SAFETY DATA SHEET

1. Identification

Product identifier **KE-3421**

Other means of identification

Sales Code GDUNS0

Recommended use RTV rubbers
RTV rubber for electrical, electronic and general industry (coating)

Recommended restrictions Industrial use only.

Manufacturer/Importer/Supplier/Distributor information

Name Shin-Etsu Silicones of America, Inc.

Address 1150 Damar Drive, Akron, OH 44305 USA

Contact Regulation compliance group

Telephone Number +1-330-630-9860

Fax Number +1-330-630-9855

Emergency Phone Number Chemtrec: +1-800-424-9300 (Within US)
Chemtrec: +1-703-527-3887 (Outside US)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Reproductive toxicity (the unborn child, fertility)	Category 2
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

*Hazards not stated here are "Not classified", "Not applicable" or "Classification not possible".

Label elements

Signal word Danger

Hazard statement Highly flammable liquid and vapor. Causes skin irritation. Causes serious eye irritation. Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling.

Response In case of fire: Use water fog, foam, dry chemical powder or carbon dioxide(CO2) to extinguish. IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Storage Store in a well-ventilated place. Keep cool. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information	None.
Substance(s) formed under the condition of use	This product reacts with water , moisture or humid air to evolve following compounds: Acetone
HMIS® ratings	Health: 2* Flammability: 3 Physical hazard: 0

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Alkenoxysilane		15332-99-7	3 - 10
Organosilane		69709-01-9	0.3 - 1
Alkoxysilane(A)		919-30-2	0.3 - 1
Alkoxysilane(B)		1760-24-3	0.3 - 1
Toluene		108-88-3	0.3 - 1

Decomposition

Chemical name	Common name and synonyms	CAS number	%
Acetone		67-64-1	

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. For minor skin contact, avoid spreading material on unaffected skin. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Eye contact	Rinse immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Take off all contaminated clothing immediately. IF exposed or concerned : Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	By heating and fire, harmful vapors/gases may be formed. Nitrogen oxides. (corrosive)
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots, and self-contained breathing apparatus.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch or walk through spilled material. Ventilate closed spaces before entering them. Wear appropriate personal protective equipment.

Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Vapors may form explosive mixtures with air. Provide adequate ventilation. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. Take precautionary measures against static discharges. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Use care in handling/storage. Do not breathe mist or vapor. Pregnant or breastfeeding women must not handle this product. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat, sparks and open flame. Store in cool place. Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Keep in original container.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Decomposition	Type	Value
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Toluene (CAS 108-88-3)	TWA	20 ppm

Decomposition	Type	Value
Acetone (CAS 67-64-1)	STEL	500 ppm
	TWA	250 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Toluene (CAS 108-88-3)	STEL	560 mg/m3 150 ppm
	TWA	375 mg/m3 100 ppm

Decomposition	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3 250 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
Decomposition	**Value**	**Determinant**	**Specimen**	**Sampling Time**
Acetone (CAS 67-64-1)	25 mg/l	Acetone	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Methanol(Impurity) (CAS 67-56-1) Can be absorbed through the skin.
Toluene (CAS 108-88-3) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Methanol(Impurity) (CAS 67-56-1) Skin designation applies.
Toluene (CAS 108-88-3) Skin designation applies.

US - Tennessee OELs: Skin designation

Methanol(Impurity) (CAS 67-56-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Methanol(Impurity) (CAS 67-56-1) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

Methanol(Impurity) (CAS 67-56-1) Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and/or door open for at least 24 hours after application.

Individual protection measures, such as personal protective equipment

Eye/face protection Tightly sealed safety glasses according to EN 166.

Skin protection

Hand protection Wear protective gloves.

Other Wear suitable protective clothing.

Respiratory protection If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Avoid contact with skin. Avoid contact with eyes. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Form Liquid.

Color Light yellow. Clear.

Odor Acetone odor

Odor threshold Not available.

pH Not measurable (Refer to water solubility)

Melting point/freezing point No data

Initial boiling point and boiling range Not applicable.

