

# Safety Data Sheet

Material: HVOF Silicone Part A

Version: 2.4 (US)

Date of print: 06/20/2019

Date of last alteration: 06/16/2018

## 1. Product and company identification

### 1.1 Identification of the substance or preparation:

**Commercial product name:** HVOF Silicone Part A  
**Use of substance / preparation:** Industrial.  
Raw material for: elastomer products .

### 1.2 Company/undertaking identification:

**Manufacturer/distributor:** Aimtek, Inc.  
201 Washington Street  
Auburn, MA 01501 USA  
www.aimtek.com

**Hours of operation:**  
Monday - Friday, 8 am to 5 pm (eastern standard time)

**Emergency telephone no. (24h):** (508) 832-5035  
**Transportation emergency:** (800) 424-9300 (CHEMTREC, USA)  
(703) 527-3887 (CHEMTREC, international)

## 2. Hazards identification

### 2.1 Classification of the substance or mixture

**Classification (GHS):**  
Not a hazardous substance or mixture.

### 2.2 Label elements

**Labelling (GHS):**  
No labeling according to GHS required.

### 2.3 Other hazards

Product can release hydrogen. Risk of hydrogen gas formation with water, alcohols, acids, metallic salts, amines and alkalis. In combination with oxygen, the released hydrogen can form oxyhydrogen.

## 3. Composition/information on ingredients

### 3.1 Chemical characterization (preparation)

Chemical characteristics  
Polydimethylsiloxane with functional groups and auxiliaries for addition cross-linking

### 3.2 Information on ingredients:

Type	CAS No.	Substance	Content [wt. %]		Note
			Lower	Upper	
INHA	14808-60-7	Quartz	>1.0	<5.0	C1, C2
INHA	13463-67-7	Titanium dioxide		<1.0	C1

**Type:** HYD - by-product upon hydrolysis, INHA - ingredient, NEBE - by-product, MONO - residual monomer, VERU - impurity, VUL - by-product upon vulcanization. **\*\*\* Note:** C1 - IARC carcinogen, C2 - NTP carcinogen, C3 - OSHA carcinogen, NH - non-hazardous, R - reproductive toxin.

Quartz: This component does not impact the product's hazard classification. Due to the product's physical properties, particulate

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inhalation exposure is not possible. Titanium dioxide: This component does not impact the product's hazard classification. Due to the product's physical properties, particulate inhalation exposure is not possible.

Substances listed in the Subsections "HAPS" and "California Proposition 65 Carcinogens / Reproductive Toxins" that are not listed in this section are only present at quantities below 0.1% for California Proposition 65 listed toxins or below 1% for non-carcinogenic HAPS or they are inextricably bound in the product. Specific chemical identities and/or exact percentage (concentration) of the composition may have been withheld as a trade secret.

## 4. First-aid measures

### 4.1 General information:

Get medical attention if irritation or other symptoms occur. Before seeking medical attention remove contaminated clothing and shoes. Take a copy of the Safety Data Sheet when going for medical treatment.

### 4.2 After inhalation

No special treatment required.

### 4.3 After contact with the skin

Wipe off excess material with cloth or paper. Use a waterless hand cleaner to remove as much of the remaining material as possible. Wash with soap and water.

### 4.4 After contact with the eyes

If contact with eyes, immediately hold eyelids apart and flush with plenty of water for at least 15 min.

### 4.5 After swallowing

No special treatment required.

## 5. Fire-fighting measures

### 5.1 Flammable properties:

Property:	Value:	Method:
Flash point.....	> 294 °C (> 561 °F)	(ISO 2592)
Boiling point / boiling range .....	not applicable	
Lower explosion limit (LEL) .....	not applicable	
Ignition temperature .....	> 450 °C (> 842 °F)	(DIN 51794)
NFPA Hazard Class (comb./flam.liquid).....	IIIB	

### 5.2 Fire and explosion hazards:

Caution! Under certain conditions this material may generate flammable hydrogen gas. Consider possible formation of explosive mixtures with air, for example in uncleaned containers by moisture. Never use welding or cutting torch on or near any container of this material, even if empty, because an explosion could occur. Spontaneous ignition is possible due to electrostatic discharge. The generation of hydrogen gas is increased under circumstances mentioned in Sect. 10 "Stability and reactivity". Explosion limits for hydrolysis product: 4-75.6% v/v (hydrogen) .

