

# Amino Functional Silicone Fluid

# TSF4709

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## PRODUCT DESCRIPTION

TSF4709 is a self-curable silicone because it has both amino functional groups and reactive alkoxy end groups. It gives unique elastic handling touch and excellent stretch back properties to fabrics.

## KEY PERFORMANCE PROPERTIES:

- ◆ Good affinity to fabrics
- ◆ Easy to formulate
- ◆ Imparts durable softness to many fabrics

## APPLICATIONS

- ◆ It gives unique elastic handling touch to a variety of fabrics.

## TYPICAL PRODUCT DATA

| Property                           | Value                     |
|------------------------------------|---------------------------|
| Silicone content, %                | 100                       |
| Viscosity, Pa·s {cP}    25°C(77°F) | 2.0 {2000}                |
| Specific gravity    25°C(77°F)     | 0.98                      |
| Appearance                         | Light yellow, translucent |
| Refractive index    ( $n_D^{25}$ ) | 1.404                     |
| Equivalent weight*                 | 10000                     |
| Amine equivalent    (meq / g)**    | 0.10                      |

\* grams of TS4709 required to neutralize one equivalent of HCl

\*\* milliequivalents of base/gram

## EMULSIFICATION INSTRUCTIONS

15% Silicone Microemulsion (22.5% solid)

- Blend the following ingredients using an overhead stirrer.

|            |                                  |
|------------|----------------------------------|
| 15.0 parts | TSF4709                          |
| 7.5 parts  | Leocol TD-70 (LION)*             |
| 7.5 parts  | Ethylene glycol mono butyl ether |

\* POE(7) tridecyl ether (HLB 12.2)
- Slowly add 20 parts of ion exchanged water with good agitation.
- Slowly add 0.2 parts of acetic acid. Agitate well for 5-10 minutes to insure homogeneity.
- Slowly add 49.8 parts of ion exchanged water (part two ion exchanged water) with good agitation.  
Note: if desired, biocides may be added in this step.
- Filter the emulsion to remove any dirt or undissolved gel particles. Fine filtration is not required.

\* Bath temperature of process 1-3 will be recommended as 40-50°C to get transparent micro emulsion.

“ATTENTIONS: NOT FOR INJECTION INTO HUMANS”

# Product Data

## TSF4709

### AN EVALUATION RESULT

|                            |                                                                                                                                                                                       |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ◆ Treating bath            | :2% solid of above emulsion                                                                                                                                                           |
| ◆ Test fabrics             | :Cotton woven, Cotton knitted                                                                                                                                                         |
| ◆ Treating condition       | :Padding (pick up 100%) Drying (130°C, 3min)                                                                                                                                          |
| ◆ Evaluation of softness   | :Pure Bending Tester (KES-FB2 : KATO TECH Co., LTD)<br>Calculation value* = (B+2HB)/2<br>B : Bending rigidity (gf.cm <sup>2</sup> /cm) 2HB : Hysteresis of B (gf.cm <sup>2</sup> /cm) |
| ◆ Evaluation of smoothness | :Surface Tester (KES-FB4 : KATO TECH Co., LTD)<br>MID** = average of kinetic friction co-efficient<br>MMD***= variation of MIU                                                        |
| ◆ Yellowing                | :Delta b value measured after 175°C, 30min by color differential tester based on untreated fabric color                                                                               |
| ◆ Stretch back property    | :JIS L1018<br>elongation and recovery percentage under constant weight                                                                                                                |

| Cotton Woven | Handling Value | Calculation Value * | MID** | MMD*** | Delta b |
|--------------|----------------|---------------------|-------|--------|---------|
| TSF4709      | elastic        | 0.060               | 0.11  | 0.015  | 0       |
| TSF4703      | slippery       | 0.043               | 0.08  | 0.012  | +1.6    |
| Untreated    | rough          | 0.070               | 0.14  | 0.015  | 0       |

| Cotton knitted | Elongation (%) | Recovery(%) |
|----------------|----------------|-------------|
| TSF4709        | 50             | 96          |
| TSF4703        | 38             | 91          |
| Untreated      | 21             | 91          |

### HANDLING AND SAFETY

- ◆ Wear eye protection, protective gloves and mask at all times when working with this product.
- ◆ Maintain adequate ventilation in the work area at all times.

### STORAGE

- ◆ Store in a cool, dry place out of direct sunlight, with container tightly closed.
- ◆ Keep out of the reach of the children.

### PACKAGING

1kg can available in cases of 10 cans  
18kg/pail, 200kg/drum

TSF4709E  
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### FOR INDUSTRIAL USE ONLY

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