TSE382
silicone adhesive sealant

ENGINEERED MATERIALS - CONSUMER ELECTRONICS

TSE382 is a one-component, oxime cure, silicone adhesive/sealant that cures at room temperature using moisture in the air. This product typically bonds to many materials in solar modules, such as metals, plastics and glass, without the use of primers.

Key Features and Typical Benefits

- primerless adhesion to many substrates
- neutral cure: Low risk of corrosion (corrosion to copper and copper alloys)
- excellent resistance to high and low temperature. Continuous operation from -55°C to 200°C
- excellent weatherability and ozone and chemical resistance
- simple and easy-to-use one-component system
- UV Stability
- 0.75mm: UL 94 HB, RTI 150°C, HAI/CTI=0, HWI=4

Typical Physical Properties		
Uncured Properties		
Appearance		Non-flowable paste
Tack-free Time (23°C)	Min	10

Cured Properties (7 days @ 23°C / 50% RH)		
Appearance		Elastic rubber
Density (23°C)	g/cm^3	1.04
Hardness (Type A)		28
Tensile Strength	MPa (kgf/cm^2)	1.9 (19)
Elongation	%	380
Adhesive Strength(1)	MPa (kgf•cm^2)	1.7 (17)
Thermal Conductivity(2)	W(m•K)•{cal/(cm•s•°C)}	0.18 {4.4 x 10^{-4}}
Volume Resistivity	Ω•cm	1.0 x 10^{15}
Dielectric Strength	KV/mm	23
Dielectric Constrant (60Hz)		2.9
Dissipation Factor (60Hz)		0.004

(1) Aluminum Lap Shear

(2) In-house test method

Typical property data values should not be used as specificatons.

Typical Adhesion Capabilities

TSE382 typically has excellent bonding properties and adheres to many materials without primers. However, for significantly better adhesion on difficult-to-bond substrates, use of a primer is suggested. The following list of materials shows the quality of adherence of TSE382 used with ME121, ME123, XP80-A5363 or without a primer.

Substrate	No Primer	ME121	ME123	YP941/ XP80-A5363
Metals				
Copper	△(1)	○(1)		
Steel	○	○		
Mild Steel	○	○		
Brass	△(1)	○(1)		
Stainless steel	△	○		
Aluminum	○	○		
Corrosion-resistant aluminum	○	○		
Galvanized sheet iron	○	○		
Tin plate	○	○		
Plastics				
Acrylic resin	○	○		
Phenolic resin	○	○		
Epoxy resin	○	○		
Polycarbonate	○(2)	○(2)		
Soft polyvinyl chloride	X	X	○	
Rigid polyvinyl chloride	○	○	○	
Polyester film	○	○	○	
Unsaturated polyester resin	○	○	○	
Polyimide	○	○	○	
Nylon 66	○		○	○(3)
PBT	△		○	X
PPS	△		○	○(3)
ABS resin	○	○	○	
Polypropylene	X	X	X	○(4)
Polyethylene	X	X	X	X(4)
Polytetrafluoroethylene	X	X	X	
Silicone varnish laminate	○	○		
Silicone varnish coated glass cloth	○	○		
Rubbers				
Chloroprene	△		○	
Nitryl	△		○	
Styrene butadiene	△		○	
Ethylene propylene	△		○	
Silicone	○		○	
Others				
Glass	○	○		
Ceramics	○	○		
Wood	△~○	△~○		

Note: ○: Excellent (Cohesive failure, 100%) △: Not sufficient X: Poor (Cohesive failure, 0%)
(1): Corrosion may occur depending on the application (2): Do not apply to Polycarbonate due to solvent crack
(3): YP9341 (4): XP80-A5363

Substrate surface should be thoroughly cleaned with a suitable solvent such as alcohol, xylene, methyl ethyl ketone (MEK), etc.

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

Customers should review the latest Material Safety Data Sheet (MSDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, and any special storage conditions required for safety. MSDS are available at www.momentive.com or, upon request, from any Momentive Performance Materials (MPM) representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

Emergency Service

Momentive Performance Materials maintains an around-the-clock emergency service for its products.

Location	Emergency Service Provider	Emergency Contact Number
Mainland U.S., Puerto Rico	CHEMTREC	1-800-424-9300
Alaska, Hawaii	CHEMTREC	1-800-424-9300
Canada	CHEMTREC	1-800-424-9300
Europe, Israel	NCEC	+44 (0) 1235239670
Middle East	NCEC	+44 (0) 1235239671
Asia Pacific (except China)	NCEC	+44 (0) 1235239670
China	NCEC	+86-10-5100-3039
Latin America (except Brazil)	NCEC	+44 (0) 1235239670
Brazil	SOS Cotec	08000111767 or 08007071767
All other locations world wide	NCEC	+44 (0) 1235239670
At sea	Radio U.S. Coast Guard in U.S. waters NCEC in International waters	 +44 (0) 1235239670

For Health related calls, contact Momentive Performance Materials at +1-518-233-2500 (English only).

DO NOT WAIT. Phone if in doubt. You will be referred to a specialist for advice.

Customer Service Centers

Worldwide

4information@momentive.com

+1 614 986 2495 / T +1 800 295 2392

North America

Silicones

T +1 800 332 3390

Consumer Sealants/
Construction Sealants and Adhesives

T +1 877 943 7325

Latin America

South America

T +55 11 4534 9650

Mexico and Central America

T +52 55 2169 7670

Europe, Middle East, Africa and India

T +00 800 4321 1000 / +40 21 3111848

Pacific

China

T +800 820 0202 / +86 21 3860 4892

Japan

T +0120 975 400 / +81 276 20 6182

Korea

T +82 2 6201 4600

Malaysia

T +60 3 9206 1532

MOMENTIVE™

22 Corporate Woods Boulevard
Albany, NY 12211 USA
momentive.com

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MOMENTIVE™

化学品安全技术说明书

TSE382-W-200K*EX

版本 *1.0* 打印日期 03/26/2012

填表时间 03/01/2012 000000013916

一 化学品及企业标识

产品名称	:	TSE382-W-200K*EX
产品编号	:	000000013916
公司名称	:	Momentive Amer Ind.
地址	:	260 Hudson River Road, 12188
责任部门	:	产品安全监管部
制作单位	:	产品安全监管
电话	:	862138604500
传真号码	:	862150793707
紧急联系信息	:	+86-10-5100-3039
产品安全监管部	:	Productstewardship-GC@momentive.com

