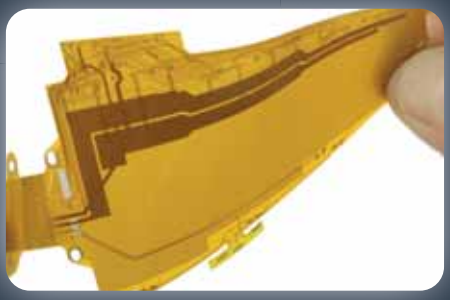


Gelest

Industrial Silanes

For Adhesives, Sealants, Coatings and Composites

Increase Mechanical Properties

Mineral Surface Treatments

Architectural Coatings

Provide Crosslinking

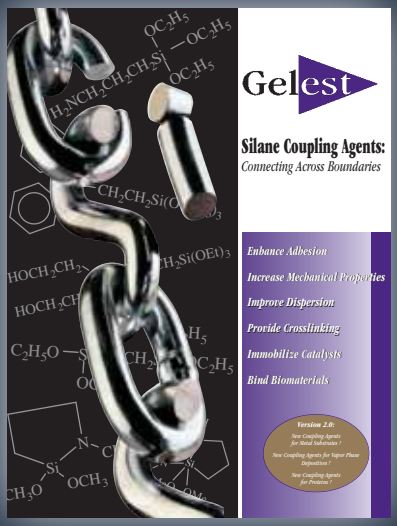
Improve Dispersion

Enhance Adhesion

Water-Repellents

Release Coatings

Gelest

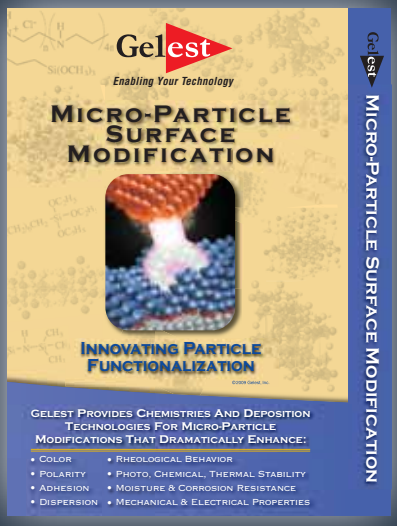


Silane Coupling Agents: Connecting Across Boundaries

Silane coupling agents enhance adhesion, increase mechanical properties of composites, improve dispersion of pigments and industrial minerals, provide crosslinking, immobilize catalysts and bind biomaterials. This 56 page brochure describes chemistry, techniques, applications and physical properties of silane coupling agents.

Hydrophobicity, Hydrophilicity and Silane Surface Modification

A description of non-functional silane monomers and siloxane oligomers that are used to prepare hydrophobic and hydrophilic surfaces is presented in a 80 page brochure. The emphasis is on distinguishing the features and benefits of the entire range of commercial alkyl-silanes and aryl-silanes, including dipodal and fluorinated materials.



Micro-Particle Surface Modification

Understanding characteristics that may affect the performance of surface modified micro-particles can dramatically improve the performance in many applications and markets. This 6 page brochure focuses on particle and chemical considerations that impact rheological behavior, color strength, dispersion, stability, and moisture and corrosion resistance enabling scientists to select materials that meet specific performance criteria.

Industrial Silanes

For Adhesives & Sealants, Coatings and Composites

This product bulletin provides physical properties and applications data on silanes that facilitates selection in most industrial applications. In addition to the commercial products listed in this brochure, Gelest manufacturers a wide range of silanes produced on a developmental basis. Gelest welcomes the opportunity to provide further technical assistance for determining the optimal silane for your application.

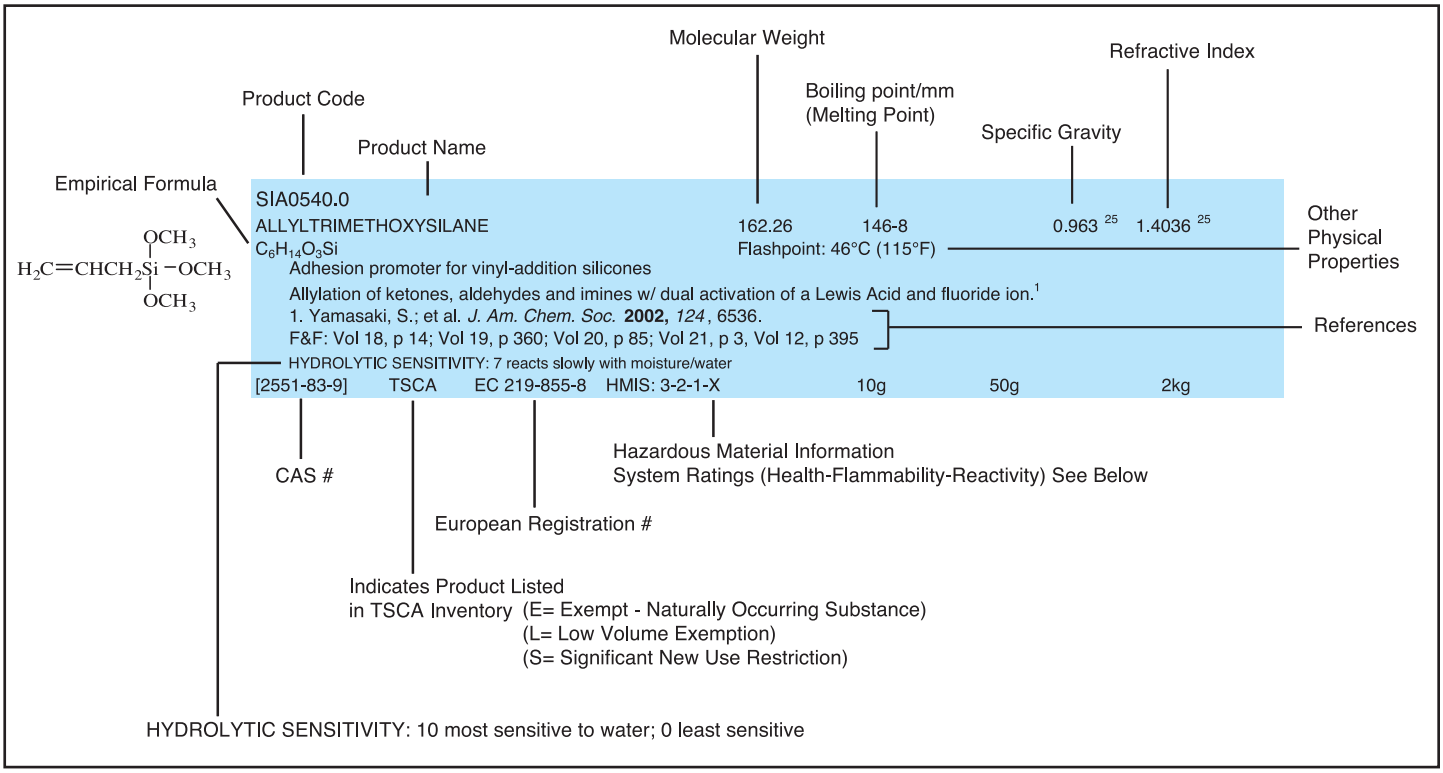
Enabling Your Technology

Gelest Inc.
11 East Steel Rd.
Morrisville, PA 19067 USA
Phone (United States): (215) 547-1015
Phone (United Kingdom): 44(0)1622 741115
www.gelest.com

Gelest Inc., headquartered in Morrisville, PA, is recognized worldwide as an innovator, manufacturer and supplier of commercial and research quantities of organosilicon and metal-organic compounds. Gelest serves advanced technology markets through a materials science driven approach. Gelest silanes find applications in:

Catalysis	**Optical Coatings**
Ceramics	**Polymer Synthesis**
Microelectronics	**Surface Modification**
Coupling Agents	**Pharmaceutical Synthesis**

Research & Development



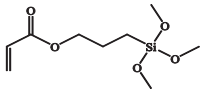

2.5 liter (kg)


5 gallon or 19L cylinder (kg)


55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SIA0200.0



(3-ACRYLOXYPROPYL)TRIMETHOXYSILANE, 96% — 234.32 — 68 / 0.4 — 1.06 — 1.4155

$C_9H_{18}O_5Si$ — Inhibited with BHT — Flashpoint: 123°C (253°F)

Coupling agent for epoxies, UV cure coatings

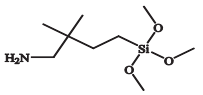
Employed in optical fiber coatings.[1]

1. Yokoshima, M. et al. *Chem. Abstr.* 113, 15746d; Jap. Pat. 02133338, 1990.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[4369-14-6] TSCA store <5°C HMIS: 3-1-1-X 2kg-kg: $310.00 16kg-kg: $256.00 180kg-kg: inquire

SIA0587.07



4-AMINO-3,3-DIMETHYLBUTYLTRIMETHOXYSILANE — 221.37 — 230 — 0.977 — 1.4302

AMINONEOHEXYLTRIMETHOXYSILANE — Flashpoint: 97°C (207°F)

$C_9H_{23}NO_3Si$

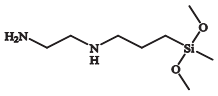
Sterically hindered primary amine coupling agent

Non-yellowing aminosilane coupling agent for flexible adhesives and sealants

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[157923-74-5] TSCA HMIS: 3-1-1-X 2kg-kg: $280.00 18kg-kg: $154.00 200kg-kg: inquire

SIA0589.0



N-(2-AMINOETHYL)-3-AMINOPROPYLMETHYL-DIMETHOXYSILANE, tech-95 — 206.36 — 265 — 0.975 [25] — 1.4447 [25]

$C_8H_{22}N_2O_2Si$ — Flashpoint: 90°C (194°F)

Autoignition temp: 280°C

Specific wetting surface: 380 m^2/g

Coupling agent for furan-quartz sand floor coating systems

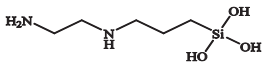
Adhesion promoter for urea-formaldehyde binders on flexible substrates

Comonomer for silicones in textile softeners and hair care formulations

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[3069-29-2] TSCA Reach preregistered HMIS: 3-1-1-X 2kg-kg: $72.00 16kg-kg: $52.00 180kg-kg: inquire

SIA0590.0



N-(2-AMINOETHYL)-3-AMINOPROPYLSILANETRIOL — 180.28 — 1.00

25% in water, mainly oligomers — Flashpoint: >110°C (>230°F)

$C_5H_{16}N_2O_3Si$ — pH: 10.0-10.5

Internal hydrogen bonding stabilizes solution

Aqueous primer, adhesion promoter for resin-to-metal applications

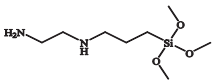
Additive for CMP slurries

See also WSA-7021 for greater hydrolytic stability

HYDROLYTIC SENSITIVITY: 0: forms stable aqueous solutions

[68400-09-9] TSCA HMIS: 2-0-0-X 2kg-kg: $60.00 18kg-kg: $48.00 200kg-kg: inquire

SIA0591.0



N-(2-AMINOETHYL)-3-AMINOPROPYLTRIMETHOXY-SILANE, tech-95 — Contains 2-6% N,N'-BIS[(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE — 226.36 — 140 / 15 — 1.019 [25] — 1.450 [25]

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE — Flashpoint: 150°C (302°F)

DAMO — TOXICITY: oral rat, LD50: 7,460 mg/kg

$C_8H_{22}N_2O_3Si$ — Autoignition temperature: 300°C

Viscosity: 6.5 cSt — Surface tension: 36.5 mN/m

Specific wetting surface: 358 m^2/g — Coefficient of thermal expansion: 0.8 x 10^{-3}

Film-forming coupling agent/primer, fiberglass size component

Coupling agent for polyamides, polycarbonates (e.g. in CDs), polyesters and copper/brass adhesion

For cyclic version see SID3543.0, for pre-hydrolyzed version see SIA0590.0

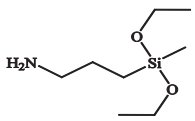
Used in the immobilization of copper (II) catalyst on silica.[1]

1. Wu, Q. and Wang, L. *Synthesis*, **2008**, 2007.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[1760-24-3] TSCA Reach preregistered HMIS: 3-1-1-X 2kg-kg: $48.00 16kg-kg: $36.00 180kg-kg: inquire

SIA0605.0



3-AMINOPROPYLMETHYLDIETHOXYSILANE, 95% — 191.34 — 85-8 / 8 — 0.916 — 1.4272

$C_8H_{21}NO_2Si$ — Flashpoint: 85°C (185°F)

TOXICITY: oral rat, LD50: 4,760 mg/kg

Coupling agent for foundry resins, including phenolic novolaks and resols

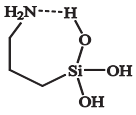
Vapor phase deposition >150° on silica yields high density amine functionality.[1]

1. Ek, S. et al. *Langmuir* **2003**, *19*, 3461.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[3179-76-8] TSCA Reach preregistered HMIS: 3-2-1-X 2kg-kg: $86.00 15kg-kg: $54.00 180kg-kg: inquire

SIA0608.0



3-AMINOPROPYLSILANETRIOL, 22-25% in water — 137.21 — 1.06

$C_3H_{11}NO_3Si$ — Flashpoint: >110°C (>230°F)

