

Product Information

TEGO® STO 85 V

PRODUCT DESCRIPTION

TEGO® STO 85 V is a liquid, non-ionic emulsifier and dispersing additive based on polyoxyethylene-20 sorbitan trioleate.

Typical Properties

Property	Unit	Value
Acid Value	mg KOH/g	1-2
Appearance		clear liquid
Color Gardner		Max. 9
Hydrophilic-lipophilic Balance (HLB) Value		11.0
Hydroxyl Value	mg KOH/g	39-52
Saponification Value	mg KOH/g	80-95

The data represents typical values (no product specification)

TYPICAL APPLICATIONS

TEGO® STO 85 V is used as emulsifier and dispersing additive in a wide range of industrial applications, such as

- Metalworking fluids (MWF)
- Concrete release agents
- Agricultural formulations
- Pigment concentrates
- Adhesives & sealants

In case of MWF applications, TEGO® STO 85 V is mainly used for the formulation of environmentally friendly lubricants based on paraffinic mineral oils and hydrocrack oils.

As dispersing additive for pigment concentrates, TEGO® STO 85 V is used for the production of

- Liquid color pastes, which might be either water-based for water-based systems or oil-based to be used for the

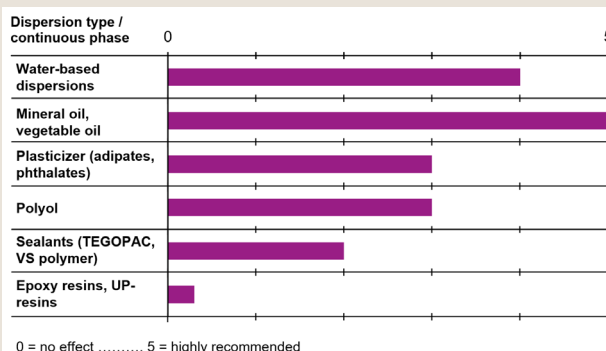
liquid coloration of thermoplastic polymers instead of solid concentrates

- Pastes of inorganic fillers, carbon blacks and organic pigments
- Solid masterbatches for prewetting of pigments in the production of masterbatches

Additionally TEGO® STO 85 V can be used for production of adhesives & sealant formulations based on TEGOPAC® polymers. TEGO® STO 85 allows to increase the filler content without having negative impacts on mechanical properties of the SMP formulations.

TEGO® STO 85 V is also used as primary or secondary emulsifier for the polymerization of acrylates or PVAc.

For agricultural applications, TEGO® STO 85 V is biocompatible with microbial control agents like *Trichoderma* spp., *Beauveria bassiana*, *Bacillus* spp.



Product Composition

Product Composition	Unit	Value
Active Content	%	100
Water Content, max.	wt%	5.2

The data represents typical values (no product specification)

BENEFITS & ADVANTAGES

TEGO® STO 85 V

- Is based on raw materials derived from natural origin
- Has excellent dermatological properties (no skin irritation)
- shows very good toxicological and ecological properties (no hazard warning labels, water hazard class 1)
- Has outstanding emulsifying and stabilizing properties, which ensures the spontaneous formation of finely dispersed and long-time stable oil-in-water emulsions
- Is biocompatible with microbial control agents like *Trichoderma* spp., *Beauveria bassiana*, *Bacillus* spp. in agricultural applications
- Offers as dispersant several advantages for the production of pigment concentrates
- Is universally suitable for inorganic and organic pigments
- Provides excellent colour strength development
- Enables low viscosity liquid pigment concentrates
- Is suitable as continuous phase for liquid pastes
- Is solvent- and nonylphenol ethoxylate-free
- Reaches fine particle size distribution if used as emulsifier in adhesive formulations based on pure acrylates as well as those with high EHA content
- Lowers water pick up of emulsions and pigments/ fillers

DOSAGE

Depending on other components (such as fatty acid amides, fatty acid amine soaps, etc.), which can be present in a lubricant formulation as well as the kind of base oils and the overall oil content, the required dosage of TEGO® STO 85 V may vary.

If TEGO® STO 85 V is used as sole emulsifier, 10 to 15 % are usually sufficient to obtain stable emulsions.

Control of an adequate HLB value adapted to the overall formulation is recommendable and may require an additional co-emulsifier (such as TEGO® STO V).