二 危险性概述

物理化学危害性	:	可能造成皮肤刺激。
GHS分类	:	严重眼损伤/眼刺激; 第2类 皮肤敏化作用; 第1类
GHS-标签	:	
信号词	:	警告
危险性说明	:	造成严重眼刺激。 可能引起皮肤过敏。

防范说明:

防范说明 - 预防	:	处理后要彻底洗手 戴防护手套/穿防护服/戴防护眼罩/戴防护面具。 避免吸入粉尘/烟/气体/烟雾/蒸气/喷雾。 受沾染的工作服不得带出工作场地。
防范说明 - 响应	:	如进入眼睛：用水小心冲洗几分钟。如戴隐形眼镜并可方便地取

出，取出隐形眼镜。继续冲洗。 如仍觉眼刺激：求医/就诊。 如皮肤沾染：用大量肥皂和水清洗。 如发生皮肤刺激或皮疹：求医/就诊。 沾染的衣服清洗后方可重新使用。

防范说明 - 处置 : 将内容物/容器处理到得到批准的焚烧厂。

紧急情况概述:

吸入 : 导致呼吸道刺激。

皮肤 : 可能造成皮肤刺激。

眼睛。 : 可能引起刺激。

吞食 : 若吞食，对健康有轻微危害。

三 成分/组成信息

纯物质/混合物 : 混合物

化学性质 : 聚二甲基硅氧烷、填料和交联剂的混合物。

危险组分

化学名称	CAS-No.	EINECS号 ELINCS号	浓度(%)
甲基三-(甲基乙基酮肟) 硅烷	22984-54-9	245-366-4	1.000 - 10.000
丁酮肟乙烯基硅烷	2224-33-1	218-747-8	0.100 - 1.000
氨乙基-氨丙基三甲氧基硅烷	1760-24-3	217-164-6	0.100 - 1.000

四 急救措施

吸入 : 若吸入，转移患者至空气新鲜处并就医。

皮肤接触	:	用大量肥皂和水清洗。
眼睛接触	:	如果不小心接触到眼睛，立刻用大量的水冲洗，并进行治疗。
吞食	:	立即呼叫医生或毒物控制中心。仅在医务人员指导下催吐。绝对不能给无意识的人员口服任何物品。

医生需注意的事项

医生需注意的事项	:	无数据

五 消防措施

合适的灭火剂	:	用泡沫、二氧化碳或干粉来灭火。
特殊的灭火步骤	:	移去可燃物。使用上述列出的灭火介质灭火。
消防员的特殊防护设备	:	佩戴自给式呼吸设备和防护服。

六 泄漏应急处理

个人防护措施、防护设备和应急程序	:	使用个人防护设备。 位于上风向。
环境预防措施	:	禁止排放到下水道、水路或地面上。
清理方法	:	若大量溢出，使用沙子或沙袋防止溢出，然后放置到空容器中以备回收。 若少量溢出，用擦或惰性物质浸透吸收，再放置到空容器中以备回收。
防止发生次生危害的预防措施	:	消除点火源。

七 操作处置与储存

操作处置

安全操作注意事项	:	远离火源，禁止吸烟。
防火防爆注意事项	:	物料会累积静电荷，后者可能会引起电气火花(点火源)。采用正确的连接及/或接地程序。

存储

储存的基本条件和要求	:	容器密闭，储存于黑暗、阴凉的室内。
储存注意事项	:	无数据

八 接触控制/个人防护

工程测量	:	只准在通风良好的地方使用。
呼吸防护	:	如果甲乙酮肟的暴露值超过推荐的工作场所暴露限值（3 ppm 8-小时 TWA），应使用针对有机气体的防护面罩。
手防护	:	建议: 橡胶或塑胶手套
眼睛防护	:	带侧防护罩的安全眼镜
皮肤和身体防护	:	穿橡胶防护靴。

九 物理特性

形态	:	浆糊, 糊剂
颜色	:	白色
气味	:	微弱的气味
pH	:	无数据 无数据
熔点	:	熔点 (°C) 不适用。
沸点/沸程	:	不适用。
闪点	:	120 °C 方法: 开杯闪点测定法
自燃温度	:	450 °C
爆炸下限	:	介质: 无数据 方法: 无数据
爆炸上限	:	介质: 无数据 方法: 无数据 不适用。
饱和蒸气压	:	不适用。
密度	:	1.04 g/cm3 在 25 °C
密度	:	大约1,040 g/cm3

溶解性/定性的	:	不溶解的
水溶性	:	不溶解的
在其它溶剂中的溶解度	:	无数据
运动粘度	:	> 7 mm2/s 在 40 °C
相对蒸气密度	:	无数据
蒸发率	:	无数据

十 稳定性和反应活性

要避免的条件	:	远离火源-禁止吸烟。
应避免的材料	:	在强酸或碱的催化下会发生聚合或分解。
危险反应	:	不发生危险的聚合反应。 注意: 正常条件下物料稳定。
进一步的信息	:	与水/湿气反应释放出甲基乙基酮肟= 2-丁酮肟。 在推荐条件下使用，无危害性反应。
有害的分解产物	:	与水/湿气反应释放出甲基乙基酮肟= 2-丁酮肟。

十一 毒性资料

急性经口毒性	:	无数据
急性吸入毒性	:	方法: 无数据 无数据

急性经皮毒性	:	无数据
皮肤刺激	:	无数据
眼睛刺激	:	无数据
致敏性	:	无数据
进一步的信息	:	该物质和水或者湿气接触反应或固化时会产生有毒的甲乙酮肟(MEKO)。皮肤接触：对皮肤有轻微刺激；眼睛接触：对眼睛有严重刺激，会损伤眼组织。急性口服毒性：LD50=4mg/kg(大鼠)；急性吸入：4-hr LC50=>4.8mg/l(大鼠)；吸入毒性：在高浓度下，具有麻醉作用。当暴露停止后恢复正常。长时间暴露会对血液有不利影响；皮肤致敏：阳性(豚鼠)对人体没有过敏反应；神经毒性：在高浓度条件下会导致运动机能出现暂时失常；致癌性：一生(大概两年)对雌性和雄性老鼠和大鼠进行的吸入试验表明，在暴露浓度在 375ppm 的水平时，在雄性老鼠和大鼠肝脏中观察到肿瘤。其他长时间的暴露测试：老鼠和大鼠嗅觉上皮细胞萎缩。可允许的浓度：TWA 3ppm(供应商推荐的数值)。确保良好的通风（STEL10ppm 或更少）。WEEL 的推荐数值，根据 AIHA 的 TWA 为 10ppm。