Mainly oligomers; monomeric at concentrations <5% — pH: 10.0-10.5

Water-borne, VOC-free coupling agent

Internal hydrogen bonding stabilizes solution

See also WSA-7011 for greater hydrolytic stability

HYDROLYTIC SENSITIVITY: 0: forms stable aqueous solutions

[58160-99-9] / [29159-37-3]

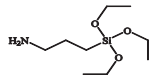
TSCA HMIS: 2-0-0-X 2kg-kg: $60.00 18kg-kg: $27.50 180kg-kg: inquire

2.5 liter (kg)

5 gallon or 19L cylinder (kg)

55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

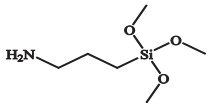


SIA0610.0
3-AMINOPROPYLTRIETHOXYSILANE
GAPS, AMEO, A-1100
$C_9H_{23}NO_3Si$
Viscosity: 1.6 cSt
Vapor pressure, 100˚: 10 mm
ΔHvap: 11.8 kcal/mole

221.37 122-3 / 30 0.951 1.4225
Flashpoint: 104°C (219°F)
TOXICITY: oral rat, LD50: 1,780 mg/kg
Primary irritation index: 6.50
Specific wetting surface: 353 m^2/g
γc of treated surfaces: 37.5 mN/m
Treated surface contact angle, water: 59°

Amino-silanes are widely used as coupling agents for fiberglass insulation and composites

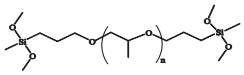
Widely used coupling agent for phenolic, epoxy, polyamide and polycarbonate resins
Effects imobilization of enzymes.[1]
Used to bind Cu(salicylaldimine) to silica.[2]
1. *Enzymes* **1976,** *84*, 55915.
2. Murphy, E. F. et al. *Inorg. Chem.* **2003,** *42*, 2559.
For pre-hydrolyzed version - see SIA0608.0; blocked amine version - see SID4068.0
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[919-30-2] TSCA Reach preregistered HMIS: 3-1-1-X 2kg-kg: $42.00 16kg-kg: $29.00 180kg-kg: inquire



SIA0611.0
3-AMINOPROPYLTRIMETHOXYSILANE
$C_6H_{17}NO_3Si$
Vapor pressure, 67˚: 5 mm

179.29 80 / 8 1.027 1.4240
Flashpoint: 83°C (181°F)
TOXICITY: oral rat, LD50: >2,000 mg/kg
Autoignition temperature: 300˚C

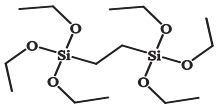
Coupling agent with superior reactivity in vapor phase and non-aqueous surface treatments
Hydrolysis rate vs SIA0610.0: 6:1
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[13822-56-5] TSCA Reach preregistered HMIS: 3-2-1-X 2kg-kg: $78.00 18kg-kg: $44.00 180kg-kg: inquire



SIB1660.0
BIS[(3-METHYLDIMETHOXYSILYL)PROPYL]-POLYPROPYLENE OXIDE
Hydrophilic dipodal silane
With tin catalyst forms moisture-crosslinkable resins

600-800 1.00 1.452^{25}
Flashpoint: >110°C (>230°F)
Viscosity: 6,000-10,000 cSt.

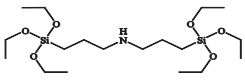
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[75009-88-0] TSCA HMIS: 3-1-1-X 2kg-kg: $114.00 18kg-kg: $68.00 200kg-kg: inquire



SIB1817.0
1,2-BIS(TRIETHOXYSILYL)ETHANE
HEXAETHOXYDISILETHYLENE, BSE
$C_{14}H_{34}O_6Si_2$

354.59 96 / 0.3 (-33) 0.957 1.4052
Flashpoint: 107°C (225°F)
TOXICITY: oral rat, LD50: 161 mg/kg
ΔHvap: 101.5 kJ/mole
Vapor pressure, 150°: 10mm

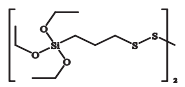
Additive to silane coupling agents formulations that enhances hydrolytic stability
Employed in corrosion resistant coatings/primers for steel and aluminum.[1,2]
Sol-gels of α,ω-bis(trimethoxysilyl)alkanes reported.[3]
Component in evaporation-induced self-assembly of mesoporous structures.[4]
Forms mesoporous, derivatizeable molecular sieves.[5,6]
1. Van Ooij, W. et al. *J. Adhes. Sci. Tech.* **1997,** *11*, 29.
2. Van Ooij, W. et al. *Chemtech* **1999,** *28*, 3302.
3. Loy, D. A. et al. *J. Am. Chem. Soc.* **1999,** *121*, 5413.
4. Lu, Y. et al. *J. Am. Chem. Soc.* **2000,** *122*, 5258.
5. Molde, B. et al. *Chem. Mater.* **1999,** *11*, 3302.
6. Cho, E. et al. *Chem Mater.* **2004,** *16*, 270.
See also SIB1821.0, SIT8185.8
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[16068-37-4] TSCA Reach preregistered HMIS: 3-1-1-X 2kg-kg: $180.00 16kg-kg: $120.00 180kg-kg: inquire



SIB1824.5
BIS(3-TRIETHOXYSILYLPROPYL)AMINE, 95%
$C_{18}H_{43}NO_6Si_2$

425.71 160 / 0.6 0.97 1.4265
Flashpoint: 162°C (324°F)
Viscosity: 5.5 cSt

Coupling agent for polyamides with improved hydrolytic stability
Adhesion promoter, crosslinking agent for hot melt adhesives
Adhesion promoter for aluminum-polyester multilayer laminates
Adhesion promoter, crosslinker for 2-part condensation cure silicones
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[13497-18-2] TSCA Reach preregistered HMIS: 3-1-1-X 2kg-kg: $180.00 18kg-kg: $78.00 180kg-kg: inquire



SIB1825.0
BIS[3-(TRIETHOXYSILYL)PROPYL]TETRASULFIDE
TESPT tech-95
$C_{18}H_{42}O_6S_4Si_2$

538.94 250 dec 1.095 1.49
Flashpoint: 91°C (196°F)
TOXICITY: oral rat, LD50: 16,400 mg/kg
Viscosity: 11 cSt

Contains distribution of S_2 - S_{10} species; average 3.8
Adhesion promoter for precious metals
Adhesion promoter for aluminum-polyester multilayer laminates
Coupling agent/vulcanizing agent for "green" tires
Adhesion promoter for PVD copper on parylene.[1]
1. Pimanpang, S. et al. *J. Vac. Sci. Technol. A* **2006**, *24(5)*, 1884.
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[40372-72-3] TSCA Reach preregistered HMIS: 2-2-1-X 2kg-kg: $78.00 18kg-kg: $32.00 210kg-kg: inquire

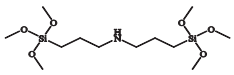

2.5 liter (kg)


5 gallon or 19L cylinder (kg)


55 gallon (kg)

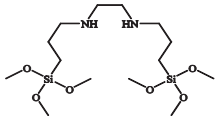
Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SIB1833.0



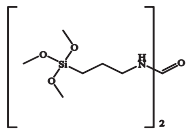
BIS(3-TRIMETHOXYSILYLPROPYL)AMINE, 96% — 341.56 — 152 / 4 — 1.040 — 1.4320
$C_{12}H_{31}NO_6Si_2$ — Flashpoint: 113°C (235°F)
Dipodal coupling agent
Secondary amine allows more control of reactivity with isocyanates
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[82985-35-1] TSCA Reach preregistered HMIS: 3-1-1-X — 2kg-kg: $140.00 — 18kg-kg: $62.00 — 180kg-kg: inquire

SIB1834.0



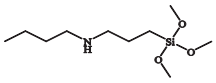
N,N'-BIS[(3-TRIMETHOXYSILYL)PROPYL]ETHYLENE-DIAMINE, 62% in methanol — 384.62 — 0.89
$C_{14}H_{36}N_2O_6Si_2$ Contains N,N-isomer — Flashpoint: 20°C (68°F)
Coupling agent for polyamides with enhanced hydrolytic stability
Provides improved solder resistance for printed circuit boards
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[68845-16-9] TSCA Reach preregistered HMIS: 3-4-1-X — 2kg-kg: $190.00 — 16kg-kg: $140.00 — 175kg-kg: inquire

SIB1835.5



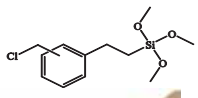
N,N'-BIS(3-TRIMETHOXYSILYLPROPYL)UREA, 95% — 384.58 — 1.10 — 1.449
$C_{13}H_{32}N_2O_7Si_2$ Amber liquid — Flashpoint: >110°C (>230°F)
Viscosity: 100 - 250 cSt
Adhesion promoter for 2-part condensation cure silicone RTVs
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[18418-53-6] TSCA HMIS: 3-2-1-X — 2kg-kg: $175.00 — 18kg-kg: $136.00 — 200kg-kg: inquire

SIB1932.2



n-BUTYLAMINOPROPYLTRIMETHOXYSILANE — 235.40 — 102 / 3.5 — 0.947 — 1.4246 [25]
$C_{10}H_{25}NO_3Si$ — Flashpoint: 110°C (230°F)
Reacts with isocyanate resins (urethanes) to form moisture cureable systems
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[31024-56-3] TSCA Reach preregistered HMIS: 2-1-1-X — 2kg-kg: $120.00 — 17kg-kg: $61.00 — 190kg-kg: inquire

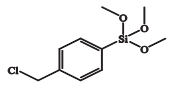
SIC2295.5



((CHLOROMETHYL)PHENYLETHYL)TRIMETHOXY-SILANE Mixed *m-, p*-isomers — 274.82 — 115 / 1.5 — 1.09 [25] — 1.4930 [25]
$C_{12}H_{19}ClO_3Si$ — Flashpoint: 130°C (266°F)
Adhesion promoter for polyphenylenesulfide and polyimide coatings
Employed as a high temperature coupling agent.[1]
1. Arkles, B. et al. *Modern Plastics* **1980,** *57(11)*, 64.
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[68128-25-6] TSCA Reach preregistered HMIS: 3-1-1-X — 2kg-kg: $680.00 — 18kg-kg: inquire

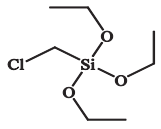
Flexible multi-layer circuit boards for cell-phones use polyimide films coupled with chloromethyl aromatic silanes

SIC2296.2



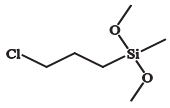
(p-CHLOROMETHYL)PHENYLTRIMETHOXYSILANE — 246.77 — 134-43 / 10 — 1.14 — 1.4965
$C_{10}H_{15}ClO_3Si$ 95% — Flashpoint: 183°C (361°F)
Coupling agent for polyimides, e.g in printed circuit boards
Modifies silica for high-throughput peptide synthesis.[1]
1. Houghten, R. et al. *J. Am. Chem. Soc.* **2005,** *127*, 8582.
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[24413-04-5] TSCA Reach preregistered HMIS: 3-1-1-X — 2kg-kg: $1,600.00 — 18kg-kg: inquire

SIC2298.4



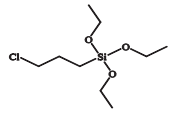
CHLOROMETHYLTRIETHOXYSILANE — 212.75 — 90-1 / 25 — 1.048 — 1.4069 [25]
$C_7H_{17}ClO_3Si$ — Flashpoint: 47°C (117°F)
TOXICITY: oral rat, LD50: 2,400 mg/kg
Grignard reacts with chlorosilanes or intermolecularly to form carbosilanes.[1]
1. Brondani, D. et al. *Tetrahedron Lett.* **1993,** *34*, 2111.
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[15267-95-5] TSCA Reach preregistered HMIS: 2-2-1-X — 2kg-kg: $288.00 — 18kg-kg: $240.00 — 200kg-kg: inquire

SIC2355.0



3-CHLOROPROPYLMETHYLDIMETHOXYSILANE — 182.72 — 70-2 / 11 — 1.0250 — 1.4253
$C_6H_{15}ClO_2Si$ — Flashpoint: 80°C (176°F)
Specific wetting surface: 428 m^2/g
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[18171-19-2] TSCA Reach preregistered HMIS: 3-2-1-X — 2kg-kg: $92.00 — 18kg-kg: $61.50 — 200kg-kg: inquire

SIC2407.0



3-CHLOROPROPYLTRIETHOXYSILANE — 240.80 — 100-2 / 10 — 1.009 — 1.420
$C_9H_{21}ClO_3Si$ — Flashpoint: 78°C (172°F)
Adhesion promoter for polyamine and epoxy resins
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[5089-70-3] TSCA Reach preregistered HMIS: 2-2-0-X — 2kg-kg: $55.00 — 18kg-kg: $32.00 — 200kg-kg: inquire

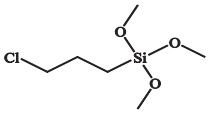

2.5 liter (kg)


5 gallon or 19L cylinder (kg)


55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SIC2410.0



3-CHLOROPROPYLTRIMETHOXYSILANE — 198.72 — 100 / 40 — 1.077 [25] — 1.4183 [25]

$C_6H_{15}ClO_3Si$

Flashpoint: 78°C (172°F)

Viscosity, 20°: 0.56 cSt

TOXICITY: oral rat, LD50: 5,628 mg/kg

Vapor pressure, 100°: 40 mm

γc of treated surface: 40.5 mN/m

Specific wetting surface: 394 m^2/g

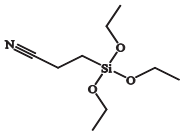
Adhesion promoter for SBR hot-melt adhesives

Powder flow control additive for dry powder fire extinguishing media

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2530-87-2] TSCA Reach preregistered HMIS: 3-2-1-X — 2kg-kg: $48.00 — 18kg-kg: $26.00 — 200kg-kg: inquire

SIC2445.0



2-CYANOETHYLTRIETHOXYSILANE — 217.34 — 224-5 — 0.9792 — 1.4140

$C_9H_{19}NO_3Si$

Flashpoint: 86°C (187°F)

TOXICITY: oral rat, LD50: 5,630 mg/kg

Crosslinker for moisture-cure silicone RTVs - improves fuel resistance

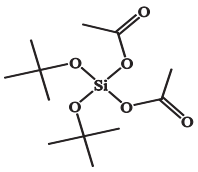
Forms mesoporous organosilica in combination with bis(triethoxysilyl)ethane.[1]

1. Wahab, M. et al. *Microporous and Mesoporous Materials,* **2004**, *69*, 19.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[919-31-3] TSCA Reach preregistered HMIS: 2-2-0-X — 2kg-kg: $180.00 — 17kg-kg: $145.00 — 180kg-kg: inquire

SID2790.0



DI-t-BUTOXYDIACETOXYSILANE, tech-96 — 292.40 — 102 / 5 (-4) — 1.0196 — 1.4040

SILICON DI-t-BUTOXIDE DIACETATE

$C_{12}H_{24}O_6Si$

Flashpoint: 95°C (203°F)

Vapor pressure, 50°: 0.03 mm

ΔHvap: 81.7 kcal/mole

employed in thermal efficiency coatings for clear incandescent lamps.