### 5.3 Recommended extinguishing media:

carbon dioxide , dry sand , alcohol-resistant foam .

### 5.4 Unsuitable extinguishing media:

water , dry chemical , halones .

### 5.5 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases

not applicable

### 5.6 Fire fighting procedures:

Fire fighters should wear full protective clothing including a self-contained breathing apparatus. Cool endangered containers with water. Hydrogen gas can become trapped under foam blankets, so sources of ignition must be eliminated during the clean-up and recovery process.

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## 6. Accidental release measures

### 6.1 Precautions:

Secure the area. Wear personal protection equipment (see section 8). Keep unprotected persons away. If material is released indicate risk of slipping. Do not walk through spilled material.

**HAZWOPER PPE Level:** D

### 6.2 Containment:

Prevent material from entering surface waters, drains or sewers and soil. Close leak if possible without risk. Contain any fluid that runs out using suitable material (e.g. earth). Retain contaminated water/extinguishing water. Dispose of in prescribed marked containers. Inform authorities if substance leaks into surface waters, sewerage or ground.

Spills of material which could reach surface waters must be reported to the United States Coast Guard National Response Center's toll free phone number (800) 424-8802.

### 6.3 Methods for cleaning up

Take up mechanically and dispose of according to local/state/federal regulations. Do not flush away with water. For small amounts: Absorb with a neutral (non-acidic / non-basic) liquid binding material such as diatomaceous earth and dispose of according to government regulations. For large amounts: Liquids may be recovered using suction devices or pumps. Use only air driven or properly rated electrical equipment. Use vented recovery containers. Clean any slippery coating that remains using a detergent / soap solution or another biodegradable cleaner. Silicone fluids are slippery; spills are a safety hazard. Apply sand or other inert granular material to improve traction.

### 6.4 Further information:

Exhaust vapours. Eliminate all sources of ignition. Consider explosion protection. Material designated for disposal must be segregated from incompatible substances or materials specified in Sect. 10. Do not blend contaminated material with uncontaminated material. Do not seal collecting vessel gas-tight. Observe notes under section 7.

## 7. Handling and storage

### 7.1 Handling

#### Precautions for safe handling:

Ensure adequate ventilation. Open and handle container with care. Keep container closed when not in use. Keep away from incompatible substances in accordance with section 10. Where possible, inert process equipment and blanket vessels, tanks and containers with nitrogen to reduce the available oxygen level. Contact WACKER for additional publications on the safe Handling of SiH Products. Avoid formation of aerosols. In case of aerosol formation special protective measures are required (exhausting by suction, respiratory protection). Spilled substance increases risk of slipping. Observe information in section 8.

#### Precautions against fire and explosion:

Product can release hydrogen. Flammable vapors may accumulate and form explosive mixtures with air in containers, process vessels, including partial, empty and uncleaned containers and vessels, or other enclosed spaces. Keep away from sources of ignition and do not smoke. Take precautionary measures against electrostatic charging. Cool endangered containers with water.

### 7.2 Storage

#### Conditions for storage rooms and vessels:

Do not store in virgin glass containers with basic surface. Observe local/state/federal regulations.

#### Advice for storage of incompatible materials:

Do not store with: basic substances (e.g. alkalis, ammonia, amines) , oxidizing agents , strong acids . Observe local/state/federal regulations.

#### Further information for storage:

Store in a dry and cool place. Protect against moisture. Store container in a well ventilated place.

## 8. Exposure controls and personal protection

### 8.1 Engineering controls

#### Ventilation:

Use only with adequate ventilation.

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## Local exhaust:

Local exhaust ventilation which meets the requirements of ANSI Z9.2 is recommended to control airborne contaminants at the point of use.

## 8.2 Associate substances with specific control parameters such as limit values

none known

## 8.3 Personal protection equipment (PPE)

### Respiratory protection:

Respiratory protection is not normally required.

