Integrated Chemical Specialties

- a division of Integrated Traffic Systems USA

ITCOSIL™

Silanes & Siloxanes

bringing **solutions** to **complex** chemistry

ITCO SIL™ SILANES & SILOXANES

- ITCO SIL™ AATS 7103
- ITCO SIL™ APDS 9002
- ITCO SIL™ APTS 9003
- ITCO SIL™ DCPX 8005
- ITCO SIL™ GOTS 7403
- ITCO SIL™ HMCX 8003
- ITCO SIL™ HMDX 6002
- ITCO SIL™ HMDZ 6102
- ITCO SIL™ HMX 8102
- ITCO SIL™ IBTS 7003
- ITCO SIL™ MATS 7203
- ITCO SIL™ OMCX 8004
- ITCO SIL™ PTCS 3003
- ITCO SIL™ SAPS 9004
- ITCO SIL™ TFTS 7303
- ITCO SIL™ SMS 2003

Your Preferred Supplier Of High-Quality Chemicals

WHAT ARE SILANES AND SILOXANES ?

Silanes and siloxanes are a group of compounds that consist of long monomer chains made up of silicon and other functional atoms such as carbon, hydrogen or nitrogen. Depending on the length of the chain and the amount of crosslinking between chains, silanes and siloxanes can be either oils or rubberlike materials. Silanes, which require a high pH to catalyze, are made up of smaller molecules so they can penetrate deeper into the substrate. As a result, silanes are used in a wide range of applications to enhance durability and prevent weathering. Siloxanes are made up of longer monomer chain molecules and they are used to treat the surfaces of substrates such as brick, stone and stucco. Siloxanes are less volatile than silanes having good heat, light, water and oxygen stability and provide good water repellant and sealant properties. Silanes and siloxanes are used in a wide range of applications to enhance the durability and prevent weathering, as well as improve mixability and adhesion. A table below lists industries and applications of silane and siloxane products currently offered by Integrated Chemical Specialties, a division of Integrated Traffic Systems USA.

TYPICAL APPLICATIONS

User Industry	Application
Paints, Coatings and Sealants	Resistance to abrasion and increased adhesion, increase resistance to heat, dispersing agent for fillers, rheology control for sealant
Oil, Gas and Petrochemicals	Rheology Modifiers for Oil Drilling Fluids and/or Hydraulic Fracking Fluids Additive for improving extraction and downhole processes
Thermoplastics	Mineral and Pigment treatment for improved dispersibility
Adhesives	Increase adhesion, temperature and chemical resistance
Plastics, Rubber and Elastomers	Added as a crosslinking modifier that includes mechanical strength of the polymer base; improves mixability and coupling of resins and minerals to improve strength and abrasion resistance
Waxes and Polishes	Abrasion resistance and dispersing agent
Fabrics and Yarn Processing	Waterproofing fabrics and improved dye receptivity
Printing	Used for improving ink release, wetting and adhesion
Glass Fibers	Improves mixability of materials and coupling of resins for improved fiber strength, integrity and durability

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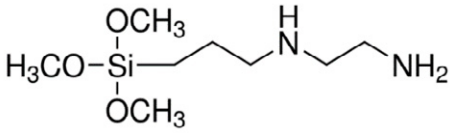
ITCO SIL™ AATS 7103

(N-(2-aminoethyl)-3-aminopropyltrimethoxysilanes)

ITCO SIL™ AATS 7103 is used as an adhesion promoter for sealants, adhesives and coatings. It is also used as a surface modifier for glass fibers, fillers and insulators.

SILANES & SILOXANES TECHNICAL DATA SHEET

SYNONYMS	N-(2-Aminoethyl)-3-(trimethoxysilyl)propylamine; [3-(2-Aminoethylamino)propyl]trimethoxysilane; N-[3-(Trimethoxysilyl)propyl]ethylenediamine; 1,2-Ethanediamine, N-[3-(trimethoxysilyl)propyl]-; 2-Ethanediamine,N-[3-(trimethoxysilyl)propyl]-1
CAS NO.	1760-24-3
EINECS NO.	217-164-6
MOLECULAR FORMULA	$C_8H_{22}N_2O_3Si$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	222.36

Test	Unit	Specification
Appearance	-	99 - 101
Purity	%	Maximum 1.0

Application

- It is used as an adhesion promoter for sealants, adhesives and coatings.
- It is also used as a surface modifier for glass fibers, glass-fiber fabrics, fillers.

