

## KE-45

### 特点

单组份

室温固化(脱脲型)

在-40℃~+180℃范围内可连续使用,并且不会失去橡胶弹性

对金属,塑料类有优良的粘着性

优良的介电气性能

### 用处

电子零件的粘着

### 物理性能

项目	单位	性能
外观		半透明/白色/黑色/红色/红褐色/灰色/象牙色
粘度	Pa·s	膏状
指触干燥时间	min.	6
密度 25℃	g/cm <sup>3</sup>	1.05
硬度	Type-A	30
断裂时伸长率	%	350
拉伸强度	MPa	2.0
抗拉剪方向粘着强度	MPa	1.0(Aluminum)
体积电阻率	TΩ·m	5
击穿强度	kV/mm	23
介电常数(50Hz)		3.0
介电损耗角正切(50Hz)		0.005
Thermal conductivity	W/m·K	0.21
阻燃性 UL94	UL94	HB

固化条件:23±2℃/50±5%相对湿度 7天

非规格值

### 包装

100g 牙膏管(半透明/白色/黑色/红色/红褐色/象牙色)

330ml 筒装(半透明/白色/黑色/红色/红褐色/灰色/象牙色)

### 使用方法

#### 处理面的洗净

处理面的可能影响粘接性的铁锈,油渍,垃圾等异物用砂纸或溶剂(甲苯,二甲苯等)除去。

另外,用溶剂对塑料进行清洗的时候,溶剂里的某些物质会腐蚀塑料,请注意。

#### 底涂料的涂布

使用刷子进行均一涂布。如果有漏涂的话,将会影响这一部分的粘接性, 请注意。

#### 牙膏管

切割尖嘴: 将附带的尖嘴安装在牙膏管的前端,用刀切割至所需口径。

操作: 握住牙膏管,将之挤出。

保存: 使用后请拆下尖嘴,盖紧盖子。请用溶剂将尖嘴内的残留物去除干净。

#### 筒装

切割尖嘴: 切割尖嘴后,用尖锐物将隔膜戳破,装入专用点胶枪内。

操作: 握住牙膏管,将之挤出。

保存: 请尽可能一次用完。如有残余,将切断之喷嘴倒置并密封。如此可保存数天。

### 使用时的注意点

1 KE-45和空气中的湿气发生反应,从表面开始固化。所以,固化速度会随温度,湿度等使用环境发生变化。

由于深部固化性不高,所以不适宜大面积粘接之用途。另外,湿度超过100%,水滴粘在正在固化中的橡胶后,加水分解反应会先架桥固化反应进行,会导致固化后橡胶强度降低,容易引起表面粘接等现象,请注意。

2 KE-45在密闭状态下腐蚀金属铜的事例,故请事先进行样品测试,以确认是否合适使用。

3 在固化的过程中,电气绝缘性可能会出现暂时降低的情况。但是基本上都会在完全固化后恢复固有的电气绝缘性并充分发挥。

4 与溶剂接触可能会导致无法固化, 请注意。

5 请勿在完全密封状态场所使用缩合反应型产品。

6 KE-45的外观会随着时间的变化而发生黄变,但特性不会发生变化。

7 清除被着物表面的污物,水分,油渍,保持干净。根据被着物体的情况,选用合适之底涂料。

8 如需使用加压枪,请将压力控制在0.3MPa。

#### 安全·卫生方面的注意点

- 1 在使用KE-45时候,请注意充分换气。在固化时,KE-45会产生疝。如在使用中感觉不适,请移自至空气新鲜的场所。
- 2 未固化的KE-45有刺激皮肤·粘膜的可能,应避免渗入眼睛、以及长时间黏附皮肤上。如小心误入眼睛时,请速用流水冲洗眼睛15分钟以上后,请医师诊断。如小心粘到皮肤上时,请速用干布擦去后,用肥皂水洗净。戴隐形眼镜者如小心将未固化的KE-45误入眼睛时,会引起隐形眼镜粘附在眼睛上的情况发生,提请充分注意。
- 3 在使用中,请勿用手擦揉眼睛。并请采取适当的防护措施,如佩戴保护眼镜等。
- 4 应发放置于孩童无法取得之处。
- 5 详情请参阅产品安全数据资料。MSDS请向相关营业部门索取。

#### 保管时的注意点

请在室温(1℃~25℃),避免阳光直射的环境中保存。

#### 其他

- 1 这一样本所列的数值均不属于规格值。此外所记载的内容,会因性能提高或规格参数改变等理由,恕不经预告更改。
- 2 使用本产品之前,务必请贵公司预先进行测试,以便确认是不是适合使用目的。此外,这一样本介绍用途并不保证不抵触任何专利。
- 3 我公司的所列有机硅系商品,均为一般性工业用途开发的。如要用于医疗或其他特殊用途时,请公司预先进行测试,以便确认该用途的安全性之后再使用。此外,请勿用于人体移植或注入人体。
- 4 有关这一样本所列有机硅系商品的进口法律责任均应由客户担负。请预先查清每一国家或地区的有关规定。
- 5 要转载这一资料时,务必需要我公司的有机硅事业本部的认可。

D4-2008/04/22



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**MATERIAL SAFETY DATA SHEET**

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**SECTION 1. COMPANY IDENTIFICATION**

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## COMPANY IDENTIFICATION

MANUFACTURER'S NAME: Shin-Etsu Chemical Co., Ltd.