### Hand protection:

Recommendation: butyl rubber protective gloves , neoprene gloves , PVC gloves .

### Eye protection:

Safety glasses with side shields or chemical safety goggles.

### Other protective clothing or equipment:

Additional protective clothing or equipment is not normally required. Provide eye bath and safety shower.

## 8.4 General hygiene and protection measures:

When handling do not eat, drink, smoke or apply cosmetics. Wash thoroughly after handling.

# 9. Physical and chemical properties

## 9.1 Appearance

Physical state / form .....: liquid  
Colour .....: white  
Odour .....: odourless

## 9.2 Safety parameters

Property:	Value:	Method:
Melting point / melting range .....	not determined	
Boiling point / boiling range .....	not applicable	
Flash point.....	> 294 °C (> 561 °F)	(ISO 2592)
Ignition temperature .....	> 450 °C (> 842 °F)	(DIN 51794)
Lower explosion limit (LEL) .....	not applicable	
Vapour pressure.....	not determined	
Density .....	1.13 g/cm <sup>3</sup> at 20 °C (68 °F), at 1013 hPa	(DIN 51757)
Water solubility / miscibility.....	virtually insoluble at 20 °C (68 °F)	
pH-Value .....	not applicable	
Viscosity (dynamic) .....	approx. 25000 mPa.s at 20 °C (68 °F)	(Brookfield)

## 9.3 Further information

According to previous experience spontaneous combustion temperature for polymer siloxane with SiH compounds is above 240 °C (464 °F). On a catalytically active surface ignition may occur at much lower temperature. This applies to porous or fibrous substances including those with alkaline surfaces, such as thermal insulation and cementaceous insulating materials. Explosion limits for released hydrogen: 4 - 75.6%(V). pH Value: Product displays neutral reaction.

Odour limit.....: no data available  
Thermal decomposition.....: > 200 °C (> 392 °F) (-)

# 10. Stability and reactivity

## 10.1 General information:

If stored and handled in accordance with standard industrial practices no hazardous reactions are known.

## 10.2 Conditions to avoid

moisture , Heat, open flames, and other sources of ignition. Contact with contaminated piping or vessels or with corroded and rusty containers can increase the rate of hydrogen formation. Observe information in section 7.

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## 10.3 Materials to avoid

proton-active substances . Reacts violently with: acids , basic substances (e.g. alkalis, ammonia, amines) . Reacts with: alcohols , water , moisture , oxidizing agents , catalyst . Reaction causes the formation of: hydrogen .

## 10.4 Hazardous decomposition products

In contact with incompatible substances this material may quickly generate a large volume of flammable hydrogen gas. Measurements have shown the formation of small amounts of formaldehyde at temperatures above about 150 °C (302 °F) through oxidation.

## 10.5 Further information:

Hazardous polymerization cannot occur.

## 11. Toxicological information

### 11.1 Information on toxicological effects

#### 11.1.1 General information

Data derived for the product as a whole are of higher priority than data for single ingredients.

#### 11.1.2 Acute toxicity

##### Product details:

Route of exposure	Result/Effect	Species/Test system	Source
oral	LD <sub>50</sub> : > 2000 mg/kg	rat	Conclusion by analogy
dermal	LD <sub>50</sub> : > 2000 mg/kg	rat	Conclusion by analogy

#### 11.1.3 Skin corrosion/irritation

##### Product details:

Result/Effect	Species/Test system	Source
not irritating	rabbit	Conclusion by analogy

#### 11.1.4 Serious eye damage / eye irritation

##### Product details:

Result/Effect	Species/Test system	Source
not irritating	rabbit	Conclusion by analogy

#### 11.1.5 Respiratory or skin sensitization

##### Product details:

Route of exposure	Result/Effect	Species/Test system	Source
dermal	not sensitizing	guinea-pig; Bühler	Conclusion by analogy OECD 406

#### 11.1.6 Germ cell mutagenicity

##### Assessment:

For this endpoint no toxicological test data is available for the whole product.

#### 11.1.7 Carcinogenicity

##### Assessment:

For this endpoint no toxicological test data is available for the whole product.