Packaging

- 25L PE Pail
- 200L Steel Drum
- 100L IBC Drum

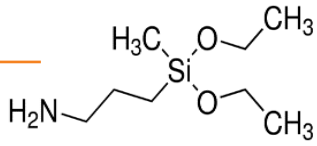
Storage and Handling

- Keep in dry, cool place at room temperature

ITCO SIL™ APDS 9002

(Aminopropylmethyldiethoxysilane)

ITCO SIL™ APDS 9002 is used as a primary amine coupling agent for UV cure and epoxy systems, as well as in microparticle surface modification. It is also often used as an additive in foundry resins.

SYNONYMS	3-(Diethoxymethylsilyl) propylamine 3-Aminopropyl-methyl-diethoxysilane 3-Aminopropylmethylsilane
CAS NO.	3179-76-8
EINECS NO.	221-660-8
MOLECULAR FORMULA	$C_8H_{21}NO_2Si$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	191.34

Test	Unit	Specification
Appearance	-	Colorless to light yellow clear liquid
Purity	%	Min 95.0

Applications

- ITCO SIL™ APDS 9002 can be used as adhesion promoter
- Used as Surface modifier for inorganic materials (e.g. glass, metals fillers)
- Used as Organic polymers (e.g. thermosets, thermoplastics and elastomers)

Packaging

- 25L PE Pail
- 200 L Steel Drum
- 1000L IBC Drum

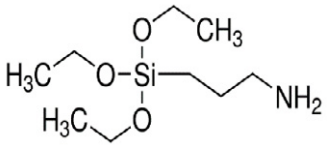
Storage and Handling

- Keep in cool, dry and well-ventilated place, far away from fire, heat source,
- Storage temperature<30°C. Avoid direct sunlight, sealed tightly, and do not contact with air. Avoid moisture, no contact with oxidants, acid and alkali

ITCO SIL™ APTS 9003

(3-Aminopropyltriethoxysilane)

ITCO SIL™ APTS 9003 is commonly used to optimize silica silanization, promote adhesion between silica substrates and organic or metal surfaces in the production of APTES film formation for clinical or pharmaceutical research purposes

SYNONYMS	3-Triethoxysilylpropylamine APTES APTS
CAS NO.	919-30-2
EINECS NO.	213-048-4
MOLECULAR FORMULA	$C_9H_{23}NO_3Si$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	221.37

Test	Unit	Specification
Appearance	-	Colorless transparent liquid
Color	Pt/Co	≤ 30
Purity	%	≥ 98.0
Specific gravity (20°C; g/cm3)	-	0.9450 ± 0.0050
Refractive index (n25D)	-	1.4230 ± 0.0050
Ionic Chloride content	ppm	≤ 100

Applications

- In the production of glass fibre cotton and mineral wool, the addition of ITCO SIL APTS 9003 into phenolic binder can improve the moisture resistance and increase the compression resilience.
- ITCO SIL™ APTS 9003 is excellent adhesion promoter and can be used for polyurethane, epoxy, nitriles, phenolic adhesive and sealing material, improve the dispersion of pigment and improve the adhesive properties of the metal of glass, aluminum, iron, also suitable for polyurethane, epoxy and acrylic latex paint.
- Used for the synthesis of amino silicone oil and its emulsion.

Packaging

- 25L/200L PE plastic drum; 200L steel drum or 1000L IBC.

Storage and Handling

- Keep in cool, dry and well-ventilated place, far away from fire, heat source, avoid direct sunlight, Sealed tightly, and do not contact with air. Avoid moisture, no contact with oxidants, acid and alkali.

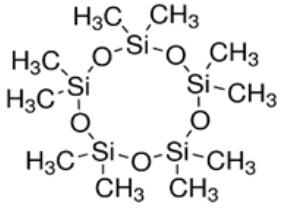
SILANES & SILOXANES TECHNICAL DATA SHEET

ITCO SIL™ DCPX 8005

(D5, Decamethylcyclopentasiloxane)

ITCO SIL™ DCPX 8005 is used as a carrier for active ingredients such as oils and greases. It can be also used to clean and remove said oils and greases in certain products. It leaves a smooth and silky feel in cosmetic formulations. It has a non-greasy feel and leaves no residue. It is not irritating, and it can also be used in conditioners, hairsprays, face wash, body wash, various cosmetics, sun care, deodorants and antiperspirants.

