

Section 1. Identification

Product Name: ROYALSIL HI-PURITY SI-69

Product Use: It had been applied successfully in the rubber industry. It can be used to increase rubber's "wetting" ability to fillers, to improve the reinforcing effect of fillers, and to reduce the rolling resistance. Thus, the mechanical properties, as well as compression heat, wear and permanent deformation performance of vulcanize can be ameliorated significantly. By using SI 69, the adverse effects of fillers on curing rate and crosslinking degree can be eliminated and the Mooney viscosity of rubber compound can be reduced, as a result, the manufacturing process can be improved significantly. Meanwhile, the cure reversion phenomenon, to some extent, can also be relieved.

The product is suitable for the polymers containing double bond (eg. NR, NBR, SBR, IR, BR, EPDM, or their combination) or for the rubber formulation containing fillers with hydroxy functional groups (eg. White carbon, silicate, etc.).

Effective Date: 21 May 2019

Replaces: 17 April 2019

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: Yellow to amber liquid. Causes mild skin irritation. Cause serious eye damage. Toxic to aquatic life.

GHS Classification:

Skin Irritation

Category 2

Eye Irritation

Category 2A



GHS Pictograms:

GHS Label: WARNING

POTENTIAL HEALTH EFFECTS:

CODE OF HAZARD STATEMENTS:

Physical Hazards

H227- Combustible liquid.

Health Hazards

H227- Combustible liquid.

H303- May be harmful if swallowed.

H317- May cause an allergic skin reaction

H318- Causes serious eye damage.

H332- Harmful if inhaled.

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 advices/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: None.

Section 3. Composition/Information on Ingredients				
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Ingredients	CAS No.	EINECS No.	%	Reach No.
Bis[-(triethoxysilyl)propyl] tetrasulfide	40372-72-3	211-519-6	≥98%	No
Ethanol	64-17-5	200-578-6	≤ 2%	Yes

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: 215.01°F (101.67°C) Flammable liquid

Flammability Limits: LEL: ND UEL: ND

Fire Fighting Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. At temperatures above 302°F (150°C) in air the product can form formaldehyde vapor and moisture.

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 earth, 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. Ethanol permissible exposure limit (PEL) is 25 mg/m³.

Personal Protection:

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

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

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	Yellow to amber liquid with sulfur odor	VOC	< 5%
Ignition Temperature	482°F (250°C) Decomposes	Density(water=1)	> 1.085 g/ml @ 68°F (20°C)
Flash Point	143°F (85°C)	Boiling Point	482°F (250°C)

Section 10. Stability and Reactivity

Chemical Stability: Considered stable under normal ambient temperatures.

Hazardous Decomposition: In complete combustion, oxides of carbon, nitrogen and silicate are formed. When heated above >302°F (>150°C) in the presence of air, product can form formaldehyde vapors.

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) = 16,400 mg/KG
Acute Dermal LD₅₀ (rabbit) = > 2,000 mg/KG

Skin Irritation: Mildly irritating.

Eye Irritation: Serious damage to eyes.

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

Reproductive Toxicity: No evidence of adverse effects on sexual function and fertility or on development, based on animal experiments.

Carcinogenic Effects: None.

Section 12. Ecological Information

Ecotoxicity: LC₅₀(Zebra fish) = 80 mg/L (96 hour)
EC₅₀(Green algae) = > 819 mg/L (72 hour)
EC₅₀(Daphnia) = 21.2mg/L (48 hour)

This is toxic aquatic organisms.

Environmental Fate: Ethanol is readily bio degradable.

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 SI-69

Proper Shipping Description (Ground):

Not regulated

IATA: (Cargo aircraft only)

Not regulated.

IMO (Water):

Not Regulated.

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: Ethanol is listed in the states of NJ and PA.

TSCA: Bis[-(triethoxysily)propyl] tetrasulfide and Ethanol are listed on TSCA active list.

Reportable Quantity (RQ): None.

Prop. 65: None.



WHMIS: Flammable and Combustible materials.
These ingredients are listed in the DSL and NDSL list in Canada.

Compounds are listed as chemical inventories of Australia, 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	
2	Health	2	Health
2	Fire	2	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.

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