

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Trisilane**

FORMULA: H_8Si_3

CAS NO: 7783-26-8

SYNONYMS: Trisilicopropane, Trisilicon Octahydride, Silicopropane, Trisilicane

MANUFACTURER:

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SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Pictogram



Signal Word

Danger

Hazard Statements

H250	Catches fire spontaneously if exposed to air
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SECTION 2 HAZARDS IDENTIFICATION (Cont.)

Precautionary Phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. –No smoking.
P222	Do not allow contact with air
P231	Handle under inert gas
P280	Wear protective gloves and eye/face protection.
P283	Wear fire/flame resistant/retardant clothing
P284	Wear respiratory protection
P302 + P334	IF ON SKIN: Immerse in cool water/wrap in wet bandages.
P406	Store in corrosive resistant/container with a resistant inner liner
P422	Store contents under inert gas

OTHER HAZARDS

Additional precautionary phrases are located throughout the safety data sheet ?

NFPA 704 RATINGS (SCALE 0-4):

Health: 0

Flammability: 4

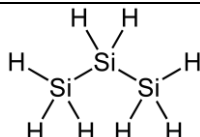
Reactivity: 1

Special: None

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Formula: H_8Si_3

Molecular Weight: 92.33



CHEMICAL NAME	CAS#	Concentration
Trisilane	7783-26-8	100 %

SECTION 4 FIRST AID MEASURES

EYE EXPOSURE: Immediately flush eyes with plenty of water for at least 15 minutes. Continue flushing until the affected person is transferred to a emergency physician.

SKIN EXPOSURE: Flush with copious stream of water while removing contaminated clothing, jewelry and shoes. Immerse in cool water/wrap in wet bandages. Get immediate medical attention.

INHALATION: Primary route of exposure. If adverse effects occur, remove to contaminated area. If the affected person is not breathing spontaneously, administer rescue breathing. If the affected person does not have a pulse, administer CPR. Keep the affected person warm, comfortable, and at rest while awaiting professional medical care. Get immediate medical attention. Monitor breathing and pulse continuously.

INGESTION: May cause thermal burns to gastrointestinal tract. Seek medical attention immediately.

SYMPTOMS: IMMEDIATE

Suspected to cause headache and nausea. Respiratory tract irritation, skin irritation, eye irritation

SYMPTOMS: DELAYED

No data available

NOTE TO PHYSICIANS:

The reaction product of Trisilane and air is silicon oxide (silica). Skin and eye burns should be irrigated to the extent the physician feels necessary to remove the silicon oxide to an acceptable degree. Treatment for burns is as usual.

SECTION 5 FIREFIGHTING MEASURES

EXTINGUISHING MEDIA:

Suitable None

Unsuitable DO NOT USE WATER, FOAM, OR CARBON DIOXIDE!

Large Fires: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn.

SECTION 5 FIREFIGHTING MEASURES (Cont.)

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS:

Hydrogen, Oxides of Silicon

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Material is pyrophoric.

ADVICE FOR FIRE FIGHTERS

Positive pressure, self-contained breathing apparatus is required for all hazardous material fire fighting. Full structural fire fighting gear is the minimum acceptable attire. The need for proximity, flashover, and entry protection as well as special protective clothing should be determined for each incident by a fire fighting safety professional.

The only safe way to extinguish a trisilane fire is to stop the flow of liquid. Allow the entire contents of the container to burn, if the flow cannot be stopped. Cool the container and surroundings with water from a suitable safe distance. Extinguishing the fire without stopping the flow of liquid may permit the formation of ignitable or explosive mixtures with air. These mixtures may propagate to a source of ignition.

Excessive pressure may develop in containers exposed to fire, which may result in explosion, regardless of the cylinder's content.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Positive pressure, full face, air supplied breathing apparatus should be used for work within the secondary containment equipment if a leak is suspected or the primary containment is to be opened. Air supplied breathing apparatus is required for response to demonstrated or suspected releases from the primary containment.

Wear appropriate gloves when handling sealed cylinders. Use gloves and other skin protection as assigned by a safety professional.

ENVIRONMENTAL PRECAUTIONS

Avoid release to the environment.

METHODS AND MATERIALS

Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Stop leak if safe to do so. Prevent entry into waterways, drains, or confined areas. Do not get water directly on material.

Large and Small Spills: If possible use sand bags to contain and isolate burning liquid.

SECTION 7 HANDLING AND STORAGE

PERSONNEL PRECAUTIONS

Keep away from all ignition sources.

Evacuate all personnel not appropriately protected.