十二 生态学资料

该产品无生态毒理学数据

环境分布	:	无数据
持久性和降解性	:	无数据
其他的生态信息	:	该产品无生态毒理学数据

十三 废弃处置

产品 : 符合地方法规的要求下能被焚烧。

受污染包装 : 作为未用过的产品处置。

十四 运输资料

进一步的信息: 依照国家和国际的危险品运输法规，该产品未被列为危险货物。

远离食品和动物饲料

远离异味敏感材料。

十五 法规资料

名录

AICS (澳洲化学物质目录)	y（列入或豁免）	
ENCS (日本现有&新的化学物质目录)	y（列入或豁免）	
IECSC (中国现有化学物质名录)	y（列入或豁免）	
KECI (韩国现有化学物质目录)	y（列入或豁免）	
DSL (加拿大国内化学物质目录)	n（未列入）	
NDSL (加拿大非国内化学物质目录)	n（未列入）	
PICCS (菲律宾化学品和化学物质目录)	y（列入或豁免）	
TSCA (美国毒性物质控制法)	q (限制量)	列入美国毒物控制法规中

化学品名录如标记为限量或特殊情况，请联系迈图。

中国适用法律和法规信息

危险化学品安全管理条例，第591号令

GB/T 16483: 《化学品安全技术说明书--内容和项目顺序》

GB15258:《化学品安全标签编写规定》

GB 20576~GB 20602:化学品分类、警示标签和警示性说明安全规范

GB 13690:《化学品分类和危险性公示通则》

GB 12268:《危险货物品名表》

GB 6944:《危险货物分类和品名编号》

GB 190《危险货物包装标志》

GB/T 15098:《危险货物运输包装类别划分原则》

GBZ 2.1《工作场所有害因素职业接触限值第1部分化学有害因素》

十六 其他资料

参考资料	:	化学物品ACGIH TLV 化学安全数据手册（化学日报）
预防措施	:	该材料的开发和生产仅作工业用途。如需用于医用或其他特殊用途，须对产品进行安全测试并确保安全。 切勿用于人体，如植入，注入或其他可能有体内残留的应用。
其他防范措施	:	其他（地址，电话和传真及其他参考信息）。本处提供的信息是基于目前的参考，信息和其他数据。本处的描述仅针对普通用途。对于特殊用途，使用前需准备适当的安全设施。 本文件所列物理特性及其他数值均为该产品的预期平均值，不能视为担保。

进一步的信息

操作时，佩戴眼睛、手和呼吸保护装置。

此安全技术说明书提供的信息在其发布之日是准确无误的，所给出的信息仅作为安全搬运，储存，运输，处理等的指导，而不能被作为担保和质量指标，此信息仅用于指定的物质而不能用于其它相关的物质，除非特别指明。

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Generation Date: 2004/08/18
Revision Date: 2007/02/22

Material Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Trade name	:	TSE382-W-333ML*F
Company name	:	Momentive Performance Materials Japan LLC
Street address	:	133,Nishi-shinmachi,Ohta-shi,Gunma,Japan
Responsible Department	:	Product Stewardship & Compliance Group
Prepared by	:	Product Stewardship & Compliance
Telephone	:	81-276-31-1468
Telefax	:	81-276-31-3061
Emergency contact	:	Product Stewardship & Compliance Group
	:	Telephone 81-276-31-1468
	:	night / weekend 81-276-31-4118
	:	Telefax 81-276-31-3061
Internal No.	:	000000012918-1

2. COMPOSITION/INFORMATION ON INGREDIENTS

Pure / Mixture	:	Mixture
Chemical name	:	SILICONE COMPOUND

Chemical components

Components	Formula	METI or ISHL number	CAS number	Conc.%

3. HAZARDS IDENTIFICATION

Risk advice to man and the environment	:	
Physical / Chemical hazard	:	combustible Flammability
Particular hazard	:	No information available.
Name of classification (based on Japanese criteria)	:	Not applied to Japanese classification criteria.

4. FIRST AID MEASURES

Inhalation	:	If inhaled, move victim to fresh air and seek medical attention.
Skin contact	:	Wash off with soap and plenty of water.Get medical attention if symptoms occur.
Eye contact	:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion	:	Induce vomiting immediately and call a physician.
Notes to physician	:	No information available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	foam,powder, carbon dioxide
Special fire fighting procedures	:	Remove sources of combustibles. Extinguish the fire using fire-fighting media listed above. Cool containers / tanks with water spray. The fire fighting should be done from the windward side,with suitable respiratory protective device,if necessary.
Special protective equipment for fire-fighters	:	Self-contained breathing apparatus. Eye protection. Full protective clothing

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Use personal protective equipment. Keep people away from the area. Work from the windward side.
Environmental precautions	:	Do not flush into surface water or sanitary sewer system.
Methods for cleaning up	:	Put in an empty container for recovery after preventing spill by sand or sandbags,if the amount of spill is large. Put in an empty container for recovery after wiping or soaking up in an inert material,if the amount of spill is small.
Prevention measure of second accident	:	Remove all sources of ignition.

7. HANDLING AND STORAGE

Handling

Technical measures	:	Wear eye, hand and respiratory protection when in handling. Ground equipment due expected sensitivity to static discharge.
Advice on safe handling	:	Avoid any source of ignition due to flammability. Use immediatery after seal is opened. Be careful that moisture vaper don't mix in this product, because this is cured by hydrolysis with moisture in air. This product release Methyl Ethyl Ketoxime during curing. Use in a well ventilated area to avoid breathing vapor.