ITCOSIL™ Silanes & Siloxanes

SYNONYMS	Cyclopentasiloxane, decamethyl- Cyclomethicone 5 Dimethylsiloxane pentamer
CAS NO.	541-02-6
EINECS NO.	208-764-9
MOLECULAR FORMULA	$C_{10}H_{30}O_5Si_5$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	370.77

Test	Unit	Specification
Appearance	-	Colorless clear liquid
Purity	%	99.0
D4 Content	%	Less than 1
*Solubility	-	Insoluble in water
*Moisture Content	ppm	Less than 100

Note: *Tests only for information and will not be reported on COA

Applications

- ITCO SIL™ DCPX 8005 is well-known as D5 or Cyclomethicone.
- It is widely used in cosmetics and human care products, excellent compatibility with most of alcohol and other cosmetic solvents

Packaging

- 200L Steel Drum; 1000L IBC Drum

Storage and Handling

- Keep in cool, dry and well-ventilated place, far away from fire, heat source,
- Storage temperature<30°C.
- Avoid direct sunlight, sealed tightly, and do not contact with air. Avoid moisture, no contact with oxidants, acid and alkali

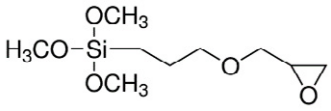
SILANES & SILOXANES TECHNICAL DATA SHEET

ITCO SIL™ GOTS 7403

(3-Glycidyloxypropyltrimethoxysilane)

ITCO SIL™ GOTS 7403 is used in the manufacture of polymers for coatings, adhesives and sealants providing excellent adhesion as well as resistance to weathering.

SILANES & SILOXANES TECHNICAL DATA SHEET

SYNONYMS	3-(2,3-Epoxypropoxy)propyltrimethoxysilane GLYMO Glycidyl 3-(trimethoxysilyl)propyl ether
CAS NO.	2530-83-8
EINECS NO.	219-784-2
MOLECULAR FORMULA	$C_9H_{20}O_5Si$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	236.34

Test	Unit	Specification
Appearance	-	Colorless transparent liquid
Color	Pt/Co	≤ 30
Purity	%	≥ 98.0
Specific gravity (20°C; g/cm3)	-	0.9450 ± 0.0050
Refractive index (n25D)	-	1.4270 ± 0.0050

Applications

- ITCO SIL™ GOTS 7403 is mainly used to improve adhesive performance on the surface of the organic materials and inorganic materials, such as glass fibre reinforced plastic in the glass fibre and plastic, rubber, paint, coating of silica filler materials such as processing, also used in the bonding agent to increase the adhesive performance, it adapt to include epoxy, phenolic resin, melamine, polysulfide polyurethane, polypropylene, etc.
- The adhesion force of inorganic filler, substrate and resin is improved, to improve the mechanical strength and electrical properties of composite materials and have high retention rate in wet state.
- As an inorganic filler, it is widely used in clay, glass beads, talc powder, silica limestone, silica, quartz, aluminium powder and iron powder
- Suitable for epoxy sealants filled with quartz, epoxy concrete repair materials or coatings filled with sand particles, and epoxy mould materials filled with metal.
- The adhesive force of two - component epoxy sealants can also be improved. Improve the adhesion of acrylic latex, sealant, polyurethane and epoxy coatings

Packaging

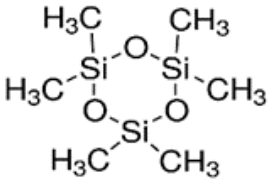
- 25L/200L PE plastic drum; 200L steel drum or 1000L IBC.

Storage and Handling

- Keep in cool, dry and well-ventilated place, far away from fire, heat source, Storage temperature<30°C.
- Avoid direct sunlight, sealed tightly, and do not contact with air. Avoid moisture, no contact with oxidants, acid and alkali.

ITCO SIL™ HMCX 8003

(Hexamethylcyclotrisiloxane)

SYNONYMS	2,2,4,4,6,6-Hexamethyl-1,3,5,2,4,6-trioxatrisilinane Dimethylsiloxane cyclic trime Cyclotrisiloxane, hexamethyl
CAS NO.	541-05-9
EINECS NO.	208-765-4
MOLECULAR FORMULA	$C_6H_{18}O_3Si_5$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	222.46

Test	Unit	Specification
Appearance	-	White Crystals or solid
Assay	%	Min. 99.0

Applications

- ITCO SIL™ HMCX 8003 may be used as synthetic equivalents for the reactive intermediate dimethylsilanone.
- May be used as an effective trapping reagent for a variety of short-lived intermediates, including silanones and silyenes.
- May be used to synthesize many kinds of organic silicone products, which have better stability, better insulation properties and better water resistance.
- May be used to synthesize silicon rubber, which may have better elasticity, better abrasive resistance, and better corrosive resistance.
- May be used to synthesize silicone oil, which may have lower freezing point and less surface tension, it is slightly affected by temperature.

