

Polyaldo® 10-2-P Pastillated Polyglyceryl Ester Plant-Based O/W Emulsifier for High Viscosity Emulsions



INCI Name: Polyglyceryl-10 Dipalmitate

SAP #: 140651

Versatile O/W Emulsifier

- Non-ionic emulsifier with HLB value of 11
- Superior product aesthetics with great long-term stability
- Stabilizer for high salt and pigment concentrations
- Excellent PEG alternative, EO-free emulsifier

Naturally Derived

- ECOCERT and Soil Association approved
- Manufactured from 100% plant-derived raw materials

High Flexibility

- In conjunction with Polyaldo® HGDS KFG (6-2-S), forms highly stable, high viscosity emulsions
- Efficient in concentrations from 1–3%
- Suitable for a wide range of formulation types

Polyaldo® 10-2-P Pastillated Polyglyceryl Ester: High Viscosity Emulsion Bases from a Natural Source

Polyaldo® 10-2-P Pastillated Polyglyceryl Ester is an excellent ester emulsifier made from raw materials of 100% plant origin. In conjunction with Polyaldo® HGDS KFG (6-2-S) Polyglyceryl Ester, this versatile emulsifier forms stable, O/W emulsions with high viscosities suitable for skin and hair care applications. In addition, Polyaldo® 10-2-P Pastillated Polyglyceryl Ester has a high salt tolerance and can help stabilize formulations with high pigment loads. Due to the non-ionic character of Polyaldo® 10-2-P Pastillated Polyglyceryl Ester, it is compatible with a broad range of co-emulsifiers. Furthermore, it is ECOCERT and Soil Association approved which makes Polyaldo® 10-2-P Pastillated Polyglyceryl Ester the smart choice for green and PEG-free formulations.

High Viscosity Emulsions with Polyaldo® 10-2-P Pastillated Polyglyceryl Esters!

Polyaldo® 10-2-P Pastillated Polyglyceryl Ester is composed of two parts; a hydrophilic head group and hydrophobic tail group. The hydrophilic head group consists of ten (10) units of glycerin while the hydrophobic tail group is made of two (2) molecules of palmitic acid, a fatty acid (fig. 1).

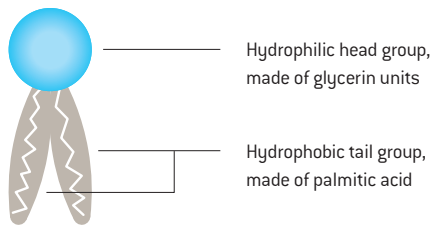


Fig. 1
Molecular representation of Polyaldo® 10-2-P Pastillated. The red represents the hydrophilic head group. The two yellow tails represent the hydrophobic tails.

Your One-Two Emulsifier Blend for High Viscosity Emulsions: Polyaldo® 10-2-P Pastillated and Polyaldo® HGDS KFG (6-2-S) Polyglyceryl Esters!

When combined with Polyaldo® HGDS KFG (6-2-S), another twin-tailed polyglyceryl ester made with stearic acid, Polyaldo® 10-2-P Pastillated Polyglyceryl Ester creates very high viscosity emulsions. This is due to the synergies between their molecular structures. Polyaldo® HGDS KFG (6-2-S) has a twin tail molecular structure, with a smaller hydrophilic head and larger hydrophobic tails, forming a triangle packing structure. Polyaldo® 10-2-P Pastillated has a relatively larger hydrophilic head versus its hydrophobic twin tails, which forms an inverted trapezoid packing structure (fig. 2a).

