

Section 1. Identification

Product Name: ROYALSIL HI-PURITY VTMO

Product Use: The role of both coupling agent & cross-linking agent, used for polymer types such as polyethylene, propylene, unsaturated polyester, etc. Commonly used in fiberglass, plastic, glass, cable, rubber, polyurethane, epoxies, etc.

Effective Date: 8 May 2019

Replaces: 1 March 2018

Supplier Information:

ROYALSIL, Inc.
25 Lancelot Lane
Mount Laurel, NJ 08054-1912

USA Emergency Phone Number:

CHEMTREC (24-hr/7 days): 1-800-424-9300

Refer to ROYALSIL, Inc. Contract # CCN674872.

Section 2. Hazard(s) Identification

Emergency Overview: Clear to pale yellow flammable liquid. Causes mild skin irritation. Cause eye Irritation. Toxic to aquatic life.

GHS Classification:

Flammable liquid

Category 2

Skin Irritation

Category 2

Serious Eye Damage

Category 2A

Acute Toxicity

Category 3



GHS Pictograms:

GHS Label: DANGER

POTENTIAL HEALTH EFFECTS:

CODE OF HAZARD STATEMENTS:

Physical Hazards

H226- Flammable liquid and vapor.

Health Hazards

H226- Flammable liquid and vapor.

H302- Harmful if swallowed.

H315- Cause skin irritation

H320- Causes eye irritation.

H332- Harmful if inhaled.

H336- May cause drowsiness or dizziness.

Environmental Hazards

H401- Toxic to aquatic life.

CODE OF PRECAUTIONARY STATEMENTS:

General

P101- Keep out of reach of children.

P103- Read label before use.

Prevention Statements

P202- Do not handle until all safety precautions have been read and understood.

P233- Keep container tightly closed.

P261- Avoid breathing dust/fume/gas/mist/vapor/spray.

P262- Do not get in eyes, on skin or on clothing.

P264- Wash thoroughly after handling using this product.

P270- Do not eat, drink, or smoke when using this product.

P271- Use only outdoors or in a well-ventilated area.

P273- Avoid release to the environment.

P280- Wear protective gloves/protective clothing/eye protection/face protection.

Response Statements

P302- P352- IF ON SKIN (or hair): wash with plenty water/soap.

P304- P312- P340- IF INHALED. Remove victim to fresh air and keep at rest in apposition comfortable and breathing. Call a POISON CENTER or doctor/physician you feel unwell.

P305- P310- P338- P351- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POSION CENTER or doctor/physician if you feel unwell.

P313- P333- If skin irritation or rash occurs: Get medical advice/attention.

P363- Wash contaminated clothing before reuse.

P370- P378- In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

P391- Collect spillage.

Storage

P235- P403 - Store in well-ventilated place. Keep cool.

Disposal

P501- Dispose of contents/container to an approved waste disposal plant.

ROUTES OF ENTRY: Eye contact, skin adsorption, ingestion and inhalation.

CARCINOGENICITY: Methanol listed for development toxicity.

Section 3. Composition/Information on Ingredients
--

Ingredients	CAS No.	EINECS No.	%
Vinyltrimethoxysilane	2768-02-7	220-449-8	≥99%
Methanol	67-56-1	200-659-6	≤1

Section 4. First Aid Measures

General Advice: In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.

Eye Contact: Flush eyes with water immediately while holding eyelids open. Remove contacts, if worn, after initial flushing and continue flushing for at least 15 minutes. Seek medical attention if irritation persists.

Skin Contact: Use soap and water to remove from the skin, remove contaminated clothing, clean thoroughly before reuse. If irritation persists, contact a physician.

Inhalation: Move to fresh air. If not breathing, give rescue breathing. If breathing is difficult, give oxygen. Seek medical attention if breathing is still difficult.

Ingestion: If swallowed, get medical attention immediately. **DO NOT INDUCE VOMITING.** Never give anything by mouth to an unconscious person.

Note to Physician: Treat symptomatically and supportively.

Section 5. Fire Fighting Measures

Flash Point: 82.4°F (28°C) Flammable liquid

Flammability Limits: LEL: ND UEL: ND

Fire Fighting Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special Fire Fighting Procedures: In case of fire cool endangered containers with water. Hazardous fumes in fires, specific to the product are ammonia, alcohols, amines, nitrogen and silicon oxides. First responders need to wear full-bunker gear with Self Contained Breathing Apparatus (SCBA), never enter a confined space unless fully protected with proper personal protective equipment (PPE).

Section 6. Accidental Release Measures

Use personal protective equipment, see section 8.

Clean-up Procedures: Stop the source of the release if you are not put at risk. Use inert absorbent material (such as diatomaceous earth, vermiculite) to absorb the spill, use non-sparking shovel to pick up absorbent for disposal. Assure sufficient ventilation.

Spills and Leaks: Dispose in accordance to local, state or Federal regulations.

Section 7. Handling and Storage

Handling: Provide good ventilation. Wear personal protective equipment, see section 8. Do not get into eyes, on skin and on clothing. Do not breathe vapors or mists. Use with adequate ventilation. Wash thoroughly after handling.

Storage: Store in original labeled container. Keep in cool and dry areas.

Section 8. Exposure Controls/Personal Protection

Introductory Remarks: Use a local exhaust ventilation or other engineering controls to minimize airborne exposure. A safety shower and eye wash should be readily available. Methanol permissible exposure limit is 260 mg/m³.

Personal Protection:

Eyes: Wear safety goggles or face shield to prevent eye contact.

Body: Chemical apron, long sleeve shirts, long pants, socks, and rubber boots.

Hands: Chemical resistant gloves.