Packaging

- 25 Kg Iron drum

Storage and Handling

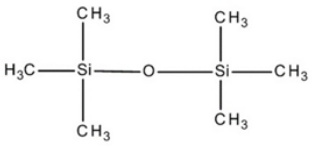
- Keep in cool, dry and well-ventilated place, far away from fire, heat source, avoid direct sunlight, sealed tightly, and do not contact with air. Avoid moisture, no contact with oxidants, acid and alkali.

SILANES & SILOXANES TECHNICAL DATA SHEET

ITCO SIL™ HMDX 6002

(Hexamethyldisiloxane)

ITCO SIL™ HMDX 6002 is used to create potentially biocompatible materials and aid in fusion or cohesion. It is also used as a monomer in the synthesis of long chain polysiloxane structures.

SYNONYMS	2,4,4-Tetramethyl-3-oxa-2,4-disilapentane, HMDSO
CAS NO.	107-46-0
EINECS NO.	203-492-7
MOLECULAR FORMULA	$C_6H_{18}OSi_2$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	162.38

Test	Unit	Specification
Appearance	-	Colorless transparent liquid
Purity	%	Min 99.0
Viscosity @ 25°C	cST	0.65 ± 0.03
Water Content	ppm	< 100

Applications

- Used as blocking agent, cleaner, release agent, also can be used as material of silazane.
- Used in silicone rubber, medicines, GC stationary liquid, analysis re-agent and moisture repellent

Packaging

- 200L plastic barrel or plastic-coated iron barrel; Net weight 150KG

Storage and Handling

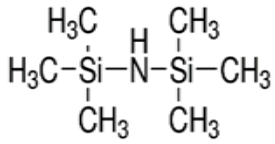
- Keep in cool, dry and well-ventilated place, far away from fire, heat source, Storage temperature<30°C.
- Avoid direct sunlight, sealed tightly, and do not contact with air. Avoid moisture, no contact with oxidants, acid and alkali.

SILANES & SILOXANES TECHNICAL DATA SHEET

ITCO SIL™ HMDZ 6102

((Hexamethyldisilazane)

ITCO SIL™ HMDZ 6102 is used in photolithography as an adhesion promoter for photoresist. It is often used in gas chromatography to detect to silylate and thus detect OH groups of organic compounds which are otherwise nonvolatile and would be undetectable by GC analysis.

SYNONYMS	Bis(trimethylsilyl)amine 1,1,1,3,3,3-Hexamethyldisilazane Hexamethylsilazane
CAS NO.	999-97-3
EINECS NO.	213-668-5
MOLECULAR FORMULA	$C_6H_{19}NSi_2$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	161.39

Test	Unit	Specification
Description	-	White Crystals or solid
Solubility	-	Insoluble in water & miscible in acetone
Identification By GC	-	To comply
Specific Gravity @25°C	-	NMT 0.78
Boiling Range	°C	123.0 – 127.0
HMDO (BY GC)	%	NMT 0.50
Purity as HMDS	%	NLT 99.0

Applications

- Sialylation of synthetic process of Amikacin, penicillin's, cephalosporins, fluorouracil and Penicillin derivatives.
- Surface treatment of Diatomite, white carbon black, titanium powder. bonding agent of light etching agent in Semiconductor industry.
- Can be used fin vinyl silicone rubber to improve the tearing strength, also can be used as a hydrophobic treatment agent of white carbon black and hydroxy protective agent of antibiotics.

Packaging

- 200L plastic barrel or plastic-coated iron barrel; Net weight 150KG

Storage and Handling

- Keep in cool, dry and well-ventilated place, far away from fire, heat source, avoid direct sunlight, sealed tightly, and do not contact with air. Avoid moisture, no contact with oxidants, acid and alkali.

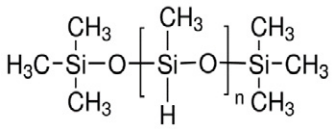
SILANES & SILOXANES TECHNICAL DATA SHEET

ITCO SIL™ HMX 8102

(Methylhydrogenpolysiloxane)

ITCO SIL™ HMX 8102 is used in production of waterproof coatings on various surfaces. It is great at repelling water thus protecting products from damage from weathering, rust, moisture and mildew.

