

# Liveo™ ST-Elastomer 10

## Silicone Topical Excipients

Excipient for pharmaceutical applications

Liveo™ ST-Elastomer 10 is a mixture of high molecular weight silicone elastomer (12%) in decamethylcyclopentasiloxane (D5).

### COMPOSITION

Silicone elastomer and decamethylcyclopentasiloxane (cross-linked silicone elastomer gel)  
INCI NAME: Cyclopentasiloxane (and) Dimethicone Crosspolymer.

### APPLICATIONS

Areas of potential use for Liveo™ ST-Elastomer 10 encompass a wide range of skincare or topical delivery applications including:

- Excipient for pharmaceutical topical formulations
- Oral care
- Skin care
- Sun care

### PACKAGING

This product is available in 400g cans, 15kg pails and 180kg drums. Samples are available in 400g cans.

### Product information

Colour Clear

### Rheological properties

Viscosity 400000 mPa.s

### Other properties

Density 940 kg/m<sup>3</sup> ISO 1183  
Non volatile content, 2h at 105°C 12.5 %

### Storage and stability

Shelf life 24 months

### Additional Information

How to use Disperse the oil-phase into Liveo™ ST-Elastomer 10 using simple mixing. There is no need for post-shearing. Liveo™ ST-Elastomer 10 provides decamethylcyclopentasiloxane which has already been thickened and can provide a novel form of delivery for other formulation components. Thickening of formulations can be achieved using a cold process.

### FORMULATION TIPS



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Liveo™ ST-Elastomer 10 may be formulated into oil-in-water emulsions, water-in-silicone emulsions, water-in-oil emulsions and anhydrous products.

- It may be added to the oil phase or silicone phase in an emulsion formulation.
- It may be post-added to emulsions provided the emulsion is viscous enough for the Liveo™ ST-Elastomer 10 to be dispersed.
- For ease of use, its viscosity may be reduced by blending with dimethicone or cyclomethicone.
- It may be formulated with organic oils and silicon-based materials with the use of mixers and may be subjected to high shear devices such as homogenisers and sonolators.
- It is dispersible in a variety of liquid oils.
- Because the elastomer is stable, Liveo™ ST-Elastomer 10 may be subjected to heat for a short duration. When heat is used, the material should be processed in an enclosed vessel to prevent the cyclomethicone from volatilising; the vessel should be inerted at temperatures over 60°C.

### Processing

Liveo™ ST-Elastomer 10 is a viscous product but has the unique characteristic of being a shear-thinning material. The following information will aid in the selection of the proper equipment to use when processing Liveo™ ST-Elastomer 10 out of a drum.

### Pump recommendation

GRACO BULLDOG® 10:1 Pump with follower plate. For more information, contact GRACO at +1-800-367-4023.

Note: GRACO offers various BULLDOG models, and other pump manufacturers may offer similar equipment equally capable of processing the material efficiently. Users should work directly with the pump manufacturer to determine the best design for their needs.

### Customer-specific pump design considerations

#### 1. Pressure and flow requirements

- a) Air supply pressure: Will depend on plant's air supply capabilities.
- b) Discharge pressure: Will depend on total pressure required to move the silicone elastomer blend from point A to point B. Pressure drops due to elevation, frictional losses within the piping, fittings, valves, filters, etc., will need to be considered.
- c) Flow requirements: Will depend on how quickly the user wishes to transfer the silicone elastomer blend from a 210 liter drum into a vessel.

#### 2. Material viscosity in cP at the application temperature

Liveo™ ST-Elastomer 10 is shear thinning. Effective viscosity is 80,000-100,000cP. This is only an example; it is the responsibility of the user to determine the effective viscosity based on the user's application. Once the material is pushed through the pump by the follower plate and processed in



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the pump, the product will shear thin and process as a lower-viscosity fluid.

### 3. Construction material for wetted parts

Stainless steel is recommended but carbon steel may also be used.

### 4. Construction materials for seals and gaskets.

VITON® or TEFLON® materials are recommended. Please contact DuPont for alternatives.

### Clean-up

Liveo™ ST-Cyclomethicone 5-NF, which dilutes the viscosity of Liveo™ ST-Elastomer 10 to water thin, is recommended for soaking or cleaning equipment. Other non-polar solvents may work as well.

## Chemical Media Resistance

### Alcohols

- ✓ Isopropyl alcohol, 23°C
- ✓ Ethanol, 23°C

### Ketones

- ✓ Acetone, 23°C

### Other

- ✗ Water, 23°C

### Symbols used:

- ✓ possibly resistant  
Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).
- ✗ not recommended - see explanation  
Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

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