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TECHNICAL DATA SHEET

Silmer® OH ACR Di-400
Low Odor Silicone Acrylate Functional Pre-polymer

DESCRIPTION

Silmer® OH ACR Di-400 is a 100% active high molecular weight silicone acrylate fluid. It is primarily used to give permanent slip, release and mar resistance to UV-curable coatings systems. It is also used to modify acrylate polymers to improve surface and physical properties. The **Silmer OH ACR** series products are made with a methyl acrylate free process providing low odor acrylated silicones.

TYPICAL PROPERTIES

Appearance	Clear to Hazy Liquid
Colour, Gardner	1
Viscosity, Cps	1,500
Active Content, %	100
Water Solubility (1 % & 10%)	Insoluble/ Insoluble
IPA Solubility (1% & 10%)	Soluble/ Soluble
Xylene Solubility (1% & 10%)	Soluble/ Soluble
Molecular Weight (gm/mol)	22,000
Equivalent Weight (gm/mol)	11,000

APPLICATION & USES

Silmer OH ACR Di-400 can be co-reacted with acrylate monomers and polymers to include a silicone moiety into the polymer structure. **Silmer OH ACR Di-400** can be reacted with UV or free radical cured systems for coatings, plastics, resins, 3D printing inks and other applications to incorporate silicone into the matrix. When co-reacted during the polymerization stage, **Silmer OH ACR Di-400** improves the surface and physical properties of the polymers or matrix. These benefits include improved slip, anti-blocking, release, mar resistance, stain resistance, surface smoothness, flexibility and hydrophobicity.

The OH functionality as well as acrylate ester functionality (as a Michael Addition acceptor) gives **Silmer OH ACR Di-400** the ability to also react into condensation cured systems such as urethanes, epoxies and polyesters. This will provide benefits as listed above.

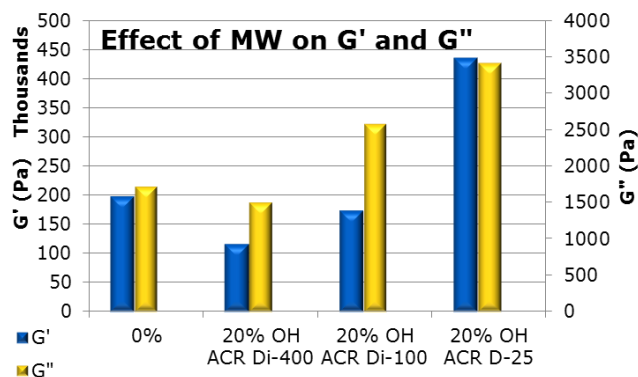
With the low odor feature of these products, they are especially well-suited for 3D printing and other sensitive applications.

Silmer OH ACR Di-400 is especially good, and the best of the series, at tape release and similar applications due to its high molecular weight.

The typical recommended amount of **Silmer OH ACR Di-400** for polymer modification ranges from 2.0-5.0%. As a reactive additive, the recommended amount ranges from 0.1-2.0%.

Applications Data

Incorporation of a di-functional reactive polymer like **Silmer OH Di-400** will lower the Storage and Loss Moduli (G' & G'') and decrease the hardness; while increasing flexibility and impact strength especially at low temperatures. The higher the molecular weight and the higher the use level, the greater the effects. This is illustrated in the chart using a simple UV cured system of **Silmer OH ACR C50** as cross-linker and **Silmer OH ACR Di-25**, **Silmer OH ACR Di-100**, or **Silmer OH ACR Di-400** as extenders. These increase in MW from Di-25 to Di-400. The Shore A hardness is 20 in the control, 10 with **Silmer OH ACR Di-25** and 0 with the other two, higher MW products.



SHELF LIFE

When stored in the original, unopened containers between 10 and 40°C, **Silmer® OH ACR Di-400** has a shelf life of 24 months from date of manufacture.

PACKAGING

Silmer OH ACR Di-400 is supplied in 20kg pails and 200kg drums.

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.

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