Adhesion promoter for silicone RTVs

Impregnant/binder for ceramic coatings

Source for silicon dioxide by LPCVD.[1,3]

Precursor for poly(di-t-butoxysiloxane) photoimageable polymers.[2]

1. Smolinsky, G. et al. *Mater. Lett.* **1986,** *4*, 256.

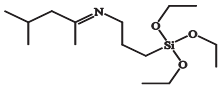
2. Senkevich, J. et al. *Chem. Mater.* **1999,** *11*, 1814.

3. Sakata, M. et al. *J. Photopolymer Sci. and Tech.* **1992,** *5*, 181.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[13170-23-5] TSCA Reach preregistered HMIS: 3-2-2-X — 3kg-kg: $72.00 — 15kg-kg: $36.00 — 200kg-kg: inquire

SID4068.0



3-(1,3-DIMETHYLBUTYLIDENE)AMINOPROPYL-TRIETHOXYSILANE, tech-95 — 303.52 — 134 / 5 — 0.93 — 1.437 [25]

$C_{15}H_{33}NO_3Si$ Contains oligomers

Flashpoint: 131°C (268°F)

Coupling agent for epoxy coatings; blocked amine - moisture deblocked

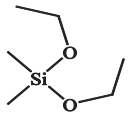
Preferred adhesion promoter for low viscosity epoxy systems

See also SIM6572.0

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[116229-43-7] TSCA HMIS: 2-1-1-X — 2kg-kg: $174.00 — 17kg-kg: $92.00 — 180kg-kg: inquire

SID4121.0



DIMETHYLDIETHOXYSILANE, 98% — 148.28 — 114-5 (-97) — 0.8395 — 1.3805

$C_6H_{16}O_2Si$

Flashpoint: 11°C (52°F)

Viscosity: 0.53 cSt

TOXICITY: oral rat, LDLo: 1,000 mg/kg

Vapor pressure, 25°: 15 mm

ΔHcomb: -1,119 kcal/mole

Dipole moment: 1.39

ΔHform: 200 kcal/mole

Coefficient of thermal expansion: 1.3 x 10^{-3}

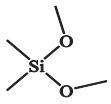
ΔHvap: 9.8 kcal/mole

Hydrophobic surface treatment and release agent

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[78-62-6] TSCA Reach preregistered HMIS: 2-4-1-X — 2kg-kg: $72.00 — 15kg-kg: $58.00 — 170kg-kg: inquire

SID4123.0



DIMETHYLDIMETHOXYSILANE, 96% — 120.22 — 82 (-80) — 0.8646 — 1.3708

$C_4H_{12}O_2Si$ Contains methanol

Flashpoint: -8°C (18°F)

Viscosity, 20°: 0.44 cSt

TOXICITY: oral rat, LD50: >2,000 mg/kg

Vapor pressure, 36°: 100 mm

Autoignition temperature: 325°

Dipole moment: 1.33 debye

ΔHcomb: 832 kcal/mole

Coefficient of thermal expansion: 1.3 x 10^{-3}

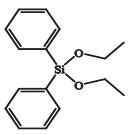
ΔHform: 171 kcal/mole

Provides hydrophobic surface treatments in vapor phase applications

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[1112-39-6] TSCA Reach preregistered HMIS: 3-4-1-X — 2kg-kg: $55.00 — 15kg-kg: $39.00 — 165kg-kg: inquire

SID4525.0



DIPHENYLDIETHOXYSILANE — 272.42 — 167 / 15 — 1.0329 — 1.5269

$C_{16}H_{20}O_2Si$

Flashpoint: 175°C (347°F)

Vapor pressure, 125°: 2 mm

Provides hydrophobic coatings with good thermal and UV resistance

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

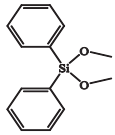
[2553-19-7] TSCA Reach preregistered HMIS: 2-1-0-X — 2kg-kg: $130.00 — 18kg-kg: $80.00 — 200kg-kg: inquire


2.5 liter (kg)


5 gallon or 19L cylinder (kg)


55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}



SID4535.0

DIPHENYLDIMETHOXYSILANE, 98% — 244.36 — 161 / 15 — 1.0771 — 1.5447

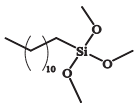
$C_{14}H_{16}O_2Si$ — Flashpoint: 121°C (250°F)

Viscosity, 25°: 8.4 cSt

Intermediate for high temperature silicone resins

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[6843-66-9] TSCA Reach preregistered HMIS: 3-1-1-X — 2kg-kg: $95.00 — 18kg-kg: $64.00 — 200kg-kg: inquire



SID4635.0

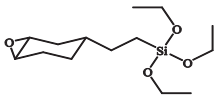
DODECYLTRIMETHOXYSILANE — 290.52 — 110-1 / 1 — 0.894 ^{25} — 1.428

$C_{15}H_{34}O_3Si$ — Flashpoint: >110°C (>230°F)

Hydrophobic surface treatment that improves compatibility with hydrocarbon fluids and polymers

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[3069-21-4] HMIS: 3-2-1-X — 2kg-kg: $120.00 — 15kg-kg: $54.00 — 170kg-kg: inquire



SIE4668.0

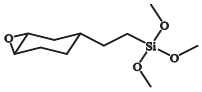
2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIETHOXYSILANE — 288.46 — 114-7 / 0.4 — 1.015 — 1.4455

$C_{14}H_{28}O_4Si$ — Flashpoint: 104°C (219°F)

Adhesion promoter for water-borne coatings on alkaline substrates

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[10217-34-2] TSCA HMIS: 2-1-1-X — 2kg-kg: $160.00 — 18kg-kg: $112.00 — 180kg-kg: inquire



SIE4670.0

2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY-SILANE — 246.38 — 95-7 / 0.25 — 1.065 — 1.4490

$C_{11}H_{22}O_4Si$ — Flashpoint: 146°C (295°F)

TOXICITY: oral rat, LD50: 12,300 mg/kg

Viscosity: 5.2 cSt — Specific wetting surface: 317 m^2/g

Vapor pressure, 152°: 10 mm — γc of treated surfaces: 39.5 mN/m

Coefficient of thermal expansion: 0.8 x 10^{-3}

Epoxy-silanes are essential for performance of epoxy resin encapsulants for microchips

Ring epoxide more reactive than glycidoxypropyl systems

UV initiated polymerization of epoxy group with weak acid donors

Forms UV-curable coating resins by controlled hydrolysis.[1]

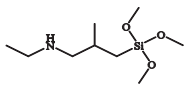
Used to make epoxy-organosilica particles w/ high positive Zeta potential.[2]

1. Crivello, J. et al. *Chem. Mater.* **1997,** 9, 1554.

2. Nakamura, M. and Ishimura, K. *Langmuir*, **2008**, *24*, 12228.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[3388-04-3] TSCA Reach preregistered HMIS: 3-1-1-X — 2kg-kg: $135.00 — 18kg-kg: $51.50 — 200kg-kg: inquire



SIE4886.0

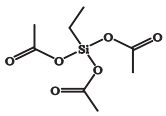
(3-(N-ETHYLAMINO)ISOBUTYL)TRIMETHOXYSILANE — 221.37 — 95 / 10 — 0.952 ^{25} — 1.4234

$C_9H_{23}NO_3Si$ — Flashpoint: 91°C (196°F)

Reacts with isocyanate resins (urethanes) to form moisture cureable systems

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[227085-51-0] TSCA HMIS: 3-2-1-X — 2kg-kg: $180.00 — 17kg-kg: $126.00 — 180kg-kg: inquire



SIE4899.0

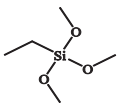
ETHYLTRIACETOXYSILANE — 243.28 — 107-8 / 8 (7-9) — 1.143 — 1.4123

$C_8H_{14}O_6Si$ — Flashpoint: 106°C (223°F)

Liquid cross-linker for silicone RTVs — TOXICITY: oral rat, LD50: 1,462 mg/kg

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[17689-77-9] TSCA Reach preregistered HMIS: 3-1-1-X — 2kg-kg: $74.00 — 18kg-kg: $29.00 — 200kg-kg: inquire



SIE4901.4

ETHYLTRIMETHOXYSILANE — 150.25 — 124-5 — 0.9488 — 1.3838

$C_5H_{14}O_3Si$ — Flashpoint: 27°C (81°F)

Viscosity: 0.5 cSt — ΔHcomb: 3,425 kcal/mole

Develops clear resin coating systems more readily than methyltrimethoxysilane

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[5314-55-6] TSCA Reach preregistered HMIS: 3-3-1-X — 2kg-kg: $70.00 — 17kg-kg: $48.00 — 180kg-kg: inquire

PP1-GC18

GLASSCLAD® 18 — 0.88

Octadecyl functional silane, 20% in t-butanol/diacetone alcohol

Control — Hazy, amber liquid — Flashpoint: 10°C (50°F)

Pour point: 4°C

Glassclad®18 — *Surface conductivity of glass substrates is reduced by application of Glassclad® 18. Surface arc-tracking is eliminated on fluorescent light bulbs*

Coefficient of friction of treated glass surface: $0.2^{-0.3}$

Surface resistivity of treated surface: 1.2 x 10^{13} ohms

Water-dispersible hydrophobic surface treatment

For application information see Gelest's Performance Products Brochure

Reduces blood protein adsorption.[1]

1. Arkles, B. et al. In *Silanes Surfaces & Interfaces;* Leyden, D., Ed; Gordon & Breach: 1986; p 91.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

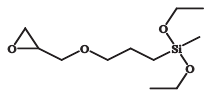
TSCA HMIS: 2-4-1-X — 1.5kg-kg: $110.00 — 15kg-kg: $38.00 — 180kg-kg: inquire


2.5 liter (kg)


5 gallon or 19L cylinder (kg)


55 gallon (kg)

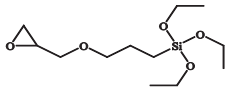
Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}
SIG5832.0				
(3-GLYCIDOXYPROPYL)METHYLDIETHOXYSILANE	248.39	122-6 / 5	0.978 ^{25}	1.431
$C_{11}H_{24}O_4Si$	Flashpoint: 122°C (252°F)			
	TOXICITY: oral rat, LD50: >2,000 mg/kg			
	Viscosity: 3.0 cSt			



Employed in scratch resistant coatings for eye glasses
Coupling agent for latex systems with reduced tendancy to gel compared to SIG5840.0
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2897-60-1] TSCA Reach preregistered HMIS: 2-1-1-X 2kg-kg: $240.00 16kg-kg: $176.00 180kg-kg: inquire

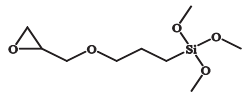
SIG5839.0				
(3-GLYCIDOXYPROPYL)TRIETHOXYSILANE	278.42	124 / 3	1.00	1.425
$C_{12}H_{26}O_5Si$	Flashpoint: 144°C (291°F)			
Viscosity: 3 cSt	Autoignition temperature: 225°C			



Coupling agent for latex polymers
Primer for aluminum and glass to epoxy coatings and adhesives when applied as a 1-2% solution in solvent
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2602-34-8] TSCA Reach preregistered HMIS: 3-1-1-X 2kg-kg: $235.00 18kg-kg: $110.00 180kg-kg: inquire

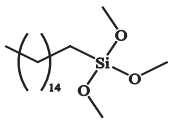
SIG5840.0				
(3- GLYCIDOXYPROPYL)TRIMETHOXYSILANE	236.34	120 / 2 (<-70)	1.070	1.4290
3-(2,3-EPOXYPROPOXY)PROPYLTRIMETHOXYSILANE	Flashpoint: 135°C (276°F)			
GLYMO, A-187, GPTMS	TOXICITY: oral rat, LD50: 8,400 mg/kg			
$C_9H_{20}O_5Si$	Autoignition temperature: 231°C			
Viscosity: 3.2 cSt	Surface tension: 38.5 mN/m			



