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TECHNICAL BULLETIN

## Silmer<sup>®</sup> Q Resins

### **DESCRIPTION**

**Silmer<sup>®</sup> Q Resins** are a series of MQ resins (INCI name Trimethylsiloxysilicate) which consist of tetrafunctional Q groups (silicon atom surrounded by four oxygen groups) end-capped with mono functional M groups (silicon atom with one oxygen group). These resins vary in molecular weight (MW) and crosslink density, resulting in physical properties ranging from liquid pourable resins, at lower MW, to film formers at higher MW. Offerings with higher crosslink densities are dispersed in isododecane (IDD) solvent for ease of use.

### **Properties of Silmer Q Resins**

Product	Appearance	Actives	Viscosity	Refractive Index
Silmer <sup>®</sup> Q25	Clear water white liquid	100%	500 cps	1.404
Silmer <sup>®</sup> Q20	Clear water white liquid	100%	1000 cps	1.404
Silmer <sup>®</sup> Q12 IDD	Clear water white liquid Will form a film on dry down	70% in IDD	20 cps	1.413
Silmer <sup>®</sup> Q9 IDD	Clear water white liquid Will form a film on dry down	70% in IDD	40 cps	1.413

### **USES AND APPLICATION**

#### **Lipsticks**

Silmer Q25 and Silmer Q20 are recommended at 1-3% levels. For lip-gloss 1-10% can be used. These products provide high gloss, color enhancement, softness and non-transfer properties. They exhibit outstanding adhesion and water-resistance to provide an enduringly smooth, non-tacky product.

#### **Foundations**

Silmer Q20 is recommended at 1-5% levels. It provides excellent stability to foundation formulations while imparting a softer, more powdery feel.

#### **Eye Shadow**

Silmer Q25 is recommended at 1-5% levels. Provides an improved sensorial by eliciting softness during application.

#### **Mascara and Eye Stay**

All Silmer Q products provide good color enhancement, water proofing, pigment dispersion and film formation. Recommended use levels are 1-5%.

#### **Sunscreen**

All Silmer Q products provide improved sensorial, but Silmer Q25 provides the most desirable aesthetic on the skin. Recommended use level is 1-5%. Silmer Q products also enhance waterproofing and stability in sunscreen formulations.

#### **Shampoo and Hair Conditioner**

Silmer Q20 and Q25 are recommended for shampoos and conditioners at usage levels from 0.3-1% by weight. They provide excellent conditioning, wet and dry comb and do not build up on the hair over time.

The following chart may assist with selection of the most appropriate MQ resin offering for specific personal care applications.

<b>Application</b>	<b>Silmer Q25</b>	<b>Silmer Q20</b>	<b>Silmer Q12 IDD</b>	<b>Silmer Q9 IDD</b>
Face Cream	✓	✓	x	x
Lip Stick	✓	✓	x	x
Moisturizing Stick	✓	✓	x	x
AP Stick	✓	✓	x	x
Foundation	✓	✓	✓	✓
Lip Gloss	✓	✓	✓	✓
Sun Screen	✓	x	✓	✓
Mascara	✓	✓	✓	✓
Eye Stay	✓	✓	✓	✓
Eye Shadow	✓	✓	✓	✓
2-in-1 Shampoo	✓	✓	x	x
Hair Conditioner	✓	✓	x	x

Pure liquid MQ resins (Silmer Q25 and Q20) used in stick products (lipsticks, AP, etc.) increase softness, but maintain strength (rigidity) and reduce sweating. These benefits allow formulators to create both soft and rigid lip and AP sticks. MQ resins have outstanding compatibility with other ingredients including emulsifiers, waxes, natural oils/butters, sunscreens, silicones and organic emollients, pigments, pearlescents, powders and plant extract additives.

Silmer Q25 or Q20 enable formulators to partially or totally replace color dispersion solvents within water-in-oil, water-in-silicone emulsions and anhydrous makeup, while intensifying color and stability.

Highly crosslinked Silmer Q12 IDD and Silmer Q9 IDD resins may suitably replace low active, high viscosity dimethicone crosspolymer gels, by providing similar desirable properties at easier to process viscosities. Silmer Q12 IDD and Q9 IDD will both impart a more cushiony, smooth powdery feel, as well as water repellency and transfer-resistant properties.

#### **SAFETY**

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

#### **STORAGE AND SHELF LIFE**

When stored in the original, unopened containers between 10 and 40°C, **Silmer Q25 and Q20** have a shelf life of 12 months from date of manufacture.

When stored in the original, unopened containers between 10 and 40°C, **Silmer Q12 IDD and Q9 IDD** have a shelf life of 24 months from date of manufacture.

#### **PACKAGING**

**Silmer® Q Resins** are 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.

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