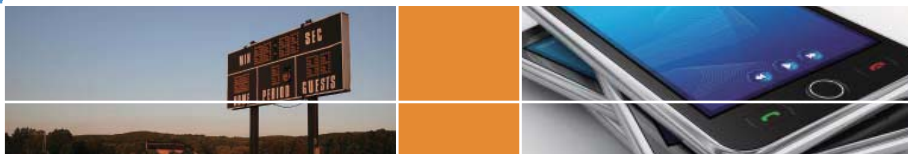


TSE382

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 specifications.

TSE382 silicone adhesive sealant

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.

TSE382 silicone adhesive sealant

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.

| <u>Location</u> | <u>Emergency Service Provider</u> | <u>Emergency Contact Number</u> |
|--------------------------------|---|---------------------------------|
| 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.

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T +00 800 4321 1000 / +40 21 3111848

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Albany, NY 12211 USA
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安全技术说明书

1. 化学品及企业标识

化学品名称: TSE382-C-333ML*F (0.35KG)

化学品的推荐用途和限制用途

推荐用途: 有机硅弹性体

限制用途: 未知。

制造商或供应商名称、地址及电话

制造商/进口商/经销商信息 : Momentive Performance Materials
Hong Kong Limited Suite 1030B, 10/F.,
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+86-10-5100-3039 (CareChem24)

责任部门 : 产品安全监管

2. 危险性概述

紧急情况概述

外观

| | |
|--------|---|
| 颜色: | 无色 |
| 性状: | 浆糊, 糊剂 |
| 物理状态: | 液体 |
| 气味: | 微弱的气味 |
| 危险性说明: | 可能导致皮肤过敏反应 造成严重眼刺激。 长期或重复接触可能对器官造成伤害。 |

物质或混合物的 GHS 分类, 以及国家或地区信息

健康危害

| | |
|---------------|-------|
| 严重眼损伤/眼刺激 | 类别 2A |
| 皮肤敏化作用 | 类别 1B |
| 特定目标器官毒性 反复接触 | 类别 2 |

GHS 标签要素

象形图:



警示词:

警告

危险性说明:

可能导致皮肤过敏反应
造成严重眼刺激。
长期或重复接触可能对器官造成伤害。

防范说明:

预防措施:

不要吸入粉尘/烟/气体/蒸气/喷雾。处理后要彻底洗手 受污染的工作服不得带出工作场地。戴防护手套/眼睛防护/面部防护。

事故响应:

如果触及皮肤: 用大量水冲洗。如发生皮肤刺激或皮疹: 求医/就诊。具体的处治 (见本标签)。脱掉污染的衣服, 并且在重新使用前清洗。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。

废弃处置:

在适合的处置和废弃设施内, 按照可用的法律法规要求, 以及废弃时的产品特性, 废弃处置内容物/容器。

没有分类的其他危害:

无。

补充标签内容

无。

3. 成分/组成信息

化学性质:

聚二甲基硅氧烷、填料和交联剂的混合物。

混合物

| 成分名称 | 化学文摘登记号 (CAS No.) | 含量百分比 (%) * |
|-----------------|-------------------|-------------|
| 甲基三-(甲基乙基酮肟) 硅烷 | 22984-54-9 | <10% |
| 丁酮肟乙烯基硅烷 | 2224-33-1 | <1% |
| 氨乙基-氨丙基三甲氧基硅烷 | 1760-24-3 | <1% |

* 除气体外, 所有组分的浓度均为重量百分比。气体浓度是体积百分比。

4. 急救措施

不同接触方式的急救措施

| | |
|------------|----------------|
| 吸入: | 就医治疗。 |
| 皮肤接触: | 用大量肥皂和水清洗。 |
| 眼睛接触: | 立即用大量水淋洗并寻求医治。 |
| 食入: | 禁止催吐。 立即就医。 |
| 急救人员的个体防护: | 无可得到的数据 |

最重要的症状/效应, 急性延迟

| | |
|---------------|---------|
| 症状: | 无可得到的数据 |
| 危害: | 无可得到的数据 |
| 对医生的提示 处理: | 无可得到的数据 |

