TEGIN® M Pellets
TEGIN® 4100 Pellets

Consistency-enhancer and co-emulsifier for O/W emulsions

- Usage concentration of 1.0 – 5.0 %
- Vegetable based

Personal Care

INCI name (CTFA name)

Glyceryl Stearate

Chemical and physical properties (not part of specifications)

Form	pellets
Colour	ivory
HLB-value	approx. 4

Application

- TEGIN® M Pellets or TEGIN® 4100 Pellets is used as a stabilizer in creams and lotions of the oil-in-water-type, because it has viscosity-increasing and emulsion-stabilizing properties.
- In combination with hydrophilic anionic, cationic, amphoteric or nonionic emulsifiers, finely dispersed, stable O/W emulsions are obtained.
- In contrast to self-emulsifying glycerol-mono-di-stearates (e. g. TEGIN®)
  TEGIN® M Pellets or TEGIN® 4100 Pellets possess only weak emulsifying properties.

Preparation

TEGIN® M Pellets or TEGIN® 4100 Pellets is added to the oil phase.
Combination of TEGIN® M Pellets or TEGIN® 4100 Pellets with fatty alcohols like e. g. TEGO® Alkanol 16, 18 or 1618 are used for the formulation of O/W emulsions.
The ratio 2 parts TEGIN® M Pellets or TEGIN® 4100 Pellets and 1 part TEGO® Alkanol 16, 18 or 1618 is tested successfully.
We therefore recommend for the preparation of creams to heat oil phase and water phase separately to approx. 65 °C; for lotions oil phase and water phase are heated separately to 80 °C.
Furthermore we recommend to add the hot oil phase to the hot water phase **while stirring**. The coarsely dispersed pre-emulsion is then homogenized.
If it has to be charged with the oil phase due to production-related conditions, the water phase must be added to the oil phase **without stirring** (in order to avoid the formation of a water-in-oil emulsion) and homogenisation has to be started afterwards.

During cooling, a constant horizontal and vertical movement of the emulsion has to be ensured. The viscosity of the liquid emulsion increases to a creamy consistency, as the hydrated consistency promoters solidify.

Polyacrylates such as TEGO® Carbomer 141 or TEGO® Carbomer 134 are added as an oil-dispersion (e. g. in mineral oil, decyl oleate, octyl stearate; not in triglycerides) is added at 60 °C. Then the emulsion is homogenized again.
Perfume, temperature-sensitive substances or electrolyte containing ingredients are added at 35 - 45 °C.
Neutralization of the emulsion is done at approx. 35 °C.
The particle size of the dispersed oil droplets of long-term stable emulsions is approx. 1 - 5 µm. More coarsely dispersed emulsions tend to separate.

Recommended usage concentration

1.0 - 5.0 % TEGIN® M Pellets or TEGIN® 4100 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

Summer Feel Moisturizing Cream MK 84/07-1	
Phase A	
TEGO® Care 450	3.0 %
TEGIN® M Pellets	2.5 %
TEGO® Alkanol 18	1.5 %
TEGOSOFT® MM	2.0 %
TEGOSOFT® TIS	2.0 %
ABIL® 350	0.5 %
Cyclomethicone	4.3 %
Jojoba (Buxus Chinensis) Oil	1.0 %
Tocopheryl Acetate	1.0 %
Ethylhexyl Methoxycinnamate	2.0 %
Butyl Methoxydibenzoylmethane	1.0 %
Phase B	
Glycerin	3.0 %
Water	68.2 %
Phase C	
Polyacrylamide; C13-14 Isoparaffin; Laureth-7	1.0 %
Phase D	
Water	5.0 %
Dihydroxyacetone	2.0 %
Phase E	
Citric Acid (10% solution)	q.s.
Phase Z	
Preservative, Perfume	q.s.

Preparation:

1. Heat phase A and B separately to approx. 80 °C.
2. Add phase A to phase B with stirring.[1)]
3. Homogenise.
4. Cool with gentle stirring to approx. 40 °C and add phase C.
5. Homogenise for a short time.
6. Cool with gentle stirring and add phase D below 30 °C.
7. Adjust pH value to 4.0 – 4.5 with phase E.

[1)] Important information:
If phase A has to be charged into the vessel first, phase B must be added **without stirring**.

O/W Body Souffle Cream MK 77/06-2	
Phase A	
TEGIN® 4100 Pellets	1.5 %
TEGO® Alkanol 18	3.5 %
TEGOSOFT® DEC	23.0 %
Phase B	
TEGO® Care CG 90	1.0 %
TEGOSOFT® PSE 141 G	2.0 %
Glycerin	3.0 %
Water	64.2 %
Phase C	
TEGO® Carbomer 341 ER (Acrylates / C10-30 Alkyl Acrylate Crosspolymer)	0.2 %
TEGOSOFT® DEC	0.8 %
Phase D	
Sodium Hydroxide (10 % in water)	q.s.
Phase E	
TEGO® Betain 810 (Capryl/Capramidopropyl Betaine)	0.8 %
Phase Z	
Preservative, Perfume	q.s.

Preparation:

1. Heat phase A and B separately to approx. 80 °C.
2. Add phase A to phase B with stirring.[1)]
3. Homogenise.
4. Cool with gentle stirring to approx. 60 °C and add phase C.
5. Homogenise for a short time.
6. Cool with gentle stirring and add phase D and E below 40 °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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