Polymer Systems Technology Limited

UK & Ireland Distributor

NuSil SILICONE TECHNOLOGY®
Creative Partners in a Material World

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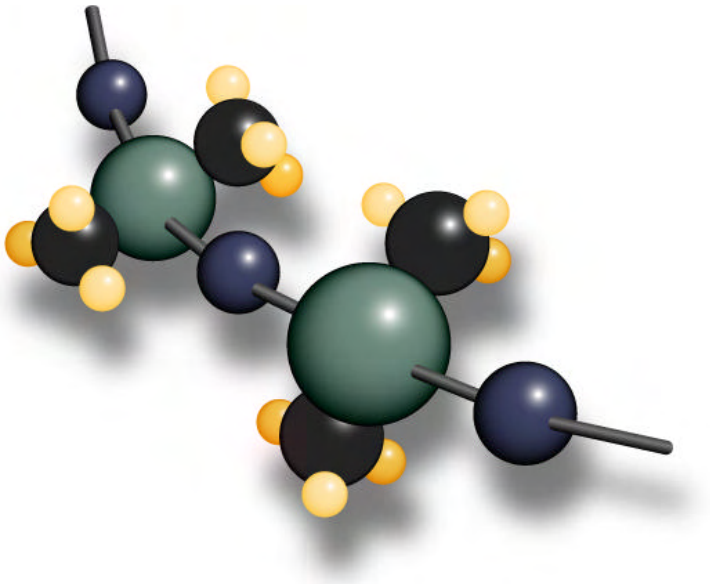

MATERIAL SAFETY DATA SHEET
LS3-3200

NuSil Technology LLC urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to the use and understanding of the data contained in this MSDS.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information regarding hazards or safety; (2) furnish this same information to each of its customers for the product; and (3) request its customers to notify their employees, customers and other users of the product of this information.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

NuSil Technology LLC 1050 Cindy Lane Carpinteria, California 93013 USA (805) 684-8780	**EMERGENCY** TELEPHONE NUMBERS: (800) 424-9300 **CHEMTREC** (805) 684-8780 OUTSIDE OF THE USA (703) 527-3887 **CHEMTREC**

PRODUCT NAME: **LS3-3200**
CHEMICAL NAME: N/A
CHEMICAL FAMILY: Silicone Primer
FORMULA: Proprietary
MOLECULAR WEIGHT: N/A
SYNONYMS: N/A
CAS #: Mixture

2. HAZARDOUS INGREDIENTS

%	MATERIAL	CAS #	EXPOSURE VALUE	CLASSIFICATION
85	Naphtha, VM&P	08030-30-6	See Section 8	See Section 7
5	Tetra-n-propyl silicate	00682-01-9	See Section 8	See Section 7
5	Tetrabutyltitanate	05593-70-4	See Section 8	See Section 7
5	Tetra (2-methoxyethoxy) silane	02157-45-1	See Section 8	See Section 7

3. HAZARDS IDENTIFICATION

EFFECTS OF SINGLE OVEREXPOSURE:

SWALLOWING:

Slightly toxic. May cause nausea, abdominal discomfort, vomiting, and diarrhea. Swallowing of large quantity may lead to central nervous system disturbances, such as convulsions, depression, or coma. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.

SKIN ABSORPTION:

No evidence of adverse effects from available information.

INHALATION:

Causes irritation of the respiratory tract, experienced as nasal discomfort and discharge with chest pain and coughing. Dizziness and drowsiness may occur. Eye irritation may occur. Severe overexposure by inhalation may result in permanent lung damage.

SKIN CONTACT:
Brief contact is not irritating. Prolonged contact, as from clothing wet with the material, may cause moderate irritation seen as local redness and may burn slightly.

EYE CONTACT:
Liquid causes irritation, experienced as stinging, excess blinking and tear production, with excess redness and swelling of the conjunctiva. High vapor concentrations may cause irritation, experienced as stinging, excess blinking and tear production, with excess redness of the conjunctiva.

EFFECTS OF REPEATED OVEREXPOSURE:
Inhalation over a prolonged period will produce symptoms of dizziness, weakness, pain in the limbs, paresthesias, nervousness, and lead to anemia and weight loss.