5. 消防措施

一般火灾危险: 移走可燃源, 使用上述列出的灭火剂。通过喷洒水来降低储罐, 建筑物等的温度以阻止火势蔓延。灭火时要站在上风向, 如有必要穿戴合适的呼吸保护器。

灭火方法

适用的灭火剂: 用泡沫、二氧化碳或干粉来灭火。

不适用的灭火剂: 无可得到的数据

化学品产生的特别危险性: 无可得到的数据

消防员的特殊防护设备和防范措施

特殊灭火程序: 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。

消防员的特殊防护设备: 采取合适的呼吸防护。 使用个人防护设备。 佩戴自给式呼吸设备和防护服。

6. 泄漏应急处理

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

| | |
|------------------------------|--|
| 作业人员防护措施、防护装备和应急处置程序: | 使用个人防护设备。 疏散未经授权的人员。 位于上风向。 |
| 对非应急人员: | 禁止排放到下水道、水路或地面上。 |
| 对应急人员: | 禁止排放到下水道、水路或地面上。 |
| 环境保护措施: | 禁止排放到下水道、水路或地面上。 |
| 收容、清除方法以及所使用的处置材料: | 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。 |
| 通告程序: | 消除点火源。 |

7. 操作处置与储存

| | |
|----------------|---|
| 操作注意事项: | 穿戴合适的个人防护设备。 远离火源, 禁止吸烟。 防止吸入蒸气和烟雾。 仅在良好的通风下使用。 |
| 储存注意事项: | 在低湿度、黑暗、阴凉的地方储存 保持容器关闭。 |

8. 接触控制和个体防护

| | |
|------------------------|---|
| 控制参数 | |
| 职业接触限值 | 所有组份均没有指定暴露限度 |
| 生物限值 | 所有组份均没有指定暴露限度 |
| 适当的工程控制: | 仅在通风良好的场所使用。 |
| 个体防护措施, 如个体防护设备 | |
| 一般信息: | 穿戴适当的防护服、手套和眼罩/面罩 |
| 眼睛/面部防护: | 带侧防护罩的安全眼镜 |
| 皮肤和身体防护 | |
| 手防护: | 橡胶或塑胶手套 |
| 其他: | 耐化学物质衣物 安全鞋 |
| 呼吸系统防护: | 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。 |

卫生措施: 避免接触眼睛、皮肤和衣物。 使用后需洗手。 使用时, 不得进食, 饮水或吸烟。

9. 理化特性

外观

| | |
|----------------------|-----------------------|
| 物理状态: | 液体 |
| 性状: | 浆糊, 糊剂 |
| 颜色: | 无色 |
| 气味: | 微弱的气味 |
| 气味阈值: | 无可得到的数据 |
| pH 值: | 无可得到的数据 |
| 熔点/凝固点: | 不适用。 |
| 初沸点和沸程: | 不适用 |
| 闪点: | 106 ° C |
| 蒸发速率: | 不适用 |
| 易燃性 (固体、气体): | 无可得到的数据 |
| 燃烧上限/下限或爆炸限值 | |
| 燃烧极限 - 上限 (%): | 无可得到的数据 |
| 燃烧极限 - 下限 (%): | 无可得到的数据 |
| 爆炸极限-上限 (%): | 无可得到的数据 |
| 爆炸极限-下限 (%): | 无可得到的数据 |
| 蒸气压: | 不适用。 |
| 蒸气密度: | 无可得到的数据 |
| 密度: | 1.04 g/cm3 (25 ° C) |
| 相对密度: | 1.04 |
| 溶解度 | |
| 在水中的溶解度: | 不溶解的 |
| 溶解度 (其它): | 无可得到的数据 |
| 分配系数 (辛醇/水) Log Pow: | 无可得到的数据 |
| 自燃温度: | 450 ° C |
| 分解温度: | 如按指导的方法贮存和使用不会分解。 |
| SADT: | 无可得到的数据 |
| 动力粘度: | 无可得到的数据 |
| 运动粘度: | > 20.5 mm2/s (40 ° C) |
| 比重: | 无可得到的数据 |

10. 稳定性和反应性

| | |
|----------|--|
| 反应性: | 无可得到的数据 |
| 化学稳定性: | 稳定的 |
| 可能的危险反应: | 不发生危险的聚合反应。 |
| 避免接触的条件: | 远离火源，禁止吸烟。 |
| 禁配物: | 在强酸或碱的催化下会发生聚合或分解。 |
| 危险的分解产物: | 与水/湿气反应释放出甲基乙基酮肟= 2-丁酮肟。在温度大于 150°C 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。 |
| 其他信息: | 无可得到的数据 |