Storage

Storage requirement	:	Store in a dark, cool place indoors, with container tightly closed.
Safety packaging material	:	No information available.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Facility / Engineering measures	:	Well ventilated area Eyewash stations
Standard Control Limit(SCL) / Permissible Exposure Limit(PEL)	:	Not established.
Personal protective equipment		
Respiratory protection	:	Gas mask for organic gas
Hand protection	:	Rubber or plastics gloves
Eye protection	:	Safety glasses with side-shields
Skin and body protection	:	Rubber boots and protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance		
Form	:	paste
Colour	:	white
Odour	:	faint distinctive odour
pH	:	no data available
Phase transition		
Boiling point/range	:	Not applied
Melting point/range	:	Not applied
Flash point	:	120 -C
Ignition temperature	:	450 -C
Explosion limit		
Explosion limit	:	Not applied
Vapour pressure	:	Not applied
Density	:	1,040 g/cm3/25 -C
Solubility/qualitative	:	Insoluble in water
Solubility in other solvents	:	no data available
Other data		
Relative vapour density	:	no data available

10. STABILITY AND REACTIVITY

Stability	:	Stable under recommended storage conditions.
Reactivity	:	The catalysis of strong acids or bases cause polymerization or decomposition.
Conditions to avoid	:	Keep product and empty container away from heat and sources of ignition. Stable under normal conditions.
Hazardous decomposition	:	Reacts with water/moisture liberating Methylethylketoxime

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products		(MEKO) = 2-Butanone-oxime. May generate formaldehyde at temperatures greater than 150 C (300 F). See Section 10 of MSDS for details.
Further information	:	Will not occur

11. TOXICOLOGICAL INFORMATION

Acute toxicity		
Acute Oral Toxicity	:	no data available
Acute inhalation toxicity	:	no data available;no data available
Acute dermal toxicity	:	no data available
Typical effect		
Skin irritation	:	no data available
Eye irritation	:	no data available
Sensitization	:	no data available
Carcinogenicity	:	no data available
Mutagenicity	:	no data available
Toxicity to reproduction	:	no data available
Teratogenicity	:	no data available
Further information	:	Toxicity of methyl ethyl ketoxime (MEKO) liberated when the material is in touch with water or moisture in the air, or the material is curing. SKIN CONTACT: May cause mild skin irritation. EYE CONTACT: Causes severe eye irritation may damage tissue. ACUTE ORAL TOXICITY: LD50 = 4ml/kg (rat). ACUTE INHALATION: 4-hr LC50 = > 4.8mg/l (rat). INHALATION TOXICITY: Narcotic in high concentration. Return to normal when exposure ends. Prolonged overexposure causes adverse effects on the blood. SKIN SENSIBILITY: Positive (guinea pig. No allergic reaction to humans. NERVE TOXICITY: Temporary decline in motor function at high concentrations. CARCINOGENICITY: A lifetime (about two years) inhalation study in male and female mice and rats revealed that liver tumors were observed in male mice and rats at a high exposure level of 375 ppm. OTHER LONG-TERM EXPOSURE TESTS: Atrophy of smell epithelium cells was observed in mice and rats. PERMISSIBLE CONCENTRATION: TWA 3 ppm (supplier's recommended value), Keep well ventilated (STEL 10 ppm or less). The WEEL recommended value of AIHA is TWA 10 ppm.

12. ECOLOGICAL INFORMATION

Chemical fate	:	no data available
Persistence / Degradability	:	no data available
Bioaccumulation	:	no data available

MOMENTIVE
performance materials

Ecotoxicity effects : no data available

Additional ecological information : Ecotoxicological data for this product is not available.

13. DISPOSAL CONSIDERATIONS

Incineration should be made in approved chemical incinerator in accordance with regulations. Or bury after cured 15cm pieces are made. Silica particulates are formed on incineration.

14. TRANSPORT INFORMATION

International regulation : Non DG under air and ship transport

Domestic regulation : JFSL Designated Flammable Substances (Combustible solids) for 3tons or more., No fire

15. REGULATORY INFORMATION

JFSL Designated Flammable Substances (Combustible solids) for 3tons or more.
Japan. PRTR Substances, Not applied.
Japanese ISHL MSDS required substances
Japanese ISHL-311 Silica

16. OTHER INFORMATION

Quotation documents
ACGIH TLV for Chemical Substances
Chemical safe administraction data book (The Chemical Daily Co., Ltd.)

Precaution
This material is developed and manufactured for industrial applications only.For medical or other special applications, use after performing safety testing on the product and conforming safety. Never use for human applications such as implant, impregnation, and possible residue-remaining in the body.

Other precaution
Other (an address, and telephone and fax numbers for information, references) The information herein is made based on references, information and data available at present. It may be revised when new information is available. The descriptions herein are for normal handling. For special applications, make safety provisions suitable to them prior to use.

化学品安全技术说明书

仅用于工业上

TSE382-W-333ML*F(0.35KG)

第一部分 物质或化合物和供应商的标识

产品名称	:	TSE382-W-333ML*F
MSDS编号	:	000000061361
化学名	:	无资料。
产品推荐及限制用途	:	
制造商/进口商/经销商信息	:	迈图（上海）贸易有限公司 上海市浦东新区张江高科技园区李冰路227号 邮编：201203 中国
联络人	:	Productstewardship-GC@momentive.com
电话	:	+86-21-3860-4500
传真号码	:	+86-21-5079-3707
应急电话号码	:	+86-532-8388-9090 (国家安全生产监督管理总局化学品登记中心) +86-10-5100-3039 (CareChem24)
责任部门	:	产品安全监管

第2部分 危险性概述

紧急情况概述:

可能导致皮肤过敏反应。

物质或混合物的分类 : 呼吸或皮肤过敏——皮肤 - 1

化学品分类和标记全球协调体系(GHS)标签要素

危险象形标记 :

