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## Hest HVB Liquid – Cold Process High Efficiency Thickener

- High performance thickener
- Cost effective
- Amide replacement
- Ease of development & manufacturing
- Improves stability
- Patent pending technology

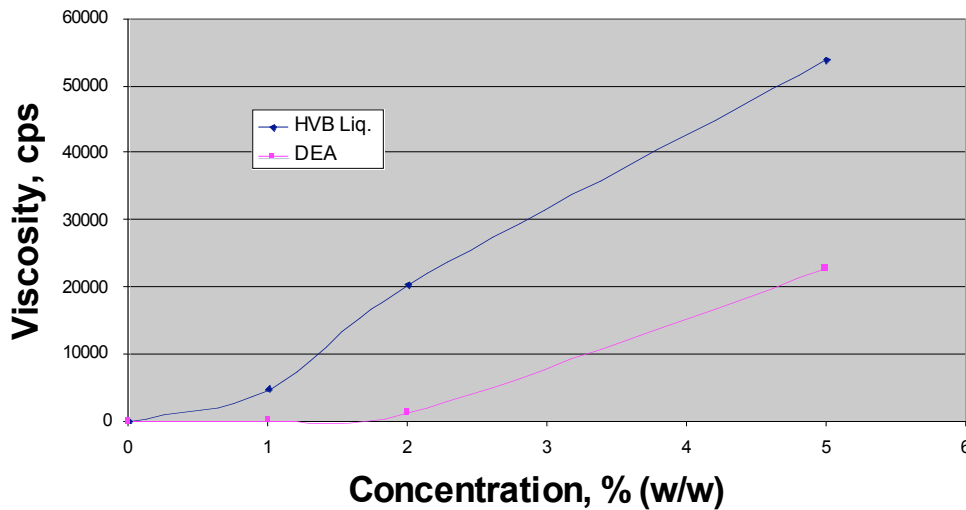
### DESCRIPTION

Global Seven Hest HVB Liquid is a clear liquid that is a high performance thickener specially developed to be highly efficient in surfactant systems. Global Seven Hest HVB Liquid outperforms other similar materials and can be used without heating.

### PROPERTIES

Global Seven Hest HVB Liquid is a clear liquid. Global Seven Hest HVB is the polyethylene glycol diester of isostearic acid and PEG-175. Hest HVB Liquid is prepared by blending Hest HVB with Glyceryl-7 Caprylic/Capric/Cococate in water yielding a highly effective, liquid thickener for surfactant systems including lauryl ether sulfates and lauryl sulfates. It functions as a replacement for amides helping increase foam stability as well as viscosity. For example, the figure below demonstrates the superior performance of Hest HVB Liquid versus cocamide DEA in an ALS (3% active)/ALES (10% active)/Cocamidopropyl betaine (2.5% active) based cleansing system. At concentrations of up to 5% active, Hest HVB Liquid gives a viscosity 2-10 times greater than that with cocamide DEA. This means that Hest HVB Liquid can be used at substantially lower concentrations than other thickeners resulting in significant formula cost savings. Furthermore, since Hest HVB Liquid can be incorporated without heating manufacturing cycle times and costs are greatly reduced.

### Effect of HVB Liquid vs DEA on Viscosity





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### APPLICATION

Global Seven Hest HVB Liquid is an effective replacement for amides, highly effective in building viscosity and helping stabilize foam volume. The table below demonstrates that Hest HVB Liquid stabilizes foam volume.

Composition	Foam Height (mL)	
	Time = 0 minutes	Time = 5 minutes
Cleanser Base	48.0	47.0
Cleanser Base + 1.0% Hest HVB Liquid	50.0	47.0
Cleanser Base + 5.0% Hest HVB Liquid	50.0	47.0

Use levels are formulation dependent but are generally at about level of about 1-10%. The data in the following table compare the effect of various thickeners on an ALS/ALES/CPB surfactant system. Clearly Hest HVB Liquid is far more effective than Cocamide DEA; as much as 2-10X more effective. This means significant reductions in formula cost and potential irritation by using Hest HVB Liquid.

Thickener, 2% active	Hest HVB Liquid	Cocamide DEA	PEG-150 Distearate	Liquid Thickener
Viscosity, cps	20,400	1,400	11,200	18,000

Global Seven Hest HVB Liquid is comparable in efficacy to other commercial liquid thickeners and compared to other structurally similar materials such as PEG-150 distearate, Hest HVB Liquid is a much more effective thickener. Another advantage of Hest HVB over other structurally similar materials is solubility. For example Hest HVB at 5% in water is a water white solution while above 1% even in surfactants PEG-150 distearate tends to be insoluble resulting in opacity and instability. This means that compared to other thickeners, Hest HVB Liquid can be used at higher levels while maintaining clarity to create novel forms with unique aesthetics and performance and with greater stability. Global Seven Hest HVB Liquid improves product performance, increases formulation versatility, simplifies the manufacturing and development process, shortens manufacturing and development cycle time, and reduces formulation and manufacturing costs.

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### REGULATORY

INCI Name: PEG-175 Diisostearate (and) Glycereth-7 Caprylate/Caprates/Cocates (and) Water

EINECS #: Polymer Excluded/ Polymer Excluded/7732-18-5

CAS #: 68958-56-5/NA/231-791-2

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