11. 毒理学信息

一般信息: 经验表明，只要遵守工业卫生条例，上述产品对健康无危险。

可能的接触途径信息

| | |
|-------|---------|
| 吸入: | 无可得到的数据 |
| 皮肤接触: | 无可得到的数据 |
| 眼睛接触: | 无可得到的数据 |
| 食入: | 无可得到的数据 |

与物理，化学和毒理特性相关的症状

| | |
|-------|---------|
| 吸入: | 无可得到的数据 |
| 皮肤接触: | 无可得到的数据 |
| 眼睛接触: | 无可得到的数据 |
| 食入: | 无可得到的数据 |

毒理学效应信息

急性毒性

| | |
|-----------|---------|
| 口服 产品: | 无可得到的数据 |
|-----------|---------|

皮肤

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

| | |
|------------------------------------|--|
| 产品: | 无可得到的数据 |
| 吸入 产品: | 无可得到的数据 |
| 重复剂量中毒 产品: | 无可得到的数据 |
| 指定物质: 氨乙基-氨丙基三甲氧基 硅烷 | NOAEL (未观察到有害效果的水平) (大鼠, 口服, 28 d): >= 500 mg/kg |
| 皮肤腐蚀和刺激 产品: | 无可得到的数据 |
| 严重眼损伤/眼刺激 产品: | 无可得到的数据 |
| 指定物质: 氨乙基-氨丙基三甲氧基 硅烷 | OECD 试验导则 405 (兔): 具强刺激性。 |
| 呼吸或皮肤过敏 产品: | 引起豚鼠的过敏反应。 无有关人类的信息可提供。 |
| 致癌性 产品: | 无可得到的数据 |
| 生殖细胞致突变性 在试管内 产品: | 无可得到的数据 |
| 活体内 产品: | 无可得到的数据 |
| 生殖毒性 产品: | 无可得到的数据 |
| 特定目标器官毒性 一次接触 产品: | 无可得到的数据 |
| 特定目标器官毒性 反复接触 产品: | 无可得到的数据 |
| 吸入危害 产品: | 无可得到的数据 |

其它影响:

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。

12. 生态学信息

生态毒性

急性危害水生环境

鱼

产品: 无可得到的数据

指定物质:

氨乙基-氨丙基三甲氧基硅烷 LC50 (Lepomis macrochirus): > 100 mg/l

水生无脊椎动物

产品: 无可得到的数据

指定物质:

氨乙基-氨丙基三甲氧基硅烷 半致死有效浓度 (EC50) (大型蚤, 48 h): 87.4 mg/l

对水生环境有慢性危害

鱼

产品: 无可得到的数据

水生无脊椎动物

产品: 无可得到的数据

对水生植物的毒性

产品: 无可得到的数据

持久性和降解性

生物降解
产品: 无可得到的数据

BOD/COD 比值
产品: 无可得到的数据

潜在的生物累积性

生物浓度因子 (BCF)
产品: 无可得到的数据

n-辛醇/水分配系数 (log Kow)
产品: 无可得到的数据

迁移性

土壤中的迁移性: 无可得到的数据

已知或预计会分布到环境隔室中

甲基三-(甲基乙基酮肟) 硅
烷 无可得到的数据

丁酮肟乙烯基硅烷 无可得到的数据

氨乙基-氨丙基三甲氧基硅
烷 无可得到的数据

其它不良影响: 无可得到的数据

13. 废弃处置

废弃处置方法

废弃处置指导: 符合地方法规的要求下能被焚烧。该产品的开发和生产仅做工业用途。

污染包装物: 作为未用过的产品处置。

14. 运输信息

国家有关规定

中国

未受管制。

IATA

未受管制。

IMDG

未受管制。

按照 MARPOL 73/78 的附录 II 和 IBC 准则散装运输

不适用

运输注意事项:

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。

15. 法规信息

国家有关规定

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, 第 591 号令

危险化学品目录 (2015 版)

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

GB/T 16483: 《化学品安全技术说明书--内容和项目顺序》

化学品安全技术说明书编写指南 (GB/T 17519)

GB15258: 《化学品安全标签编写规定》

化学品分类和标签规范 (GB 30000.2 - GB 30000.29)

