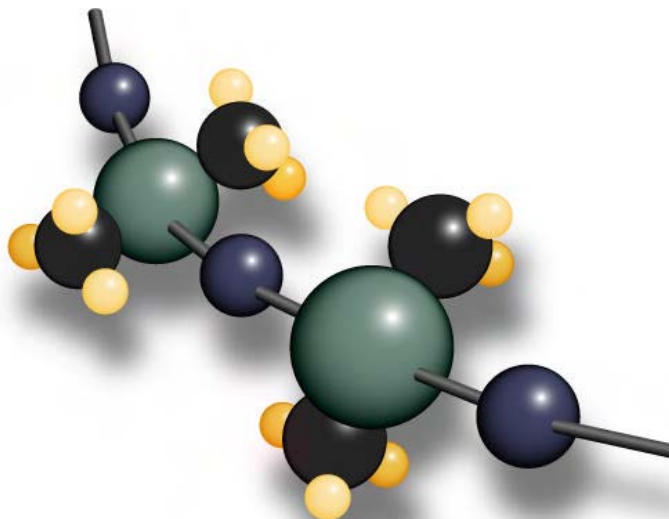


Polymer Systems Technology Limited

UK & Ireland Distributor



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MATERIAL SAFETY DATA SHEET

MED12-6381 PART B

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
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PRODUCT NAME: MED12-6381 PART B
CHEMICAL NAME: Tetra-n-propyl silicate
CHEMICAL FAMILY: Silicone
FORMULA: Si(OC₃H₇)₄
MOLECULAR WEIGHT: 264.44
SYNONYMS: N/A
CAS # : 00682-01-9

2. HAZARDOUS INGREDIENTS

%	<u>MATERIAL</u>	<u>CAS #</u>	<u>EXPOSURE VALUE</u>	<u>CLASSIFICATION</u>
100	Tetra-n-propyl silicate**	00682-01-9	See Section 8	See Section 7
**	n-propanol may be generated upon exposure to water or moist air	00071-23-8	See Section 8	See Section 7

3. HAZARDS IDENTIFICATION

EFFECTS OF SINGLE OVEREXPOSURE:

SWALLOWING:

Small amounts transferred to the mouth by fingers during use, etc., should not injure. Swallowing large amounts may cause digestive discomfort.

SKIN ABSORPTION:

No evidence of adverse effects from available information.

INHALATION:

Short-term harmful health effects are not expected from vapor generated at ambient temperature.

SKIN CONTACT:

May cause slight irritation and reddening.

EYE CONTACT:

Direct contact may cause temporary discomfort with mild redness, dryness, and irritation.

EFFECTS OF REPEATED OVEREXPOSURE:

This product can hydrolyze to form toxic n-Propanol. It causes irritation to the eyes, skin, and respiratory tract. Harmful if swallowed. Exposure can cause stomach pains, vomiting, diarrhea, nausea, and headache. Undocumented reports suggest that this product may form a siloxane polymer on the eyes, lungs, or other mucous membranes.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:

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

OTHER EFFECTS OF OVEREXPOSURE:

None currently known.

4. FIRST AID MEASURES

EMERGENCY AND FIRST AID MEASURES:

SWALLOWING:

If a large quantity (several ounces) has been swallowed, and if patient is fully conscious, give two glasses of water. Obtain medical attention.

SKIN:

Wash with soap and water.

INHALATION:

Remove to fresh air. Obtain medical attention if discomfort persists.

EYES:

Immediately flush eyes with water for at least 15 minutes. Obtain medical attention if discomfort persists.

NOTES TO PHYSICIAN:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. NOTE: Do not induce vomiting. Emesis of this material may prove difficult due to its high viscosity. Aspiration may cause lung damage.

5. FIRE FIGHTING MEASURES

FLASH POINT (test method(s)): >203°F (Cleveland Open Cup)

FLAMMABLE LIMITS IN AIR (by volume):

LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA:

Apply alcohol-type or universal-type foams by manufacturer's recommended technique for large fires. Use water spray, carbon dioxide, dry chemical media for small fires.

SPECIAL FIRE FIGHTING PROCEDURES:

Do not direct a solid stream of water or 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:

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

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal.

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.

Store below 90°F (32°C).

Keep container closed, in a cool dry place

S3/S7/S8

Avoid contact with skin and eyes

S24/S25

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:

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)

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 Value.

PROTECTIVE GLOVES: PVC-coated.

EYE PROTECTION: Safety glasses.

OTHER PROTECTIVE EQUIPMENT: Eye bath and safety shower.

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

BOILING POINT: 228°C
 SPECIFIC GRAVITY (H₂O=1): 0.916
 FREEZING POINT: N/A
 VAPOR PRESSURE: N/A
 VAPOR DENSITY (air=1): N/A
 EVAPORATION RATE (Butyl Acetate=1): N/A
 SOLUBILITY IN WATER (By wt): Insoluble
 APPEARANCE: Translucent
 ODOR: Mild Sweet
 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: None.

INCOMPATIBILITY: Oxidizing materials can cause a reaction.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:

Burning can produce carbon monoxide, carbon dioxide, oxides of silicon, and 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:

MED12-6381 PART B:

Acute Oral LD ₅₀ (mg/kg):	500-5000 (Rat) Inferred from ingredient hazard(s)
Acute Dermal LD ₅₀ (mg/kg):	1000-2000 (Rbt.) Inferred from ingredient hazard(s)
Acute Inhalation LC ₅₀ (mg/l):	2-20 (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: None

I.A.T.A. HAZARD CLASSIFICATION: None (Not Regulated)

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 2002 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:

<u>MATERIAL</u>	<u>CAS NUMBER</u>	<u>UPPER BOUND CONCENTRATION</u>
*n-Propyl Alcohol	00071-23-8	Trace Amount

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: **** NONE ****

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: **** NONE ****

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 no 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.

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:

<u>MATERIAL</u>	<u>CAS NUMBER</u>	<u>UPPER BOUND CONCENTRATION</u>
*n-Propyl Alcohol	00071-23-8	Trace Amount

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:

<u>MATERIAL</u>	<u>CAS NUMBER</u>	<u>UPPER BOUND CONCENTRATION</u>
*n-Propyl Alcohol	00071-23-8	Trace Amount

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 < 900 g/L VOC's.

OTHER REGULATORY INFORMATION:

EPA Hazard Categories: None.

C.H.I.P. Regulations:

Designation:	MED12-6381 PART B
Symbol:	N/A
Indication of Danger:	N/A
Safety Phrases:	S3/S7/S8/S24/S25
(Ref. Sect. 7)	

16. OTHER INFORMATION

HMIS FORMAT:

Health: 1

Flammability: 1

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: December 27, 2007