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TECHNICAL DATA SHEET

Silmer® OH ACR series
Low Odor Silicone Acrylate Functional Pre-polymers

DESCRIPTION

Silmer® OH ACR Series is a 100% active molecular weight silicone acrylate fluid with secondary hydroxyl groups. They are designed to give permanent slip, release and mar resistance to UV-curable coatings systems. **Silmer OH ACR Series** products can also be 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

Property	Silmer OH ACR Di-10	Silmer OH ACR Di-25	Silmer OH ACR Di-50	Silmer OH ACR Di-100	Silmer OH ACR Di-400	Silmer OH ACR C50
Appearance	Clear Liquid	Clear Liquid	Clear Liquid	Clear Liquid	Clear to hazy liquid	Clear to hazy liquid
Colour, Gardner	1	2	1	1	1	1
Viscosity, Cps	120	140	200	300	1500	1500
Active Content, %	100	100	100	100	100	100
Solubility						
Water (1%/10%)	Insoluble/ Insoluble	Insoluble/ Insoluble	Insoluble/ Insoluble	Insoluble/ Insoluble	Insoluble/ Insoluble	Insoluble/ Insoluble
IPA (1%/10%)	Soluble/ Soluble	Soluble/ Soluble	Soluble/ Soluble	Soluble/ Soluble	Soluble/ Soluble	Soluble/ Soluble
Xylene (1%/10%)	Soluble/ Soluble	Soluble/ Soluble	Soluble/ Soluble	Soluble/ Soluble	Soluble/ Soluble	Soluble/ Soluble
Mol. Wt. (gm/mol)	1,100	2,200	4,000	7,800	30,000	12,000
Eq. Wt. (gm/mol)	550	1,100	2,000	3,900	15,000	4,000
Type	Extender	Extender	Extender	Extender	Extender	CrossLinker

APPLICATION & USES

Silmer OH ACR Series can be co-reacted with acrylate monomers and polymers to incorporate a silicone moiety into the polymer structure. **Silmer OH ACR Series** products 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 Series** products improve 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 Series** 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.

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

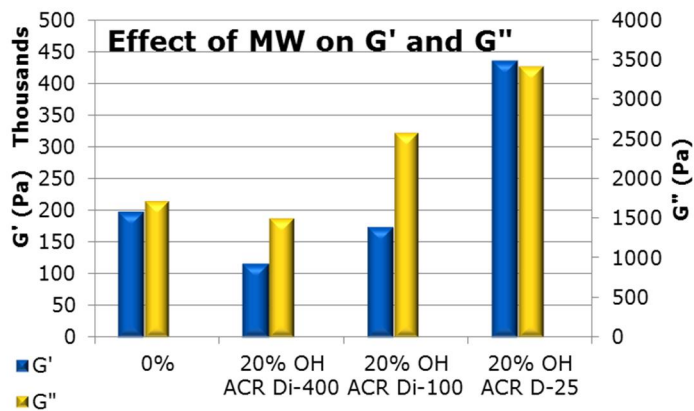
APPLICATIONS DATA

The linear, di-functional Silmer OH ACR Di-xx products act as extenders, increasing the flexibility and elongation of the system. Conversely, the trifunctional **Silmer OH ACR C50** acts as a crosslinker providing the hardness and strength.

Incorporation of a low Mol. Wt. extender di-functional reactive polymer, such as **Silmer OH Di-25** will increase the Storage and Loss Moduli (G' & G'') and decrease the hardness; while increasing flexibility and impact strength especially low temperature impact strengths. 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 ACRs** have a shelf life of 24 months from date of manufacture.

PACKAGING

Silmer OH ACRs are 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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