GB 13690: 《化学品分类和危险性公示通则》

GB 12268: 《危险物品名表》

GB 6944: 《危险货物分类和品名编号》

GB 190 《危险货物包装标志》

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》

国际法规

蒙特利尔协议

不适用

斯德哥尔摩公约

不适用

鹿特丹公约

不适用

京都议定书

不适用

物质名录:

| | |
|------------------------|-----------|
| AICS (澳洲化学物质目录): | y (列入或豁免) |
| DSL (加拿大国内化学物质目录): | n (未列入) |
| EINECS (欧洲现有上市化学物质名录): | 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) |
| 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) |
| 新西兰化学物质名录: | y (列入或豁免) |
| CSNN (台湾既有化学物质名录): | y (列入或豁免) |

16.其他信息

| | |
|--------------|---------------------|
| 发布日期: | 2016/07/01 |
| 修订日期: | 无可得到的数据 |
| 版本 #: | 1.3 |
| 补充信息: | 操作时, 佩戴眼睛、手和呼吸保护装置。 |
| 参考文献: | 无可得到的数据 |

免责声明:

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

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。

®, *和 TM 为迈图公司注册商标。

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

SAFETY DATA SHEET

1. Identification of the substance or mixture and of the supplier

GHS Product identifier: TSE382-C-333ML*F (0.35KG)

Recommended use of the chemical and restrictions on use

Recommended use: Silicone Elastomer

Recommended restrictions: Not known.

Supplier's details

Manufacturer/Importer/Distributor Information : Momentive Performance Materials
Hong Kong Limited Suite 1030B, 10/F.,
Ocean Centre, Harbour City
5Canton Road, Tsim Sha Tsui, Kowloon
Hong Kong, Telephone: (852) 2885-8009

Contact person : Productstewardship-GC@momentive.com

Telephone : +852-2885-8009
Telefax : +852-2885-9107

Emergency telephone number : 1-800-424-9300
+86-10-5100-3039 (CareChem24)

Responsible Department : Product Stewardship & Compliance

2. Hazard(s) identification

Emergency Overview

Appearance

Color: Colorless

Form: Paste

Physical state: liquid

Odor: Faint

Hazard Statement(s): May cause an allergic skin reaction.
Causes serious eye irritation.
May cause damage to organs through prolonged or repeated exposure.

GHS classification of substance or mixture, and national or regional information

Health Hazards

| | |
|--|-------------|
| Serious Eye Damage/Eye Irritation | Category 2A |
| Skin sensitizer | Category 1B |
| Specific Target Organ Toxicity - Repeated Exposure | Category 2 |

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

GHS label elements

Hazard symbol(s):



Signal Word:

Warning

Hazard Statement(s):

May cause an allergic skin reaction.
Causes serious eye irritation.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statement(s):

Prevention:

Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/eye protection/face protection.

Response:

IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see this label). Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Disposal:

Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification:

None.

Supplemental label information

None.

3. Composition/information on ingredients

Chemical nature:

Mixture of polydimethylsiloxanes, fillers and cross-linkers.

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

Mixtures

| Chemical Identity | CAS number | Content in percent (%)* |
|--|------------|-------------------------|
| methyl tris-(methyl ethyl ketoximo) silane | 22984-54-9 | <10% |
| butanone oxime vinylsilane | 2224-33-1 | <1% |
| Aminoethyl aminopropyl trimethoxy silane | 1760-24-3 | <1% |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Description of necessary first-aid measures

| | |
|--|---|
| Inhalation: | Get medical attention. |
| Skin Contact: | Wash with plenty of water/... |
| Eye contact: | Rinse immediately with plenty of water and seek medical advice. |
| Ingestion: | Do not induce vomiting. Get medical attention immediately. |
| Personal Protection for First-aid Responders: | No data available. |

Most important symptoms/effects, acute and delayed

| | |
|--------------------------------------|--------------------|
| Symptoms: | No data available. |
| Hazards: | No data available. |
| Notes to physician Treatment: | No data available. |

5. Fire-fighting measures

General Fire Hazards: Remove sources of combustibles. Extinguish the fire using fire-fighting media listed above. Cool surrounding tanks, buildings and so on by spraying with water to prevent the fire extension.
The fire fighting should be done from the windward side, with suitable respiratory protective device, if necessary.

Means of fire extinguishing

| | |
|--|---|
| Suitable extinguishing media: | Extinguish with foam, carbon dioxide or dry powder. |
| Unsuitable extinguishing media: | No data available. |

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

Specific hazards arising from the chemical: No data available.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures.

Special protective equipment for fire-fighters: Wear suitable respiratory protection. Use personal protective equipment. Wear self-contained breathing apparatus and protective clothing.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Keep unauthorized personnel away. Keep upwind.

