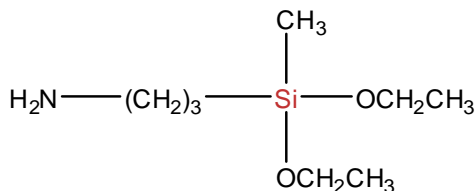


SiSiB[®] PC1120

gamma-Aminopropylmethyldiethoxysilane

CHEMICAL STRUCTURE



INTRODUCTION

SiSiB[®] PC1120 is a colorless to yellowish liquid with an amine-like odor which is soluble in alcohols and aliphatic and aromatic hydrocarbons.

SiSiB[®] PC1120 acts as an adhesion promoter between inorganic materials and organic polymers, as a surface modifier and for material changes to chemical substances.

TYPICAL PHYSICAL PROPERTIES

CAS No.	3179-76-8
EINECS No.	221-660-8
Formula	C ₈ H ₂₁ NO ₂ Si
Molecular Weight	191.3
Boiling Point	88°C [15mmHg]
Flash Point	68°C
Color and Appearance	Colorless transparent liquid
Density _{25/25°C}	0.916
Refractive Index	1.4272 [20°C]
Min. Purity	98.0%

Reactivity:

SiSiB[®] PC1120 is a bifunctional organic compound in which the silicon-functional OC₂H₅ -groups hydrolyze in the presence of water to give ethanol and the corresponding reactive silanols, which can be bonded to an inorganic substrate; the organophilic amino group can interact with a suitable polymer.

The hydrolysis of SiSiB[®] PC1120 takes place autocatalytically in a short time of about 5-10 minutes. Hydrolysates having a concentration of < 5% are stable for more than 72

hours. The pH is about 11.

Examples of suitable inorganic substrates are glass, glass fibres, glass wool, mineral wool, silicic acid, quartz, sand, cristobalite, wollastonite and mica; also suitable are aluminium hydroxide, kaolin, talc, other silicate fillers, metal oxides and metals.

Examples of suitable polymers are epoxy resins, polyurethanes, phenolic resins, furane resins, melamine resins, PA, PBT, PC, PEK, PE, EVA, PP, PVB, PVAC, PVC, acrylates and silicone.

SiSiB® PC1120 can undergo reactions with ketones or esters as solvents. Silane or silanized substrates can react with carbon dioxide to form the corresponding carbonates resp. carbamates. Product modifications are possible through addition reactions with suitable monomeric or polymeric compounds (for example isocyanates, epoxides, etc.) or by co-condensation with polysiloxanes.

APPLICATIONS

SiSiB® PC1120 is an important or even essential constituent in many applications. SiSiB® PC1120 is particularly important as an additive to cold-curing phenolic and furan foundry resins to improve the flexural strength of sand/resin elements with very long shelf life of the resins.

Further examples are:

- Glass fiber/glass fabric composites: as size constituent or finish
- Glass and metal primers
- Abrasives: as additive to phenolic resin binders
- Sealants and adhesives: as primer or additive and for chemical modification
- Mineral-filled composites: for pretreatment of fillers and pigments or as additive
- Synthesis of functional silicones

The most important effects which can be achieved using PC1120 are improvements in product properties, such as

- Adhesion
- Mechanical properties, for example flexural strength, tensile strength, impact strength and modulus of elasticity
- Moisture and corrosion resistance
- Electrical properties, for example dielectric constant, volume resistivity

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And improvements in processing properties, such as

Better filler dispersion

Rheological behavior: reduction in viscosity, Newtonian behaviour

Higher degree of filling

PACKING AND STORAGE

SiSiB[®] PC1120 is supplied in 180Kg steel drum or 900Kg IBC container.

In the unopened original container SiSiB[®] PC1120 has a shelf life of one year in a dry and cool place.

NOTES

All information in the leaflet is based on our present knowledge and experience. We reserve the right to make any changes according to technological progress or further developments. Performance of the product described herein should be verified by testing.

We specifically disclaim any other express or implied warranty of fitness for a particular purpose or merchantability. We disclaim liability for any incidental or consequential damages.

Please send all technical questions concerning quality and product safety to: silanes@SiSiB.com.