Flash point 33.8 °F (1 °C) Closed Cup

Evaporation rate < 1 (Butyl Acetate=1)

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 2.1 % v/v [Acetone]

Flammability limit - upper (%)	13.0 % v/v [Acetone]
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Negligible (25 °C)
Vapor density	> 1 (air=1)
Relative density	0.98 (25°C)
Solubility(ies)	
Solubility (water)	Not soluble
Partition coefficient (n-octanol/water)	Not applicable
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	300 mm2/s (25°C)
Other information	
Molecular weight	Not applicable.

10. Stability and reactivity

Reactivity	No hazardous reaction known under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Water, moisture.
Hazardous decomposition products	This product reacts with water, moisture or humid air to evolve following compounds: Acetone. Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Nitrogen oxides. Formaldehyde .

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Alkoxysilane(A) (CAS 919-30-2)		
Acute		
Dermal		
LD50	Rabbit	4290 mg/kg
Oral		
LD50	Rat	1570 - 3650 mg/kg
		1780 mg/kg

Components	Species	Test Results
Alkoxysilane(B) (CAS 1760-24-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
		16 ml/kg
Oral		
LD50	Rat	2995 mg/kg
		2400 mg/kg
Organosilane (CAS 69709-01-9)		
Acute		
Oral		
LD50	Rat	3.67 ml/kg
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	12124 mg/kg
		14.1 ml/kg
Inhalation		
LC50	Mouse	400 ppm, 24 Hours
Oral		
LD50	Rat	5000 mg/kg
		2.6 g/kg

Decomposition	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
Inhalation		
LC50	Rat	50.1 mg/l, 8 Hours
Oral		
LD50	Mouse	3000 mg/kg
	Rabbit	5340 mg/kg
	Rat	5800 mg/kg

Skin corrosion/irritation
Causes visible necrosis of the skin tissue (Rabbit/60 Minutes) [Organosilane]
SKIN-RABBIT : 5mg/24Hr SEVERE [Alkoxysilane(A)]
SKIN-RABBIT : Moderately irritating [Alkoxysilane(B)]
Causes skin irritation. [Toluene]

Serious eye damage/eye irritation
Causes serious eye damage. [Organosilane]
EYE-RABBIT : 0.75mg/24Hr SEVERE [Alkoxysilane(A)]
EYE-RABBIT : 15mg SEVERE [Alkoxysilane(B)]
Causes eye irritation. [Toluene]
Causes serious eye irritation. [Acetone]

Respiratory or skin sensitization

Respiratory sensitization
Not available.

Skin sensitization
May cause an allergic skin reaction. [Alkoxysilane(A)]
Positive (Guinea pig) [Alkoxysilane(B)]

Germ cell mutagenicity
Negative(Ames Test) [Alkoxysilane (A)]
Negative(Ames test, Chromosome analysis, Micronucleus test) [Alkoxysilane (B)]

Germ cell mutagenicity: Ames test

Organosilane	OECD 471 Result: Negative with and without metabolic activation. Species: Micro-organisms

Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity

Developmental toxicity: NOAEL 500mg/kg/day (Rat), Maternal toxicity: NOAEL 500mg/kg/day (Rat) [Alkoxysilane(B)]
Suspected of damaging the unborn child. [Toluene]

Specific target organ toxicity - single exposure

May cause damage to the following organs.
Narcotic effects. [Toluene]
Narcotic effects. [Acetone]

Specific target organ toxicity - repeated exposure

May cause damage to the following organs through prolonged or repeated exposure:
Central nervous system. [Toluene]

Aspiration hazard

May be fatal if swallowed and enters airways. [Toluene]

Further information

This product reacts with water , moisture or humid air to evolve following compounds:
Acetone

12. Ecological information

Ecotoxicity

Toxic to aquatic life. [Alkoxysilane(B)] [Toluene]
Harmful to aquatic life with long lasting effects. [Toluene]

