DuPont™ Liveo™ Silicone Resin Blend technology

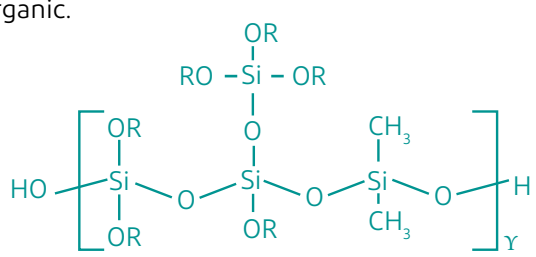
Offering formulation flexibility and diverse film-forming properties for topical applications

Safety, efficiency and substantivity benefits are key to formulating over-the-counter or pharmaceutical topical skin products that increase consumer satisfaction. Topical skin medications containing the right topical ingredients can make the difference in patient comfort and compliance while offering a long-lasting film barrier on the skin.

Liveo™ Silicone Resin Blend technology provides various film-forming and long-lasting benefits in formulations. It is designed to provide formulation flexibility with a wide range of materials offering diverse film-forming properties for a chosen application.

Liveo™ Silicone Resin Blend technology

This technology is a blend of silicone resin solubilized in a range of carrier solvents – volatile or non-volatile/silicone or organic.



A range of potential benefits and properties

By selecting the appropriate resin blend in terms of solid content and carrier solvent, desired specific benefits and properties can be achieved, including:

- Medium to long-lasting film
- Permeable to semi-permeable film
- Range of film flexibility and durability
- Drying time tunability
- Wash-off resistance
- Ability to deliver actives/drugs

Applications

Liveo™ Silicone Resin Blend technology can be incorporated easily into many product forms:

- Creams for skin barrier applications
- Sprays that offer ease of application and protect the skin
- Gels for novel forms in challenging skin conditions

Target indications

- **Ostomy care:** Skin barrier and protective film
- **Wound care:** Scar management, liquid bandages, skin barrier
- **Skin care:** UV protection, sunscreen
- **Dermal care:** Drug delivery therapy for acne, actinic keratosis, antifungal, pain management, etc.

DuPont™ Liveo™ Silicone Resin Blend offering[1]

Product	Chemical description	Carrier	Main benefits
Liveo™ TE-9720 Resin Blend[1]	Dimethicone and Trimethylsiloxysilicate	Dimethicone 100 cSt	• Film-forming behavior • Wash-off resistance • Long-lasting film • Non-occlusive/breathable material
Liveo™ TE-9721 Resin Blend[1]	Caprylyl Methicone and Trimethylsiloxysilicate	Caprylyl Methicone	• Film-forming behavior • Non-occlusive/breathable material • Long-lasting film • Good compatibility with various excipients • Wash-off resistance

[1]New development with low cyclosiloxane content. Has been designed to meet the substance of very high concern (SVHC) threshold for concerned cyclosiloxanes (below 0.1%) proposed by REACH regulation (EC) No 1907/2006.

Proposed Liveo™ Silicone Resin Blend technology toolbox[2]

Specification writers: These values are not intended for use in preparing specifications. Please contact your local Liveo™ representative prior to writing specifications on these products.

Carrier fluid	Resin level	Drying time	Occlusivity[3]	Film flexibility	Film integrity		Rub-off resistance	Substantivity on skin[4]	Substantivity vs. washes[4]	Product name[5]
					1 hr	6 hr				
Silicone volatile										
HMDS, 0.65 cSt	20%	++++	Non	0	+++	0	+	++++	+++	C
	40%	++++	Non	0	++++	++	++	++++	+++	C
	50%	++++	Non	0	++++	+++	++	++++	+++	C
Dimethicone, 2 cSt	40%	++	Non	0	++++	+	++	++	0	C
Organic volatile										
Isododecane	20%	+++	Non	0	+++	0	++	+	+	C
	40%	+++	Non	0	++	0	+++	+	+	C
Silicone fluid										
Dimethicone, 5 cSt	40%	0	Non	+++	+++	0	0	+	+	C
	50%	0	Non	+++	+++	0	0	+	0	C
Dimethicone, 100 cSt	30%	0	Non	+++	++++	+++	0	++	+	TE-9720
	40%	0	Semi	+++	++++	+++	0	++	+	C
Specialty silicone fluid										
Caprylyl Methicone	40%	+	Non	0	++++	+	0	++	+	C
	50%	+	Non	0	++++	+	+	++	+	TE-9721
Organic solvent										
Isopropyl Myristate	40%	0	Non	0	+++	0	0	+	+	C

[2]Other combinations are available on demand. | [3]Non = non-occlusive; Semi = semi-occlusive. | [4]For substantivity evaluation versus time and washes, materials were diluted at 5% in solvent to avoid saturation of the peak. | [5]C = concept test.

Legend: + to ++++ = level of benefit (lowest to highest); 0 = no benefit.

About DuPont™ Liveo™ Healthcare Solutions

DuPont™ Liveo™ is a globally recognized leader in technology for a broad range of innovations in medical devices, biopharmaceutical processing and pharmaceutical solutions. DuPont high-performance materials help create safer healthcare environments and protect the health of patients and healthcare providers worldwide. We help enable smarter healthcare and positive patient outcomes.

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