For non-emergency personnel: Do not allow runoff to sewer, waterway or ground.

For emergency responders: Do not allow runoff to sewer, waterway or ground.

Environmental Precautions: Do not allow runoff to sewer, waterway or ground.

Methods and material for containment and 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.

Notification Procedures: Remove sources of ignition.

7. Handling and storage

Precautions for safe handling: Wear appropriate personal protective equipment. Keep away from sources of ignition - No smoking. Avoid inhalation of vapors and spray mists. Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities: Store in the low moisture, dark, cool place Keep container closed.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

Biological Limit Values

None of the components have assigned exposure limits.

Appropriate Engineering Controls:

Use only in well-ventilated areas.

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

Individual protection measures, such as personal protective equipment

| | |
|--------------------------------|--|
| General information: | Wear suitable gloves and eye/face protection. |
| Eye/face protection: | Safety glasses with side shields |
| Skin Protection | |
| Hand Protection: | Rubber or plastics gloves |
| Other: | Chemical resistant clothing Safety shoes |
| Respiratory Protection: | Gas mask for organic gas if MEKO exposure limits are exceeded (3 ppm 8-hr TWA, recommended workplace exposure guideline. |
| Hygiene measures: | Avoid contact with eyes, skin, and clothing. Wash hands after handling. When using do not eat, drink or smoke. |

9. Physical and chemical properties

Appearance

| | |
|--|--------------------------------|
| Physical state: | liquid |
| Form: | Paste |
| Color: | Colorless |
| Odor: | Faint |
| Odor threshold: | No data available. |
| pH: | No data available. |
| Melting point/freezing point: | Not applied |
| Initial boiling point and boiling range: | not applicable |
| Flash Point: | 106 °C |
| Evaporation rate: | not applicable |
| Flammability (solid, gas): | No data available. |
| Upper/lower limit on flammability or explosive limits | |
| Flammability limit - upper (%): | No data available. |
| Flammability limit - lower (%): | No data available. |
| Explosive limit - upper (%): | No data available. |
| Explosive limit - lower (%): | No data available. |
| Vapor pressure: | Not applied |
| Vapor density: | No data available. |
| Density: | 1.04 g/cm ³ (25 °C) |
| Relative density: | 1.04 |
| Solubility(ies) | |
| Solubility in water: | Insoluble |
| Solubility (other): | No data available. |
| Partition coefficient (n-octanol/water) Log Pow: | No data available. |

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

| | |
|-----------------------------------|---|
| Auto-ignition temperature: | 450 °C |
| Decomposition temperature: | No decomposition if stored and applied as directed. |
| SADT: | No data available. |
| Viscosity, dynamic: | No data available. |
| Viscosity, kinematic: | > 20.5 mm ² /s (40 °C) |
| Specific gravity: | No data available. |

10. Stability and reactivity

| | |
|--|--|
| Reactivity: | No data available. |
| Chemical Stability: | Stable |
| Possibility of hazardous reactions: | Hazardous polymerisation does not occur. |
| Conditions to avoid: | Keep away from sources of ignition - No smoking. |
| Incompatible Materials: | The catalysis of strong acids or bases cause polymerization or decomposition. |
| 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. |
| Other information: | No data available. |

11. Toxicological information

General information: Experience has shown, that the above mentioned product can be used without any danger to health, as long as the usual conditions of industrial hygiene are observed.

Information on likely routes of exposure

| | |
|----------------------|--------------------|
| Inhalation: | No data available. |
| Skin Contact: | No data available. |
| Eye contact: | No data available. |
| Ingestion: | No data available. |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|----------------------|--------------------|
| Inhalation: | No data available. |
| Skin Contact: | No data available. |
| Eye contact: | No data available. |

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

Ingestion: No data available.

Information on toxicological effects

Acute toxicity

Oral
Product: No data available.

Dermal
Product: No data available.

Inhalation
Product: No data available.

Repeated dose toxicity
Product: No data available.
Specified substance(s):
Aminoethyl aminopropyl
trimethoxy silane
NOAEL (Rat, Oral, 28 d): ≥ 500 mg/kg

Skin irritation and corrosion
Product: No data available.

Serious Eye Damage/Eye Irritation
Product: No data available.
Specified substance(s):
Aminoethyl aminopropyl
trimethoxy silane
OECD Test Guideline 405 (Rabbit): Strongly irritating.

Respiratory or Skin Sensitization
Product: Causes sensitization on guinea-pigs. No human information is available.