Repeated overexposure to Tetra (2-methoxyethoxy) silane may cause injury to bone marrow, blood cells, and testes.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:
Because of its irritating and defatting properties, this material may aggravate an existing dermatitis.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:
Prolonged and repeated inhalation exposure to hydrocarbon vapor in the same boiling range has produced kidney damage in male rats. This effect has not been observed in female rats and male and female mice. The relevance of this information to humans is unknown.

The EPA has expressed concern regarding the possible adverse health effects resulting from the inhalation of alkoxylsilanes and has recommended that administrative and mechanical means be used to minimize exposures.

In laboratory inhalation studies of Tetra (2-methoxyethoxy) silane, increased fetal lethality, and delayed fetal development have been observed in offspring of female animals exposed to concentrations in air of 50 ppm and higher.

OTHER EFFECTS OF OVEREXPOSURE:
None currently known.

4. FIRST AID MEASURES

EMERGENCY AND FIRST AID MEASURES:

SWALLOWING:
Do not induce vomiting. Do not give anything to drink. Obtain medical attention without delay.

SKIN:
Remove contaminated clothing and wash skin with soap and water. Wash clothing before reuse.

INHALATION:
Remove to fresh air. Give artificial respiration if not breathing. Oxygen may be given by qualified personnel if breathing is difficult. Obtain medical attention.

EYES:
Immediately flush eyes with water and continue washing for several minutes. Obtain medical attention.

NOTES TO PHYSICIAN:
Laboratory findings in poisoning may include reduction of red cell count, possible bone marrow hypoplasia, albuminuria, and red cells in urine. If only a small amount of this product has been ingested and if there is likely to be a significant delay before emergency medical help is available, then in the absence of signs and symptoms of CNS depression or convulsions, and when the gag reflex is intact, ipecac may be used to produce vomiting. If vomiting is induced, the patient's head and upper body must be kept at a lower level than the hips to assist in the prevention of aspiration. Aspirated material may cause severe lung damage and present a significant hazard.

If a significant quantity of product is ingested, remove by means of gastric lavage using activated charcoal. A cuffed endotracheal tube should be used to prevent aspiration. When evacuation of the stomach is complete, 30-60 ml of Fleet's Phospho-Soda diluted 1:4 in water may be given. Keep the patient under observation for 24 hours and check for signs of lung injury. It may require 2-4 weeks for resolution of lung infiltrates involving more than 30% of the lung volume.

5. FIRE FIGHTING MEASURES

FLASH POINT (test method(s)): 63°F / 17°C (Tag Closed Cup)

FLAMMABLE LIMITS IN AIR (by volume):
LOWER: 1% UPPER: 6%

EXTINGUISHING MEDIA: Use alcohol-type or universal-type foams applied by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical for small fires.

SPECIAL FIRE FIGHTING PROCEDURES: Do not spray a solid stream of foam directly into a pool of hot, burning liquid as this may cause frothing, and may intensify the fire. Use self-contained breathing apparatus when fighting fire in an enclosed area.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors form from this product and may travel or be moved by air currents and ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharges or other ignition sources at locations distant from product handling point.

Vapors from this product may settle in low or confined areas, or travel a long distance to an ignition source and flash back explosively.

Flammable liquid. Vapor may be ignited by static sparks. Use proper bonding and grounding during liquid transfer as described in National Fire Protection Association document NFPA 77.

Do not extinguish fires with water. Contact with water may generate n-Propanol, which is highly flammable.
Do not extinguish fires with water. Contact with water may generate n-Butanol, which is highly flammable.
Do not extinguish fires with water. Contact with water may generate 2-Methoxyethanol, which is highly flammable.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Extinguish and do not turn on any ignition source until the area is determined to be free from explosion or fire hazards. See Section 5, "Unusual Fire and Explosion Hazards". Spills should be contained. Large spills removed by vacuum. Smaller spills may be soaked up with absorbent.

WASTE DISPOSAL METHOD: Dispose of in accordance with all Federal, State, and local regulations.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
Normal precautions common to safe manufacturing practice should be followed in handling and storage.

Keep container closed, in a cool dry place	S3/S7/S8
Keep away from heat and sources of ignition	S15/S16
Avoid contact with skin and eyes	S24/S25
In case of fire do not breathe fumes	S41
Flammable	R10

Contains Tetra (2-methoxyethoxy) silane -- In laboratory animal studies, birth defects and adverse effects on pregnancy have been observed.