CONDITIONS FOR SAFE STORAGE

Store and handle in accordance with all current regulations and standards. Store under an inert atmosphere. Avoid direct sunlight.

Avoid contact with water or moisture. Avoid contact with temperatures above 55 deg. C. Protect from physical damage. May ignite on exposure to air. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. Keep separated from incompatible substances.

INCOMPATIBILITIES:

Exposure to Air, Combustible materials, halogenated compounds, halogenes, oxidizing materials.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROLS

Appropriate exhaust gas treatment is strongly encouraged.

Monitor the work area and the secondary containment continuously for release of the material. Automatic alerting of personnel and automatic shutdown of flow are appropriate in most applications and are required in some jurisdictions.

Purge all primary containment systems with a nonreactive gas, such as nitrogen, before introducing trisilane.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION (Cont.)

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Positive pressure, full face, air supplied breathing apparatus should be used for work within the secondary containment equipment if a leak is suspected or the primary containment is to be opened, e.g. for a cylinder change. Air supplied breathing apparatus is required for response to demonstrated or suspected releases from the primary containment.

EYE/FACE PROTECTION: When using respiratory protection as described above, use a face mask that provides splash and impact protection for the face and eyes. For handling sealed cylinders, wear safety glasses.

SKIN PROTECTION: Wear appropriate gloves when handling sealed cylinders. Use gloves and other skin protection, as assigned by a competent safety professional.

EXPOSURE GUIDELINES

	ACGIH	OSHA	NIOSH	
	TLV-TWA	PEL-TWA	REL-TWA	IDLH
Trisilane	5 ppm	5 ppm	5 ppm	NE

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: Colorless Liquid

pH: Not available

MELTING POINT/ FREEZING POINT: -117.4 deg C

BOILING POINT: 52.9 deg C

DECOMPOSITION: Not available

FLASH POINT: Less than 0 deg C (32 deg F), pyrophoric at room temperature.

AUTO-IGNITION TEMPERATURE: Less than 20 deg C (68 deg F), this material is pyrophoric

VAPOR PRESSURE: 95.5 Torr @ 0 deg C

VAPOR DENSITY: 3.47 @ 52.9 deg C

SPECIFIC GRAVITY (water=1): 0.743 @ 0 deg C

SOLUBILITY IN WATER: Reacts, Decomposes

COEFF. WATER/OIL DUST: Not available

ODOR: Irritating Odor

ODOR THRESHOLD: Not available

EVAPORATION RATE: Not available

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Ignites on exposure to air.

HAZARDOUS POLYMERIZATION: Will not polymerize.

CONDITIONS TO AVOID: Avoid contact with air. Keep dry. Keep out of water supplied and sewers.

INCOMPATIBILITY: Combustible materials, halogenated compounds, halogens, oxidizing materials

DECOMPOSITION PRODUCTS: Hydrogen, oxides of silicon

SECTION 11 TOXICOLOGICAL DATA

ACUTE TOXICITY

No information on Trisilane's acute toxicity is known. By analogy with silane, exposure by inhalation may cause headache or nausea. Reaction with air may produce irritation or thermal burns to skin, eyes, and mucous membranes.

CHRONIC TOXICITY

Trisilane is not listed in RTECS; no information on its carcinogenicity is known.

IMMEDIATE EFFECTS

Respiratory tract irritation, skin irritation, eye irritation

DELAYED EFFECTS

No data available

SECTION 12 ECOLOGICAL DATA

COMPONENT ANALYSIS –AQUATIC TOXICITY

No LOEL ecotoxicity data are available for this product's components

PERSISTENCE AND DEGRADABILITY

No data available

BIOACCUMULATIVE POTENTIAL

No data available

MOBILITY IN ENVIRONMENTAL MEDIA

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORTATION DATA

Pyrophoric liquid, inorganic, n.o.s. (Trisilane)

Class 4.2

UN3194

PG I

Transportation by air is not permitted

Marine Pollutant: NO

SECTION 15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or required an OSHA process safety plan.

SARA 311/312 HAZARDOUS CATEGORIES

ACUTE HEALTH: No

CHRONIC HEALTH: No

FIRE: Yes

PRESSURE: No

REACTIVE: Yes

U.S. STATE REGULATIONS

None of this product's components are listed on the state lists from CA, MA, MN, NJ, or PA

Not regulated under California Proposition 65

SECTION 16 OTHER INFORMATION

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, WONIK MATERIALS NORTH AMERICA LLC makes no representation, warranty, or guarantee of any kind with respect to the information in this document or any use of the product based on the information.

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SDS DEPT