

# CREAGEL® CRYSTAL



- VISCOSITY & TEXTURE MODIFIER
- THICKENER
- FILM FORMER
- MOISTURE BARRIER
- WATERPROOFING AGENT

**CREAGEL® CRYSTALS** are thickened lipids, which have been produced from various oils by a polymerisation process. **CREAGEL® CRYSTALS** are either fully synthetic or combinations of synthetic and natural lipids. They are anhydrous gels varying from transparent to slightly coloured depending on the lipid used.

In addition to standard products, **CREAGEL® CRYSTALS** can be made into higher viscosity (HV) and with an oil of your choice.

Without Creagel® Crystal AF



With 10% Creagel® Crystal AF



## Creagel® Crystals:

The water resistance of a W/O Sun Cream was tested with 10% Creagel® Crystal AF. The test method was based on FDA procedure (21CFR352.76). As a result can be said that Creagel® Crystals impart water resistance at 10% concentration.

Brookfield Viscosity (Pa.s) @20°C

Trade Name	INCI Name	Standard	HV (High Viscosity)	Refractive Index @20°C	Main Properties	Ideal Application
Creagel® Crystal AF	Hydrogenated Polydecene (and) Ethylene/ Propylene Copolymer	380-500	1000-2000	1,460-1,470	Transparent, richest skin feel of all, good film former and stabilizer, good disperser of UV-filters	Skin care, sun care and colour care
Creagel® Crystal DF 5	Hydrogenated Polyisobutene (and) Ethylene/ Propylene Copolymer	225-300	-	1,435-1,445	Transparent, good glide and silicone like slip, softness	Skin care, sun care and colour care
Creagel® Crystal HCO	Hydrogenated Coconut Oil (and) Ethylene/Propylene Copolymer	50-80	300-400	1,420-1,435	Transparent, light skin feel, light residue on the skin	Skin care, products with natural ideology
Creagel® Crystal HPB	Hydrogenated Polyisobutene (and) Ethylene/ Propylene Copolymer	250 - 450	-	1,450 - 1,470	Transparent, medium skin feel	Skin care, sun care and colour care
Creagel® Crystal ID	Isododecane (and) Ethylene/Propylene Copolymer	200-360	-	1,426-1,436	Transparent, lightest and driest skin feel, least of skin residue of all	Colour care, hair care
Creagel® Crystal IH	Isohexadecane (and) Ethylene/Propylene Copolymer	80 - 150	350 - 450	1,445 - 1,455	Transparent, medium skin feel	Skin care, sun care and colour care
Creagel® Crystal VS	Squalane (and) Ethylene/Propylene Copolymer	20-70	70-180	1,450-1,470	Transparent, benefits of the natural and photostable oil	Skin care and sun care, products with natural ideology
Creagel® Crystal 10 ISO 16128	Hydrogenated Vegetable Oil (and) Ethylene/ Propylene Copolymer	30 - 60	-	1,420 - 1,450	Transparent, light skin feel, NOI > 0.85 (ISO 16128)	Skin care, sun care and colour care for natural products
Creagel® Crystal 40 ISO 16128	Hydrogenated Vegetable Oil (and) Ethylene/ Propylene Copolymer	90 - 120	-	1,420 - 1,450	Transparent, medium skin feel, NOI > 0.85 (ISO 16128)	Skin care, sun care and colour care for natural products
Creagel® Crystal 100 ISO 16128	Hydrogenated Vegetable Oil (and) Ethylene/ Propylene Copolymer	110 - 140	-	1,420 - 1,450	Transparent, rich skin feel, NOI > 0.85 (ISO 16128)	Skin care, sun care and colour care for natural products

## Benefits

- Forms a long lasting pseudoplastic film
- Water resistant
- Increases photostability
- Gloss and shine
- SVHC free

## Properties

- Viscosity and rheology modifier
- Pseudoplastic
- Film former
- Allow hot and cold processing
- Excellent heat stability
- Stable gel structure, resistant to stirring
- Pumpable and easy to clean from machinery in comparison to Polyisobutenes



# CREAGEL® CRYSTAL

## Application Areas

### Skin Care

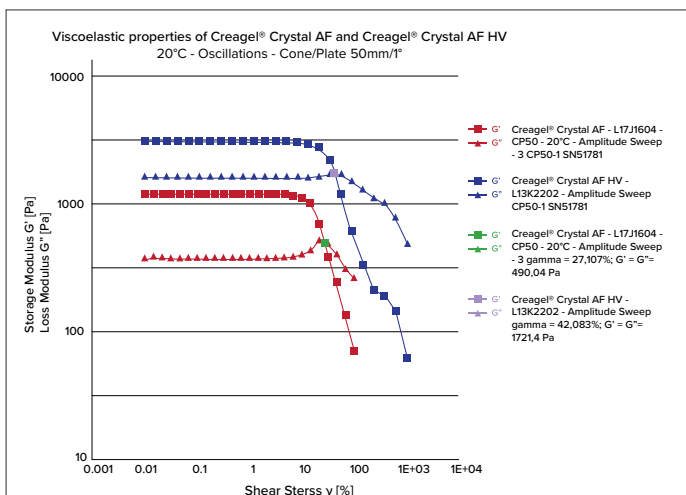
In skin care emulsions, **CREAGEL® CRYSTALS** thicken and modify rheological properties. Due to the **CREAGEL® CRYSTALS**, final products will form an occlusive film and have a longer play time. In addition to these physical properties, **CREAGEL® CRYSTALS** also provide the same skin care benefits as the lipids in which they are based on. They can also be used as a base for various anhydrous treatment products in which oil soluble ingredients can be added.