警示词 : 警告

危险性说明 : 可能导致皮肤过敏反应。

防范说明

一般 : 不适用。

预防措施 : 戴防护手套。
避免吸入蒸气。
受沾染的工作服不得带出工作场地。

事故响应 : 如皮肤沾染：
用大量肥皂水和水清洗。
脱掉沾染的衣服，清洗后方可重新使用。
如发生皮肤刺激或皮疹：
求医/就诊。

贮存 : 不适用。

废弃处置 : 本品、容器的处置应遵守所有地方的、地区的、国家的和国际法规的规定。

物理/化学危险 : 不适用。

人类健康危险 : 可能导致皮肤过敏反应。

环境危害 : 不适用。

没有分类的其他危害 :
没有已知信息。

第3部分 成分 / 组成信息

物质/混合物 : 混合物

化学名 : 无资料。

有害物质名称	重量百分比	CAS号码
甲基三(2-亚丁基 氨氧基)硅烷	1 - 5	22984-54-9

没有出现就供应商当前所知可应用的浓度，被分类为对健康或环境有害及因此需要在本节报告的添加剂。

职业暴露限制, 如果有的话, 列在第 8 节中。

第4部分 急救措施

注明必要的措施

眼睛接触 ：
立即用大量水冲洗眼睛，并不时提起上下眼睑。
检查和取出任何隐形眼镜。 连续冲洗至少十分钟。
如果感到疼痛，请就医治疗。

吸入 ：
将患者转移到空气新鲜处，休息，保持利于呼吸的体位。
如没有呼吸，呼吸不规则或呼吸停止，由受过训练的人员进行人工呼吸或给氧。
如使用嘴对嘴呼吸方法进行救助，可能会对救助者造成危险。
如有害的健康影响持续存在或加重，应寻求医疗救治。
如失去知觉，应置于康复位置并立即寻求医疗救治。
保持呼吸道畅通。
解开过紧的衣服，如领口、领带、皮带或腰带。

皮肤接触 ：
用大量肥皂和水清洗。 脱去受污染的衣服和鞋子。
脱下被污染的衣物前请用水彻底冲洗，或者戴手套。
连续冲洗至少十分钟。 寻求医疗救护。
在任何疾病或症状存在的情况下，应避免进一步曝露。
衣物重新使用前应清洗。 鞋子在重新使用前应彻底清洗。

食入 ：
用水冲洗口腔。
将患者转移到空气新鲜处，休息，保持利于呼吸的体位。
如物质已被吞下且患者保持清醒，可饮少量水。
禁止催吐，除非有专业医疗人士指导。 如发生呕吐，
应保持头部朝下以避免呕吐物进入肺部。
如有害的健康影响持续存在或加重，应寻求医疗救治。
切勿给失去意识者任何口服物。
如失去知觉，应置于康复位置并立即寻求医疗救治。
保持呼吸道畅通。
解开过紧的衣服，如领口、领带、皮带或腰带。

最重要的急性和延迟症状/效应

潜在的急性健康影响

眼睛接触 : 没有明显的已知作用或严重危险。

吸入 : 接触分解产物下会导致健康危险。
暴露后，严重的影响会延迟才出现。

皮肤接触 : 可能导致皮肤过敏反应。

食入 : 没有明显的已知作用或严重危险。

过度接触征兆/症状

眼睛接触 : 没有具体数据。

吸入 : 没有具体数据。

皮肤接触 : 不利症状可能包括如下情况：
刺激
充血发红

食入 : 没有具体数据。

必要时注明应立即就医及所需的特殊治疗

医生注意事项 : 在火灾时吸入分解产品后，症状可能延迟才出现。
受到暴露的患者须医疗观察 48小时。

特殊处理 : 无特殊处理。

急救人员防护 : 如果有任何人身危险或尚未接受适当培训时，不可采取行动。
如使用嘴对嘴呼吸方法进行救助，可能会对救助者造成危险。
脱下被污染的衣物前请用水彻底冲洗，或者戴手套。

请参阅"毒理学资料" (第 11 部分)

第5部分 消防措施

灭火介质

适当的灭火介质 : 使用干化学剂、CO2、抗酒精泡沫或喷水 (雾)。

不适当的灭火介质 : 直流水

化学品产生的具体危险 : 在燃烧或加热情况下，会发生压力增加与容器爆裂。

有害的热分解产物 : 分解产物可能包括如下物质：
二氧化碳
一氧化碳
氮氧化物
金属氧化物

在温度大于150ºC并有空气（氧气）存在的情况下，测试显示由于氧化降解会形成少量的甲醛。

消防人员的特殊防护设备和防范措施 : 如有火灾，撤离所有人员离开灾区及邻近处，以迅速隔离现场。
如果有任何人身危险或尚未接受适当培训时，不可采取行动。
用雾状水冷却暴露于火场中的容器。
必须收集被本产品污染了的消防水，且禁止将其排放到任何水道（下水道或排水沟）。

消防人员特殊防护设备 : 消防人员须穿戴适当的防护设备和带有保护整个面部的正压自给式呼吸装置 (SCBA)。

第6部分 泄漏应急处理

人身防范、保护设备和应急程序

对于非紧急反应人员 : 如果有任何人身危险或尚未接受适当培训时，不可采取行动。
疏散周围区域。 防止无关人员和无防护的人员进入。
禁止接触或走过溢出物质。 避免吸入蒸气或烟雾。
提供足够的通风。 通风不充足时应戴合适的呼吸器。
穿戴合适的个人防护装备。

对于紧急反应人员 : 如需穿戴特殊的服装来处理泄漏物，请参考第8部分关于合适的和不合适的物料的信息。
参见“非紧急反应人员”部分的信息。

环境防范措施 : 避免溢出物扩散和流走，避免溢出物接触进入土壤、河流、下水道和污水管道。
如产品已经导致环境污染（下水道，水道，土壤或空气），请通知有关当局。

抑制和清洁的方法和材料

小量泄漏 : 若无危险，阻止泄漏。 将容器移离泄漏区域。
如果溶于水，用水稀释并抹除。
相应的，如果不溶于水，用一种惰性的干燥物料吸收并置于合适的废弃处置容器中。 注：有关应急联系信息，请参阅第 1 部分；有关废弃物处理，请参阅第 13 部分。

大量泄漏 : 若无危险，阻止泄漏。 将容器移离泄漏区域。
从上风向接近泄漏物。
防止进入下水道、水道、地下室或密闭区域。

将溅出物冲洗至废水处理工厂或者依照下述方法处理。
用不燃吸收剂如沙、土、蛭石、硅藻土来控制收集泄漏物，并装在容器内，以根据当地的法规要求处理 (参阅第 13 部分)。
经由特许的废弃品处理合同商处置。
被污染的吸附物质可呈现与溢出产品同样的危险。
注：有关应急联系信息，请参阅第 1
部分；有关废弃物处理，请参阅第 13 部分。