SILANES & SILOXANES TECHNICAL DATA SHEET

SYNONYMS	PMHS Methyl Hydrogen Silicon Hydrogen Silicon Oil
CAS NO.	63148-57-2
MOLECULAR FORMULA	$(CH_3)_3SiO[(CH_3)HSiO]nSi(CH_3)_3$
MOLECULAR STRUCTURE	

Test	Unit	Specification
Appearance	-	Colorless to transparent liquid
Active Ingredient	%	100
Hydrogen content	%	≥ 1.55
Viscosity (25°C)	mm2/s	15.00 ~40.00
Density (25°C)	g/cm3	0.995~1.015
Acid Number	-	≤0.01

Applications

- Under the function of metal salt catalysts, it can form film at low temperature, form waterproof membrane on all kinds of material surface, thus it can be used as the waterproofing agent of various kinds of materials such as rubber, fabric, glass, ceramic, paper, leather, metal, cement, marble, etc.
- Used in silicone rubber processing and other high-end products;
- Used for general textile auxiliary/powder processing;
- Widely used for the synthesis processing of building materials (ceramic antifouling agent).
- Methyl Hydrogen silicone oil emulsion can work with methyl hydroxy silicone oil emulsion, offer waterproof function and can keep the permeability of fabrics, and can improve the tear strength, friction strength and soil resistance, improve the touch and sewing performance.
- It can be used as anti-stick isolation agent and crosslinking agent of paper.

Packaging

- 200L Plastic coated metal pail or plastic drum (Net Wt. 200KG/drum)

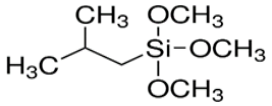
Storage and Handling

- Store in cool place. Keep container tightly closed in a dry and well-ventilated place Storage temperature <30°C

ITCO SIL™ IBTS 7003

(Iso-Butyltrimethoxysilane)

ITCO SIL™ IBTS 7003 is used as waterproofing agent in solar energy applications where non-aqueous solubility is required.

SYNONYMS	Isobutyl(trimethoxy)silane Silane, trimethoxy(2-methylpropyl)- Trimethoxy(2-methylpropyl) silane Trimethoxy isobutyl silane
CAS NO.	18395-30-7
EINECS NO.	242-272-5
MOLECULAR FORMULA	$C_7H_{18}O_3Si$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	178.30

Test	Unit	Specification
Appearance	-	Colorless transparent liquid
Refractive Index (n25D)	-	1.3960 ± 0.0050
Purity	%	Min 98.0

Applications

- ITCO SIL™ IBTS 7003 can be used as a surface modifier to generate hydrophobicity (e.g. on concrete, glass, inorganic pigment, or mineral fillers)
- When diluted with an appropriate solvent, it can be used in the formulation of water repellent products. Upon proper application, the formulated product will penetrate and provide water repellency by chemical reacting with the cementitious substrate. Treated substrates are hydrophobic and retain their original appearance.

Packaging

- 210 Iron Drum: 170kg/drum
- 1000 IBC Container: 850 kg/container

Storage and Handling

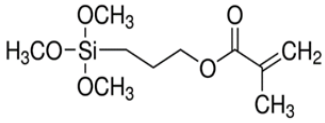
- Keep in dry, cool place and room temperature

ITCO SIL™ MATS 7203

(3-Methacryloxypropyltrimethoxy Silane)

ITCO SIL™ MATS 7203 is used in the curing process of polymer systems, in the production of unsaturated polyester-fiberglass composites and in microparticle surface modification as well as dental polymer composites.

SILANES & SILOXANES TECHNICAL DATA SHEET

SYNONYMS	3-(Trimethoxysilyl) propyl methacrylate; Methacrylic Acid 3-(Trimethoxysilyl)Propyl Ester; gamma Methacryloxy propyl trimethoxy silane; 2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester
CAS NO.	2530-85-0
EINECS NO.	219-785-8
MOLECULAR FORMULA	$C_{10}H_{20}O_5Si$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	248.35

Test	Unit	Specification
Appearance	-	Colorless clear liquid
Purity	%	≥ 98.0%
Color	APHA	≤ 25
Density (25°C)	g/cm3	1.0445 ± 0.0055
Refractive Index (25°C)	-	1.4290 ± 0.0010

Applications

- ITCO SIL™ MATS 7203 is mainly used in unsaturated polyester composite material to improve the mechanical property, electric property, photic property, especially, greatly improve the wet property of composite material.
- Invasive treatment (containing this coupling agent) to glass fibre, can improve the wet mechanical property and electric property of glass fibre reinforced composite material.
- In wire and cable industry, when used to treat EPDM system stuffed by pottery clay and crosslinked by peroxide, it can improve consumption factor and specific inductance captance.
- Polymerize with vinyl acetate and acrylic acid or methyl acrylic acid monomer. These polymers are widely used in coating, adhesive and sealing agent, providing excellent adhesion and durability.