Appropriate screening tests to evaluate the required proportion of TEGO® STO 85 V and the hydrophobic co-emulsifier are advisable.

Used as dispersant, the required dosage depends on the technical equipment and selected filler or pigment grade. The dosage is calculated on specific pigment type (see table below).

In case of foam build up during pigment dispersion in water a highly effective and compatible defoamer concentrate could be applied (e.g. TEGO® Antifoam D 2315).

For the production of titanium dioxide and carbon black water-based concentrates the addition of a small amount of

amine (0.1 to 0.3 %) may be beneficial to neutralize the partially acidic pigment surface.

	% AOP* (100% dispersant)	% AOP* (100% dispersant)
Filler	0.2 – 2.0%	0.2 – 2.0%
Inorganic pigments	1.0 – 5.0%	1.0 – 5.0%
Organic pigments	10.0 – 30.0%	10.0 – 30.0%
Carbon black	10.0 – 50.0%	10.0 – 50.0%
Nanoparticles	5.0 – 15.0%	5.0 – 15.0%

* AOP = additive on pigment / filler

HANDLING & PROCESSING

For inorganic pigment concentrates the addition of a rheology modifier such as fumed silica has proven to be beneficial.

If TEGO® STO 85 V is used for the coloration of master-batches, the liquid material has to be applied with less than 5 parts of 100 parts formulation in a high speed mixing operation together with the pigment only. The polymer should be added afterwards. The mixture will occur dry again and can be dosed at the usual position.

TEGO® STO 85 V is soluble in ethanol, toluene, petrol and mineral oil. It is dispersable in water and peanut oil. Basic guide recipes and formulating hints are available upon request.

PACKAGING

200 kg plastic drum

Pallet size 4 x 200 kg corr. 800 kg

1 000 kg container

SHELF LIFE

In originally sealed containers TEGO® STO 85 V can be stored at temperatures below 40 °C for at least 1 year.

HAZARDOUS SUBSTANCE

Information concerning

- Classification and labelling according to regulations for transport and for dangerous substances
- Protective measures for storage and handling
- Measures in case of accidents and fire
- Toxicity and ecological effects

is given in our material safety data sheets.

REGISTRATION LISTING SUMMARY

The relevant components of TEGO® STO 85 V are listed/ registered or exempt in the following chemical inventories.

Registration Listings

Registry	Status
Australia (AICIS)	Yes
Canada (DSL)	Yes
EU (REACH)	Yes
European Union (EINECS/ELINCS)	Yes
Japan (ENCS)	Yes
Korea (KECL)	Yes
New Zealand (NZIoC)	Yes
Philippines (PICCS)	Yes
United States of America (TSCA)	Yes

FOOD CONTACT COMPLIANCE

Reg (EU) 10/2011

TEGO® STO 85 V may be used for the manufacturing of materials and articles within the scope of the current amendment of Regulation (EU) N° 10/2011, since the components are fully listed in Annex I, table 1. Specific

migration limits (SML) or restrictions do not apply. Dual-use additives or volatile solvents are not present by design.

BfR Rec XIV

TEGO® STO 85 V complies with the XIVth BfR Recommendation. Polymer dispersions that comply with the XIVth Recommendation may be further used as production auxiliary according to the BfR Recommendation XXXVI under B. I. 10.

FDA 21 CFR

TEGO® STO 85 V may be used in compliance with FDA 21 CFR 175.105, when separated from food by a functional barrier or used in compliance with GMP such that it does not become a component of food at de minimus levels. Tego STO 85V may be used in compliance with FDA 21 CFR 175.300, 176.210 and 178.3400. Tego STO 85V may be used in compliance with FDA 21 CFR 176.170 and 176.180, if used as defoamer at the wet end of the production.

China GB 9685-2016

TEGO® STO 85 V may be used in compliance with China GB 9685-2016 for plastic substances without limitations (GB: PE,PP,PS,AS,ABS,PA,PET,PC,PVDC: Dosage as necessary).

Disclaimer

This information and all further technical advice are based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third-party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

Evonik Operations GmbH

Interface & Performance
Goldschmidtstraße 100
45127 Essen, Germany
Phone Europe +49 201 173-2665
Phone Asia +86 21 61191 125
Phone Americas +1 804 727 0700
interface-performance@evonik.com
evonik.click/interface-performance