

Technical Information

TEGOMER® DA 646

TEGOMER® DA 646 is a wetting and dispersing additive based on polyether technology and can be used as dispersant in liquid or solid concentrates. Furthermore TEGOMER® DA 646 is an emulsifier technology to replace APEO in polymer dispersions.

Physical properties

Appearance (25 °C)	liquid, yellowish to red coloured, clear
Active content	100 %
Refractive index (25 °C)	1.502 - 1.510
Viscosity (25 °C)	200 - 800 m Pas

Application

TEGOMER® DA 646 is a liquid dispersing additive used for the surface treatment of pigments to improve dispersion properties of:

- organic pigments
- inorganic fillers e. g. talc
- inorganic pigments e. g. titanium dioxide, ultramarine blue, iron oxides

TEGOMER® DA 646 can be used for the manufacturing of liquid color pastes, based on oils, polyols or phthalates, containing:

- organic pigments
- carbon blacks

Due to its HLB balance the additive is even suitable for the manufacturing of water-based pigment concentrates. These can be used in water-based or hydrophobic let-down systems afterwards.

TEGOMER® DA 646 is a primary or secondary emulsifier for the polymerization of acrylates or PVAc.

Starting formulation can be found on page 2 of this leaflet.

Dispersion type / continuous phase	0	5
Water-based dispersion		
Mineral oil vegetable oil		
Plasticizer (adipates, Phthalates)		
Polyol		
Sealants (TEGOPAC, VS Polymer)		
Epoxy resins, UP-resins		

0 = no effect, 5 = highly recommended

	% AOP* (100 % dispersant)	% AOP TEGOMER® DA 646
Filler	0.2 - 2.0 %	0.2 - 2.0 %
Inorganic Pigment	1.0 - 5.0 %	1.0 - 5.0 %
Organic Pigment	10 - 30 %	10 - 30 %
Carbon black	10 - 50 %	10 - 50 %
Nano particles	5 - 15 %	5 - 15 %

*AOP = additive on pigment/filler

At temperatures below 15°C slight turbidity can occur. This does not affect the product quality. The product should be stirred and slightly heated to reverse that completely.

Application as pigment treatment:

TEGOMER® DA 646 can be applied in the pigment manufacturing process either to a water-based pigment slurry or during the final milling procedure (for instance steam milling). Both methods achieve a suitable surface treatment of pigment. The amount of additive used should be calculated on the amount of filler/pigment (0.5 - 3.0 % as supplied).

Application as emulsifier for the polymerization of acrylates or PVAc:

Formulation example of a PVAc dispersion:

Pos	Substance	Weight (g)
1	Water	211.00
2	Polyvinyl alcohol. Gohsenol GH-17R	7.70
3	TEGOMER® DA 646 (100 % active)	3.85
4	Ammoniumperoxodisulfate	1.53
5	Water	8.00
6	Natriumacetate Trihydrat	1.40
7	Vinylacetate	150.00
8	Ammoniumperoxodisulfate	0.39

Formulation example of an acrylic dispersion:

Pos	Substance	Weight (g)
1	Substance	170.00
2	Water	7.42
3	REWOPOL® SB FA 50 (31 % active)	1.84
4	TEGOMER® DA 646 (100 % active)	72.00
5	Ethylacrylate	76.00
6	Methylmethacrylate	27.00
7	Butylacrylate	5.00
8	Acrylic acid	100.00
9	Water	1.00

Application as dispersant in concentrates:

The required dosage level depends on the nature of the solid particle and composition of polymeric formulation to use it in water-based or liquid colour pastes with a hydrophobic continuous phase.

Benefits

The use of TEGOMER® DA 646 offers several advantages:

- high loaded pigment pastes or masterbatches
- excellent rheological properties without gelling in liquid pastes
- improved durability
- higher colour strength
- less speck formation
- improved mechanical properties
- solvent- and nonylphenol ethoxylate-free emulsifier technology
- pure acrylates as well as those with high EHA content for adhesive formulation reach fine particle size distribution if it is used as emulsifier
- water pick up of emulsions and pigments / fillers is lowered

Surface treated pigments with TEGOMER® DA 646 can be used in hydrophilic and hydrophobic surroundings.

Registration status

The ingredients of TEGOMER® DA 646 are listed in the following chemical inventories:

EINECS, TSCA, DSL, ENCS, PICCS, IECSC, KECL, TCSI and NZIOC

Based on the submitted information of our raw material suppliers we can confirm, that TEGOMER® DA 646 is compliant with EC Regulation 1907/2006 (REACH).

Storage stability

TEGOMER® DA 646 can be stored for a minimum of 12 months in original sealed containers at room temperature. Stir before use.

Packaging

200 kg plastic drums (800 kg each pallet)
950 kg containers

Hazardous goods classification

Information concerning

- classification and labelling according to regulations for transport of chemicals
- protective measures for storage and handling
- measures in case of accidents and fire
- toxicological and ecotoxicological effects

is given in our safety data sheets.

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