Packaging

- 25Kg/ 200Kg Drum or 1000kg IB

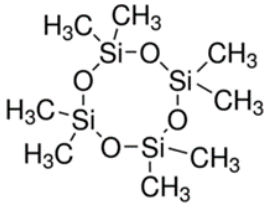
Storage and Handling

- Store in a cool, dry place. Avoid sunshine and moisture.

ITCO SIL™ OMCX 8004

(Octamethylcyclotetrasiloxane)

ITCO SIL™ OMCX 8004 is used in the production of cosmetics and personal care products such as skin, hair care and antiperspirants. It is also used as a defoamer for pulp, paper, food, petro-chemical and water treatment industries

SYNONYMS	Octamethyltetrasiloxane Dimethylsiloxane Cyclic Tetramer Cyclotetrasiloxane, octamethyl OMCTS
CAS NO.	556-67-2
EINECS NO.	209-136-7
MOLECULAR FORMULA	$C_8H_{24}O_4Si_4$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	296.62

Test	Unit	Specification
Appearance	-	Colorless transparent liquid
Assay	%	≥ 99
IDensity (P20)	g/cm^3	0.95
Melting Point	°C	17.5
Boiling Range	°C	≥ 175
Flash Point	°C	56
Refractive Index (nD20)	-	1.394
Viscosity (25 °C)	mm^2/s	2.30

Applications

- Silicone Oil, Silicone rubber intermediate
- In Auxiliary

Packaging

- 190 Kg iron- plastic drum

Storage and Handling

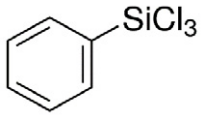
- Keep in dry, cool place and room temperature.
- Do not mix with acid, alkali and water. Avoid rain and Insolation

SILANES & SILOXANES TECHNICAL DATA SHEET

ITCO SIL™ PTCS 3003

(Phenyltrichlorosilane)

ITCO SIL™ PTCS 3003 is used as a starting point in the production of resins.

SYNONYMS	Trichloro (phenyl) silane; Silane, trichlorophenyl-
CAS NO.	98-13-5
EINECS NO.	202-640-8
MOLECULAR FORMULA	$C_6H_5SiCl_3$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	211.55

Test	Unit	Specification
Appearance	-	Colorless or light-yellow clear liquid
Purity	%	Min 99

Applications

- ITCO SIL™ PTCS 3003 can be used in production of phenyl silicone fluid and silicone resin.
- It is also used for functional silanes synthesis.

Packaging

- 200L Steel drum
- 1000L IBC drum

Storage and Handling

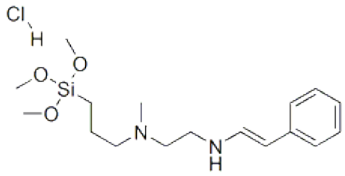
- Keep in cool, dry and well-ventilated place, far away from fire, heat source, Storage temperature<30°C.
- Avoid direct sunlight, sealed tightly, and do not contact with air. Avoid moisture, no contact with oxidants, acid and alkali.

SILANES & SILOXANES TECHNICAL DATA SHEET

ITCO SIL™ SAPS 9004

3-(N-Styrylmethyl-2-aminoethylamino)-propyltrimethoxysilane Hydrochloride 40% in methanol

ITCOSIL™ Silanes & Siloxanes

SYNONYMS	3-(styrylmethylamino)ethylamino]propyltrimethoxysilaneHCl; 3-(N-;N'-[3-(trimethoxysilyl)propyl]-1, 2-ethanediamine monohydrochloride3-(N-Styrylmethyl-2-aminoethylamino)-propyltrimethoxysilane hydrochloride ethylenediamine monohydrochloride
CAS NO.	34937-00-3
EINECS NO.	252-297-3
MOLECULAR FORMULA	$C_{17}H_{31}CLN_2O_3Si$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	374.98

Test	Unit	Specification
Appearance	-	Colorless Liquid
Viscosity	%	1.00 – 3.00
Specific Gravity	g/cm^3	0.88 – 0.92
Turbidity	°C	10

Applications

- Coupling agent
- Chemical Intermediate
- Blocking agent
- Release agent
- Lubricant
- Primer
- Reducing agent

Packaging

- 25L PE Pail
- 200L Steel Drum
- 100L IBC Drum

Storage and Handling

- Keep in dry, cool place at room temperature

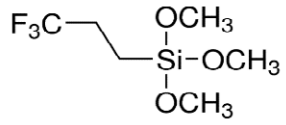
SILANES & SILOXANES TECHNICAL DATA SHEET

ITCO SIL™ TFTS 7303

(3,3,3-Trifluropropyl)trimethoxysilane

ITCO SIL™ TFTS 7303 is used to manufacture superhydrophobic surfaces and treatment of inorganic fillers. It can be also used in the production of semiconductors.