WARNING: Hot organic chemical vapors or mists are susceptible to sudden spontaneous combustion when mixed with air. Ignition may occur at temperatures below those published in the literature as "autoignition" or "ignition" temperatures. Ignition temperatures decrease with increasing vapor volume and vapor / air contact time, and are influenced by pressure changes.
Ignition may occur at typical elevated-temperature process conditions, especially in processes operating under vacuum if subjected to sudden ingress of air, or outside process equipment operating under elevated pressure if sudden escape of vapors or mists to the atmosphere occurs.

Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE VALUES AND SOURCE:
Naphtha, VM&P: 100 ppm - 8 hours TWA (NIOSH, OSHA)
400 ppm - 8 hours TWA (ACGIH)

Tetra-n-propyl silicate: observe values for n-Propyl Alcohol, formed on exposure to water or humid air:
200 ppm - 8 hours TWA (skin)(ACGIH, OSHA, NIOSH)
250 ppm - STEL / CEIL (skin)(ACGIH, OSHA, NIOSH)

Tetrabutyltitanate: observe values for n-Butyl Alcohol, formed on exposure to water or humid air:
50 ppm - STEL/CEIL(C) (skin) (ACGIH, NIOSH)

Tetra(2-methoxyethoxy)silane: observe values for 2-Methoxyethanol, formed on exposure to water or humid air:
5 ppm - 8 hours TWA (skin)(ACGIH)
25 ppm - 8 hours TWA (skin)(OSHA)
0.1 ppm - 8 hours TWA (skin)(NIOSH)

RESPIRATORY PROTECTION:
Use NIOSH approved respirator or self-contained breathing apparatus as needed to maintain personnel exposure below established Occupational Exposure Values.

VENTILATION:
General (mechanical) room ventilation with local ventilation as needed to maintain exposure below established Occupational Exposure Values.

PROTECTIVE GLOVES: Use solvent resistant gloves.

EYE PROTECTION: Use safety goggles.

OTHER PROTECTIVE EQUIPMENT: Eye wash and emergency shower.

9. PHYSICAL AND CHEMICAL PROPERTIES (based on typical material)

BOILING POINT (@ 760 mm Hg) : ~210°F / 99°C
SPECIFIC GRAVITY (H_2O = 1): 0.76
FREEZING POINT: N/A
VAPOR PRESSURE (@ 77°F / 25°C) : ~25 mm Hg
VAPOR DENSITY (air = 1): ~3.8
EVAPORATION RATE (Butyl Acetate = 1): Not Determined
SOLUBILITY IN WATER (By wt): Not Determined
APPEARANCE: Clear to Amber
ODOR: Solvent
PHYSICAL STATE: Liquid
PERCENT VOLATILES (by wt): See Section 15

Note: The above information is not intended for use in preparing product specifications.

10. STABILITY AND REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: Avoid open flames and ignition sources.

INCOMPATIBILITY: Avoid strong oxidizing sources, moisture or humid air.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:
Burning can produce oxides of carbon, oxides of silicon, and miscellaneous hydrocarbons. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

COMPONENT:
LS3-3200:

Acute Oral LD_{50} (mg/kg):	50-500 (Rat) Inferred from ingredient hazard(s)
Acute Dermal LD_{50} (mg/kg):	200-1000 (Rbt.) Inferred from ingredient hazard(s)
Acute Inhalation LC_{50} (mg/l):	0.5-2 (Rat) Inferred from ingredient hazard(s)
Other:	N/A.
Ames Test:	N/A.

Refer to Section 3 for further discussion of the health hazards associated with this preparation.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Complete information not yet available.
CHEMICAL FATE INFORMATION: Complete information not yet available.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with all Federal, State, and local regulations.

14. TRANSPORT INFORMATION

DOT HAZARD CLASSIFICATION:
Proper Shipping Name: Petroleum Distillates, n.o.s. (Naphtha Solution)
Hazard Class: 3
Hazard Label: Flammable Liquid
UN Number: UN1268
Packaging Group: II

I.A.T.A. HAZARD CLASSIFICATION:
Proper Shipping Name: Petroleum Distillates, n.o.s. (Naphtha Solution)
Hazard Class: 3
Hazard Label: Flammable Liquid
UN Number: UN1268
Packaging Group: II

15. REGULATORY INFORMATION

STATUS ON SUBSTANCE LISTS:
The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations. Trade Secrets are indicated by "TS".

