

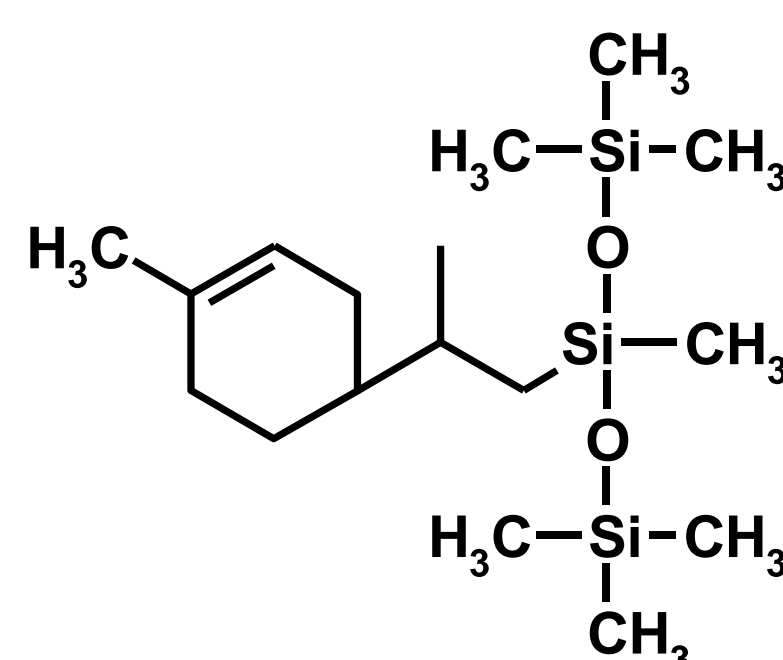
VERTASIL® TM-L01 LIMONENYLTRISILOXANE:

INCI: Methylcyclohexenyl Isopropyl Trisiloxane

A Multifunctional Cyclomethicone Replacement

ABSTRACT

Vertasil® TM-L01 is a Gelest multi-functional hybrid fluid offering a natural component from limonene—the major ingredient of citrus rind oil—and a low molecular weight siloxane.



With consumers demanding more natural or “greener” ingredients in their products, **Vertasil® TM-L01** offers formulators another alternative to D5 & D5/D6 blends. **Vertasil® TM-L01** shares similar properties to cyclopentasiloxane including compatibility and solubility in common cosmetic ingredients, viscosity, and sensory experience on skin. The cleansing properties of **Vertasil® TM-L01** offer the formulator an additional benefit in a variety personal care and cosmetic products.

PHYSICAL PROPERTIES

Property	TM-L01	Cyclopentasiloxane
Color	Colorless	Colorless
Refractive Index	1.426	1.398
Organic Compatability	Yes	Yes
Viscosity (cSt)	4-5	3.8-3.9
Volatility	Slight	Yes
Flash Point °C	>65	77
Boiling Point °C	295	210

Low surface tension enables **Vertasil® TM-L01** to spread easily on the skin. As a result, the hybrid fluid will reduce the tack of materials such as natural waxes, butters, and oils. It exhibits the typical silicone “slip”, provides a non-greasy application, and incorporates a silky soft after feel in formulations that is more lubricious on skin than D5. Overall, in-house panelists reported that the feel of **Vertasil® TM-L01** is comparable to an improvement over D5 at a 1:1 ratio in an oil or wax and in finished formulations.

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SOLUBILITY

Vertasil® TM-L01 has improved solubility characteristics over cyclopentasiloxane, permitting greater compatibility with common raw materials including natural oils and waxes, hydrocarbons, esters, and sunscreens.

Solubility	TM-L01	Cyclopentasiloxane
Natural Oils	Soluble	Soluble
Castor Oil	Insoluble	Insoluble
Esters	Soluble	Soluble
Butters	Soluble _{Hot}	Soluble _{Hot}
Natural Waxes	Soluble _{Hot}	Insoluble to Soluble _{Hot}
Lanolin Oil	Soluble	Soluble _{Hot}
Silicones	Soluble	Soluble
Vitamin E	Soluble	Soluble
Hydrocarbons	Soluble	Soluble

CLEANSING PROPERTIES

The gentle cleansing properties of **Vertasil® TM-L01** are due to the insertion of limonene onto an emollient silicone segment. This combination offers the formulator an additional benefit in bath, cleansing products, and wipes.

BENEFITS

Used in combination with natural or synthetic ingredients, **Vertasil® TM-L01** benefits when compared to D5 or D6 include:

- ✓ Non Volatile, More Environmentally Friendly
- ✓ Contains a Natural Component
- ✓ Improved Sensory Experience
- ✓ Reduced Tack and Greasiness
- ✓ Richer, Lubricious After Feel
- ✓ Soft and Silky After Feel
- ✓ Improved Spreadability
- ✓ Fast absorption on Skin
- ✓ Colorless & Odorless
- ✓ Light & Dry Skin Feel
- ✓ Cleansing Properties

RECOMMENDED USES

Use in the following products to replace D5 or D5/D6:

- Sunscreens, Tanning Oils, and After Sun Products
- Foundations, Lip Products, and Color Cosmetics
- Men's Grooming Products
- Bath & Cleaning Products
- Creams and Lotions
- Hair Care
- Wipes
- Sticks



FORMULATION

Cleansing Milk with Vertasil® TM-L01

Phase A

Deionized Water		q.s.
Ultrez 20 ¹	Acrylates/C10-20 Acrylates Crosspolymer	0.20
Actives		q.s.
Zemea ^{®2}	Propanediol	1.00

Phase B

Vertasil® TM-L01³ Limonenyltrisiloxane		10.00
Liponate [®] IPM ⁴	Isopropyl Myristate	
PG3-O ⁴	Polyglyceryl-3 Oleate	2.00
Tween [™] 80 ⁵	Polysorbate 80	0.50
Vitamin E	Tocopherol	0.50

Phase C

Red 40 ⁶		q.s.
Preservative		q.s.
Grapefruit & Wheatgrass ⁷	Fragrance	0.50
		100.00

Suppliers:

¹ Lubrizol ² DuPont Lyle Tate ³ Gelest ⁴ Lipo ⁵ Croda ⁶ Emerald ⁷ The Lebermuth Co.

Formula LF2-068

Find more information in:
Hybrid Fluids for Personal Care