##### Data related to ingredients:

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## Decamethylcyclopentasiloxane (D5, Impurity):

In a two year combined chronic toxicity and carcinogenicity inhalation study with decamethylcyclopentasiloxane (D5) in rats, an increased incidence for (uterine) endometrial tumors was observed in the highest exposure level of 160 ppm in female rats. The same effects were not seen at the other dose levels of 10 and 40 ppm. Whether or not this increase in incidence is truly related to the exposure to D5 is questionable and yet to be determined. Based on our present knowledge it is unlikely that industrial, commercial or consumer uses of products containing D5 would result in a significant risk to humans.

### 11.1.8 Reproductive toxicity

#### Assessment:

For this endpoint no toxicological test data is available for the whole product.

### 11.1.9 Specific target organ toxicity (single exposure)

#### Assessment:

For this endpoint no toxicological test data is available for the whole product.

### 11.1.10 Specific target organ toxicity (repeated exposure)

#### Assessment:

For this endpoint no toxicological test data is available for the whole product.

### 11.1.11 Aspiration hazard

#### Assessment:

Based on the physical-chemical properties of the product no aspiration hazard must be expected.

### 11.1.12 Further toxicological information

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. Quartz has been classified by IARC as carcinogen group 1 ("carcinogenic to humans") and by NTP as known to be a human carcinogen. Titanium dioxide has been classified by IARC as carcinogen group 2B ("possibly carcinogenic to humans").

## 12. Ecological information

### 12.1 Toxicity

#### Assessment:

Assessment based on ecotoxicological tests with similar products under consideration of the physical-chemical properties: For this product no effects on aquatic organisms, relevant for classification, are expected. According to current knowledge adverse effects on water purification plants are not expected.

### 12.2 Persistence and degradability

#### Assessment:

Silicone content: biologically not degradable. Separation by sedimentation.

### 12.3 Bioaccumulative potential

#### Assessment:

Polymer component: No adverse effects expected.

### 12.4 Mobility in soil

#### Assessment:

Silicone content: Insoluble in water.

### 12.5 Other adverse effects

none known

### 12.6 Additional information

Easily separable from water by filtration.

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## 13. Disposal considerations

### 13.1 Product disposal

Recommendation:

Risk of oxyhydrogen formation upon contact with the substances mentioned in 10. Material designated for disposal must be segregated from incompatible substances or materials specified in Sect. 10. Wastes of this material should not be mixed with other wastes. Provide measures such as vented bungs to ensure pressure relief in the waste containers. Material that cannot be used, reprocessed or recycled should be disposed of in accordance with Federal, State, and local regulations at an approved facility. Depending on the regulations, waste treatment methods may include, e.g., landfill or incineration.

### 13.2 Packaging disposal

Recommendation:

Containers may contain hazardous quantities of hydrogen gas. Uncleaned containers should not be reused to hold another material due to the potential for reaction between residual product and incompatible materials. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local/state/federal regulations. Uncleaned packaging should be treated with the same precautions as the material.

## 14. Transport information

### 14.1 US DOT & CANADA TDG SURFACE

Valuation .....: Not regulated for transport

### 14.2 Transport by sea IMDG-Code

Valuation .....: Not regulated for transport

### 14.3 Air transport ICAO-TI/IATA-DGR

Valuation .....: Not regulated for transport

## 15. Regulatory information

### 15.1 U.S. Federal regulations

#### TSCA inventory status and TSCA information:

This material or its components are listed on or are in compliance with the requirements of the TSCA Chemical Substance Inventory.

#### TSCA 12(b) Export Notification:

This material does not contain reportable amounts of any TSCA 12(b) listed chemicals.

#### CERCLA Regulated Chemicals:

This material does not contain any CERCLA regulated chemicals.

#### SARA 302 EHS Chemicals:

This material does not contain any SARA extremely hazardous substances.

#### SARA 311/312 Hazard Class:

This product does not present any SARA 311/312 hazards.

#### SARA 313 Chemicals:

This material does not contain any SARA 313 chemicals above de minimus levels.

#### HAPS (Hazardous Air Pollutants):

This material does not contain any hazardous air pollutants.