Specific wetting surface area: 331 m^2/g
Component in abrasion resistant coatings for plastic optics
Coupling agent for epoxy composites employed in electronic "chip" encapsulation
Component in aluminum metal bonding adhesives
Used to prepare epoxy-containing hybrid organic-inorganic materials.[1]
1. Innocenzi, P. et al. *Chem. Mater.* **1999,** *11*, 1672.
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2530-83-8] TSCA Reach preregistered HMIS: 3-1-1-X 2kg-kg: $69.00 18kg-kg: $38.00 180kg-kg: inquire

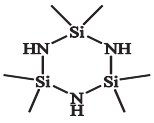
SIH5925.0				
HEXADECYLTRIMETHOXYSILANE, 95%	346.63	155 / 0.2 (-1)	0.89	1.4356
$C_{19}H_{42}O_3Si$	Flashpoint: 122°C (252°F)			
Viscosity: 7 cSt	TOXICITY: oral rat, LD50: >2,000 mg/kg			
	Autoignition temperature: 245°C			



Employed as rheology modifier for moisture crosslinkable HDPE
Modifier for moisture crosslinkable polyethylene (XLPE)
Water scavenger
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[16415-12-6] TSCA Reach preregistered HMIS: 2-2-1-X 2kg-kg: $120.00 16kg-kg: $78.00 175kg-kg: inquire

SIH6102.0				
1,1,3,3,5,5-HEXAMETHYLCYCLOTRISILAZANE	219.51	186-8 (-10)	0.922	1.4448
$C_6H_{21}N_3Si_3$	Flashpoint: 61°C (142°F)			
Viscosity, 20°: 1.7 cSt	Dielectric constant, 1000Hz: 2.57			
ΔHform: 132 kcal/mole	Dipole moment: 0.92			



Modifies positive resists for O_2 plasma resistance.[1]
Polymerizes to polydimethylsilazane oligomer in presence of Ru/H_2.[2]
Silylation reagent for diols.[3]
1. Babich, E. et al. *Microelectron. Eng.* **1990,** *11*, 503.
2. Blum, Y. et al. US Patent 4,216,383, 1986; US Patent 4,788,309, 1988.
3. Birkofer, L. et al. *J. Organomet. Chem.* **1980,** *187*, 21.
See also SID4074.4 1,1,1-DIMETHYLCYCLOSILAZANES
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[1009-93-4] TSCA Reach preregistered HMIS: 2-2-1-X 2kg-kg: $290.00 16kg-kg: $154.00 180kg-kg: inquire

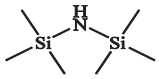
2.5 liter (kg)

5 gallon or 19L cylinder (kg)

55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SIH6110.0



1,1,1,3,3,3-HEXAMETHYLDISILAZANE — 161.39 — 126-7 (<-76) — 0.7742 — 1.4080

HMDS, HMDZ

$C_6H_{19}NSi_2$

Flashpoint: 12°C (54°F)

TOXICITY: oral rat, LD50: 850 mg/kg

TOXICITY: ipr mouse, LDLo: 650 mg/kg

Viscosity: 0.90 cSt

Vapor pressure, 50°: 50 mm

Autoignition temperature: 325˚C

Dielectric constant: 1000 Hz: 2.27

ΔHcomb: 6,052 kcal/mole

pKa: 7.55

ΔHvap: 8.3 kcal mole

Ea, reaction w/SiO_2 surface: 17.6 kcal/mole

Surface tension: 18.2 mN/m

Dipole moment: 0.37

Specific wetting surface: 485 m^2/g

Treatment of fumed silica with hexamethyldisilazane renders it hydrophobic

Versatile silylation reagent; creates hydrophobic surfaces

Review of synthetic utility.[1]

Converts acid chlorides and alcohols to amines in a three-component reaction.[2]

Reacts with formamide and ketones to form pyrimidines.[3]

Lithium reagent reacts w/ aryl chlorides or bromides to provide primary anilines.[4]

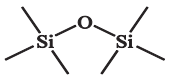
1. *Handbook of Reagents for Organic Synthesis, Reagents for Silicon-Mediated Organic Synthesis*, Fuchs, P. L. Ed., John Wiley and Sons, Ltd., 2011, p. 317-319.
2. Li, H.-H. et al. *Eur. J. Org. Chem.* **2008**, 3623.
3. Tyagarajan, S.; Chakravarty, P. K. *Tetrahedron Lett.* **2005**, *46*, 7889.
4. Lee, S.; Jorgensen, M.; Hartwig, J. F. *Org. Lett.* **2001**, *3*, 2729.

F&F: Vol. 1, p 427; Vol. 2, p 159; Vol. 5, p 323; Vol. 6, p 273; Vol. 7, p 167; Vol. 8, p 29; Vol. 9, p 234; Vol. 11, p 38; Vol. 12, p 239; Vol. 13, p 141; Vol. 14, p 300.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[999-97-3] TSCA Reach preregistered HMIS: 2-4-1-X 1.5kg-kg: $40.00 14kg-kg: $22.50 150kg-kg: inquire

SIH6115.0



HEXAMETHYLDISILOXANE, 98% — 162.38 — 99-100 (-67) — 0.7636 — 1.3774

$C_6H_{18}OSi_2$ *MM, HMDSO*

Flashpoint: -1°C (30°F)

TOXICITY: oral gpg LDLo: 32,500 mg/kg

Viscosity: 0.65 cSt

Vapor pressure, 30°: 55 mm

Autoignition temperature: 340˚C

Dipole moment: 0.78 debye

Critical pressure: 1.91 mPa

Dielectric constant: 2.17

Critical temperature: 243°

Surface tension: 15.9 mN/m

ΔHcomb: -1,401 kcal/mole

Specific heat: 0.46 cal/g/˚

ΔHvap: 7.2 kcal/mole

Henry's law constant: 4.5 atm-m^3/mole

Solubility parameter: 6.8

Solubility in water: 930 ppb

Review of synthetic utility.[1]

Exhibits high excess electron mobility: 22 cm^2/V s.[2]

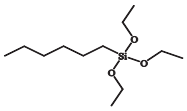
Plasma polymerization produces hydrophobic coatings on metals.[3]

1. *Handbook of Reagents for Organic Synthesis, Reagents for Silicon-Mediated Organic Synthesis*, Fuchs, P. L. Ed., John Wiley and Sons, Ltd., 2011, p. 313-317.
2. Holroyd, R. et al. *Nucl. Instrum. Methods Phys. Res., Sect. A* **1997,** *390*, 233.
3. Bonnar, M. et al. *Chem. Phys. Vac. Dep.* **1997,** *3*, 201.

HYDROLYTIC SENSITIVITY: 1: no significant reaction with aqueous systems

[107-46-0] TSCA Reach preregistered HMIS: 1-3-0-X 1.5kg-kg: $40.00 14kg-kg: $21.00 150kg-kg: inquire

SIH6167.5



HEXYLTRIETHOXYSILANE — 248.44 — 115 / 18 — 0.860 — 1.408 ^{25}

$C_{12}H_{28}O_3Si$

Flashpoint: 95°C (203°F)

Viscosity: 3 cSt

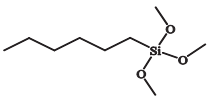
Employed in so-gel derived stationary phases for capillary electrochromatography.[1]

1. Li, W. et al. *J. Chromatog., A* **2004**, *1044*, 23.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[18166-37-5] TSCA HMIS: 2-1-1-X 2kg-kg: $80.00 15kg-kg: $42.00 175kg-kg: inquire

SIH6168.5



HEXYLTRIMETHOXYSILANE — 206.35 — 202-3 — 0.911 ^{25} — 1.4070

$C_9H_{22}O_3Si$

Flashpoint: 62°C (144°F)

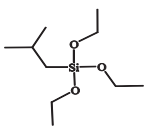
Surface modification of TiO_2 pigments improves dispersion

See also SIO6715.5

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[3069-19-0] TSCA Reach preregistered HMIS: 3-2-1-X 2kg-kg: $95.00 16kg-kg: $76.00 180kg-kg: inquire

SII6453.5



ISOBUTYLTRIETHOXYSILANE, 98% — 220.38 — 190-1 — 0.9104 — 1.3908

$C_{10}H_{24}O_3Si$

Flashpoint: 63°C (145°F)

TOXICITY: oral rat, LD50: >5,000 mg/kg

Hydrophobic surface treatment for microporous minerals

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[17980-47-1] TSCA Reach preregistered HMIS: 2-2-1-X 2kg-kg: $46.00 16kg-kg: $33.00 180kg-kg: inquire

2.5 liter (kg)

5 gallon or 19L cylinder (kg)

55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SII6453.7

ISOBUTYLTRIMETHOXYSILANE — 178.30 — 154 — 0.933 — 1.3960

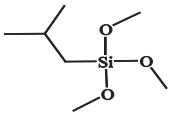
TRIMETHOXYSILYL-2-METHYLPROPANE

$C_7H_{18}O_3Si$

Flashpoint: 42°C (108°F)

TOXICITY: oral rat, LD50: >2,000 mg/kg

Viscosity: 0.8 cSt



Branched structure provides hydrophobic surface treatments for architectural coatings

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

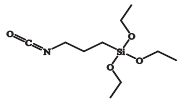
[18395-30-7] TSCA Reach preregistered HMIS: 3-2-1-X 2kg-kg: $55.00 17kg-kg: $29.00 180kg-kg: inquire

SII6455.0

3-ISOCYANATOPROPYLTRIETHOXYSILANE, 95% — 247.37 — 130 / 20 — 0.990 — 1.4190

$C_{10}H_{21}NO_4Si$

Flashpoint: 80°C (176°F)



Component in hybrid organic/inorganic urethanes.[1]

1. Cuney, S. et al. *Better Ceramics Through Chemistry VII (MRS. Symp. Proc.)* **1996,** *435*, 143.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[24801-88-5] TSCA Reach preregistered HMIS: 3-2-1-X 2kg-kg: $130.00 17kg-kg: $96.00 180kg-kg: inquire

SII6456.0

3-ISOCYANOTOPROPYLTRIMETHOXYSILANE, 95% — 205.29 — 95-8 / 10 — 1.073 — 1.4219

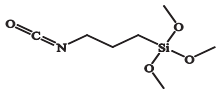
$C_7H_{15}NO_4Si$

Flashpoint: 108°C (226°F)

Viscosity: 1.4 cSt

TOXICITY: oral rat, LD50: 878 mg/kg

Autoignition temperature: 265°



HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[15396-00-6] TSCA HMIS: 3-2-1-X 2kg-kg: $178.00 18kg-kg: $108.00 200kg-kg: inquire

SII6457.5

ISOOCTYLTRIETHOXYSILANE — 276.48 — 236 (<-80) — 0.880 — 1.4160

$C_{14}H_{32}O_3Si$

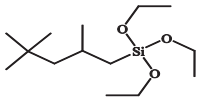
Flashpoint: >65°C (>150°F)

Viscosity: 2.1 cSt

TOXICITY: oral rat, LD50: >2,000 mg/kg

Vapor pressure, 112°: 10mm

Autoignition temperature: 265°C



Architectural water-repellent

Water scavenger for sealed lubricant systems

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[35435-21-3] TSCA Reach preregistered HMIS: 1-2-1-X 2kg-kg: $74.00 15kg-kg: $28.00 175kg-kg: inquire

SII6458.0

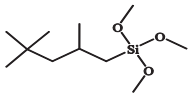
ISOOCTYLTRIMETHOXYSILANE — 234.41 — 90 / 10 — 0.887 — 1.4176

$C_{11}H_{26}O_3Si$

Flashpoint: 52°C (126°F)

Viscosity: 2 cSt.