Carcinogenicity
Product: No data available.

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.

Specific Target Organ Toxicity - Single Exposure
Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure
Product: No data available.

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

Aspiration Hazard

Product: No data available.

Other effects:

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(central nervous system)effects in high concentrations.Effects were reversible when exposure was ended.Prolonged overexposure causes adverse effects on the blood. **SKIN SENSITIVITY:** Positive (guinea pig).No allergic reaction to humans.**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 nasal epithelium cells was observed in both mice and rats at all concentrations.The effect appeared reversible at lower concentrations. **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

Ecotoxicity

Acute hazards to the aquatic environment

Fish

Product: No data available.

Specified substance(s):

Aminoethyl aminopropyl trimethoxy silane LC50 (Lepomis macrochirus): > 100 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Aminoethyl aminopropyl trimethoxy silane EC50 (Daphnia magna, 48 h): 87.4 mg/l

Chronic hazards to the aquatic environment

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

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

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

BOD/COD Ratio

Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product: No data available.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility

Mobility in Soil: No data available.

Known or predicted distribution to environmental compartments

methyl tris-(methyl ethyl ketoximo) silane No data available.

butanone oxime vinylsilane No data available.

Aminoethyl aminopropyl trimethoxy silane No data available.

Other Adverse Effects: No data available.

13. Disposal considerations

Disposal methods

Disposal instructions: Can be incinerated when in compliance with local regulations. This material is developed and manufactured for industrial applications only.

Contaminated Packaging: Dispose of as unused product.

14. Transport information

National Regulations

China

Not regulated.

IATA

Not regulated.

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

IMDG

Not regulated.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

Special precautions for user:

This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods. Keep away from foodstuffs and animal feed. keep away from odour sensitive materials

15. Regulatory information

National Regulations

The following regulations, rules or standards set forth the requirement for the classification, labeling, use, handling, storage and transportation of chemicals.

Regulations on Safety Administration of Hazardous Chemicals, Decree No.591 of the State Council

Catalogue of Hazardous Chemicals (2015 Version)

Regulation of Safety Use Chemicals at Workplace

Regulations on Labor Protection in Workplaces Where Toxic Products Are Used

GB/T 16483: #Safety data sheet for chemical products - Content and order of sections#

GB/T 17519: Guidance on the compilation of safety data sheets for chemical products

GB 15258:#General rules for preparation of precautionary label for industrial chemicals#

GB 30000.2 ~ GB 30000.29: Rules for classification and labelling of chemicals

GB 13690:#General rule for classification and hazard communication of chemicals#

GB 12268:#List of dangerous goods#

GB 6944:#Classification and code of dangerous goods#

GB 190 #Labels for packages of dangerous goods#

GBZ 2.1#Occupational Exposure Limits for Hazardous Agents in the Workplace, Part 1, Chemical Hazardous Agents #

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

International regulations

Montreal Protocol

not applicable

Stockholm convention

not applicable

Rotterdam Convention

not applicable

Kyoto Protocol

not applicable

Inventory Status:

| | |
|--|-------------------------|
| Australia AICS: | y (positive listing) |
| Canada DSL Inventory List: | n (Negative listing) |
| EU EINECS List: | y (positive listing) |
| Japan (ENCS) List: | y (positive listing) |
| China Inventory of Existing Chemical Substances: | y (positive listing) |
| Korea Existing Chemicals Inv. (KECI): | y (positive listing) |
| Canada NDSL Inventory: | n (Negative listing) |
| Philippines PICCS: | y (positive listing) |
| US TSCA Inventory: | q (quantity restricted) |
| New Zealand Inventory of Chemicals: | y (positive listing) |
| Taiwan. Taiwan inventory (CSNN): | y (positive listing) |

16. Other Information

| | |
|-----------------------------|---|
| Issue Date: | 2016/07/01 |
| Revision Date: | No data available. |
| Version #: | 1.2 |
| Further Information: | "Wear eye, hand and respiratory protection when in handling." |
| References: | No data available. |

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

Disclaimer:

Notice to reader

Unless otherwise specified in section 1, Momentive products are intended for use in the manufacture and/or formulation of products and are not intended for direct consumer use. These products are not intended for long-lasting (> 30 days) implantation, injection or direct ingestion into the human body, nor for use in the manufacture of multiple use contraceptives.

Further Information

"Wear eye, hand and respiratory protection when in handling."

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.

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