ADDRESS: 6-1, 2-Chome, Ohtemachi, Chiyodaku, Tokyo, JAPAN

EMERGENCY TELEPHONE NUMBER:

02-2751-6999 (Shin-Etsu Silicone Taiwan Co., Ltd.)

TELEPHONE NUMBER FOR INFORMATION:

03-3246-5121 (Tokyo, JAPAN)

02-2751-6999 (Shin-Etsu Silicone Taiwan Co., Ltd)

DATA PREPARED : 12/11/1997

LAST REVISION : 09/29/1999

DATA ISSUED : 02/23/2001

ISSUE NO 200102002528

BASE NO 9

PRODUCT NAME :

**KE-45-T**

PRODUCT CLASSIFICATION:

One Component Silicone Rubber Compound

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**SECTION 2. COMPOSITION**

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SINGLE OR MIXTURE:

Mixture

CHEMICAL IDENTIFICATION:

Organopolysiloxane mixture

HAZARDOUS COMPONENT(S)/(CAS No.):

No hazardous materials present

(See Section 8 of this MSDS for Exposure Guideline)

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**SECTION 3. HAZARDS IDENTIFICATION**

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HAZARDS CLASSIFICATION:

None (based on IMO)

None (based on DOT)

FIRE AND EXPLOSION:

Not considered flammable nor combustible, but will burn if involved in a fire.

POTENTIAL HEALTH EFFECT:

INHALATION ; Vapor overexposure may cause drowsiness, injure blood and liver, and may irritate eyes, nose and throat.

SKIN contact ; On direct contact uncured product or its

vapor may cause slight irritation to skin.  
EYES contact ; On direct contact uncured product or its  
vapor may cause slight irritation to eyes.  
INGESTION ; No information is available.

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**SECTION 4. FIRST AID MEASURES**

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INHALATION ; Remove to fresh air.  
SKIN contact ; Immediately remove product from skin with dry  
cloth or towel, and wash exposed area with  
detergent.  
EYES contact ; Immediately flush with plenty of water for at  
least 15 minutes and promptly call a  
physician.  
INGESTION ; Wash out mouth with water provided person is  
conscious. Never give anything by mouth to an  
unconscious person. Call a physician  
immediately.

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**SECTION 5. FIRE FIGHTING MEASURES**

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FLASH POINT(method used):  
Not applicable (Solid)  
FLAMMABLE LIMITS:  
LOWER: Not determined UPPER: Not determined  
EXTINGUISHING MEDIA:  
Foam, dry chemical, carbon dioxide or fine water spray  
SPECIAL FIRE FIGHTING PROCEDURE:  
None  
UNUSUAL FIRE AND EXPLOSION HAZARD:  
None

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

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STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:  
Shut off all ignition sources.  
Contain the spill or leak.  
Scrape up with rag or other material and place in container.

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**SECTION 7. HANDLING AND STORAGE**

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PRECAUTION TO BE TAKEN IN HANDLING AND STORING:  
Keep container closed when not in use.  
Store in a cool place.  
Keep away from heat, sparks and flame.  
Do not lay the container on its side.  
Use only with adequate ventilation.

Avoid prolonged breathing vapor.  
Avoid contact with eyes and skin.  
Contact lens wearers take appropriate precaution.  
Keep out of reach of children.  
\* \* \* \* \* Information about the emptied container \* \* \* \* \*  
Do not re-use this container.  
Keep away from heat, sparks and flame.  
Do not puncture or cut this container, and do not weld on or  
near this container.

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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## EXPOSURE GUIDELINES:

Vendor guide ; 3ppm(TWA), 10ppm(STEL),  
AIHA WEEL\* ; 10ppm(TWA)  
[Methylethylketoxime ; decomposed product]  
(\*AIHA WEEL = American Industrial Hygiene Association  
Workplace Environmental Exposure Level)

## RESPIRATORY PROTECTION(specify type):

Use air-supplied breathing apparatus unless local exhaust ventilation is adequate  
decomposed product is within AIHA guideline.

## VENTILATION:

LOCAL EXHAUST: Required  
MECHANICAL(general): Adequate ventilation system  
SPECIAL: Unknown  
OTHER: Pay attention to ventilation such as local exhaust, mechanical and/or do  
for at least 24 hours after application.

## PROTECTIVE GLOVES:

Plastic film or rubber gloves

## EYE PROTECTION:

Safety glasses

## OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Eyewash equipment

## WORK/HYGIENIC PRACTICES:

Keep away from heat, sparks and flame.  
Avoid prolonged breathing vapor.  
Avoid contact with eyes and skin.  
Wash hands after handling.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

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## BOILING POINT:

Not applicable

## VAPOR PRESSURE:

Negligible (25 degrees C)

## VAPOR DENSITY(air=1):

>1

## SPECIFIC GRAVITY:

1.05 (25 degrees C)

## MELTING POINT:

Not applicable

## EVAPORATION RATE:

&lt;1 (Butyl Acetate=1)

## SOLUBILITY IN WATER:

Not soluble

## APPEARANCE(color):

Translucent

## APPEARANCE(form):

Paste

## ODOR:

Oxime odor

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**SECTION 10. STABILITY AND REACTIVITY**

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## STABILITY:

Stable

## CONDITION TO AVOID:

Exposure to air or moisture until ready to use - Causes curing and methylethylketoxime vapors form gradually.