Autoignition temperature: 310°C



Component in Anti-Graffiti coatings

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

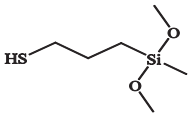
[34396-03-7] TSCA Reach preregistered HMIS: 3-2-1-X 2kg-kg: $95.00 16kg-kg: $38.00 180kg-kg: inquire

SIM6474.0

3-MERCAPTOPROPYLMETHYLDIMETHOXYSILANE, 96% — 180.34 — 96 / 30 — 1.000 — 1.4502

$C_6H_{16}O_2SSi$

Flashpoint: 93°C (199°F)



Intermediate for silicones in thiol-ene UV-cure systems

Adhesion promoter for polysulfide sealants

Used to make thiol-organosilica Nanoparticles.[1]

1. Nakamura, M. and Ishimura, K. *Langmuir*, **2008**, *24*, 5099.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

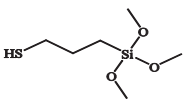
[31001-77-1] TSCA Reach preregistered HMIS: 3-2-1-X 2kg-kg: $186.00 18kg-kg: $118.00 180kg-kg: inquire

SIM6476.0

3-MERCAPTOPROPYLTRIMETHOXYSILANE — 196.34 — 93 / 40 — 1.051 ^{25} — 1.4502 ^{25}

$C_6H_{16}O_3SSi$

Flashpoint: 96°C (205°F)



Viscosity: 2 cSt

TOXICITY: oral rat, LD50: 2,380mg/kg

γc of treated surfaces: 41 mN/m

Primary irritation index: 0.19

Specific wetting surface: 348 m^2/g

Coupling agent for EPDM and mechanical rubber applications

Adhesion promoter for polysulfide adhesives

For enzyme immobilization.[1]

Treatment of mesoporous silica yields highly efficient heavy metal scavenger.[2]

Couples fluorescent biological tags to semiconductor CdS nanoparticles.[3]

Modified mesoporous silica supports Pd in coupling reactions.[4]

Used to make thiol-organosilica Nanoparticles.[5]

Adhesion promoter for structural polysulfide glass sealants

1. Stjernlöf, P. et al. *Tetrahedron Lett.* **1990,** *31*, 5773.
2. Liu, J. et al. *Science* **1997,** *276*, 923.
3. Bruchez, M. et al. *Science* **1998,** *281*, 2013.
4. Crudden, C. et al. *J. Am. Chem. Soc.* **2005,** *127*, 10045.
5. Nakamura, M. and Ishimura, K. *Langmuir*, **2008**, *24*, 5099.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[4420-74-0] TSCA Reach preregistered HMIS: 3-2-1-X 2kg-kg: $82.00 18kg-kg: $38.00 180kg-kg: inquire

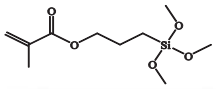
2.5 liter (kg)

5 gallon or 19L cylinder (kg)

55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SIM6487.4



METHACRYLOXYPROPYLTRIMETHOXYSILANE — 248.35 — 78-81 / 1 (-48) — 1.045 — 1.4310

$C_{10}H_{20}O_5Si$ — Inhibited with MEHQ, HQ

Flashpoint: 108°C (226°F)

Viscosity: 2 cSt — store <5°C

TOXICITY: oral rat, LD50: 3,000 mg/kg

Copolymerization parameters-e,Q: 0.07, 2.7

Primary irritation index: 1.19

Specific wetting surface: 314m^2/g

Coupling agent for radical cure polymer systems

See SIA0200.0 for acrylate-functional UV cureable analog

Widely used coupling agent for unsaturated polyester-fiberglass composites.[1]

Copolymerized with styrene in formation of sol-gel composites.[2]

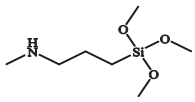
Employed in dental polymer composites.[3]

1. Arkles, B. *Chemtech* **1977,** *7*, 713.
2. Wei, Y. et al. *J. Mater. Res.* **1993,** *8*, 1143.
3. Matinlinna, J. et al. *Int. J. Prosthodontics* **2004**, *17*, 157.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2530-85-0] TSCA Reach preregistered HMIS: 3-1-1-X — 2kg-kg: $62.00 — 18kg-kg: $35.00 — 180kg-kg: inquire

SIM6500.0



N-METHYLAMINOPROPYLTRIMETHOXYSILANE — 193.32 — 106 / 30 — 0.978 [25] — 1.4194

$C_7H_{19}NO_3Si$

Flashpoint: 82°C (180°F)

γc of treated surfaces: 31 mN/m

Orients liquid crystals

$pK_b^{25}H_2O$: 5.18

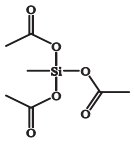
Reacts with urethane prepolymers to form moisture-curable resins

See also SIB1932.2, SIB1932.3, SIM6572.0

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[3069-25-8] TSCA Reach preregistered HMIS: 3-2-1-X — 2kg-kg: $210.00 — 15kg-kg: $162.00 — 180kg-kg: inquire

SIM6519.0



METHYLTRIACETOXYSILANE, 95% — 220.25 — 87-8 / 3 (40) — 1.175 — 1.4083

$C_7H_{12}O_6Si$

Flashpoint: 85°C (185°F)

Vapor pressure, 94°: 9 mm

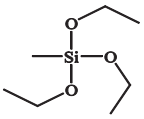
Most common cross-linker for condensation cure silicone RTVs

For liquid version see blend, SIM6519.2

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[4253-34-3] TSCA Reach preregistered HMIS: 3-2-1-X — 2kg-kg: $100.00 — 18kg-kg: $34.00 — 200kg-kg: inquire

SIM6555.0



METHYLTRIETHOXYSILANE — 178.30 — 142 — 0.8948 — 1.3832

$C_7H_{18}O_3Si$

Flashpoint: 30°C (86°F)

Viscosity: 0.6 cSt

TOXICITY: oral rat, LD50: 12,500 mg/kg

Vapor pressure, 25°: 6 mm

Autoignition temperature: 225˚C (437˚F)

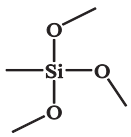
Dipole moment: 1.72 debye

Low cost hydrophobic surface treatment

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2031-67-6] TSCA Reach preregistered HMIS: 1-3-1-X — 2kg-kg: $50.00 — 15kg-kg: $24.00 — 180kg-kg: inquire

SIM6560.0



METHYLTRIMETHOXYSILANE — 136.22 — 102-3 (-78) — 0.955 — 1.3696

$C_4H_{12}O_3Si$

Flashpoint: 8°C (46°F)

Viscosity: 0.50 cSt

TOXICITY: oral rat, LD50: 12,500 mg/kg

Dipole moment: 1.60 debye

Autoignition temperature: 255°

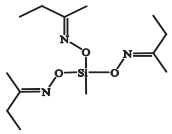
ΔHcomb: 1,142 kcal/mole

Intermediate for coating resins

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[1185-55-3] TSCA Reach preregistered HMIS: 3-4-1-X — 2kg-kg: $35.00 — 17kg-kg: $19.00 — 190kg-kg: inquire

SIM6590.0



METHYLTRIS(METHYLETHYLKETOXIMINO)SILANE — 301.46 — 110-1 / 2 (-22) — 0.982 — 1.4548 [25]

METHYLTRIS(2-BUTANONEOXIME)SILANE

Flashpoint: 90°C (194°F)

$C_{13}H_{27}N_3O_3Si$ — tech-95

TOXICITY: oral rat, LD50: 2,000-3,000 mg/kg

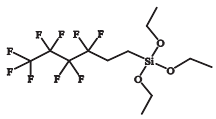
Neutral cross-linker for condensation cure silicones

See also SIV9280.0

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[22984-54-9] TSCA Reach preregistered HMIS: 2-2-1-X — 2kg-kg: $75.00 — 16kg-kg: $28.00 — 190kg-kg: inquire

SIN6597.65



NONAFLUOROHEXYLTRIETHOXYSILANE — 410.35 — 96 / 15 — 1.201 — 1.3502

$C_{12}H_{19}F_9O_3Si$

Critical surface tension, treated surface: 23 mN/m

Oleophobic, hydrophobic surface treatment

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[102390-98-7] TSCA-L HMIS: 2-2-1-X — 2.5kg-kg: $760.00 — 20kg-kg: $685.00

2.5 liter (kg)

5 gallon or 19L cylinder (kg)

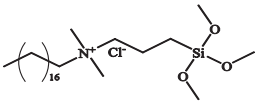
55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SIO6620.0

OCTADECYLDIMETHYL(3-TRIMETHOXYSILYLPROPYL)-AMMONIUM CHLORIDE, 60% in methanol
$C_{26}H_{58}ClNO_3Si$ Contains 3-5% $Cl(CH_2)_3Si(OMe)_3$

496.29 | Flashpoint: 125°C (257°F) | Autoignition temperature: 230°C | 0.89



Orients liquid crystals
Provides an antistatic surface coating
Employed as a glass lubricant
Dispersion/coupling agent for high density magnetic recording media.[1]
Application as immobilizable antimicrobial reported.[2]

1. Vincent, H. In *Chemically Modified Oxide Surfaces;* D. Leyden, D., Ed.; Gordon & Breach: 1990; p.305.
2. White, W. et al. In *Silanes, Surfaces & Interfaces;* Leyden, D., Ed.; Gordon & Breach: 1986; p.107.

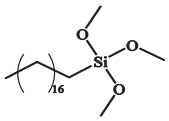
See also SID3392.0, SIO6606.0
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[27668-52-6] TSCA Reach preregistered HMIS: 3-4-0-X | 2kg-kg: $120.00 | 16kg-kg: $52.00 | 190kg-kg: inquire

SIO6645.0

n-OCTADECYLTRIMETHOXYSILANE, 95%
$C_{21}H_{46}O_3Si$ Contains 5-10% C_{18} isomers

374.68 | 170 / 0.1 (13-17) | 0.885 | 1.439
Flashpoint: 140°C (284°F)
TOXICITY: oral rat, LD50: >5,000 mg/kg



Forms hydrophobic, oleophilic coatings
Forms clear, ordered films with tetramethoxysilane.[1]
Undergoes oscillatory adsorption to form SAMs.[2]

1. Shimjima, A. et al. *J. Am. Chem. Soc.* **1998,** *120*, 4528.
2. Thomsen, L. et al. *Surf. & Interface Analysis* **2005,** *37*, 472.

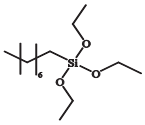
See also SIS6952.0
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[3069-42-9] TSCA Reach preregistered HMIS: 2-1-1-X | 2kg-kg: $240.00 | 15kg-kg: $102.00 | 160kg-kg: inquire

SIO6715.0

n-OCTYLTRIETHOXYSILANE
$C_{14}H_{32}O_3Si$

276.48 | 98-9 / 2 (<-40) | 0.8750 | 1.4160
Flashpoint: 109°C (228°F)
TOXICITY: oral rat, LD50: >5,110 mg/kg



Viscosity: 1.9 cSt
May be formulated to stable water emulsions.[1]

1. Depasquale, R. et al. US Patent 4,648,904, 1987.

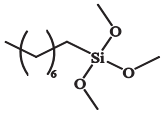
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2943-75-1] TSCA Reach preregistered HMIS: 2-1-0-X | 2kg-kg: $60.00 | 15kg-kg: $34.00 | 175kg-kg: inquire

SIO6715.5

n-OCTYLTRIMETHOXYSILANE
$C_{11}H_{26}O_3Si$

234.41 | 191-2 | 0.907 | 1.417
Flashpoint: 68°C (154°F)
Vapor pressure, 75°: 0.1 mm



Viscosity: 1 cSt
Treatment for particles used in non-aqueous liquid dispersions

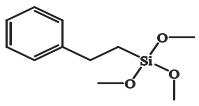
See also SII6458.0
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[3069-40-7] TSCA Reach preregistered HMIS: 3-1-1-X | 2kg-kg: $95.00 | 15kg-kg: $60.00 | 190kg-kg: inquire

SIP6722.6

PHENETHYLTRIMETHOXYSILANE, tech-95
$C_{11}H_{18}O_3Si$ Contains α-, β-isomers

226.35 | 95-6 / 2 | 1.037 | 1.4753
Flashpoint: 109°C (228°F)



Component in optical coating resins
In combination with TEOS forms hybrid silicalite-1 molecular sieves.[1]

1. Yeong, Y. et al. *Adv. Mater. Res.* **2008**, *47-50*, 238

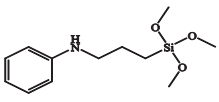
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[49539-88-0] TSCA Reach preregistered HMIS: 3-1-1-X | 2kg-kg: $190.00 | 18kg-kg: $140.00 | 190kg-kg: inquire

SIP6724.0

N-PHENYLAMINOPROPYLTRIMETHOXYSILANE
$C_{12}H_{21}NO_3Si$

255.38 | 132-5 / 0.3 | 1.07 | 1.504
Flashpoint: 165°C (329°F)
Specific wetting surface: 307 m^2/g



Oxidatively stable coupling agent for polyimides, phenolics, epoxies

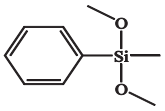
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[3068-76-6] TSCA Reach preregistered HMIS: 3-1-1-X | 2kg-kg: $120.00 | 18kg-kg: $82.00 | 200kg-kg: inquire

SIP6740.0

PHENYLMETHYLDIMETHOXYSILANE
$C_9H_{14}O_2Si$

182.29 | 199-200 | 0.9934 | 1.4694
Flashpoint: 76°C (169°F)
TOXICITY: oral rat, LD50: 892 mg/kg
Viscosity, 20°: 1.65 cSt



Additive to coupling agent systems, increasing interface flexibility, UV stability

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[3027-21-2] TSCA Reach preregistered HMIS: 3-2-1-X | 2kg-kg: $190.00 | 18kg-kg: $120.00 | 180kg-kg: inquire

2.5 liter (kg)

5 gallon or 19L cylinder (kg)

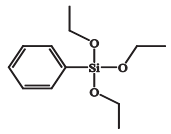
55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SIP6821.0

PHENYLTRIETHOXYSILANE — 240.37 — 112-3 / 10 — 0.996 — 1.4718

$C_{12}H_{20}O_3Si$ — Flashpoint: 96°C (205°F)



Viscosity, 25°: 1.7 cSt — TOXICITY: oral rat, LD50: 2,830 mg/kg

Vapor pressure, 75°: 1 mm — Autoignition temperature: 265°C

Dipole moment: 1.85 debye — Coefficient of thermal expansion: 0.9 x 10^{-3}

Surface tension: 28 mN/m — Dielectric constant: 4.12

Electron donor component of polyolefin polymerization catalyst complexes

Improves photoresist adhesion to silicon nitride

Effective treatment for organic-grafted clays.[1]

Phenylates allyl benzoates.[2]

1. Canrado, K. et al. *Chem. Mater.* **2001,** *13*, 3766.
2. Correia, R. and DeShong, P. *J. Org Chem.* **2001,** *66*, 7159.

