

TEGIN® Pellets

Emulsifier for the formulation of O/W creams

- Emulsifier based on vegetable raw materials
- Usage concentration of 6.0 – 8.0 %
- Emulsifier for O/W creams with pleasant application properties
- Formulations with all kinds of cosmetic oils
- Stable creams from pH 6.8 – 8.2

Personal Care

INCI name (CTFA name)

Glyceryl Stearate SE

Chemical and physical properties (not part of specifications)	
Form	pellets
Colour	ivory
HLB-value	approx. 12

Application

- TEGIN® Pellets is produced on basis of vegetable raw materials.
- The amount used, referred to the emulsion, is 6.0 – 8.0 %.
- Oil content (including emulsifier) can be varied from 20 – 40 %.
- All common cosmetic oils and fats can be emulsified; the resulting creams show good stability. However, the exclusive use of high viscous oils has a negative influence on the application properties.
- Additives containing acids or electrolytes act as destabilizers; they have to be dosed carefully.
- The pH value can be adjusted to 6.8 – 8.2.
- The creams are distinguished by good stability towards heat and freezing stress; stability between –15 °C and +50 °C is attainable.

Preparation

Oil phase including the emulsifier and water phase are heated separately to 65 °C.

We recommend adding the hot oil phase to the hot water phase **while stirring**. The coarsely dispersed pre-emulsion is then homogenized.

If the above mentioned processing is not possible, we therefore recommend to combine the hot water and oil phase **without stirring** (to avoid the building of the water-in-oil form) and start afterwards with the homogenisation.

Optimal diameter of the oil particles is approx. 5 µm.

Emulsion is cooled while slightly stirring; the stirrer has to guarantee equal horizontal and vertical thorough mixing, even at temperatures below 50 – 45 °C, when the low viscous emulsions become highly viscous to creamy.

Perfumes and other heat sensitive substances are added at 45 – 40 °C.

Homogenisation below 50 °C has a negative influence on the consistency promoting gel structures.

Influence of the degree of dispersion on emulsion quality

Coarsely dispersed emulsions appear dull and slightly inhomogeneous. Extremely small diameters for the present have a positive influence on the appearance of the creams (creams look "brilliant"), but they promote gradual formation of inhomogeneous structures ("gritty" creams), which become visible after days or weeks. These inhomogeneous structures are due to partial changes in the consistency promoting crystal structures. The latter are based on glycerol monodistearate and are stabilized by the hydrophilic potassium stearate.

Reason for the negative influence of intensive homogenisation presumably is: With increasing degree of dispersion a higher amount of potassium stearate is absorbed in the interface. This means that the portion available for building up the consistency-promoting gel structures decreases below the minimal dosage required for long-term stability. Average particle sizes of approx. 5 µm are optimal.

Recommended usage concentration

6.0 – 8.0 % TEGIN® Pellets

Packaging

600 kg pallet (24 x 25 kg)

Hazardous good classification

Information concerning

- classification and labelling according to regulation for transport and for dangerous substances
- protective measures for storage and handling
- measures in case of accidents and fires
- toxicity and ecological effects

is given in our material safety data sheets.

Guide Line Formulations

O/W Care Cream – ECOCERT conform – F 26/97	
Phase A	
TEGIN® Pellets	8.0 %
Stearic Acid	2.0 %
TEGOSOFT® CT (Caprylic/Capric Triglyceride)	14.0 %
Avocado (Persea Gratissima) Oil	10.0 %
Tocopheryl Acetate	0.9 %
Retinyl Palmitate	0.1 %
Phase B	
Glycerin	2.0 %
Water	63.0 %
Phase Z	
Preservative, Parfum	q.s.
Preparation:	
<ol style="list-style-type: none"> Heat phase A and B separately to approx. 70 – 75 °C. Add phase A to phase B with stirring. ¹⁾ Homogenise. Cool with gentle stirring. 	
¹⁾ Important information: If phase A has to be charged into the vessel first, phase B must be added without stirring .	

O/W Hand Care Treatment GP 4/99-11	
Phase A	
TEGIN® Pellets	6.0 %
TEGO® Alkanol 1618 (Cetearyl Alcohol)	2.0 %
Stearic Acid	2.0 %
TEGOSOFT® OS (Ethylhexyl Stearate)	3.0 %
Mineral Oil (30 mPas)	3.0 %
ABIL® 350 (Dimethicone)	1.5 %
ABIL® Wax 9840 (Cetyl Dimethicone)	2.0 %
Phase B	
Glycerin	7.0 %
Panthenol	0.5 %
Water	73.0 %
Phase Z	
Preservative, Parfum	q.s.
Preparation:	
<ol style="list-style-type: none"> Heat phase A and B separately to approx. 70 – 75 °C. Add phase A to phase B with stirring. ¹⁾ Homogenise. Cool with gentle stirring. 	
¹⁾ Important information: If phase A has to be charged into the vessel first, phase B must be added without stirring .	

O/W Natural Foot Care Balm	
F 34/01-4	
Phase A	
TEGIN® Pellets	6.0 %
TEGO® Alkanol 18 (Stearyl Alcohol)	1.0 %
Stearic Acid	2.0 %
TEGOSOFT® liquid (Cetearyl Ethylhexanoate)	4.0 %
TEGOSOFT® HP (Isocetyl Palmitate)	3.0 %
Phase B	
Glycerin	3.0 %
Water	78.0 %
Phase C	
Rosemary (Rosmarinus Officinalis) Oil	1.0 %
Pine (Pinus) Oil	1.5 %
Lavender (Lavandula Angustifolia) Oil	0.5 %
Phase Z	
Preservative, Parfum	q.s.
Preparation:	
<ol style="list-style-type: none"> 1. Heat phase A and B separately to approx. 70 – 75 °C. 2. Add phase A to phase B with stirring. ¹⁾ 3. Homogenise. 4. Cool with gentle stirring. 5. Add phase C below 35 °C. 	
¹⁾ Important information: If phase A has to be charged into the vessel first, phase B must be added without stirring .	

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