## INCOMPATIBILITY(material to avoid):

Water or moisture

## HAZARDOUS DECOMPOSITION OR BY-PRODUCT:

Water, moisture, or humid air can cause methylethylketoxime

Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Nitrogen oxides. Formaldehyde.

## HAZARDOUS POLYMERIZATION:

Will not occur

## CONDITION TO AVOID:

None

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**SECTION 11. TOXICOLOGICAL INFORMATION**

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## SKIN IRRITATION:

No information is available.

See OTHER INFORMATION.

## EYE IRRITATION:

No information is available.

See OTHER INFORMATION.

## SENSITIZATION:

No information is available.

See OTHER INFORMATION.

ACUTE TOXICITY(LD50):

No information is available.

See OTHER INFORMATION.

ACUTE TOXICITY(LC50):

No information is available.

See OTHER INFORMATION.

SUBACUTE TOXICITY:

No information is available.

See OTHER INFORMATION.

CHRONIC TOXICITY:

No information is available.

See OTHER INFORMATION.

CARCINOGENICITY:

NTP:Not listed, IARC:Not listed, OSHA REGULATED:Not listed

See OTHER INFORMATION.

MUTAGENICITY:

No information is available.

See OTHER INFORMATION.

OTHER INFORMATION:

Additional Information

Methyl Ethyl Ketoxime (MEKO)---Decomposition product  
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)= 4ml/kg.

Acute Inhalation Tox.;LC50(rat)= >4.8mg/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.

No evidence of cumulative  
neurotoxicity was detected.

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

These carcinomas were statistically  
increased in males at MEKO

**PRODUCT NAME: KE-45-T**

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concentration of 375ppm. Relevance to humans is uncertain now.

Mutagenicity ;Not considered mutagenic based on several in vitro and vivo studies.

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.

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

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**SECTION 12. ECOLOGICAL INFORMATION**

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## BIODEGRADATION:

Not applicable

## BIOACCUMULATION:

No information is available.

## AQUATIC TOXICITY:

No information is available.

## OTHER INFORMATION:

None

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**SECTION 13. DISPOSAL CONSIDERATIONS**

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Can be land-filled for cured product or burned in a chemical incinerator equipped with an afterburner and scrubber.

Do not dispose the emptied container unlawfully.

Observe all federal, state, and local laws.

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**SECTION 14. TRANSPORT INFORMATION**

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## &lt;IMO INFORMATION&gt;

## ID No.:

None

## CLASSIFICATION AND CLASS:

None

## PACKAGING GROUP:

None

## PROPER SHIPPING NAME:

None

## TECHNICAL SHIPPING NAME:

None

## MARINE POLLUTANT:

None





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<DOT INFORMATION>

ID No.(49CFR 172.101):

None

HAZARD CLASS(49CFR 172.101):

None

PACKING GROUP(49CFR 172.101):

None

PROPER SHIPPING NAME(49CFR 172.101):

None

TECHNICAL SHIPPING NAME:

None

DOT REPORTABLE QUANTITY(49CFR 172.101, APP.) :

HAZARD SUBSTANCE(S) NAME / (CAS No.), CONTENTS AND RQ

Not applicable

SECTION 15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT(TSCA) STATUS:

Listed on the TSCA Inventory.

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EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES(EINECS) STATUS:

Listed on the EINECS.

LABELING ACCORDING TO EC-REGULATIONS REQUIRED:

SYMBOL : Not required

R-PHRASE : Not required

S-PHRASE : Not required

CONTAINS : None

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WGK CLASSIFICATION (Water Resources Act in Germany):

WGK=1

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SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986(SARA) TITLE III SECTION 313 SUPPLIER NOTIFICATION:

This regulation requires submission of annual reports of toxic chemical(s) that appear in section 313 of the emergency planning and community Right-To-Know Act of 1986 and 40 CFR 372. This information must be included in all MSDS's that are copied and distributed for the material.

The toxic chemical(s) contained in this product are:

CHEMICAL NAME/(CAS No.) AND CONTENTS

\*\* None \*\*

\* \* \* \* \*

CALIFORNIA PROPOSITION 65:This regulation requires a warning for California Proposition 65 Chemical(s) under the statute.

The California Proposition 65 Chemical(s) contained in this product are:

CHEMICAL NAME/(CAS No.) AND CONTENTS

\*\* None \*\*



**SECTION 16. OTHER INFORMATION**

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For Industrial Use Only

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This materials safety data sheet is offered solely for your information, consideration and investigation. The data described in this MSDS consist of data on literature, our acquisitional data and analogical inference by data of similar chemical substance or product. Shin-Etsu Chemical Co., Ltd. provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.

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