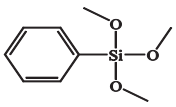
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[780-69-8] TSCA Reach preregistered HMIS: 2-1-1-X — 2kg-kg: $56.00 — 17kg-kg: $30.00 — 200kg-kg: inquire

SIP6822.0

PHENYLTRIMETHOXYSILANE — 198.29 — 211 (-25) — 1.064 — 1.4734

$C_9H_{14}O_3Si$ — Flashpoint: 86°C (187°F)



Viscosity, 25°: 2.1 cSt — TOXICITY: ivn mouse, LD50: 180 mg/kg

Vapor pressure, 108°: 20 mm — Dielectric constant: 4.44

Dipole moment: 1.77

Hydrophobic additive to other silanes with excellent thermal stabilty

Intermediate for high temperature silicone resins

Cross couples with aryl halides.[1]

Phenylates heteroaromatic carboxamides.[2]

Directly couples with 1° alkyl bromides and iodides.[3]

Converts carboxylic acids to phenyl esters and vinyl carboxylates.[4]

Converts arylselenyl bromides to arylphenylselenides.[5]

Reacts with anhydrides to transfer both phenyl and methoxy and thus form the mixed diester.[6]

Used in the nickel-catalyzed direct phenylation of C-H bonds in heteroaromatic system such as benzoxazoles.[7]

1. M. E. Mowery, and DeShong, P. *J. Org. Chem.* 1, 2137, 1999.
2. Lam, P. Y. S. et al. *Tetrahedron Lett.* **2001.** *42*, 2427.
3. Young, J.-Y. and Fu, G. C. *J. Am. Chem. Soc.* 2003, 125, 5616.
4. Luo, F. et al. *Synthesis* **2010**, 2005.
5. Bhadra, S. et al. *J. Org. Chem.* **2010**, *75*, 4864.
6. Luo, F. et al. *J. Org. Chem.* **2010**, *75*, 5379.
7. Hachilya, H. et al. *Angew. Chem., Int. Ed. Engl.* **2010**, *49*, 2202.

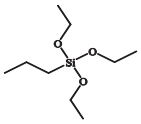
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2996-92-1] TSCA Reach preregistered HMIS: 3-2-1-X — 2kg-kg: $49.00 — 18kg-kg: $39.00 — 200kg-kg: inquire

SIP6917.0

n-PROPYLTRIETHOXYSILANE — 206.36 — 179-80 — 0.8916 — 1.3956

$C_9H_{22}O_3Si$ — Flashpoint: 57°C (135°F)



Architectural masonry water repellant

Surface modifier for TiO_2 particles that improves dispersibility but does not reduce photocatalytic activity.[1]

1. Ukaji, E. et al. *Appl. Surf. Sci.* **2007**, *254*, 563.

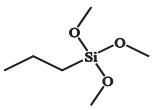
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2550-02-9] TSCA Reach preregistered HMIS: 2-2-1-X — 2kg-kg: $70.00 — 16kg-kg: $30.00 — 170kg-kg: inquire

SIP6918.0

n-PROPYLTRIMETHOXYSILANE — 164.27 — 142 — 0.932 ^{25} — 1.3880

$C_6H_{16}O_3Si$ — Flashpoint: 34°C (93°F)



γc of treated surface: 28.5 mN/m — TOXICITY: oral rat, LD50: 7,420 mg/kg

Hydrophobic surface treatment

Donor in Zeigler-Natta polymerization catalyst systems for polyolefins

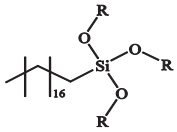
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[1067-25-0] TSCA Reach preregistered HMIS: 3-3-1-X — 2kg-kg: $56.00 — 16kg-kg: $26.00 — 180kg-kg: inquire

SIS6952.0

SILICLAD® — 0.880

OCTADECYL FUNCTIONAL SILANE — Flashpoint: 25°C (77°F)



20% in t-AMYL ALCOHOL and DIACETONE ALCOHOL

Amber liquid — Coefficient of friction of treated glass surface: 0.2 - 0.3

Surface resistivity of treated surface: 1.2 x 10^{13} ohms

γc of treated glass surface: 31 mN/m

For application information see Performance Products Brochure

Reduces blood protein adsorption.[1]

Anti-stiction coating for polysilicon.[2]

1. Arkles, B. et al. In *Silanes Surfaces & Interfaces;* Leyden, D., Ed; Gordon & Breach: 1986; p 91.
2. Almanza-Workman, A. et al. *J. Electrochem. Soc.* **2002**, *149*, H6

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[39443-39-5] TSCA HMIS: 2-3-1-X — 1.5kg-kg: $116.00 — 15kg-kg: $45.00 — 175kg-kg: inquire

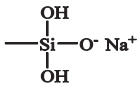

2.5 liter (kg)


5 gallon or 19L cylinder (kg)


55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SIS6984.0



SODIUM METHYLSILICONATE, 30% in water — 116.12 — 1.24

CH_5NaO_3Si — pH: 13.0

Viscosity: 10 cSt.

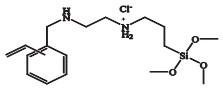
Forms economical water-repellent coatings

HYDROLYTIC SENSITIVITY: 0: forms stable aqueous solutions

[16589-43-8] TSCA Reach preregistered HMIS: 3-0-0-X — 2.5kg-kg: $24.00 — 20kg-kg: $19.00 — 250kg-kg: inquire

SIS6994.0

3-(N-STYRYLMETHYL-2-AMINOETHYLAMINO)-PROPYLTRIMETHOXYSILANE HYDROCHLORIDE, 40% in methanol — 374.98 — 0.91 — 1.395



$C_{17}H_{31}ClN_2O_3Si$ Inhibited with BHT — Flashpoint: 11°C (52°F)

Viscosity: 2.3 cSt — store <5°C

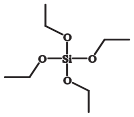
Specific wetting surface area: 208 m^2/g

Coupling agent for phenolic and epoxy fiberglass laminates (printed circuit boards)

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[34937-00-3] TSCA Reach preregistered HMIS: 3-4-1-X — 2kg-kg: $122.00 — 15kg-kg: $58.00 — 180kg-kg: inquire

SIT7110.0



TETRAETHOXYSILANE, 98% — 208.33 — 169 — (-77) — 0.9335 — 1.3818

TETRAETHYLORTHOSILICATE; TEOS — Flashpoint: 46°C (115°F)

$C_8H_{20}O_4Si$ 28-9% SiO_2 equivalent — TOXICITY: oral rat, LD50: 6,270 mg/kg

Viscosity: 0.8 cSt — Autoignition temperature: 260°

Vapor pressure, 20°: 11.8 mm — Critical temperature: 616°

Vapor pressure, 60°: 12 mm — ΔHvap: 11.0 kcal/mole

Vapor pressure, 108°: 200 mm — Specific heat: 0.55 cal/g/°

Vapor viscosity, 60°: 60 micropoise — Coefficient of thermal expansion: 1.1 x 10^{-3}

Dielectric constant: 4.1 — Coefficient of thermal conductivity: 4.0

Dipole moment: 1.63 — Solubility parameter: 7.87

TEOS forms low density insulating aerogels

Source by hydrolysis of SiO_2 and sol-gel derived glasses.[1]

Intermediate for silica spheres with controlled dimensions.[2]

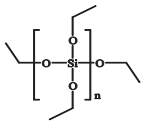
1. Brinker, C. et al. *Sol-Gel Science;* Academic Press: 1990.
2. Stöber, W. et al. *J. Coll. Interface Sci.* **1968,** *26*, 62.

See also polydiethoxysiloxane - PSI-021

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[78-10-4] TSCA Reach preregistered HMIS: 2-2-1-X — 3kg-kg: $22.00 — 17kg-kg: $15.00 — 185kg-kg: inquire

SIT7110.3



TETRAETHOXYSILANE, oligomeric hydrolysate — 650-800 — 1.05-1.07 — 1.398

ETHYLSILICATE 40, POLY(DIETHOXYSILANE)

$[(C_2H_5O)_2SiO]$ Metal content: 20.5-21.5% Si (40-42% SiO_2 equivalent)

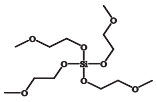
Viscosity: 3-5 cSt

Base for zinc-rich paints

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[68412-37-3] TSCA — 2kg-kg: $30.00 — 18kg-kg: $18.00 — 220kg-kg: inquire

SIT7286.0



TETRAKIS(METHOXYETHOXY)SILANE, tech-95 — 328.43 — 179-82 / 10 — 1.079 — 1.4219

$C_{12}H_{28}O_8Si$ Contains tris(methoxyethoxy)ethoxysilane — Flashpoint: 118°C (244°F)

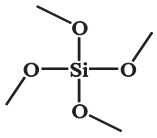
Viscosity: 4.9 cSt

Crosslinker for condensation cure silicone RTVs

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2157-45-1] TSCA Reach preregistered HMIS: 3-1-0-X — 2.5kg-kg: $90.00 — 18kg-kg: $38.00 — 200kg-kg: inquire

SIT7510.0



TETRAMETHOXYSILANE, 98% — 152.22 — 121-2 — (4-5) — 1.032 — 1.3688

TETRAMETHYLORTHOSILICATE; TMOS — Flashpoint: 20°C (68°F)

$C_4H_{12}O_4Si$ — TOXICITY: oral rat, LD50: 700 mg/kg

TOXICITY: ihl rat, LCLo:1,000 mg/m^3/10M

CAUTION: VAPORS CAN CAUSE BLINDNESS- GOGGLES MUST BE WORN

SURFACE TRANSPORT ONLY - UPS FORBIDDEN. AIR TRANSPORT FORBIDDEN

See PSI-026 Poly(dimethoxysiloxane) for safer version; see SIT7510.2 for high purity grade

Viscosity: 0.5 cSt — Autoignition temperature: 245°

Vapor pressure, 25°: 12 mm — ΔHcomb: 694 kcal/mole

Dipole moment: 1.75 debye — ΔHform: 300 kcal/mole

ΔHvap: 11.25 kcal/mole

Specific heat: 1.6 J/g/°

Deposition frosting of glass

Cocatalyst with CsF for Michael additions

Converts aryl fluorides to anisole derivatives.[1]

1. Buckley, H. L. et al. *Organometallics* **2009**, *28*, 2356.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

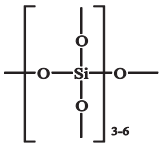
[681-84-5] TSCA Reach preregistered HMIS: 4-4-1-X — 2kg-kg: $140.00 — 18kg-kg: $55.00 — 200kg-kg: inquire

2.5 liter (kg)

5 gallon or 19L cylinder (kg)

55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}



SIT7510.3

TETRAMETHOXYSILANE, oligomeric hydrolysate — 380-500 — 1.17 — 1.398

METHYLSILICATE, CONDENSED

$CH_3O[(CH_3O)_2SiO]_{3\text{-}6}CH_3$ — 26.0-27.0% silicon - typically 3-5 silicon atoms (50-52% SiO_2 equivalent)

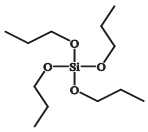
Viscosity: 6-9 cSt.

Lower toxicity replacement for tetramethoxysilane

Highest SiO_2 content precursor for sol-gel; intermediate for synthetic quartz

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[25498-02-6] TSCA HMIS: 3-2-1-X 2.5kg-kg: $152.00 20kg-kg: $92.50 225kg-kg: inquire



SIT7777.0

TETRA-n-PROPOXYSILANE — 264.44 — 224-5 — (<-80) — 0.9158 — 1.4012

SILICON TETRA-n-PROPOXIDE

Flashpoint: 95°C (203°F)

$C_{12}H_{28}O_4Si$

Viscosity: 1.66 cSt — Dipole moment: 1.48

Surface tension: 23.6 mN/m — Dielectric constant: 2.92

Coefficient of thermal expansion: 9.12 x 10^{-4}/°C — Specific heat: 1.7 J/g/°

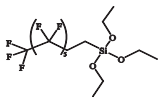
Crosslinker for tin catalyzed condensation cure silicones

In combination with CTAB intermediate for mesoporous silica fibers.[1]

1. Kleits, F. et al. *Chrom. Mater.* **2001,** *13*, 3587.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[682-01-9] TSCA Reach preregistered HMIS: 2-2-1-X 2kg-kg: $69.00 16kg-kg: $42.00 182kg-kg: inquire



SIT8175.0

(TRIDECAFLUORO-1,1,2,2-TETRAHYDROOCTYL)-TRIETHOXYSILANE — 510.36 — 86 / 1.5 — (<-38) — 1.351 — 1.3436

Flashpoint: 84°C (183°F)

$C_{14}H_{19}F_{13}O_3Si$

Viscosity: 3.5 cSt.

