



# OLIVEM<sup>®</sup> 2090

The ultimate W/O cold process emulsifier

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# OLIVEM® 2090

Hallstar has applied its knowledge in olive oil chemistry to create a unique product able to satisfy the most demanding consumers. Water-in-oil emulsions are widely used in cosmetics and pharmaceuticals, but it's known that they are difficult to obtain and stabilize. In addition, beauty customers strongly request finished products with a light sensorial profile. Olivem® 2090 represents the perfect solution thanks to its innovative chemical structure based on the combination of polyglycerol esters of olive oil fatty acids and polyricinoleic acid. Olivem® 2090 is a derived natural ingredient cold process W/O emulsifier offering exceptional emulsifying performance combined with excellent sensorial and hydration benefits for multiple applications.

## TECHNICAL DATA

- INCI: Polyglyceryl-4 Olivate/Polyricinoleate
- Appearance: light yellow viscous liquid
- Recommended concentration: 2-4%
- Patent application filed
- Olivem® 2090 G – Global version compliant with China Regulation INCI: polyglyceryl-4 Oleate (and) Polyglyceryl-3 Polyricinoleate

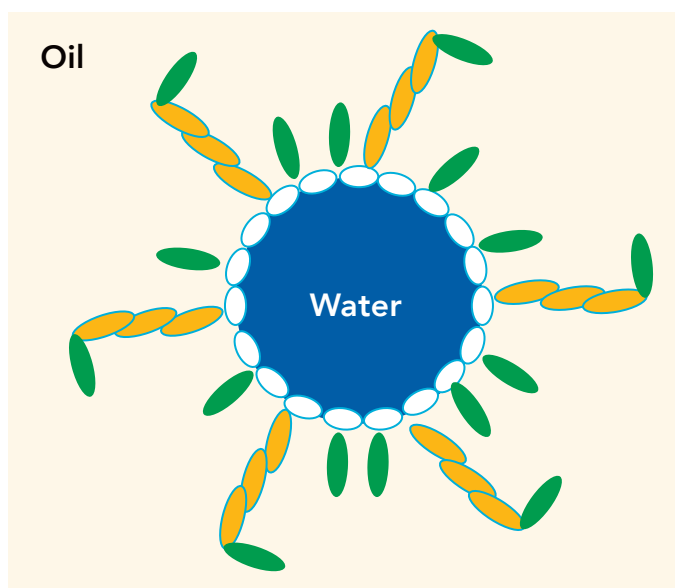
## REGULATORY PROFILE

- 100% derived natural ingredient
- ISO 16128 derived natural ingredient Index 1
- No palm-derived ingredient
- Readily biodegradable according to OECD 310
- 100% renewable
- Vegan friendly

## CHEMICAL STRUCTURE

Hallstar expertise in olive oil chemistry enabled the development of this unique ingredient, combining the emulsifying properties of polyglycerol esters of polyricinoleic acids and the skin benefits of olive oil fatty acids.

Olivem® 2090 creates a homogeneous layer that completely surrounds water droplets and confers high stability to the emulsion.



## PERFORMANCE OVERVIEW

### Oils

- High compatibility with every type of oil
- Excellent performance with vegetable oils
- Good performance with mineral oils and esters
- Good performance with texturizers, volatile oils, silicones and EtOH

### Preservatives and Additives

- Compatible with all types of preservatives
- Best thickeners: hydrogenated castor oil, hydrophilic fumed silica and Olivem® 900

### Inorganic Filters

- Improves the wettability of TiO<sub>2</sub> and ZnO

### Organic Filters

- Perfectly emulsifies all organic sun filters, conferring a superb sensoriality

## APPLICATIONS

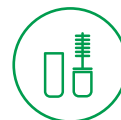
As a high-performing W/O emulsifier with broad cosmetic applications and excellent powder wetting and dispersing properties, Olivem® 2090 is highly suitable for sun care and skin care applications



