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# Technical Data Sheet

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**Product Name: Silsurf<sup>®</sup> DMC-AP**

**INCI Name:** PEG 18 PPG 6 Dimethicone

**Chemical Description** Silsurf DMC-AP is a dimethicone copolyol specifically designed to improve the release of the antiperspirant actives.

**Typical Properties**

**Silsurf DMC-AP**

Appearance	Yellow Liquid
Foreign Matter	Free of
Water Solubility (5% weight)	Soluble
Color (Gardner)	2
Surface Tension	24 mN/m

**Applications** The structure of Silsurf DMC-AP has been specifically designed to aid in the release of antiperspirant actives from sticks. It is recommended that the product be added to the antiperspirant actives before incorporation into the stick. The product is patent pending.



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## **Analytical Method**

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### **Determination of Active Release from Antiperspirant Stick**

**Principle:** Antiperspirant compositions exist in either the active form, which provides functionality, or in a non-active form. The conversion from the non-active form to the active form is referred to as release. The concentration of active is measured by chloride titration, since the chloride ion is only found in the aqueous phase for active form. The percent release is calculated by the ratio of active divided by total times 100.

**Reagents:**

1. Silver nitrate (0.05%N)
2. 10% Nitric acid

**Apparatus:**

1. Constant temperature water bath.
2. Lab stirrer with RPM reading
2. 250 ml beaker
3. Analytical Balance
4. Weighing dish
5. Spatula
6. Filter paper (Whatman #4)
7. Funnel
8. Automatic Chloride titrator (Brinkman)
9. Magnetic Stirrer
10. Thermometer

**Procedure:**

1. Weigh 199 grams of DI water into a 250 ml beaker and heat to 37°C
2. Place the beaker in a constant temperature water bath and mix well at 250 RPM with an overhead mixer.
3. Weigh 1.1 gram of antiperspirant stick by shaving with a spatula from the surface of the stick.
4. Mix for 30 and proceed to step 6.
5. Repeat steps 1-3 three more times only this time mix for 60, 120 and 240 minutes
6. Filter through filter paper and collect liquid for chloride titration.
7. Add 15 mo of 10% nitric acid and mix well.
8. Analyze for chloride ion using the auto titrator
9. Calculate % chloride

$$\frac{\% \text{ Chloride titrated}}{\text{Theoretical \% Chloride}} \times 100 = \% \text{ Active}$$

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