### Sun Care

**CREAGEL® CRYSTALS** stabilize the emulsion structures and the SPF values of sun care formulations with physical UV-filters. **CREAGEL® CRYSTALS** create a structure, which functions as a grid for physical UV-filters allowing an even distribution of the UV-pigments and preventing their sedimentation. When formulating with **CREAGEL® CRYSTALS**, less surfactant is needed and this reduces the skin penetration of chemical UV-filters. The hydrophobic quality of **CREAGEL® CRYSTALS** gives a possibility to formulate water resistant products.

### Colour Care

**CREAGEL® CRYSTALS** are ideal bases for lip glosses as they form a pseudoplastic and water resistant film. **CREAGEL® CRYSTALS** create a structure, which functions as a grid for colour pigments. This allows higher and more stable colour loading than traditional formulations. With **CREAGEL® CRYSTALS** it is possible to formulate products, which give an even colour distribution and a water resistant film. These properties are desirable especially in mascaras, eyeliners and lipsticks.



## Formulating

**CREAGEL® CRYSTALS** can be used in O/W and W/O emulsions and in anhydrous systems. When mixed with water, the **CREAGEL® CRYSTALS** become opaque, but if mixed with oils, they stay translucent.

### Emulsions

**CREAGEL® CRYSTALS** are added in the oil phase before emulsification, and they can be used in both hot and cold processes. **CREAGEL® CRYSTALS** tolerate strong mixing and homogenization and in general they don't have any specific requirements for the formulating process. TYPICAL USE LEVEL: 2-5%.

### Anhydrous Systems

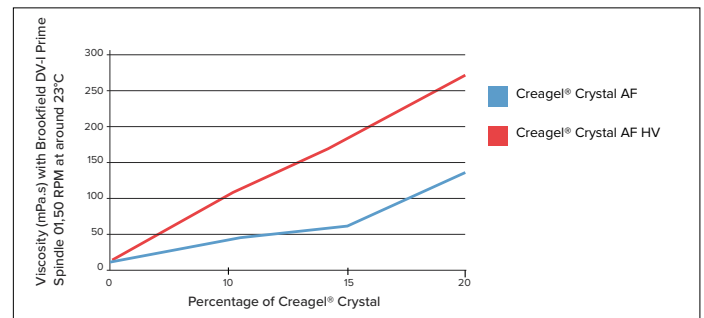
In lip gloss formulations, the colour dispersions can be added directly into **CREAGEL® CRYSTALS** without heating, and therefore the colour shading can be done in one time efficient step. **CREAGEL® CRYSTALS** are user-friendly materials as they are easy to clean from machinery, unlike traditional lip gloss ingredients.

In anhydrous products, the ingredients can be mixed together either in hot or cold process. **CREAGEL® CRYSTALS** are ideal bases for actives, which are sensitive to water, and they can also be used as bases for aromatherapy and other wellness treatments.

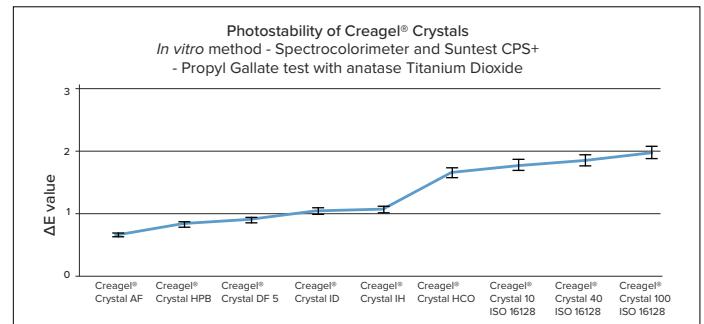
TYPICAL USE LEVEL: 40-60%.

### Packaging

25kg and 100kg open-head drums.



Viscosity evolution of Alphaflaw® 20 (Hydrogenated Polydecene) depending on the percentage of Creagel® Crystal added (classical or high viscosity grade).



Photostability testing of Creagel® Crystals by means of the DeltaE value comparing the product colour before and after 30 minutes of irradiation in the solar simulator. All of the references are photostable because they show a DeltaE value less than 2.