第7部分 操作处置与储存

安全搬运的防范措施

防护措施 ：
穿戴适当的个人防护设备 (参阅第 8部分)。
患有皮肤过敏史的个体不应受雇于任何与本产品有关的作业。
避免接触进入眼睛、皮肤或衣物。 禁止食入。
避免吸入蒸气或烟雾。 仅在充足的通风条件下使用。
保持在原装容器或已批准的由相容的材料制成的代替品中，不使用时容器保持密闭。
空容器中保留有产品残余物且可能非常危险。

一般职业卫生建议 ：
应当禁止在本物质的处理、储存和加工区域饮食和抽烟。
工作人员应在饮食和抽烟之前洗手。
参见第8部分的卫生防护措施的其他信息。

安全存储的条件，包括任何不相容性 ：
按照当地法规要求来储存。
储存于原装容器中，防止直接光照，置于干燥、凉爽和通风良好的区域，远离禁忌物（见第10部分）、食品和饮料。
使用容器前，保持容器关紧与密封。
已开封的容器必须小心地再封好，并保持直立以防止漏出。
请勿储存在未加标签的容器中。
使用恰当的防泄漏系统以防止环境污染。

第8部分 接触控制和个体防护

控制参数

职业接触限值

没有。

推荐的监测程序 ：

适当的工程控制 ： 无特殊通风要求。
良好的全面通风应当足以控制工人工作环境的空气传播污染物含量。
本产品如含有具有接触限制值的成份，请使用隔离设备，局部通风系统，或者其它工艺控制方法以确保工人在低于建议或法定限制值的环境中工作。

环境接触控制 ： 应检测由通风或工作过程装备的排放物以保证它们满足环境保护法规的要求。
在某些情况下，为了将排放物减至能接受的含量，有必要改装烟雾洗涤器，过滤器或过程装备。

个人保护措施

卫生措施 ： 接触化学物质后，在饭前、吸烟前、入厕前和工作结束后要彻底清洗手、前臂和脸。
采用适当的技术移除可能已遭污染的衣物。
受沾染的工作服不得带出工作场地。
污染的衣物重新使用前需清洗。
确保洗眼台和安全淋浴室靠近工作处。

眼睛/面部防护 ： 若风险评估结果表明必须避免暴露在液体飞溅物、水雾、气体或粉尘下，请配带符合标准的安全眼镜。

身体防护

手防护 ： 若风险评估结果表明是必要的，在接触化学产品时，请始终配带符合标准的抗化学腐蚀，不渗透的手套。
考虑手套制造商指定的参数，在使用过程中检查手套是否仍然保持其防护性能。
应该指出，任何手套材料的突破时间可能会针对不同的手套制造商而不同。
一旦混合物含有几种物质时，手套的防护时间无法准确估计。

身体防护 ： 个人防护用品的选择应以执行工作种类和所冒风险为根据，并且须得到专业人员的核准。

其他皮肤防护 ： 合适的鞋类和任何其他皮肤防护措施的选择应基于正在执行的任务和所涉及的风险，并在操作处置该产品之前得到专家的许可。

呼吸系统防护 ： 若风险评估结果表明是必要的，请使用符合标准的合适的带有空气净化装置或空气供给装置的呼吸器具。
选择呼吸器必须根据已知或预期的暴露级别、产品的危险以及所选呼吸器的安全工作极限。

第9部分 理化特性

外观

物理状态	:	
颜色	:	无资料。
气味	:	无资料。
气味阈值	:	无资料。
pH值	:	无资料。
熔点	:	无资料。
沸点	:	无资料。
闪点	:	无资料。
燃烧时间	:	无资料。
燃烧速率	:	无资料。
蒸发速率	:	无资料。
易燃性（固体、气体）	:	无资料。
爆炸（燃烧）上限和下限	:	**下限：** 无资料。 **上限：** 无资料。
蒸气压	:	无资料。
蒸气密度	:	无资料。
相对密度	:	无资料。
溶解性	:	无资料。
水中溶解度	:	无资料。
n-辛醇 / 水分配系数	:	无资料。
自燃温度	:	无资料。
降解温度	:	无资料。
自加速分解温度	:	无资料。
粘度	:	**动态:** 无资料。 **运动学的:** 无资料。

其他信息

无其他信息。

第10部分 稳定性和反应性

活动性	:	正常条件下稳定。
化学稳定性	:	本产品稳定。
危险反应的可能性	:	在正常状态下储存与使用不会发生危险化学反应。

应避免的条件 : 没有具体数据。

不相容的物质 : 没有具体数据。

危险的分解产物 : 在通常的储存和使用条件下，不会产生危险的分解产物。

第11部分 毒理学信息

毒理效应信息

急性毒性

结论/概述 : 无资料。

刺激或腐蚀

结论/概述

皮肤 : 无资料。

眼睛 : 无资料。

呼吸 : 无资料。

敏化作用

结论/概述

皮肤 : 无资料。

呼吸 : 无资料。

致突变性

结论/概述 : 无资料。

致癌性

结论/概述 : 无资料。

生殖毒性

结论/概述 : 无资料。

致畸性

结论/概述 : 无资料。

特异性靶器官系统毒性 一次性接触

无资料。

特异性靶器官系统毒性 反复接触

产品/成份名称	分类	接触途径	目标器官
甲基三(2-亚丁基 氨氧基)硅烷	2		心血管系统

吸入危害

无资料。

有关可能的接触途径的信息 ： 无资料。

潜在的急性健康影响

眼睛接触 ： 没有明显的已知作用或严重危险。

吸入 ： 接触分解产物下会导致健康危险。

暴露后，严重的影响会延迟才出现。

皮肤接触 ： 可能导致皮肤过敏反应。

食入 ： 没有明显的已知作用或严重危险。

与物理,化学和毒理特性有关的症状

眼睛接触 ： 没有具体数据。

吸入 ： 没有具体数据。

皮肤接触 ： 不利症状可能包括如下情况：

刺激

充血发红

食入 ： 没有具体数据。

延迟和即时影响，以及短期和长期接触引起的慢性影响

短期暴露

潜在的即时效应 ： 无资料。

潜在的延迟效应 ： 无资料。

长期暴露

潜在的即时效应 ： 无资料。

潜在的延迟效应 ： 无资料。

潜在的慢性健康影响

结论/概述 ： 无资料。

一般 : 一旦敏化，暴露于非常低的水平也可能产生严重的过敏反应。

致癌性 : 没有明显的已知作用或严重危险。

致突变性 : 没有明显的已知作用或严重危险。

致畸性 : 没有明显的已知作用或严重危险。

发育影响 : 没有明显的已知作用或严重危险。

生育能力影响 : 没有明显的已知作用或严重危险。

毒性的度量值

急性毒性估计值

无资料。

第12部分 生态学信息

生态毒性

结论/概述 : 无资料。

持久性和降解性

结论/概述 : 无资料。

潜在的生物累积性:

无资料。

产品/成份名称	LogPow	生物富集系数	潜在的

土壤中的迁移性

土壤/水分配系数 (KOC) : 无资料。

其他不利效应 : 没有明显的已知作用或严重危险。

第13部分 废弃处置

废物处理方法

产品

废弃方法 : 应尽可能避免或减少废物的产生。
产品、溶液和其副产品的处置应符合环境保护、废弃物处理法规和当地相关法规的要求。
经由特许的废弃物处理合同商处理剩余物与非再生产品。

废物不应未经处置就排入下水道，除非完全符合所有管辖权内主管机构的要求。

包装

废弃方法 ： 应尽可能避免或减少废物的产生。 包装废弃物应回收。仅在回收利用不可行时，才考虑焚烧或填埋。

第14部分 运输信息

PG* : 包装组

用户特别注意事项 ： 在用户场地内运输时：运输时始终采用密封的容器并保持直立固定。应确定运输人员明白在发生事故或发生泄漏时应采取的措施。’

根据MARPOL 73/78的附录II和IBC准则按散装运输

无资料。

第15部分 法规信息

本国法规

下列条例、法规和标准，对化学产品的使用、操作、储存、运输、分类和标示等方面均作了规定。

危险化学品安全管理条例
工作场所安全使用化学品规定
使用有毒物品作业场所劳动保护条例
化学品安全技术说明书、内容和项目顺序 （GB/T 16483）
化学品安全标签编写规定（GB 15258）
化学品分类和标签规范 （GB 30000.2 - GB 30000.29）
化学品分类和危险性公示通则（GB 13690）
危险货物品名表（GB 12268）
危险货物分类和品名编号（GB 6944）
危险货物包装标志（GB 190）
工作场所有害因素职业接触限值 第1部分 化学有害因素 （GBZ 2.1）

遵守适用的环境保护和废物处置法规处理和处置废物

中国现有化学物质名录（IECSC ： 所有组分都列出或被豁免。

)

国际法规

国际列表 ： 澳大利亚化学品目录（AICS） 所有组分都列出或被豁免。
日本目录 所有组分都列出或被豁免。
韩国目录 所有组分都列出或被豁免。
加拿大目录 所有组分都列出或被豁免。
菲律宾目录（PICCS（菲律宾化合物和化学物质目录））
所有组分都列出或被豁免。
美国目录（TSCA 8b（有毒物质控制法）） 至少有一种组分未列入。
台湾目录（CSNN） 所有组分都列出或被豁免。

第16部分 其他信息

发行记录

印刷日期	：	2016/06/29
发行日期/修订日期	：	2015/06/10
上次发行日期	：	0000/00/00
版本	：	1.0
制作者	：	产品安全管理
缩写的关键词	：	急性毒性估计值（ATE） 生物富集系数（BCF） 化学品分类及标示全球协调制度（GHS） 国际航空运输协会（IATA） 中型散装容器（IBC） 国际海上危险货物运输规则（IMDG） 辛醇/水分配系数对数值（LogPow） 国际海事组织73/78防污公约（MARPOL 73/78） 联合国（UN）
参考	：	无资料。

读者注意事项

除非在第1部分另有规定，迈图产品仅用于工业应用。
它们并不有意的用于特定医疗应用，既不用于长效（>30天）植入人体，直接注射或吸入，也不用于生产多种可用避孕产品。

进一步的信息

此安全技术说明书提供的信息在其发布之日是准确无误的，所给出的信息仅作为安全搬运，储存，运输，处理等的指导，而不能被作为担保和质量指标，此信息仅用于指定的物质而不能用于其它相关的物质，除非特别指明。

SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY

TSE382-W

1. Product and company identification

Product name	:	TSE382-W
MSDS Number	:	000000061361
Manufacturer/Importer/Distributor Information	:	Momentive Performance Materials Japan LLC Akasaka Park Building 5-2-20 Akasaka, Minato-ku Tokyo Japan
Contact person	:	commercial.services@momentive.com
Telephone	:	+81-3-5544-3100
Telefax	:	+81-3-5544-3101
Emergency telephone number	:	+81-276-31-1468 +81-276-31-4118 (night / weekend)
Responsible Department	:	Product Stewardship & Compliance Group

2. Hazards identification

GHS Classification : SKIN SENSITIZATION - Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : May cause an allergic skin reaction.

Precautionary statements

General : Not applicable.

Prevention : Wear protective gloves.
Avoid breathing vapor.
Contaminated work clothing should not be allowed out of the workplace.

Response : **IF ON SKIN:**
Wash with plenty of soap and water.
Wash contaminated clothing before reuse.
If skin irritation or rash occurs:
Get medical attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

3. Composition/information on ingredients

Substance/mixture : Mixture
Chemical nature : Silicone compound

Hazardous ingredient name	% by weight	CAS number	ENCS
Oxime silane	>=1 - <10	Trade Secret	Trade Secret
Silica	>=10 - <20	Trade Secret	Trade Secret
Titanium dioxide	>=0.1 - <1	13463-67-7	(5)-5225

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie,

belt or waistband.

Most important symptoms/effects, acute and delayed

Eye contact	:	No known significant effects or critical hazards.
Inhalation	:	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	:	May cause an allergic skin reaction.
Ingestion	:	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	No specific data.
Inhalation	:	No specific data.
Skin contact	:	Adverse symptoms may include the following: irritation redness
Ingestion	:	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	:	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	:	No specific treatment.
Protection of first aid personnel	:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	Use dry chemical, CO2, alcohol-resistant foam or water spray (fog).
Unsuitable extinguishing media	:	water jet
Specific hazards arising from the chemical	:	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	:	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides metal oxide/oxides Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.
Special protective actions for fire-fighters	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Use water spray to keep fire-exposed containers cool. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Special protective equipment for	:	Fire-fighters should wear appropriate protective equipment and

fire-fighters	self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	:	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill	:	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.
Large spill	:	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13 of SDS). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.

