MOMENTIVE™

# 化学品安全技术说明书

## RTV162

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## 一 化学品及企业标识

| | | |
|---|---|---|
| 产品名称 | : | RTV162 |
| 产品代码 | : | M00000006604 |
| 产品推荐及限制用途 | : | 有机硅弹性体 |
| 公司名称 | : | 迈图（上海）贸易有限公司 |
| 地址 | : | 上海市浦东新区张江高科技园区李冰路227号，201203，中国 |
| 责任部门 | : | 产品安全监管部 |
| 制作人 | : | 产品安全监管 |
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| 产品安全监管部 | : | Productstewardship-GC@momentive.com |

## 二 危险性概述

| | | |
|---|---|---|
| 物理和化学危害 | : | 注意!可能导致皮肤，眼睛和呼吸系统刺激。不可用于人体注射。 |
| GHS分类 | : | 根据分类标准无需分类 |

**紧急情况概述:**

| | | |
|---|---|---|
| 吸入 | : | 刺激呼吸系统。 未固化状态下使用。 |
| 皮肤 | : | 与未固化产品接触会刺激唇，牙龈和舌头。 与未固化的产品接触，可能会引起皮肤刺激。 |
| 眼睛 | : | 接触未固化的产品可能会引起眼刺激。 |
| 吞食 | : | 可能会造成胃部不适。 非预期暴露途径。 |

## 三 成分/组成信息

| | | |
|---|---|---|
| 化学性质 | : | 混合物 |

## 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。 如症状出现，就医。 |
| 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 | : | 漱口。 联系医生以咨询具体建议。 |

**给医治人员的提示**

| | | |
|---|---|---|
| 最重要的急性和迟发效应及主要症状 | : | 对症治疗和辅助治疗。 |

## 五 消防措施

| | | |
|---|---|---|
| 灭火方法及灭火剂 | : | 用泡沫、二氧化碳或干粉来灭火。 |
| 特殊的灭火程序 | : | 移去可燃物。使用上述列出的灭火介质灭火。 喷水冷却暴露于火场的容器。 |
| 消防人员的特殊保护设备 | : | 佩戴自给式呼吸设备和防护服。 |

## 六 泄漏应急处理

| | | |
|---|---|---|
| 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。 撤离周边区域人员。 位于上风向。 |

| | | |
|---|---|---|
| 环境保护措施 | : | 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**

| | | |
|---|---|---|
| 安全操作注意事项 | : | 远离火源，禁止吸烟。 |

**储存**

| | | |
|---|---|---|
| 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 |
| 其他理化性质 | : | 稳定的 |

## 八 接触控制/个人防护

| | | |
|---|---|---|
| 工程控制 | : | 处理本品时，应有洗眼设施和应急冲淋设施。<br>通风系统和其他形式的工程控制是控制接触的首选方案。 非常规和紧急情况下需要使用呼吸保护设备。 |
| 呼吸系统防护 | : | 带有机蒸气滤毒罐、粉尘和雾气过滤器的防毒面具。 |
| 手部防护 | : | 建议: 橡胶或塑胶手套 |
| 眼睛防护 | : | 带侧防护罩的安全眼镜 |

| | | |
|---|---|---|
| 身体防护 | : | 耐化学物质衣物<br>穿橡胶防护靴。 |
| 卫生措施 | : | 避免接触眼睛、皮肤和衣物。<br>使用后需洗手。<br>使用时不要吃喝东西或抽烟。 |
| 保护措施 | : | 需穿上合适的防护手套和眼睛/面部保护装置。 |

## 九 物理特性

| | | |
|---|---|---|
| 性状 | : | 浆糊, 糊剂 |
| 颜色 | : | 白色 |
| 气味 | : | 醇 |
| pH值 | : | 无数据 |
| 熔点 | : | 熔点 ( °C )<br>不适用。 |
| 闪点 | : | >93.3 °C<br>方法: 估计的, 预计的 |
| 自燃温度 | : | 450 °C |
| 爆炸上限 | : | 不适用。 |
| 饱和蒸气压 | : | 无数据 |
| 密度 | : | 大约1.085 g/cm3 |
| 密度 | : | 1.10 g/cm3 |

在 25 °C

| | | |
|---|---|---|
| 溶解性/定性的 | : | 不溶解的 |
| 在其它溶剂中的溶解度 | : | 无数据 |
| 相对蒸汽密度 | : | 无数据 |
| 热分解 | : | 如按指导的方法贮存和使用不会分解。 |
| 蒸发速率 | : | 无数据 |