Sun care



Skin care



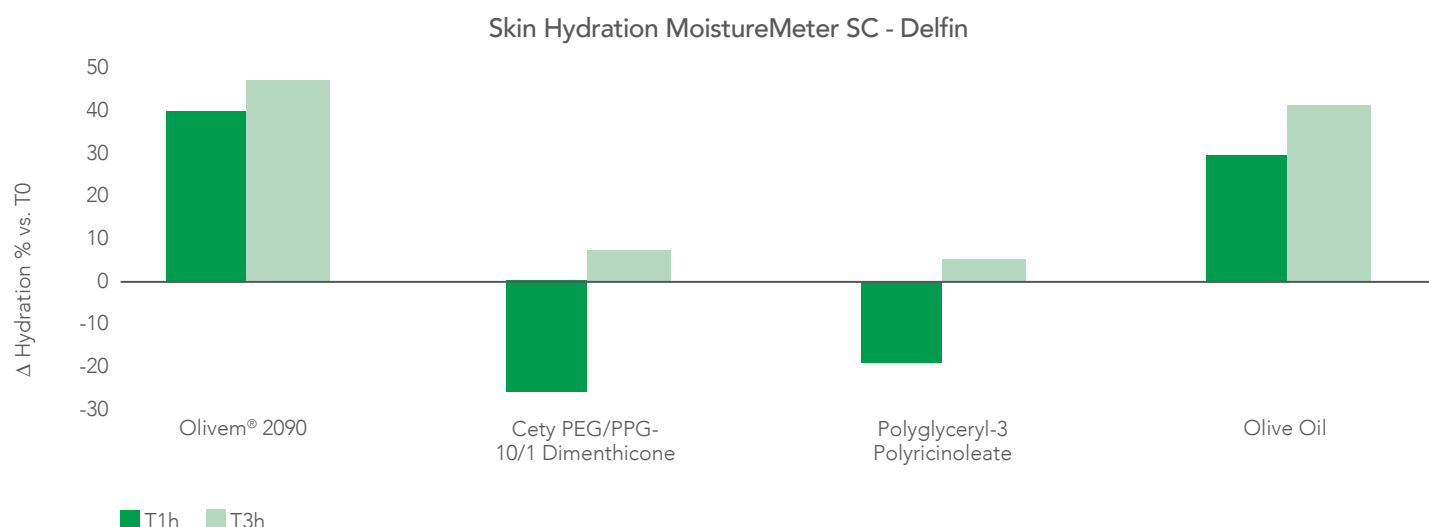
Make-up



Baby care

## OLIVEM® 2090 BIOMIMETIC EMOLLIENCE

This internal clinical test illustrates Olivem® 2090's multifunctionality. The olive oil origin of Olivem® 2090 confers hydrating properties similar to olive oil itself; in comparison, other W/O emulsifiers have less compatibility with skin.



Skin hydration test on direct application of 2mg/cm<sup>2</sup> on 12 panelists. Measurements after 1 hour and 3 hours.

T student test:

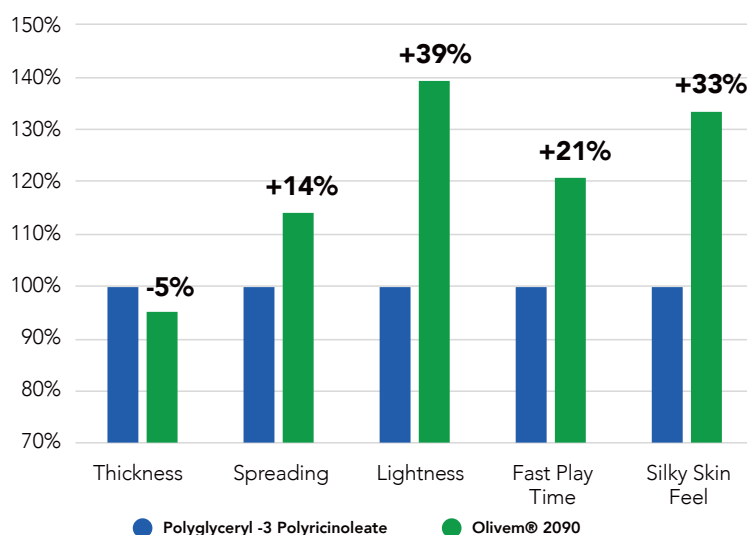
P<0.01 Very significant difference between Olivem® 2090 and the other emulsifiers both after 1h and 3h; no significant difference between Olivem® 2090 and olive oil, both at 1 and 3h

