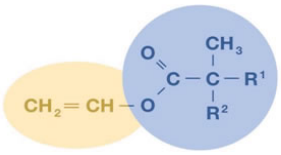
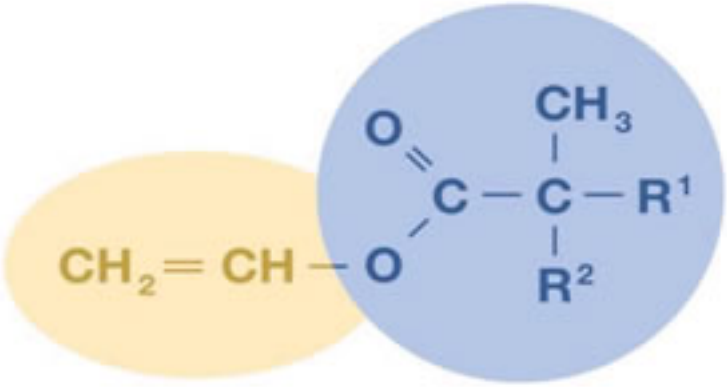
Vinyl Esther of Versatic Acid (VeoVa)

Chemical Formula: $C_{12}H_{22}O_2$

Molecular Weight: 198

PRODUCT INFORMATION





Description

VeoVa 10 is the vinyl ester of Versatic 10, a synthetic saturated monocarboxylic acid with a highly branched structure containing ten carbon atoms. VeoVa 10, a low viscosity liquid with a typical mild ester odor, is a very attractive monomer for the manufacture of polymers through reactions of the vinyl group. It imparts a combination of flexibility (medium to low Tg), hydrophobicity and very good chemical and UV resistance.

Sales Specification			
Property	**Test method**	**Unit**	**Value**
Appearance	ASTM D4176	-	Clear liquid, free from suspended matter
Color	ASTM D1209	Pt-Co	15 max
Density at 20ϵC	ASTM D4052	kg/m^3	875.0-885.0
Refractive index, nD25	ASTM D1218		1.432-1.437
Acid Value	ASTM D1639	mg KOH / g	1.0 max
Water content	ASTM E203	% (m/m)	0.1 max
Vinyl unsaturation*	SMS 2687	mol/kg	4.85-5.10
*Vinyl unsaturation in moles/kg x 16 = Bromine number in grams of Br/100g			
Typical Properties			
Molecular formula (theoretical)			$C_{12}H_{22}O_2$
Molecular mass (theoretical)			198
Added inhibitor (hydroquinone monomethyl ether)		mg/kg 5 +/-2	
Kinematic viscosity at 20ϵC	ASTM D445	mm2/s 2.2	
Specific heat at 20ϵC	ASTM E1269	kJ/kg ϵC	1.97
Latent heat of vaporization at 20ϵC		kJ/mol 48.9	
Boiling range	ASTM D1078	ϵC	133-136*
Flash point (PMCC)	ASTM D93	ϵC	75
Solidification point	ASTM D97	ϵC	Below -60
Solubility in water at 20-80ϵC		% (m/m)	<0.1
Solubility of water in monomer at 20-80ϵC		% (m/m)	0.05

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Miscibility with vinyl acetate			Completely miscible
Specific heat of polymerization	ASTM E1269	kJ/mol 96	
parameters**, e			-0.53
parameters**, Q			0.026
Glass transition temperature (Tg) of homopolymer *** (vinyl acetate homopolymer=32єC)	ASTM D3418	єC	-3
* measured at a reduced pressure (100 mm Hg) ** Using constants according to Young, J.Pol.Sci. 54,411, e=-0.22, Q = 0.026 for Vinyl acetate *** By differential scanning calorimetry (onset value 20єC per minute).			

Applications

VeoVa 10 is widely used as a modifying co-monomer in the manufacture of vinyl acetate based polymer latices. VeoVa 10 is also used for the production of VeoVa 10/(meth)acrylic latices and solution polymers.

Examples of VeoVa 10 based polymer applications are:

1. Decorative emulsion paints, plasters and renders.
2. Industrial paints and coatings such as anti-corrosion paints, wood coatings and varnishes and coatings for polyolefins.
3. Latices and spray-dried redispersible powders for mortar admixtures.
4. Latices for adhesives including Pressure Sensitive Adhesives, construction and wood adhesives.
5. Reactive diluent for specific heat-cured unsaturated polyesters.

Test Methods

ASTM Standards are published by the American Society for Testing and Materials, 100 Barr Harbor Drive, west Conshohocken, PA 19428-2959, USA.

SMS methods mentioned are available from Hexion Specialty Chemicals B.V.

Property	Test method	Unit	Value
Added inhibitor (hydroquinone monomethyl ether)		mg/kg	5 +/-2
Kinematic viscosity at 20єC	ASTM D445	mm2/s 2.2	
Specific heat at 20єC	ASTM E1269	kJ/kg єC	1.97
Latent heat of vaporization at 20єC		kJ/mol	48.9
Boiling range	ASTM D1078	єC	133-136*
Flash point (PMCC)	ASTM D93	єC	75
Solidification point	ASTM D97	єC	Below -60
Solubility in water at 20-80єC		% (m/m)	<0.1
Solubility of water in monomer at 20-80єC		% (m/m)	0.05
Miscibility with vinyl acetate			Completely miscible
Specific heat of polymerization	ASTM E1269	kJ/mol	96
Copolymerisation parameter**, e/Q			-0.53/0.026
Glass transition temperature (Tg) of homopolymer *** (vinyl acetate homopolymer=32єC)	ASTM D3418	єC	-3

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Handling Precautions

For more detailed information on all aspects relating to Health, Safety and Handling, reference should be made to the Safety Data Sheet of VeoVa 10.

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