## 十 稳定性和反应活性

| | | |
|---|---|---|
| 避免接触的条件 | : | 未知。 |
| 禁配物 | : | 在强酸或碱的催化下会发生聚合或分解。 |
| 进一步的信息 | : | 可燃的<br>易燃 |
| 有害的分解产物 | : | 与水反应生成少量甲醇。 该材料含有甲基聚硅氧烷，当温度接近及高于300ºF（150ºC）且空气中含有氧气时，甲基聚硅氧烷能产生甲醛。 甲醛为一种皮肤和呼吸致敏剂、眼睛和喉咙刺激物、急性毒物并有可能致癌的危险。 Momentive可以提供甲醛的MSDS。 |

## 十一 毒性资料

| | | |
|---|---|---|
| 急性经口毒性 | : | 无数据 |
| 急性吸入毒性 | : | 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 | : | 无数据 |

## 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。 |
| 污染了的包装物 | : | 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。
防潮。
远离食品，酸和碱。

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） | |
| 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） | |
| DSL (加拿大国内化学物质目录) | 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) | y（列入或豁免） | 在美国的有毒物质管理条款(TSCA)的名单上 |

**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 | : | 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。<br>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。

MOMENTIVE™

Technical Data Sheet

# RTV160

## Description

RTV160, RTV162 and RTV167 adhesive sealants from Momentive Performance Materials are one-component, ready-to-use electronic grade silicone sealants. They cure to a tough, resilient silicone rubber on exposure to atmospheric moisture at room temperature. These electronic-grade silicone adhesive sealants differ somewhat in physical properties including consistency.

- RTV160 - white flowable paste
- RTV162 - white paste
- RTV167 - gray, high strength paste

## Key Features and Benefits

- Non-corrosive to electronic metals, including copper and brass
- Low odor cure, releasing an alcohol vapor from the sealant surface during cure
- UL Recognition: RTV160, RTV162 and 167 are recognized by Underwriters Laboratories, Inc. under their Component Recognition Program (UL File No. E-36952)
- Retains elastomeric properties for long periods at temperatures from -60°C (-75°F) to 205°C (400°F) and for short periods up to 260°C (500°F)
- One component
- Cure at room temperature
- Excellent electrical insulation properties
- Excellent resistance to moisture, dust, dirt, UV, ozone and chemicals

## Typical Physical Properties

| **Typical Uncured Properties** | **RTV160** | **RTV162** | **RTV167** |
|---|---|---|---|
| Color | White | White | Gray |
| Consistency | flowable liquid | spreadable paste | spreadable paste |
| Viscosity, poise | 380 | – | – |
| Specific Gravity | 1.04 | 1.09 | 1.12 |
| Application Rate, gm/min. | – | 350 | 180 |
| Tack-Free Time, hours | 4 | 4 | 4 |
| **Cured Properties**[1] | | | |
| **Mechanical** | | | |
| Hardness, Shore A | 25 | 35 | 37 |
| Tensile Strength, $kg/cm^2$ ($lb/in^2$) | 19 (275) | 38.2 (550) | 56 (800) |
| Elongation, % | 230 | 400 | 600 |
| Peel Strength, kg/cm (lb/in)($^2$) | 2 (10) | 7.2 (40) | 10 (80) |
| **Electrical** [3] | | | |
| Dielectric Strength, kv/mm (v/mil) | 20 (500) | 18 (450) | 20 (500) |
| Dielectric Constant @ 60 Hz | 2.8 | 2.8 | 2.8 |
| Dissipation Factor @ 60 Hz | .001 | .001 | .0026 |

| | | | |
|---|---|---|---|
| Volume Resistivity, ohm-cm | $4x10^{14}$ | $3x10^{15}$ | $3x10^{15}$ |
| **Thermal**(3) | | | |
| Brittle Point, °C (°F) | -60 (-75) | -60 (-75) | -60 (-75) |
| Maximum continuous operating temperature, °C (°F) | 204 (400) | 204 (400) | 204 (400) |
| Maximum intermittent operating temperature, °C (°F) | 260 (500) | 260 (500) | 260 (500) |
| Additional Information(3) | | | |
| Thermal Conductivity, cal/sec/$cm^2$, °C/cm | .0005 | .0005 | .0005 |
| (Btu/hr/$ft^2$, °F/f) | (.12) | (.12) | (.12) |
| Coefficient of Expansion | $27x10^{-5}$ | $27x10^{-5}$ | $27x10^{-5}$ |
| cm/cm, °C (in/in, °F) | ($15x10^{-5}$) | ($15x10^{-5}$) | ($15x10^{-5}$) |

(1) Cure time 7 days at 25°C (77°F), 50% relative humidity.(2) 1 in. x 8 in. stainless steel screen at 180° pull angle.(3) Information is provided for customer convenience only. Properties are not tested on a routine basis.

## Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a 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.

## Processing Recommendations

### Applications

RTV160, RTV162 and RTV167 are recommended for use in aerospace, automotive, appliance and other industries which incorporate electronic components into a finished product. Electronic and integrated circuits, semiconductors and copper connections are typical applications.

RTV160 adhesive sealant is recommended for insulating, encapsulating and coating in thin sections [less than 6mm (1/4")], where flow into small crevices or hard-to-reach places is desired.

### Surface Preparation

RTV160, RTV162 and RTV167 adhesive sealants will bond to many clean surfaces without the aid of primers. These surfaces normally include many metals, glass, ceramic, silicone rubber and some rigid plastics. These adhesive sealants will also bond to some organic rubbers and flexible plastics not containing fugitive plasticizers (those that migrate to the surface impairing adhesion). An evaluation should be made to determine bond strength for each specific application.

For difficult-to-bond substrates, use of a primer is suggested. SS4004, SS4044 and SS4179 primers are recommended for use with RTV160, RTV162 and RTV167 sealants. Complete information and usage instructions for these primer products are contained in a separate product data sheet.

Where adhesion is required, surfaces should be thoroughly cleaned with a suitable solvent to remove dirt, oil and grease. The surface should be dry before applying the adhesive sealant.

When solvents are used, proper safety precautions must be observed.

### Cure Time Cycle

RTV160, RTV162 and RTV167 adhesive sealants may be applied directly to a clean or primed substrate. The adhesive sealant begins to cure on exposure to moisture in the air at room temperature. Where broad surfaces are to be bonded the sealant should be applied in a thin, less than 6mm (¼ in.) diameter bead or ribbon around the edge of one of the surfaces.

The cure process begins with the formation of a skin on the exposed surface of the sealant and progresses inward through the material. At 25°C (77°F) and 50% relative humidity, these products will form a surface skin which is tack-free to the touch in about 4 hours. Once the tack-free skin has begun to form, further tooling of the adhesive sealant is not advisable.

High temperatures and high humidity will accelerate the cure process low temperatures and low humidity will slow the cure rate.

As the adhesive sealant cures, alcohol vapors are released from the sealant surface. This by-product of cure has a slight, but non-objectionable odor which will completely disappear after curing is completed.

A 3mm (1/8 in.) section of adhesive sealant will cure through in approximately 48 hours at 25°C (77°F) and 50% relative humidity. Since cure time increases with thickness, use of RTV160, RTV162 and RTV167 sealants should be limited to section thicknesses of 6mm (¼ in.) or less.

### PACKAGING AND DISPENSING

RTV160, RTV162, RTV167 adhesive sealants are supplied in caulking cartridges and bulk containers. RTV162 and RTV167 are also available in collapsible squeeze tubes.

Tubes may be squeezed by hand or with the aid of mechanical wringers which allow more complete removal of material from the tube. The sealant may be dispensed from caulking cartridges by using simple mechanical caulking guns or air-operated guns. Air-operated guns will allow greater control and application speed. Both tubes and cartridges are easy to use, can be put into production quickly and require minimum capital investment.

**Note:** Do not exceed 45 psig when used in air-powered caulking guns.Bulk containers offer the most economical packaging for volume production.

Bulk dispensing systems are air-operated extrusion pumps coupled to hand or automated dispensing units.

Recommendations for pump selection and assistance in converting lines from other silicone systems to the RTV160, RTV162 and RTV167 alkoxy cure system sealants are available from Momentive Performance Materials.

### CLEAN UP AND REMOVAL

Before cure, solvent systems such as naphtha or methyl ethyl ketone (MEK) are effective.

## Limitations

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

## Specifications

### MILITARY SPECIFICATIONS

RTV162 and RTV167 sealants meet the physical requirements of MIL-A-46146. Testing is performed in accordance with current Momentive Performance Materials quality test methods, laboratory conditions, and procedures, frequency and sampling, which are not necessarily identical with the methods, conditions, procedures, frequency and sampling stated or referenced in MIL-A-46146. Any certification will be limited to listed properties and will not imply or state conformity to any other aspect of MIL-A-46146, including but not limited to marking, packaging, bar coding, testing, or sampling. Contact Momentive Performance Materials for a comparison review.

performance, solve product development issues and engineer better manufacturing processes.

**Contact Information**

For product prices, availability, or order placement, contact our customer service by visiting momentive.com/ContactSilicones.

For literature and technical assistance, visit our website at: www.momentive.com



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