Respiratory: Wear an approved respirator that provides protection from this product if the airborne concentrations exceed the recommended exposure limits.

Section 9. Physical and Chemical Properties

Physical State, Color, Odor	Clear to pale yellow liquid with slight odor	Vapor Pressure	11.9 hPa @ 68°F (20°C)
Ignition Temperature	435°F (2,224°C) @ 68°F (20°C)	Density(water=1)	< 1 g/ml @ 77°F (25°C)
Flash Point	82.4°F (28°C)	Boiling Point	253°F (123°C)

Section 10. Stability and Reactivity

Chemical Stability: Considered stable under normal ambient temperatures.

Hazardous Decomposition: In complete combustion, oxides of carbon and silicate are formed.

Hazardous Polymerization: Will not occur.

Incompatibility- Materials to Avoid: Reacts with strong oxidizing agent and water.

Section 11. Toxicological Information

Toxicology: Acute Oral LD₅₀ (rat) = 7,100 mg/kg

Acute Dermal LD₅₀(rabbit) => 3,200 mg/kg

Skin Irritation: Cause skin irritation.

Eye Irritation: Causes eye irritation.

Acute Eye Irritation: Mild irritation.

Acute Inhalation Toxicity: Expected to be an irritant to the respiratory system.

Reproductive Toxicity: May cause effects on reproductive development.

Carcinogenic Effects: Methanol listed for development toxicity.

Section 12. Ecological Information

Ecotoxicity: LC₅₀(Rainbow Trout) = 191 mg/L (96 hour)
LC₅₀(Daphnia Magna) = 189 mg/L (48 hour)

This is toxic to aquatic organisms.

Environmental Fate: No data available.

Section 13. Disposal Considerations

Waste Disposal Method: Whatever cannot be saved for recovery or recycling should be managed by the local, state or Federal Regulations.

Container Handling and Disposal: All containers should be triple rinsed and disposed of according to local, state and Federal regulations.

Section 14. Transport Information

Shipping Name: ROYALSIL HI-PURITY VTMO

Proper Shipping Description (Ground):

UN1993, Flammable liquid, N.O.S., (Vinyltrimethoxysilane), 3, III

IATA: (Cargo aircraft only)

UN1993, Flammable liquid, N.O.S., (Vinyltrimethoxysilane), 3, III

Use packing instruction 310. The net quantity is 58 Gal/(220L).

IMO (Water):

UN1993, Flammable liquid, N.O.S., (Vinyltrimethoxysilane), 3, III

Use packing instructions P001 and LP01.

Section 15. Regulatory Information

EPCRA 311/312 Categories: Immediate (Acute) Health Effects: Yes
Delayed (Chronic) Health Effects: Yes
Fire Hazard: Yes
Sudden Release of Pressure: No
Reactivity: No

Right to know classification: Methanol is listed in the states of NJ, PA and RI.

TSCA: Vinyltrimethoxysilane and Methanol are on TSCA active inventory list.

SARA Section 313: Both ingredients are listed.

Reportable Quantity (RQ): None.

Prop. 65: Methanol listed for development toxicity.



WHMIS: Flammable and combustible material.
Methanol is listed in DSL list.

Compounds are listed as chemical inventories of Australia, Canada, China, Germany, Israel, Japan, Korea, Philippines, United Kingdom and United States of America.

Abbreviations:

CAS #	Chemical Abstract Service Number		
°C	Celsius Temperature Scale	°F	Fahrenheit Temperature Scale
EINECS #	European Inventory of Existing Chemical Substances Number		
hPa	Hectopascal	LD ₅₀	Lethal Dose Oral or Dermal
LC ₅₀	Lethal Inhalation	LEL	Lower Explosive Limit
UEL	Upper Explosive Limit	PEL	Permissible Exposure Limit
PPE	Personal Protective Equipment	Prop.	Proprietary
PSI	Pounds Per Square Inch	NA	Not Applicable
ND	Not Determined	STEL	Short Term Exposure Limit
TLV	Threshold Limit Value	TSCA	Toxic Substance Control Act
TWA	Time Weighted Average		

Section 16. Other Information

Hazardous Material Information System		National Fire Protection Association	
HMIS		NFPA	
1	Health	1	Health
4	Fire	4	Fire
0	Reactivity	0	Instability
H	Personal Protection		NA

Health	4 Deadly	3 Extreme Danger	2 Dangerous	1 Slight hazard	0 No hazard
Fire	4 < 73 °C	3 < 100 °C	2 < 200 °C	1 >200 °C	0 Will not burn
Reactivity/ Instability	4 May detonate	3 Explosive	2 Unstable	1 Normally stable	0 Stable

Prepared by: Dennis E. Belau

Reviewed by: Rosario A. Licciardello
ROSARIO@ROYALSIL.com

This Safety Data Sheet (SDS) meets the requirements of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200) this product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all information required by CPR.

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 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 on valid patents or as extending the 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 related to the product being used.

DISCLAIMER

Strictly for Commercial or Research and Development use only. Not intended for drug, household or other noncommercial uses.

The use of "Qualitative Determinations of Organosilanes" is subject to many variables which can be environmentally or human caused which may allow the reading of results to be inaccurate.

The user of this information takes full responsibility in how these tests are performed and the seller in no way expressed, written or implied is responsible for the interpretation of the results. All use of these tests is the full responsibility of the user.

WARRANTY

The information above in the Safety Data Sheet is believed to be accurate and represents the best information currently available to ROYALSIL Inc and its supplier.

However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use.

Users should make their own investigations to determine the suitability of the information for their purposes. In no event shall ROYALSIL Inc. or its supplier be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, how so ever arising, even if ROYALSIL Inc and its supplier has been advised of the possibility of such damages. (REV: 9-4-16)