7. Handling and storage

Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see section 8 of SDS). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also

Section 8 for additional information on hygiene measures.

Conditions for safe storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10 of SDS) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits: None.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Appropriate engineering controls : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection	:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	:	Gas mask for organic gas if MEKO exposure limits are exceeded (3 ppm 8-hr TWA, recommended workplace exposure guideline). Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

9. Physical and chemical properties

Appearance

Physical state	:	Paste
Color	:	White
Odor	:	Faint odor.
Odor threshold	:	Not available
pH	:	Not available
Melting point	:	Not available
Boiling point	:	Not available
Flash point	:	120 °C
Burning time	:	Not available
Burning rate	:	Not available
Evaporation rate	:	Not available
Flammability (solid, gas)	:	Not available
Lower and upper explosive (flammable) limits	:	**Lower:** Not available **Upper:** Not available
Vapor pressure	:	Not available
Vapor density	:	Not available
Relative density	:	1.04
Density	:	1.04 g/cm3 (25 °C)
Solubility	:	Insoluble
Solubility in water	:	Not available
Partition coefficient: n-octanol/water	:	Not available
SADT	:	Not available
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
Viscosity	:	**Dynamic:** Not available **Kinematic:** Not available

Other information

No additional information.

10. Stability and reactivity

Reactivity	:	Stable under normal conditions.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	moistureNo specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Reacts with water/moisture liberating Methylethylketoxime (MEKO) = 2-Butanone-oxime.,Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Titanium dioxide				
	LD50 Oral	Rat	> 10,000 mg/kg	-
	LC50 Inhalation	Rat	6.8 mg/l	4 h
	LD50 Dermal	Rabbit	10,000 mg/kg	-

Conclusion/Summary : Not available

Irritation/Corrosion

Conclusion/Summary
Skin : Not available
eyes : Not available
Respiratory : Not available

Sensitization

Conclusion/Summary
Skin : Not available
Respiratory : Not available

Mutagenicity

Conclusion/Summary : Not available

Carcinogenicity

Conclusion/Summary : Not available

Reproductive toxicity

Conclusion/Summary : Not available

Teratogenicity

Conclusion/Summary : Not available

Specific target organ toxicity (single exposure)

Not available

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs

Oxime silane	Category 2		cardiovascular system

Aspiration hazard

Not available

Information on the likely routes of exposure : Not available

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available

Potential delayed effects : Not available

Long term exposure

Potential immediate effects : Not available

Potential delayed effects : Not available

Potential chronic health effects

Conclusion/Summary : Not available

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Other information : This product will liberate methyl-ethyl-ketoxime (MEKO) on curing, contact with water or moisture in the air.

The toxicity of pure MEKO is characterized by:

Mild skin irritation, severe eye irritation, and systemic toxicity after inhalation or long term exposure. The acute inhalation 4-hr LC50 was > 4.8 mg/L.

Long-term inhalation studies (>28 days) with 2-butanone-oxime in male rats and mice showed at concentrations of 10 ppm and higher atrophy of the mucous membrane of the nose in rats and mice. This effect is most probably due to the irritating potential of 2-butanone-oxime.

Central nervous system effects (motor function, narcotic), which were reversible, when exposure is terminated, were observed at high concentrations. Acute exposure to 400 ppm in air caused effects on blood chemistry (methemoglobinemia).

MEKO has been shown to elicit skin sensitization in Guinea pigs, but no sensitization has been reported in humans.

After life long inhalation exposure to the maximum concentration of 375 ppm liver carcinomas were observed in male rats and mice. In male rats exposed to concentrations of 75 ppm benign liver tumors were observed. The lowest test concentration of 15 ppm caused no tumors.
The relevance of these tumors to humans is unknown.

12. Ecological information

Toxicity

Conclusion/Summary : Not available

Persistence/degradability

Conclusion/Summary : Not available

Mobility in soil

Soil/water partition coefficient (KOC) : Not available

Other adverse effects : No known significant effects or critical hazards.

13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. See Section 8 for information on appropriate personal protective equipment.

14. Transport information

This product is not regarded as dangerous goods according to the international regulations on the transport of dangerous goods.
See Section 15 of the MSDS for domestic (Japan) regulations.

15. Regulatory information

Fire Service Law

Dangerous substance classes : JFSL Designated Flammable Substances (Combustible solids) for 3tons or more.

ISHL

Use of specified chemical substances: None required.

Lead regulation : Not listed

Label requirements: Listed

Ingredient name	%
Silica	10 - 20

Chemicals requiring notification: Listed

Ingredient name	%
Silica	10 - 20
Titanium dioxide	0.1 - 1

Carcinogen: Not listed

Mutagen: Not listed

Organic solvents poisoning prevention : Not available

Chemical Substances Control Law (CSCL): Not listed

Poisonous and Deleterious Substances

Deleterious: Not listed

Poisonous: Not listed

Specified poisonous: Not listed

JSOH Carcinogen : Not listed
High Pressure Gas Control Law : Not available

Law Concerning Prevention of Pollution of the Ocean and Maritime Disaster : Not available

Pollutant Release and Transfer Registers (PRTR): Not listed

Japan inventory : All components are listed or exempted.

Safety, health and environmental regulations specific for the product : No known specific national and/or regional regulations applicable to this product (including its ingredients).

International regulations

International lists : Australia inventory (AICS) All components are listed or exempted.
China inventory (IECSC) All components are listed or exempted.
Korea inventory All components are listed or exempted.
Canada inventory All components are listed or exempted.
Philippines inventory (PICCS) All components are listed or exempted.
United States inventory (TSCA 8b) All components are listed or exempted.
Please contact your supplier for further information on the inventory status of this material.
Taiwan inventory (CSNN) All components are listed or exempted.

16. Other information

History

Date of printing	:	06/29/2016
Date of issue/Date of revision	:	01/14/2016
Date of previous issue	:	10/05/2015
Version	:	1.1
References	:	

Notice to reader

This material is developed and manufactured for industrial applications only. For medical or other special applications, use after performing safety testing on the product and confirming safety. Never use for human applications such as implant, impregnation, or where a residue may possibly remain in the body.

Further Information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.