SILANES & SILOXANES TECHNICAL DATA SHEET

SYNONYMS	Trimethoxy(3,3,3-trifluoropropyl)silane Silane, trimethoxy(3,3,3-trifluoropropyl)- 1-(Trimethoxysilyl)-3,3,3-trifluoropropane 1,1,1-Trifluoro-3-(trimethoxysilyl)propane
CAS NO.	429-60-7
EINECS NO.	207-059-3
MOLECULAR FORMULA	$C_6H_{13}F_3O_3Si$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	218.25

Test	Unit	Specification
Appearance	-	Colorless clear liquid
Purity	%	Min 97.0

Applications

- It is mainly used in superhydrophobic coatings and surface treatment of inorganic fillers.
- It can be used in cosmetics
- It can be used in semiconductor drives production.

Packaging

- 25L Plastic Pail
- 200L Steel drum
- 100L IBC drum

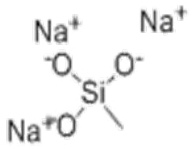
Storage and Handling

- Keep in dry, cool place at room temperature

ITCO SIL™ SMS 2003

(Sodium Methyl Siliconate)

ITCO SIL™ SMS 2003 is a new rigid three-dimensional modified silicone waterproof material used in building, mainly composed by methyl silicate. Its mechanism is efficient waterproofing under the action of water and carbon dioxide to produce silicon methyl alcohol, methyl alcohol further condenses with construction materials from a chemical reaction to produce an insoluble layer of a few molecules thick waterproof material surface and internal structure a polymer compound, i.e., the silicone resin film mesh. This resin has a waterproof membrane, impermeable, moisture, rust, anti-aging, anti-pollution, etc., which can be widely used in cement mortar, gypsum, perlite, reinforced concrete, waterproof coatings, and other areas.

SYNONYMS	methyl-silanetriosodiumsalt Silanetriol,methyl-,sodiumsalt sodium methylsilanetriolate;
CAS NO.	16589-43-8
EINECS NO.	240-648-3
MOLECULAR FORMULA	$CH_3Na_3O_3Si$
MOLECULAR STRUCTURE	
MOLECULAR WEIGHT	160.09

Test	Unit	Specification
Appearance	-	Colorless or pale-yellow liquid
pH value	-	13
Solid Content	%	≥ 32
Stability	-	No stratification, no floating oil, no significant precipitation

Main Features

- ITCO SIL SMS 2003 is a colorless or pale-yellow liquid
- Non-toxic, odorless, non-flammable, non-explosive, miscible with water, environmental pollution, in full compliance with health and environmental protection requirements
- It has excellent water resistance, and excellent weather resistance and durability
- Non-permeability stronger than normal cement increased by four times
- Superior wear resistance, life can be increased more than 6 times
- Passivation, no corrosion of steel
- Safe and convenient in work

ITCO SIL™ SMS 2003
(Sodium Methyl Siliconate)

SILANES & SILOXANES TECHNICAL DATA SHEET

Instructions

1. Water Seepage Mortar Construction

Clean up the grass roots: Clear grassroots debris, grease, suspended sediment, etc., to make it moist, clean, solid, rough. Asperities using plain ash and cement mortar layered levelling.

The selection of materials: Portland cement is not less than 32.5, such as 425 grade cement, sand is clean sand, clay content less than 3%, a particle size of 1-2mm.

A solution of water seepage and mortar ratio

- water seepage solution preparation: Waterproof rust agents: water = 1: 5-6 (volume, mix)
- water seepage mortar ratio Cement: sand: water seepage solution = 1: 2.5-3: 0.5-0.6
- construction ratio (see table below)

Construction:

- Wipe waterproof barrier layer: Wipe a bonding layer slurry paste on the primary surface of waterproof layer with thickness of 2-3mm, add a 1cm thick layer waterproof mortar; when the initial setting compaction, and wipe with a wooden board into hemp stamp face, finally wiping waterproof mortar surface layer having a thickness of 1cm, light compaction roll when the initial setting. For decoration, wood should be wiped with a pockmarked face plate stamp. (Note: The waterproof layer and thickness can be adjusted according to design requirements
- Conservation: When the open operation should be carried out after the final setting mortar nursing, the same method with ordinary mortar, curing time can be 3-4 days.