### 15.2 U.S. State regulations

#### California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

California Proposition 65 Carcinogens:

14808-60-7	Quartz
13463-67-7	Titanium dioxide

This material does not contain any chemicals known to the State of California to cause reproductive effects.

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## Massachusetts Substance List:

14808-60-7 Quartz

## New Jersey Right-to-Know Hazardous Substance List:

14808-60-7 Quartz

## Pennsylvania Right-to-Know Hazardous Substance List:

14808-60-7 Quartz

### 15.3 Details of international registration status

Relevant information about individual substance inventories, where available, is given below.

South Korea (Republic of Korea) .....	<b>ECL</b> (Existing Chemicals List): This product is listed in, or complies with, the substance inventory.
Japan .....	<b>ENCS</b> (Handbook of Existing and New Chemical Substances): This product is listed in, or complies with, the substance inventory.
New Zealand .....	<b>NZIoC</b> (New Zealand Inventory of Chemicals): This product is listed in, or complies with, the substance inventory. (For a correct interpretation of the New Zealand status, additional information like GHS classification or Group Standard is required.)
Australia .....	<b>AICS</b> (Australian Inventory of Chemical Substances): This product is listed in, or complies with, the substance inventory.
People's Republic of China .....	<b>IECSC</b> (Inventory of Existing Chemical Substances in China): This product is listed in, or complies with, the substance inventory.
Canada .....	<b>DSL</b> (Domestic Substance List): This product is listed in, or complies with, the substance inventory.
Philippines.....	<b>PICCS</b> (Philippine Inventory of Chemicals and Chemical Substances): This product is listed in, or complies with, the substance inventory.
United States of America (USA).....	<b>TSCA</b> (Toxic Substance Control Act Chemical Substance Inventory): All components of this product are listed as active or are in compliance with the substance inventory.
Taiwan (Republic of China).....	<b>TCSI</b> (Taiwan Chemical Substance Inventory): This product is listed in, or complies with, the substance inventory. General note: The Taiwanese chemicals regulation requires a phase 1 registration for TCSI-listed or TCSI-compliant substances if imports to Taiwan or manufacturing in Taiwan exceed the trigger quantity of 100 kg/a (for mixtures to be calculated per each ingredient). It is the duty of the importing/manufacturing legal entity to take care of this obligation.
European Economic Area (EEA).....	<b>REACH</b> (Regulation (EC) No 1907/2006): General note: the registration obligations for substances imported into the EEA or manufactured within the EEA by the supplier mentioned in section 1 are fulfilled by the said supplier. The registration obligations for substances imported into the EEA by customers or other downstream users must be fulfilled by the latter.

## 16. Other information

### 16.1 Additional information:

This Safety Data Sheet (SDS) meets the requirements of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee expressed or implied, is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license under valid patents. This SDS provides selected regulatory information on this product, including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

Vertical lines in the left-hand margin indicate changes compared with the previous version.



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## 16.2 Glossary of Terms:

ACGIH - American Conference of Governmental Industrial Hygienists  
DOT - Department of Transportation  
hPa - Hectopascals  
mPa\*s - Milli Pascal-Seconds  
OSHA - Occupational Safety and Health Administration  
PEL - Permissible Exposure Limit

ppm - Parts per Million  
SARA - Superfund Amendments and Reauthorization Act  
STEL - Short Term Exposure Limit  
TSCA - Toxic Substances Control Act  
TWA - Time Weighted Average  
WHMIS - Canadian Workplace Hazardous Materials Identification System

### Flash point determination methods

Flash point determination methods	Common name
ASTM D56.....	Tagliabue (Tag) closed cup
ASTM D92, DIN 51376, ISO 2592 .....	Cleveland open cup
ASTM D93, DIN 51758, ISO 2719 .....	Pensky-Martens closed cup
ASTM D3278, DIN 55680, ISO 3679 .....	Setaflash or Rapid closed cup
DIN 51755 .....	Abel-Pensky closed cup

## 16.3 Conversion table:

Pressure:.....: 1 hPa \* 0.75 = 1 mm Hg = 1 torr; 1 bar = 1000 hPa  
Viscosity:.....: 1 mPa\*s = 1 centipoise (cP)