations

Local disposal regulations

- Not hardening substance : Incinerate. Incinerator should be appropriately equipped for silica and other fine powder which the product will generate in incineration. Workers should wear appropriate personal protective equipment(s) such as respirator.

- Hardening substance : Bury or incinerate. Incinerator should be appropriately equipped for silica and other fine powder which the product will generate in incineration. Workers should wear appropriate personal protective equipment(s) such as respirator.

- Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Dispose of contents/container in accordance with local/regional/national/international regulations.

14. Transport information

International regulations

IATA Not regulated as dangerous goods.

IMDG Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This product is not intended to be transported in bulk.
National regulations

Follow regulation in section 15 for domestic transportation.

15. Regulatory information

Industrial Safety and Health Act
Specified substances regulation
Class 1 designated chemical substances
Not regulated.
Class 2 designated chemical substances
Not regulated.
Class 3 designated chemical substances
Not regulated.

Organic solvent regulation
Class 1 organic solvents
Not regulated.
Class 2 organic solvents
Not regulated.
Class 3 organic solvents
Not regulated.

Notifiable substances
Not applicable
Labeling substances
Not applicable

Poisonous and Deleterious Substances Control Act
Specified poisonous substances
Not regulated.
Poisonous substances
Not regulated.
Deleterious substances
Not regulated.

Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
Class I specified chemical substances
Not regulated.
Class II specified chemical substances
Not regulated.
Monitoring chemical substances
Not regulated.
Priority Assessment Chemical Substances (PACs)
Not regulated.

Law concerning Pollutant Release and Transfer Register
Specified class 1 substances (substance name, ordinance number and content)
Not applicable
Class 1 substances (substance name, ordinance number and content)
Not applicable
Class 2 substances (substance name, ordinance number and content)
Not applicable

Fire Service Act
Designated combustible material (Combustible solids)

Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule
Not regulated.

Air Law, Enforcement Rule
Not regulated.

Explosives Control Act
Not applicable.

High Pressure Gas Safety Act
Not applicable.

Act on Prevention of Marine Pollution and Maritime Disaster
Not applicable.
16. Other information

Bibliography

- HSDB® - Hazardous Substances Data Bank
- IARC Monographs. Overall Evaluation of Carcinogenicity
- National Toxicology Program (NTP) Report on Carcinogens
- ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
- Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits
- JIS Z 7252:2014 Classification of chemicals based on “Globally Harmonized System of Classification and Labelling of Chemicals (GHS)”
- JIS Z 7253:2012 Hazard communication of chemicals based on GHS - Labelling and Safety Data Sheet (SDS)
- Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012

This safety data sheet was prepared in accordance with JIS Z 7253:2012.

This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

This product has been designed, manufactured and developed solely for general industrial use only. This product is not designed for, intended for use as, or suitable for, medical, surgical or other particular purposes. Users have the sole responsibility and obligation to determine the suitability of this product for any application, to make preliminary tests, and to confirm the safety of this product for their use. Users must never use this product for the purpose of implantation into the human body and/or injection into humans.

Version number

05

Revision date

05-09-2019