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TECHNICAL DATA SHEET

Silquat® C18

Alkyl quaternary ammonium
trimethoxy silane solution

DESCRIPTION

Silquat C18 is an alkyl quaternary ammonium trimethoxy silane solution. **Silquat C18** is designed to react with many surfaces upon drying leaving a durable film of alkyl quaternary ammonium salt on the surface. The active in **Silquat C18** is described by the CAS name 3-(trimethoxysilyl)propyl dimethyl octadecyl ammonium chloride.

TYPICAL PROPERTIES

Appearance	Clear liquid
Colour, (Gardner)	2
Viscosity, cPs	30
Active Content, %	70
Water Solubility, 1%/10%	Soluble/Soluble

USES AND APPLICATION

Silquat® C18 provides durable hydrophobicity to reactive surfaces such as glass, textiles, metals, minerals, paper, porcelain and other common surfaces. The silane end of the molecule reacts with OH, NH, SH, COOH, and similar functional groups on the surface to provide a chemically bonded octadecyl quaternary compound.

On non-functional surfaces such as many plastics, the silane functionality has no groups to react with but will still react with other silane molecules or other components in the formula, often forming a semi-durable treatment.

On porous surfaces such as concrete, this small surface active molecule penetrates into the substrate to provide protection below the surface.

Silquat C18 can be applied directly to a surface or formulated. It is important to formulate with methanol, another alcohol or in some cases water to keep the silane molecules from reacting with themselves and then nucleating out of solution. Test the formulation stability.

Silquat C18 is typically used at 0.1 - 3.0% weight percent of the active.

REGULATORY

Siltech has not evaluated or registered **Silquat C18** as a biocide.

Many other quaternary ammonium compounds (QACs) are known to have potent antibacterial and antiviral properties. The fatty alkyl group is pulled in to the lipid bilayer of the bacterial cell wall or the enveloped virus's envelope. The charged quaternary nitrogen lyses the lipid bilayer leaving the organism unprotected.¹

A competitive product with the same CAS name as **Siltech C18** is registered with the EPA and has been used as an antibacterial coating for many years. Siltech does not have the requisite FIFRA registration and can only offer the product to customers who have a registered use. The product must be properly formulated, evaluated and registered before it can be legally used.

SAFETY

Before handling, read the Material Safety Data Sheet and container label for safe use, physical and health hazard information.

THIS MATERIAL IS NOT FOR MEDICAL OR DRUG USE.

STORAGE AND SHELF LIFE

When stored in the original, unopened containers between 10 and 40°C, **Silquat C18** has a shelf life of 12 months from date of manufacture.

PACKAGING

Silquat C18 is available in 20kg and 200kg containers.

LEGAL DISCLAIMER

Siltech Corporation believes that the information in this technical data sheet is an accurate description of the typical uses of the product. Siltech Corporation, however, disclaims any liability for incidental or consequential damages, which may result from the use of the product that are beyond its control. Therefore, it is the user's responsibility to thoroughly test the product in their particular application to determine its performance, efficacy and safety. Nothing contained herein is to be considered as permission or a recommendation to infringe any patent or any other intellectual property right.

SILQUAT® is a registered trademark of Siltech Corporation, Toronto, Ontario, Canada.

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¹ C.F. Gerba, *Quaternary Ammonium Biocides: Efficacy in Application*, **Applied and Environmental Microbiology**, Vol 81, Number 2, 464-469 (2015)