## SENSORIALITY

By using Olivem® 2090, it is possible to achieve completely natural water-in-oil emulsions with a light skin feel that can be used in all cosmetic applications (e.g., skin care, baby care, sun care, make-up and toiletries) with top-notch sensoriality.

Phase	INCI Name	% Wt	% Wt
A	Water (Aqua) (deionized)	74.0	74.0
	Magnesium Sulfate	0.50	0.50
	Glycerin	2.00	2.00
B	<b>Olivem® 2090</b>	<b>3.00</b>	-
	<b>Polyglyceryl-3 Polyricinoleate</b>	-	<b>3.00</b>
	Caprylic/Caprylic Triglycerides	10.0	10.0
	Dicaprylyl Ether	5.0	5.0
	Olea Europea (Olive) Fruit Oil	5.0	5.0
	Hydrogenated Castor Oil	0.5	0.5
	Preservative	a.n.	a.n.

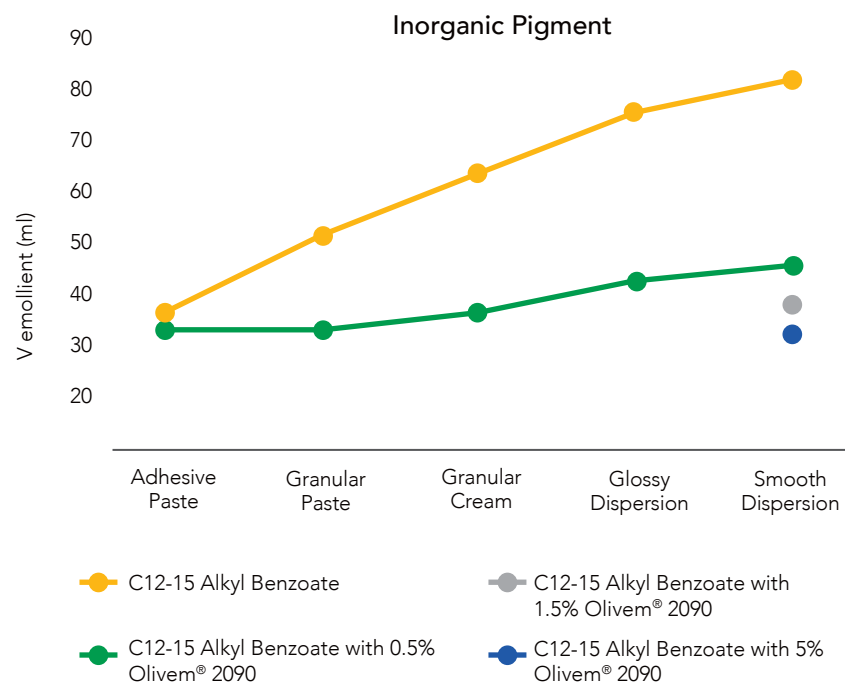
### Sensory Evaluation (Δ%)



Compared to more traditional emulsifiers used in equal percentages, Olivem® 2090 gives exceptional lightness and spreadability associated with fast absorption and silky after-feel. Quantitative Descriptive Analysis (QDA) conducted externally by 10 trained panelists, Δ % compared to benchmark base line.

## DISPERSING PROPERTIES

Olivem® 2090 allows a reduction in the quantity of oil necessary to obtain a good dispersion of powders.



Comparison of the dispersions: on the left inorganic pigment plus C<sub>12-15</sub> Alkyl Benzoate only; on the right inorganic pigment plus C<sub>12-15</sub> Alkyl Benzoate with 5% of Olivem® 2090 (anchor stirrer at 450rpm for 10 mins.)

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