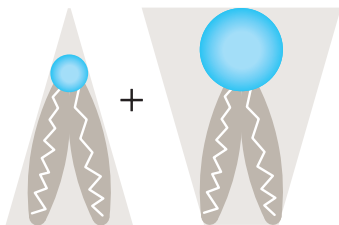


Fig. 2a

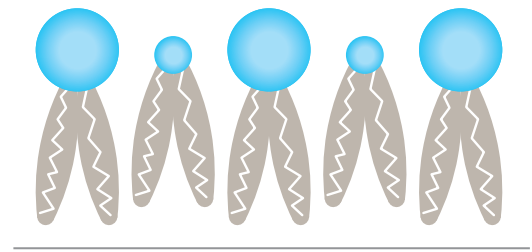


Fig. 2b

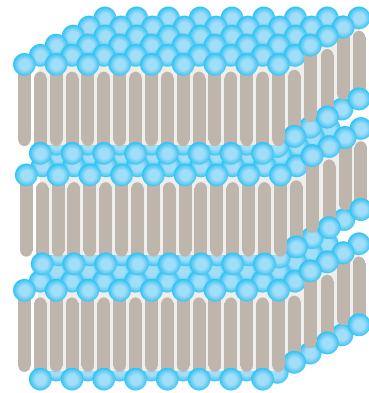


Fig. 2c

Fig. 2a, b, c The combination of Polyaldo® HGDS KFG (6-2-S) and Polyaldo® 10-2-p Pastillated form a novel order at the oil/water interface, creating lamellar structures.

When the two emulsifiers are combined in a formulation, they create a novel order at the oil/water interface (fig. 2b). The packing of these Polyaldo® emulsifiers creates lamellar structures (fig. 2c), which are ideal for forming quality emulsions with increased viscosity and improved stability.

To confirm the efficacy of Polyaldo® 10-2-P Pastillated and Polyaldo® HGDS KFG (6-2-S), a base emulsion was created utilizing the two emulsifiers and compared against a traditional emulsifier system, Steareth-2 and Steareth-21. The combined emulsifiers were used at a 2% use level in the presence of 15% oil phase and 3% fatty alcohol. The emulsions were created under identical conditions and evaluated concurrently.

Evaluation of Polyaldo® 6-2-S + Polyaldo® 10-2-P Pastillated vs. Traditional Emulsifier Base

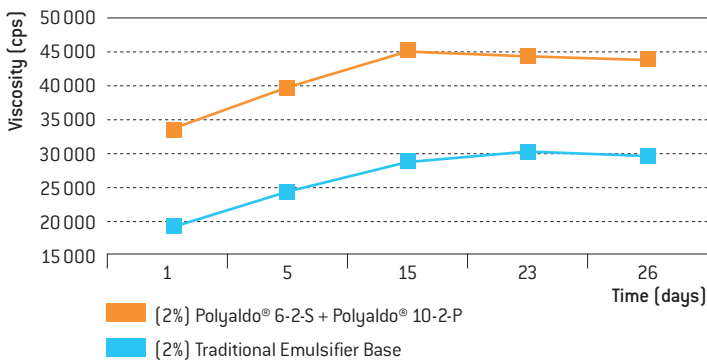


Fig. 3
Evaluation of Polyaldo® 10-2-P Pastillated + Polyaldo® HGDS KFG (6-2-S) formulation versus a traditional emulsifier base (Steareth-2 + Steareth-21)

The results in figure 3 show the emulsion base made with Polyaldo® 10-2-P Pastillated and Polyaldo® HGDS KFG (6-2-S) had a higher viscosity compared to the traditional emulsifier system. The combined Polyaldo® emulsifier system had a 58% higher overall viscosity compared to the traditional emulsifier system. The improvement in viscosity provided by the Polyaldo® emulsifier system is a solution for formulators dealing with lackluster emulsion bases without having to increase the use level of costly rheology modifiers.

Polyaldo® 10-2-P Pastillated Polyglyceryl Ester is your emulsifier solution for high viscosity formulations. This naturally-derived, plant-based emulsifier provides you an EO-free option and an alternative to PEG-based chemistries. When combined with Polyaldo® HGDS KFG (6-2-S), Polyaldo® 10-2-P Pastillated Polyglyceryl Ester creates formulations with excellent stability and enhanced formulation aesthetics.

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