ΔHvap: 66.1 kJ/mole

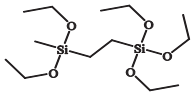
γc of treated surface: 14 mN/m

See also SIN6597.65

Automotive side windows are treated with fluoroalkylsilanes to provide self-cleaning properties

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[51851-37-7] TSCA Reach preregistered HMIS: 2-2-1-X 3kg-kg: $1,180.00 25kg-kg: inquire



SIT8185.8

1-(TRIETHOXYSILYL)-2-(DIETHOXYMETHYLSILYL)-ETHANE — 324.56 — 100 / 0.5 — 0.946 — 1.4112

Flashpoint: 102°C (216°F)

$C_{13}H_{32}O_5Si$

TOXICITY: oral rat, LD50: >500 mg/kg

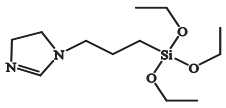
Dipodal silane

Improves hydrolytic stability of silane adhesion promotion systems

Lower toxicity, easier to handle than bis(triethoxysilyl)ethane

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[18418-54-7] TSCA HMIS: 2-1-1-X 2kg-kg: $380.00 16kg-kg: $260.00 180kg-kg: inquire



SIT8187.5

N-(3-TRIETHOXYSILYLPROPYL)-4,5-DIHYDRO-IMIDAZOLE — 274.43 — 134 / 2 — 1.005 — 1.452

3-(2-IMIDAZOLIN-1-YL)PROPYLTRIETHOXYSILANE, IMEO

Flashpoint: >110°C (>230°F)

$C_{12}H_{26}N_2O_3Si$

Viscosity: 5 cSt.

Coupling agent for elevated temperature-cure epoxies

Utilized in HPLC of metal chelates.[1]

Forms proton vacancy conducting polymers with sulfonamides by sol-gel.[2]

Ligand for molecular imprinting of silica with chymotrypsin transition state analog.[3]

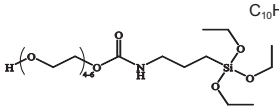
1. Suzuki, T. et al. *Chem. Lett.* **1994,** 881.

2. De Zea Bermudez, V. et al. *Sol-Gel Optics II, SPIE Proc.* **1992,** *1728*, 180.

3. Markowitz, M. et al. *Langmuir* **2000**, *16*, 1759.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[58068-97-6] TSCA Reach preregistered HMIS: 2-1-1-X 2kg-kg: $314.00 18kg-kg: $148.00 180kg-kg: inquire



SIT8192.0

N-(TRIETHOXYSILYLPROPYL)-O-POLYETHYLENE-OXIDE URETHANE, 95% — 400-500 — 1.09 — 1.4540 [25]

Contains some bis(urethane) analog

$C_{10}H_{22}NO_4SiO(CH_2CH_2O)_{4\text{-}6}H$

Viscosity: 75-125 cSt

Hydrophilic surface modifier

Forms PEGylated glass surfaces suitable for capillary electrophoresis.[1]

1. Razunguzwa, T. et al. *Anal. Chem.* **2006**, *78*, 4326

See also SIB1824.82

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

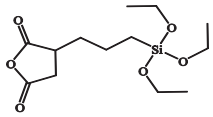
[74695-91-3] TSCA HMIS: 2-1-1-X 2kg-kg: $290.00 20kg-kg: $210.00 200kg-kg: inquire


2.5 liter (kg)

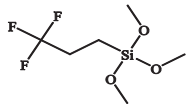

5 gallon or 19L cylinder (kg)


55 gallon (kg)

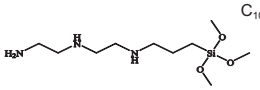
Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}



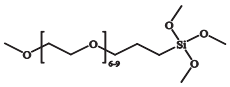
SIT8192.6
(3-TRIETHOXYSILYL)PROPYLSUCCINIC ANHYDRIDE, 95% — 304.41 — 135 / 0.2 — 1.070 — 1.4405
$C_{13}H_{24}O_6Si$ — Flashpoint: >100°C (>212°F)
Viscosity: 20 cSt — TOXICITY: oral rat, LD50: >2,000 mg/kg
Autoignition temperature: 250˚C
Coupling agent for dibasic surfaces
Acetic acid-catalyzed hydrolysis yields succinic acid derivatives
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[93642-68-3] TSCA HMIS: 2-1-1-X — 2kg-kg: $360.00 — 18kg-kg: $262.00 — 200kg-kg: inquire



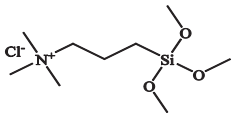
SIT8372.0
(3,3,3-TRIFLUOROPROPYL)TRIMETHOXYSILANE, 98% — 218.25 — 144 — 1.137 — 1.3546
$C_6H_{13}F_3O_3Si$ — Flashpoint: 38°C (100°F)
γc of treated surface: 33.5 mN/m
Forms catalytic gels for aerobic oxidation of alcohols in combination with tetrapropylammonium perrhenate.[1]
1. Cirminna, R. et al. *Org. Biomol. Chem.* **2006**, *4*, 2637
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[429-60-7] TSCA Reach preregistered HMIS: 3-3-1-X — 2.5kg-kg: $480.00 — 20kg-kg: $385.00 — 220kg-kg: inquire



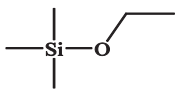
SIT8398.0
(3-TRIMETHOXYSILYLPROPYL)DIETHYLENETRIAMINE — 265.43 — 114-8 / 2 — 1.030 — 1.4590
$C_{10}H_{27}N_3O_3Si$ 95% — Flashpoint: 137°C (279°F)
TOXICITY: oral rat, LD50: >2,000 mg/kg
γc of treated surface: 37.5 mN/m
Hardener, coupling agent for epoxies
See also SSP060, SIS6944.0
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[35141-30-1] TSCA Reach preregistered HMIS: 3-1-1-X — 2kg-kg: $124.00 — 18kg-kg: $55.00 — 200kg-kg: inquire



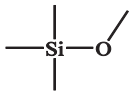
SIT8408.0
TRIMETHOXYSILYLPROPOXYPOLYETHYLENEOXIDE,-METHYL ETHER, tech-85 — 459-591 — (-8) — 1.076 — 1.403
$CH_3(C_2H_4O)_{6\sim9}(CH_2)_3OSi(OCH_3)_3$ — Flashpoint: 88°C (190°F)
Hydrophilic surface treatment
Stabilizes colloidal silica sols in aqueous alcohol and aqueous glycol systems
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[65994-07-2] TSCA HMIS: 2-2-1-X — 2kg-kg: $120.00 — 20kg-kg: $68.00 — 200kg-kg: inquire



SIT8415.0
N-TRIMETHOXYSILYLPROPYL-N,N,N-TRIMETHYL-AMMONIUM CHLORIDE, 50% in methanol — 257.83 — 0.927 — 1.3966
Flashpoint: 11°C (52°F)
N,N,N-TRIMETHYL-3-(TRIMETHOXYSILYL)-1-PROPANAMINIUM CHLORIDE
$C_9H_{24}ClNO_3Si$
Employed for bonded chromatographic phases
Anti-static agent
Used to treat glass substrates employed in electroblotting
Prevents contact electrification.[1]
1. Thomas, S. et al. *J. Am. Chem. Soc.* **2009**, *131*, 8746.
See also SIT8395.0
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[35141-36-7] TSCA Reach preregistered HMIS: 2-4-1-X — 2kg-kg: $195.00 — 15kg-kg: $124.00 — 180kg-kg: inquire



SIT8515.0
TRIMETHYLETHOXYSILANE — 118.25 — 75-6 — (-83) — 0.7573 — 1.3742
ETHOXYTRIMETHYLSILANE — Flashpoint: -27°C (-17°F)
$C_5H_{14}OSi$ — TOXICITY: oral rat, LDLo: 1,400 mg/kg
Vapor pressure, 22°: 111 mm — Critical temperature: 233°
Dipole moment: 1.2 — ΔHcomb: 970.4 kcal/mole
ΔHvap: 33.5 kcal/mole
Anti-structuring additive for silicone rubber
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[1825-62-3] TSCA Reach preregistered HMIS: 2-4-1-X — 1.5kg-kg: $92.00 — 14kg-kg: $48.00 — 150kg-kg: inquire



SIT8566.0
TRIMETHYLMETHOXYSILANE — 104.22 — 57-8 — 0.7560 — 1.3678
$C_4H_{12}OSi$ — Flashpoint: -11°C (12°F)
Dipole moment: 1.18 debye — ΔHcomb: 908 kcal/mole
Undergoes α-lithiation with tert-butyllithium.[1]
1. Bates, T.F. et al. *J. Organometal. Chem.* **2000,** *595*, 87.
F&F: Vol. 14, p 119.
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water
[1825-61-2] TSCA Reach preregistered HMIS: 3-4-1-X — 1.5kg-kg: $124.00 — 14kg-kg: $52.00 — 145kg-kg: inquire

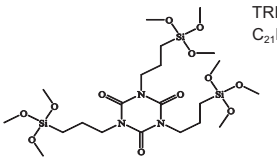
2.5 liter (kg)

5 gallon or 19L cylinder (kg)

55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SIT8717.0



TRIS(3-TRIMETHOXYSILYLPROPYL)ISOCYANURATE — 615.86 — 1.170 — 1.4610

$C_{21}H_{45}N_3O_{12}Si_3$ tech-95 — Flashpoint: 102°C (216°F)

Viscosity: 325-350 cSt.

Adhesion promoter for hotmelt adhesives

Coupling agent for polyimides to silicon metal

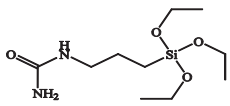
Forms periodic mesoporous silicas.[1]

1. Zhang, W. et al. *Chem. Mater.* **2007**, *19*, 2663.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[26115-70-8] TSCA Reach preregistered HMIS: 2-1-1-X — 2kg-kg: $180.00 — 18kg-kg: $112.00 — 235kg-kg: inquire

SIU9055.0



UREIDOPROPYLTRIETHOXYSILANE, 50% in methanol — 264.40 — (-97) — 0.92 — 1.386

$C_{10}H_{24}N_2O_4Si$ — Flashpoint: 11°C (52°F)

Contains ureidopropyltrimethoxysilane and related transesterification products

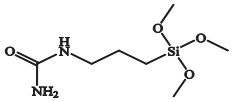
Coupling agent for polyamides and urea-formaldehyde resins

See also SIS6944.0

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[23779-32-0] TSCA Reach preregistered HMIS: 2-4-1-X — 2kg-kg: $75.00 — 16kg-kg: $48.00 — 180kg-kg: inquire

SIU9058.0



UREIDOPROPYLTRIMETHOXYSILANE — 222.32 — 217-225 — (-5) — 1.150 — 1.386 [25]

$C_7H_{18}N_2O_4Si$ — Flashpoint: 99°C (210°F)

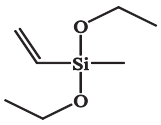
Component in primers for tin alloys

Adhesion promoter for foundry resins

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[23843-64-3] TSCA Reach preregistered HMIS: 2-1-1-X — 2kg-kg: $190.00 — 20kg-kg: $124.00 — 225kg-kg: inquire

SIV9085.0



VINYLMETHYLDIETHOXYSILANE — 160.29 — 133-4 — 0.858 — 1.3998

$C_7H_{16}O_2Si$ — Flashpoint: 16°C (61°F)

Dipole moment: 1.27

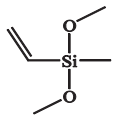
Copolymerization parameters- e,Q; -0.86, 0.020

Chain extender, crosslinker for silicone RTVs and hydroxy-functional resins

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[5507-44-8] TSCA Reach preregistered HMIS: 2-4-1-X — 2kg-kg: $160.00 — 15kg-kg: $86.00 — 160kg-kg: inquire

SIV9086.0



VINYLMETHYLDIMETHOXYSILANE — 132.23 — 103 — 0.889 — 1.395

$C_5H_{12}O_2Si$ — Flashpoint: 15°C (59°F)

Viscosity: 0.7 cSt — Autoignition temperature: 245°

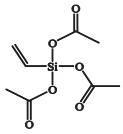
Vapor pressure, 20°: 38 mm

Additive to moisture-cure silane modified polyurethanes as a water scavenger to prevent premature cure

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[16753-62-1] TSCA HMIS: 3-4-1-X — 2kg-kg: $120.00 — 16kg-kg: $72.00 — 170kg-kg: inquire

SIV9098.0



VINYLTRIACETOXYSILANE — 232.26 — 112-3 / 1 — (10-13) — 1.167 — 1.423

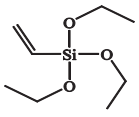
$C_8H_{12}O_6Si$ store <5°C — Flashpoint: 88°C (190°F)

Crosslinker for moisture-cure silicone RTVs with greater liquid range for formulation, faster moisture-cure rate and better substrate adhesion properties than methyltriacetoxysilane

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[4130-08-9] TSCA Reach preregistered HMIS: 3-2-1-X — 2kg-kg: $79.00 — 18kg-kg: $48.00 — 225kg-kg: inquire

SIV9112.0



VINYLTRIETHOXYSILANE — 190.31 — 160-1 — 0.903 — 1.3960

$C_8H_{18}O_3Si$ — Flashpoint: 44°C (111°F)

Vapor pressure, 20°: 5 mm — TOXICITY: oral rat, LD50: 22,500 mg/kg

Dipole moment: 1.69 — Autoignition temperature: 268°

Specific heat: 0.25 cal/g/° — ΔHform: -463.5 kcal/mole

γc of treated glass surface: 25 mN/m — ΔHvap: 6.8 kcal/mole

Copolymerization parameters- e,Q: -0.42, 0.028 — Specific wetting surface area: 412 m^2/g

Relative hydrolysis rate versus SIV9220.0, vinyltrimethoxysilane; 0.05

Couples fillers or fiberglass to resins

Specific wetting surface area: 412 m2/g

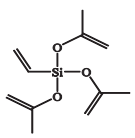
Couples fillers or fiberglass to resins

See VEE-005 for polymeric version

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[78-08-0] TSCA Reach preregistered HMIS: 1-2-1-X — 2kg-kg: $55.00 — 16kg-kg: $29.50 — 180kg-kg: inquire