Components		Species	Test Results
Alkoxysilane(A) (CAS 919-30-2)			
Aquatic			
Fish	LC50	Oryzias latipes	> 1000 mg/l, 48 hr
Alkoxysilane(B) (CAS 1760-24-3)			
Aquatic			
Algae	EbC50	Green algae (Selenastrum capricornutum)	5.5 mg/l, 72 hr
	ErC50	Green algae (Selenastrum capricornutum)	8.8 mg/l, 72 hr
Crustacea	EC50	Daphnia magna	90 mg/l, 48 hr
			81 mg/l, 48 hr
	NOEC	Daphnia magna	> 1 mg/l, 21 day
Fish	LC50	Brachydanio rerio	597 mg/l, 96 hr
Organosilane (CAS 69709-01-9)			
Aquatic			
Acute			
Algae	EC50	Pseudokirchneriella subcapitata	> 133 mg/l, 72 hours
	NOEC	Pseudokirchneriella subcapitata	> 133 mg/l, 72 hours
Crustacea	EC50	Daphnia	> 122 mg/l, 48 hours
Toluene (CAS 108-88-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)	5.5 mg/l, 96 hours

Decomposition		Species	Test Results
Acetone (CAS 67-64-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	10294 - 17704 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours

Persistence and degradability

Causes easily hydrolysis in water or atmosphere. [Alkoxysilane]

Biodegradability

Percent degradation (Aerobic biodegradation-ready)

Organosilane	36 % OECD 301F, Not readily biodegradable. Species: Activated sludge Test Duration: 28 days

Bioaccumulative potential No data available.

Mobility in soil Not available.

Mobility in general No data available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Follow applicable Federal, State and Local regulations.

14. Transport information

DOT

- **UN number** UN1133
- **UN proper shipping name** Adhesives, containing a flammable liquid
- **Transport hazard class(es)**
  - **Class** 3
  - **Subsidiary risk** -
  - **Label(s)** 3
- **Packing group** II
- **Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.
- **Special provisions** 149, B52, IB2, T4, TP1, TP8
- **Packaging exceptions** 150
- **Packaging non bulk** 173
- **Packaging bulk** 242

IATA

- **UN number** UN1133
- **UN proper shipping name** Adhesives containing flammable liquid
- **Transport hazard class(es)**
  - **Class** 3
  - **Subsidiary risk** -
- **Packing group** II
- **Environmental hazards** No.
- **ERG Code** 3L
- **Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.
- **Other information**
  - **Passenger and cargo aircraft** Allowed with restrictions.
  - **Cargo aircraft only** Allowed with restrictions.

IMDG

- **UN number** UN1133
- **UN proper shipping name** ADHESIVES containing flammable liquid
- **Transport hazard class(es)**
  - **Class** 3
  - **Subsidiary risk** -
- **Packing group** II
- **Environmental hazards**
  - **Marine pollutant** No.
- **EmS** F-E, S-D
- **Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This product is not intended to be transported in bulk.

DOT

IATA; IMDG

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Methanol(Impurity) (CAS 67-56-1)	Listed.
Toluene (CAS 108-88-3)	Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Toluene	108-88-3	0.3 - 1

US state regulations

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Methanol(Impurity) (CAS 67-56-1)	Listed: March 16, 2012
Toluene (CAS 108-88-3)	Listed: January 1, 1991

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Methanol(Impurity) (CAS 67-56-1)
Toluene (CAS 108-88-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 09-02-2015

Revision date 04-17-2019

Version # 03

HMIS® ratings
Health: 2*
Flammability: 3
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 3
Instability: 0

NFPA ratings

Disclaimer
This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.
This product has been designed, manufactured and developed solely for general industrial use only. This product is not designed for, intended for use as, or suitable for, medical, surgical or other particular purposes. Users have the sole responsibility and obligation to determine the suitability of this product for any application, to make preliminary tests, and to confirm the safety of this product for their use. Users must never use this product for the purpose of implantation into the human body and/or injection into humans.

Revision information This document has undergone significant changes and should be reviewed in its entirety.