C.H.I.P. REGULATIONS

Chemicals (Hazard Information and Packaging for Supply) Regulations 2008 requires physico-chemical and health hazard determination of all substances and preparations manufactured, transported, stored, modified, or consumed within the U.K. Components present in this product at a level, which could require reporting under the statute, are:

MATERIAL	CAS NUMBER	UPPER BOUND CONCENTRATION
Naphtha, VM & P	08030-30-6	85%
*n-Butyl Alcohol	00071-36-3	Trace Amount
*n-Propyl Alcohol	00071-23-8	Trace Amount
*2-Methoxyethanol	00109-86-4	Trace Amount

*(Trace amounts may be formed on exposure to moisture or humid air).

FEDERAL EPA

Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQ's) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are:

MATERIAL	CAS NUMBER	UPPER BOUND CONCENTRATION
*n-Butyl Alcohol	00071-36-3	Trace Amount

*(Trace amounts may be formed on exposure to moisture or humid air).

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40 CFR 355 (used for SARA 302, 304, 311, and 312). Components present in this product at a level which could require reporting under the statute are: **** NONE ****

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDS's that are copied and distributed for this material. Components present in this product at a level which could require reporting under this statute are:

MATERIAL	CAS NUMBER	UPPER BOUND CONCENTRATION
*2-Methoxyethanol	00109-86-4	Trace Amount
*n-Butyl Alcohol	00071-36-3	Trace Amount

*(Trace amounts may be formed on exposure to moisture or humid air).

INVENTORY STATUS

The ingredients of this product are listed on, or are exempt from listing on, the TSCA inventory.

STATE-RIGHT-TO-KNOW

CALIFORNIA Proposition 65

This product contains the following levels of listed substances, which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute.

*2-Methoxyethanol (Ethylene glycol monomethyl ether)

*(Trace amounts may be given off during hydrolyzation.)

MASSACHUSETTS 105 CMR 670.000 Right-To-Know, Substance List (MSL)

Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. Components present in this product at a level which could require reporting under the statute are:

MATERIAL	CAS NUMBER	UPPER BOUND CONCENTRATION
Naphtha, VM & P	08030-30-6	85%
*2-Methoxyethanol	00109-86-4	Trace Amount
*n-Propyl Alcohol	00071-23-8	Trace Amount
*n-Butyl Alcohol	00071-36-3	Trace Amount

*(Trace amounts may be formed on exposure to moisture or humid air).

PENNSYLVANIA Right-To-Know, Hazardous Substance List
Hazardous Substances and Special Hazardous Substances on the List must be identified when present in products. Components present in this product at a level which could require reporting under the statute are:

MATERIAL	CAS NUMBER	UPPER BOUND CONCENTRATION
Naphtha, VM & P	08030-30-6	85%
*2-Methoxyethanol	00109-86-4	Trace Amount
*n-Propyl Alcohol	00071-23-8	Trace Amount
*n-Butyl Alcohol	00071-36-3	Trace Amount

*(Trace amounts may be formed on exposure to moisture or humid air).

CALIFORNIA SCAQMD RULE 443.1 VOC'S:
Volatile Organic Components (VOC's) = Substances with vapor pressure of ≥ 0.5 mm Hg at 104°C (219.2°F).
This product contains < 635 g / liter VOC's.

OTHER REGULATORY INFORMATION:
EPA Hazard Categories: Immediate Health Hazard
Delayed Health Hazard
Fire Hazard

C.H.I.P. Regulations:

Designation:	**LS3-3200**
Symbol:	F; Xn
Indication of Danger:	Flammable  Harmful 
Safety Phrases:	S3/S7/S8/S15/S16/S24/S25/S41
(Ref. Sect. 7)	R10

16. OTHER INFORMATION

HMIS FORMAT:
Health: 2 Flammability: 3 Reactivity: 0

We believe that the information contained herein is current as of the date of this Material Safety Data Sheet, and is offered in good faith. Since the use of this information and of these opinions and the conditions of the use of the product are not within the control of NuSil Technology, it is the user's obligation to determine the conditions of safe use of the product.
-NuSil Technology LLC Regulatory Compliance Department

Effective Date: January 1, 2009