

1. Identification

Product identifier	KR-251
Other means of identification	
Sales Code	0415S0
Recommended use	Not available.
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 1
	Reproductive toxicity (the unborn child)	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2 (central nervous system)
Environmental hazards	Aspiration hazard	Category 1
	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 3
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 damage. Suspected of damaging the unborn child. May cause drowsiness or dizziness. May cause damage to organs (central nervous system) through prolonged or repeated exposure. May be fatal if swallowed and enters airways. Toxic to aquatic life. Harmful to aquatic life with long lasting effects.
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. Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

Response	In case of fire: Use water fog, foam, dry chemical powder or carbon dioxide(CO2) to extinguish. If swallowed: Immediately call a poison center/doctor/. Do NOT induce vomiting. 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 inhaled: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Storage	Store in a well-ventilated place. Keep cool. Keep container tightly closed. 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.
HMIS® ratings	Health: 3* Flammability: 3 Physical hazard: 0

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Toluene		108-88-3	70 - < 80
Isobutyl alcohol		78-83-1	3 - < 5

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Wash skin with soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing 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 immediately.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Behavioral changes. Decrease in motor functions. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Aspiration may cause pulmonary edema and pneumonitis. Narcosis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.
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.
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. Water runoff can cause environmental damage.
General fire hazards	Highly flammable liquid and vapor.

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. Do not breathe mist or vapor.
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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. Prevent entry into waterways, sewer, basements or confined areas.

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

Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

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. Use care in handling/storage. Obtain special instructions before use. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Use personal protective equipment as required. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains. Do not handle until all safety precautions have been read and understood. Pregnant or breastfeeding women must not handle this product. Do not breathe mist or vapor. 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 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. 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)**

Components	Type	Value
Isobutyl alcohol (CAS 78-83-1)	PEL	300 mg/m3
		100 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
Isobutyl alcohol (CAS 78-83-1)	TWA	50 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Isobutyl alcohol (CAS 78-83-1)	TWA	150 mg/m3
		50 ppm
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 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	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
	0.02 mg/l	Toluene	Blood	*

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

Exposure guidelines**US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants**

TOLUENE; TOLUOL (CAS 108-88-3) Can be absorbed through the skin.

US. Minnesota Hazardous Substances List (Minn. Rules 5206.0400).

Toluene (CAS 108-88-3) Skin designation applies.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Provide eyewash station.

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 When using, do not eat, drink or smoke. Avoid contact with eyes. Avoid contact with skin. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Form Liquid.

Color Colorless. Clear.

Odor Solvent odor

Odor threshold Not available.

pH Not available.

Melting point/freezing point No data

Initial boiling point and boiling range 226.4 °F (108 °C) [Isobutyl alcohol]

Flash point 41 °F (5 °C) Closed Cup

Evaporation rate > 1 (Butyl Acetate=1) [Isobutyl alcohol]

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) 1.4 % v/v [Toluene]

Flammability limit - upper (%) 6.7 % v/v [Toluene]

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 1.1 kPa (20 °C) [Isobutyl alcohol]

Vapor density 3.1 (air=1) [Toluene]

Relative density 0.92 (25 °C)

Solubility(ies)

Solubility (water) Not soluble

Partition coefficient (n-octanol/water) Not applicable

Auto-ignition temperature > 572 °F (> 300 °C)

Decomposition temperature Not available.

Viscosity 20 mPa·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.

Hazardous decomposition products 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.
Formaldehyde.

11. Toxicological information

Information on likely routes of exposure

Ingestion Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Inhalation Prolonged inhalation may be harmful. May cause drowsiness and dizziness. Headache. Nausea, vomiting. May cause damage to organs through prolonged or repeated exposure by inhalation.

Skin contact Causes skin irritation.

Eye contact Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics Behavioral changes. Decrease in motor functions. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Irritation of nose and throat. Narcosis. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Isobutyl alcohol (CAS 78-83-1)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	3392 mg/kg
<i>Inhalation</i>		
LC50	Rat	8000 ppm, 4 hours 8000 ppm, 4 Hours
<i>Oral</i>		
LD50	Mouse	3500 mg/kg
	Rat	2.46 g/kg
Toluene (CAS 108-88-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	12124 mg/kg 14.1 ml/kg
<i>Inhalation</i>		
LC50	Mouse	400 ppm, 24 hours
<i>Oral</i>		
LD50	Rat	5000 mg/kg 2.6 g/kg

Skin corrosion/irritation Causes skin irritation. [Toluene] [Isobutyl alcohol]

Serious eye damage/eye irritation	Causes serious eye damage. [Isobutyl alcohol] Causes eye irritation. [Toluene]
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
Skin sensitization	Not available.
Germ cell mutagenicity	Not available.
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 listed.	
Reproductive toxicity	Suspected of damaging the unborn child. [Toluene]
Specific target organ toxicity - single exposure	May cause damage to the following organs. Narcotic effects. [Toluene] Respiratory tract irritation. Narcotic effects. [Isobutyl alcohol]
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]
Chronic effects	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity	Toxic to aquatic life. Harmful to aquatic life with long lasting effects. [Toluene]		
Components	Species	Test Results	
Isobutyl alcohol (CAS 78-83-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	950 - 1200 mg/l, 48 hours
Fish	LC50	Bleak (Alburnus alburnus)	1000 - 3000 mg/l, 96 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
Persistence and degradability	Not available.		
Bioaccumulative potential	Not available.		
Mobility in soil	Not available.		
Other adverse effects	Not available.		

13. Disposal considerations

Disposal instructions	Follow applicable Federal, State and Local regulations.
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14. Transport information

DOT	
UN number	UN1866
UN proper shipping name	Resin solution
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	UN1866
UN proper shipping name	Resin solution flammable
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.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1866
UN proper shipping name	RESIN SOLUTION flammable
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E*
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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
Toluene	108-88-3	70 - < 80

US state regulations**US. Massachusetts RTK - Substance List**

Isobutyl alcohol (CAS 78-83-1)
Toluene (CAS 108-88-3)

US. New Jersey Worker and Community Right-to-Know Act

Isobutyl alcohol (CAS 78-83-1)
Toluene (CAS 108-88-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Isobutyl alcohol (CAS 78-83-1)
Toluene (CAS 108-88-3)

US. Rhode Island RTK

Isobutyl alcohol (CAS 78-83-1)
Toluene (CAS 108-88-3)

US. California Proposition 65

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

Toluene (CAS 108-88-3) Listed: January 1, 1991

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Toluene (CAS 108-88-3) Listed: August 7, 2009

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
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
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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	09-24-2015
Version #	01
NFPA ratings	Health: 3 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

Product and Company Identification: Product and Company Identification

Composition / Information on Ingredients: Disclosure Overrides

Physical & Chemical Properties: Multiple Properties

Toxicological Information: Toxicological Data

Ecological Information: Ecotoxicity

Transport Information: Proper Shipping Name/Packing Group

Regulatory Information: Regulatory Information

HazReg Data: Pacific Rim

GHS: Classification