SIV9209.0



VINYLTRIISOPROPENOXYSILANE — 226.35 — 73-5 / 12 — 0.926 — 1.4373

$C_{11}H_{18}O_3Si$

Employed as a cross-linker and in vapor phase derivatization; byproduct is acetone

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[15332-99-7] TSCA Reach preregistered HMIS: 1-3-1-X — 2kg-kg: $210.00 — 15kg-kg: $152.00 — 170kg-kg: inquire

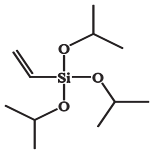
2.5 liter (kg)

5 gallon or 19L cylinder (kg)

55 gallon (kg)

Name	MW	bp °C/mm (mp)	D_4^{20}	n_D^{20}

SIV9210.0



VINYLTRIISOPROPOXYSILANE — 232.39 — 179-81 — 0.8659 — 1.3961 ^{25}

$C_{11}H_{24}O_3Si$ — Flashpoint: 51°C (124°F)

Copolymerization parameters- e,Q: -0.36, 0.031 — Vapor pressure, 60°: 4 mm

Relative hydrolysis rate versus vinyltrimethoxysilane; 0.0015

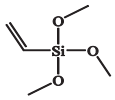
Used for free-radical cure water-borne resin systems

Adhesion promotor for vinyl acetate/ethylene latex

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[18023-33-1] TSCA Reach preregistered HMIS: 1-2-1-X — 2kg-kg: $140.00 — 15kg-kg: $70.00 — 175kg-kg: inquire

SIV9220.0



VINYLTRIMETHOXYSILANE — 148.23 — 123 — 0.970 — 1.3930

$C_5H_{12}O_3Si$ — Flashpoint: 28°C (82°F)

Viscosity: 0.6 cSt — TOXICITY: oral rat, LD50: 8,000 mg/kg

Vapor pressure, 20°: 9 mm — Autoignition temperature: 235°

Copolymerization parameters- e,Q: -0.38, 0.031 — Specific wetting surface area: 528 m^2/g

Employed in two-stage[1] and one-stage[2] graft polymerization/crosslinking for PE

Copolymerizes with ethylene to form moisture crosslinkable polymers.[3]

Converts arylselenyl bromides to arylvinylselenides.[4]

Reacts with anhydrides to transfer both vinyl and methoxy and thus form the mixed diester.[5]

Cross-couples w/ α-bromo esters to give α-vinyl esters in high ee.[6]

Vinylsilanes are used in PE and EPDM insulated wire and cable

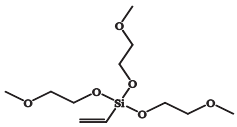
1. Scott, H. US Patent 3,646,155, 1972.
2. Swarbrick, P. et al. US Patent 4,117,195, 1978.
3. Isaka, T. et al. U.S. Patent 4,413,066, 1983.
4. Bhadra, S. et al. *J. Org. Chem.* **2010**, *75*, 4864.
5. Luo, F. et al. *J. Org. Chem.* **2010**, *75*, 5379.
6. Strotman, N. A.; Sommer, S.; Fu, G. C. *Angew. Chem., Int. Ed. Engl.* **2007**, *46*, 3556.

See also VMM-010 for polymeric version

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2768-02-7] TSCA Reach preregistered HMIS: 3-3-1-X — 2kg-kg: $48.00 — 16kg-kg: $22.00 — 180kg-kg: inquire

SIV9275.0



VINYLTRIS(2-METHOXYETHOXY)SILANE — 280.39 — 284-6 — 1.0336 ^{25} — 1.4271 ^{25}

$C_{11}H_{24}O_6Si$ — Flashpoint: 115°C (239°F)

Vapor pressure, 108°: 2 mm — TOXICITY: oral rat, LD50: 2,960mg/kg

Autoignition temperature: 210°

Employed in peroxide graft-moisture crosslinking of polyethylene

Relative hydrolysis rate versus SIV9220.0, vinyltrimethoxysilane; 0.50

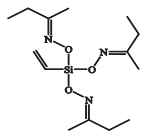
Coupling agent for kaolin in EPDM/PE cable formulations.[1]

1. Arkles, B. et al. *Modern Plastics* **1987,** *64(4)*, 138.

HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[1067-53-4] TSCA Reach preregistered HMIS: 3-1-1-X — 2kg-kg: $58.00 — 18kg-kg: $30.00 — 200kg-kg: inquire

SIV9280.0



VINYLTRIS(METHYLETHYLKETOXIMINO)SILANE, tech-95 — 313.47 — 113 / 0.1 — (-22) — 0.982 ^{25} — 1.465

$C_{14}H_{27}N_3O_3Si$

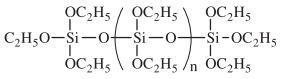
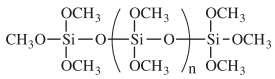
Neutral cross-linker/coupling agent for condensation cure silicones

Byproduct: methylethylketoxime

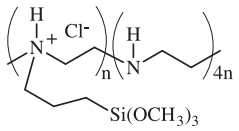
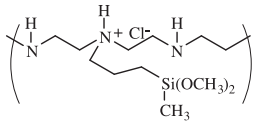
HYDROLYTIC SENSITIVITY: 7: reacts slowly with moisture/water

[2224-33-1] TSCA Reach preregistered HMIS: 3-3-1-X — 2kg-kg: $90.00 — 16kg-kg: $44.00 — 180kg-kg: inquire

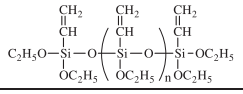
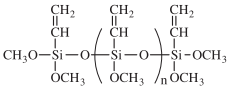
Polymeric Metal Alkoxides

Structure	Name	Metal content	Unit M.W.	Viscosity, cSt	Density
	PSI-021 POLY(DIETHOXYSILOXANE) *Ethylsilicate 40* $[(C_2H_5O_2)_2SiO]$ Base for zinc-rich paints Binder for "lost wax" investment casting of refractory metals Crosslinker for two-component condensation cure (silanol) RTVs [68412-37-3] TSCA 2kg-kg: $30.00 18kg-kg: $18.00 220kg-kg: inquire	20.5-21.5% Si (40-42% SiO_2 equivalent) M.W.: 700-800	134.20	3-5	1.05-1.07
	PSI-026 POLY(DIMETHOXYSILOXANE) *Methylsilicate 51* $[(CH_3O)_2SiO]$ *Lower hazard potential than tetramethoxysilane* Forms clear aerogels.[1] 1. Tillotson, T.; et al. In Better Ceramics Through Chemistry IV; MRS Proc. 1990; Vol. 180, p.309. [25498-02-6] TSCA 2kg-kg: $128.00 20kg-kg: $92.50 200kg-kg: inquire	26.0 27.0% Si (48-52% SiO_2 equivalent)	106.15	6-9	1.14-1.16

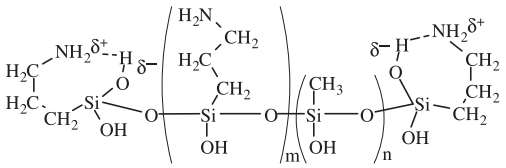
Polyamine Silanes

Structure	Name	MW	Viscosity	Density
	SSP-060 TRIMETHOXYSILYLPROPYL MODIFIED (POLYETHYLENIMINE) 50% in isopropanol ~20% of nitrogens substituted Employed as a coupling agent for polyamides.[1] In combination with glutaraldehyde immobilizes enzymes.[2] 1. Arkles, B.; et al. SPI 42nd Composite Inst. Proc., 21-C, 1987 2. Cramer, S.; et al. *Biotechnol. Bioeng.* **1989**, *33(3)*, 344. [136856-91-2] TSCA HMIS: 2-4-1-X 2kg-kg: $182.00 16kg-kg: $96.00 180kg-kg: inquire	1,500-1,800	125-175 cSt	0.92
	SSP-065 DIMETHOXYSILYLMETHYLPROPYL MODIFIED (POLYETHYLENEIMINE) 50% in isopropanol ~20% of nitrogens substituted Primer for brass [125441-88-5] TSCA HMIS: 2-4-1-X 2kg-kg: $277.50 16kg-kg: $138.00 180kg-kg: inquire	1,500-1,800	100-200 cSt	0.92

Vinylalkoxysiloxane Polymers

Structure	Name	Wt% vinyl	Viscosity	Density	2kg-kg	18kg-kg	200kg-kg
	VEE-005 Vinylethoxysiloxane Homopolymer Crosslinking agent for neutral cure RTVs [29434-25-1] TSCA	19-22	4-7 cSt	1.02	$148.00	$82.00	inquire
	VMM-010 Vinylmethoxysiloxane Homopolymer Coupling agent in polyethylene for wire and cable applications Adhesion promoter for vinyl-addition cure RTVs [131298-48-1] TSCA	22-3	8-12 cSt	1.10	$120.00	$68.00	inquire

Water-borne Silsesquioxane Oligomers



Code	Functional Group	Mole %	MW	Weight % in solution	Density	Viscosity, cSt	pH	3kg-kg	18kg-kg
WSA-7011	Aminopropyl	65-75	250-500	25-28	1.10	5-15	10-10.5	$120.00	$46.00
WSA-9911*	Aminopropyl	100	270-550	22-25	1.06	5-15	10-10.5	$95.00	$32.00
WSA-7021	Aminoethylaminopropyl	65-75	370-650	25-28	1.10	5-10	10-11	$145.00	$72.00
WSAV-6511**	Aminopropyl, vinyl	60-65	250-500	25-28	1.11	3-15	10-11	$160.00	$84.00

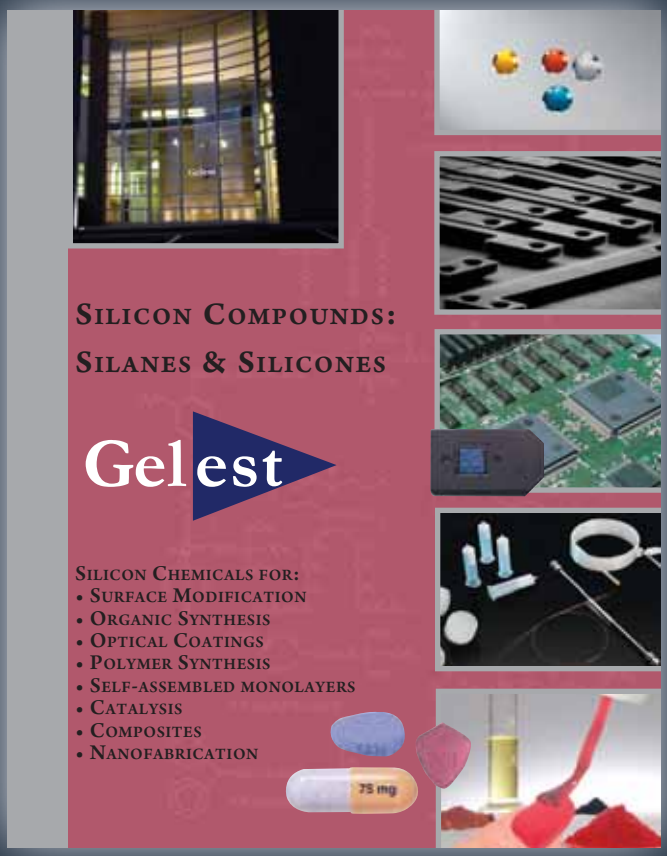
CAS * [29159-37-3] ** [207308-27-8]

Stable water solutions
Primers for metals
Additives for acrylic latex sealants
Coupling agents for siliceous surfaces.[1]
1. Arkles, B.; et al. in "Silanes & Other Coupling Agents", ed. Mittal, K. L. p91. VSP, Utrecht, 1992.

INDUSTRIAL CHLOROSILANES - SILICON CHEMICAL INTERMEDIATES

Chlorosilanes are the building blocks for the silicon industry. The following materials are readily available in bulk. They are corrosive and must be handled in enclosed non-dispersive environments since they produce hydrogen chloride gas on contact with moisture. The more reactive materials are provided in bulk cylinders.

Gelest Product Code	Product Name
SIC2405.0	3-CHLOROPROPYLTRICHLOROSILANE
SID3368.0	DICHLOROSILANE
SID4120.0	DIMETHYLDICHLOROSILANE
SID4510.0	DIPHENYLDICHLOROSILANE
SID4630.0	DODECYLTRICHLOROSILANE
SIE4901.0	ETHYLTRICHLOROSILANE
SIM6504.0	METHYLDICHLOROSILANE
SIM6520.0	METHYLTRICHLOROSILANE
SIO6615.0	OCTADECYLDIMETHYLCHLOROSILANE
SIO6640.0	OCTADECYLTRICHLOROSILANE
SIO6713.0	OCTYLTRICHLOROSILANE
SIP6738.0	PHENYLMETHYLDICHLOROSILANE
SIP6810.0	PHENYLTRICHLOROSILANE
SIP6915.0	PROPYLTRICHLOROSILANE
SIT7085.0	TETRACHLOROSILANE
SIT8155.0	TRICHLOROSILANE
SIT8510.0	TRIMETHYLCHLOROSILANE
SIV9070.0	VINYLDIMETHYLCHLOROSILANE
SIV9084.0	VINYLMETHYLDICHLOROSILANE
SIV9110.0	VINYLTRICHLOROSILANE



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