

Rheological Additives

Gilugel®

What is Gilugel®

Gilugel® is a lipogel which lends both stability and viscosity to cosmetic emulsions. Gilugel® is composed of 20% Aluminium-Magnesium-Hydroxide-Stearate, as the active material, which is based on the inorganic pharmaceutical active, Hydrotalcite. The remaining 80% consists of specific oils or ester, in which the active material is gelled.

Gilugel® takes on the colour and odour of the oil or ester used for gelling. Gilugel® is free from preservatives, stabilisers and components of animal origin.

Application Areas and Benefits

Skin Care	stability, excellent skin feel, increased water content in W/O emulsions
Sun Care	thermostability (see fig 1), increased SPF, Water resistance
Decorative Cosmetics Liquid Make-up	homogeneous pigment distribution
Barrier Creams	protective film formation, resistant to aqueous and oily media
Antiperspirants	lends consistency to sticks and creams

How Gilugel® Works

Gilugel® is a functional additive which as a result of the patented gelling agent, Aluminium-Magnesium-Hydroxide-Stearate, improves the stability and rheological characteristics of emulsions. Depending on the application area, additional formulation benefits can be achieved by using specific Gilugel® types.

Stabilisation of emulsions with waxes can be avoided by using Gilugel®, allowing formulators to take full advantage of the dermatological benefits of water in oil (W/O) formulations.

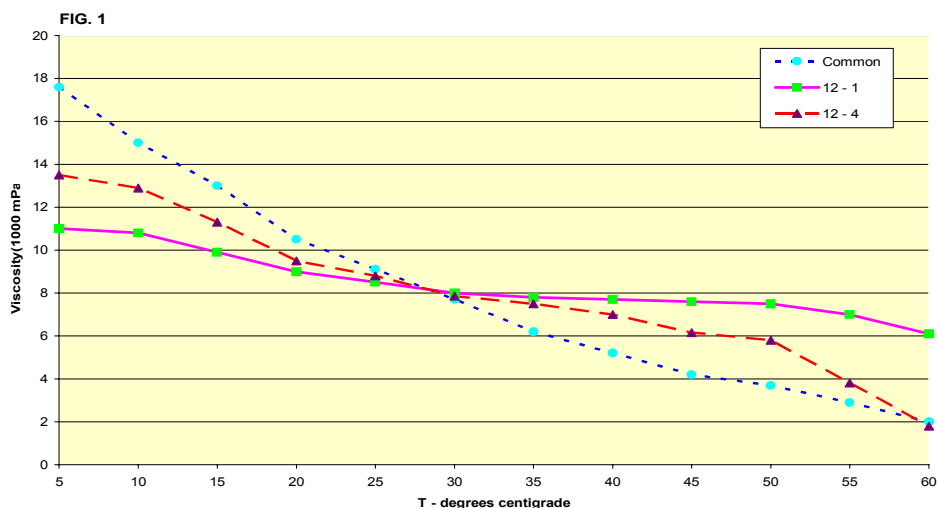
Skin Feeling

the absence of waxes, in combination with the thixotropic properties of Gilugel®, allows the formulation of very light W/O emulsions (containing more than 80% water) with excellent skin sensory characteristics.

Pigment Distribution In formulations containing TiO₂, ZnO or Iron Oxide pigments, Gilugel[®] forms a layer on the surface of the particles which leads to improved pigment dispersion and prevention of reagglomeration, even on storage of the end product. This means that in sun care emulsions, a reduction in (SPF) over time is avoided and a favourable relationship is achieved between the level of pigments applied and the resulting Sun Protection Factor.

Water Resistance Tests have shown that sun care formulations containing Gilugel[®] maintain their SPF even after 3 hours of swimming. This water resistance can be attributed to the film forming characteristics of Gilugel[®] on the skin.

Thermostability Gilugel[®] lends high thermostability to formulations. In sun care products, for example, changes in viscosity are minimal even at extreme temperatures.



Ingredients (%)	12 - 1	12 - 4
Gilugel[®] JOB	2.00	-
Isopropylmyristate	5.00	5.00
Isohexadecane	5.00	5.00
Arlacel 481	1.70	1.70
Arlacel 989	2.00	2.00
Microcrystalline Wax	-	2.00
Octinoxate	6.00	6.00
Water	78.30	78.30

Figure 1 shows the change in viscosity of a sun care formulation containing Gilugel[®] (12 - 1) compared to a corresponding formulation containing microcrystalline wax (12 - 4) and a commonly known commercial product.

The formulation containing Gilugel[®] is the most stable at both higher and lower temperatures.

Antiperspirants The efficacy of anhydrous antiperspirant products can be negatively affected by the presence of high levels of hydrophobic waxes. The thickening properties of Gilugel[®] allow wax levels to be reduced to a minimum.

Gilugel® Types

	INCI Name
Gilugel® CAO	Castor (Ricinus Communis) Oil (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® DCC	Dicaprylyl Carbonate (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® EHS	Octyl Salicylate (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® EUG	Octyldodecanol (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® HPB	Hydrogenated Polyisobutene (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® JOB	Jojoba (Buxus Chinensis) Oil (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® MIG	Caprylic / Capric Triglyceride (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® MIN	Mineral Oil (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® OIN	Octyl Isononanoate (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® OMC	Octyl Methoxycinnamate (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® OS	Octyl Stearate (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® PIB	Polyisobutene (and) Aluminum / Magnesium Hydroxide Stearate
Gilugel® SIL-5	Cyclomethicone (and) Aluminum / Magnesium Hydroxide Stearate