Layer	Water seepage solution ratio Waterproof rust agents: water (by volume)	Mortar Ratio Cement: sand: water seepage solution
Bonding layer slurry paste	1:4	1 : 0.0 : 0.6
Layer waterproof mortar	1:5	1 : 2.0 : 0.5
Surface layer of cement mortar	1:6	1 : 2.5 : 0.5

2. Proportion of rust waterproof concrete construction and working

In concrete ratio:

- No. 325 slag cement 360kg: 700kg: sand stones 1200kg: water 185kg: waterproof rust inhibitor 8kg;
- No. 425 ordinary cement 420 kg: Sand 700kg: gravel 1110kg: Water 195kg: water proof. Rust inhibitor 8kg; (Note: before construction, the waterproof rust inhibitor should be formulated as an aqueous solution, the ratio of water: water = 1: 24.5 (weight ratio)

Construction

- Construction methods are same with ordinary concrete

ITCOSIL™
Silanes & Siloxanes

Uses

- Widely used in anti-rust roofing, internal and external walls, floors, bathrooms, kitchens basements and warehouses as well as waterproof concrete mechanism penetration
- For underground civil air defence projects: Such as culverts, bridges, dams, tunnels, large hydropower, water diversion project to reduce water erosion. Prevent weathering
- For a variety of pools: such as swimming pools, clean water tank, cesspool, water towers and so on
- Impregnation effect such as perlite board, house brick, cement block, high-rise building lightweight brick veneer, asbestos, inorganic fabrics, insulation materials, etc., so that it has significant waterproof, moisture: 4 for high-water inorganic aggregates
- The water-soluble architectural coatings waterproof, color protection, pollution prevention, anti-aging, it has been widely used in external wall finishes
- Used in latex paints, water glass, 107 plastic additives, it can markedly increase the water-based, and can maintain stable bond strength
- Used in oil drilling, adjustable mud viscosity and density, which can effectively prevent the collapse of drilling to improve drilling efficiency
- Open for post-oil pump, oil injection layer, a layer of oil to prevent the collapse of the crust skeleton. So that oil from wells far more successful exploitation
- For other special purposes to reduce water absorption and permeability

Using Restrictions

- The structure should not be used in a large number of water-soluble salts on the substrate, to avoid contact with high concentrations of salt;
- Should not be used in place of high-acid environment (due to the high acid environment is not conducive
- to participate in the reaction of carbon dioxide)
- Best construction temperature is 10°C - 35°C

Precaution

- The product is an alkaline aqueous solution, to avoid skin, eyes, mouth contact. It should be washed with water once splashed on the skin immediately; if splashed into the eyes, wash with water more than 15 minutes immediately, and sent to hospital for an examination promptly (do not wipe with solution).
- Within 24 hours should be applied to avoid the rain, water flushing or other intervention
- After diluted with water, it is best used in the same day, the remaining solution cannot fly-tips.
- If not in use, it should be sealed and stored in a cool, dry place.

Packaging

- Packed in iron, plastic barrels
- 240 Kgs drum,
- 60 Kgs plastic barrel

Storage and Handling

- Keep in cool, dry and well-ventilated place, far away from fire, heat source, Storage temperature < 30°C.
- Avoid direct sunlight, sealed tightly, and do not contact with air. Avoid moisture, no contact with oxidants, acid and alkali.

ABOUT

Integrated Chemical Specialties

- a division of Integrated Traffic Systems USA

Integrated Chemical Specialties comprises a competent team of professionals who strive hard to ensure the highest level of quality and service in our business. It is our goal to deliver every product meeting the quality and consistency that our customers expect, irrespective of its origin. Our specialty chemicals are used in a variety of applications and industries. We offer customized solutions through formulated products and excellent technical support.

We consider ourselves a versatile and customer centric company that works closely with its customers to provide them the products they need. Our dedication and motivation have made us who we are today, as that also shapes our future.

At Integrated Chemical Specialties, we believe building solid partnerships with our customer is critical to our success. We as a company endeavor to follow the right path, which will allow us to continue meeting new challenges and exceeding expectations.

YOUR **SAFETY** OUR **CONCERN**

WWW.ITSUSAINC.COM

5850 San Felipe Street,
5th Floor, Houston, TX - 77056
(713)-337-0152
(713)-400-7801
info@itsusainc.com

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