

Emulsion Polymerization Solutions

 **Univar**Solutions

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At Univar Solutions, we have a comprehensive portfolio of base and specialty monomers plus surfactants and defoamers specifically for emulsion polymerization. Our complete solution has products that deliver high-performing benefits for coatings, adhesives, sealants, and graphic arts and inks.

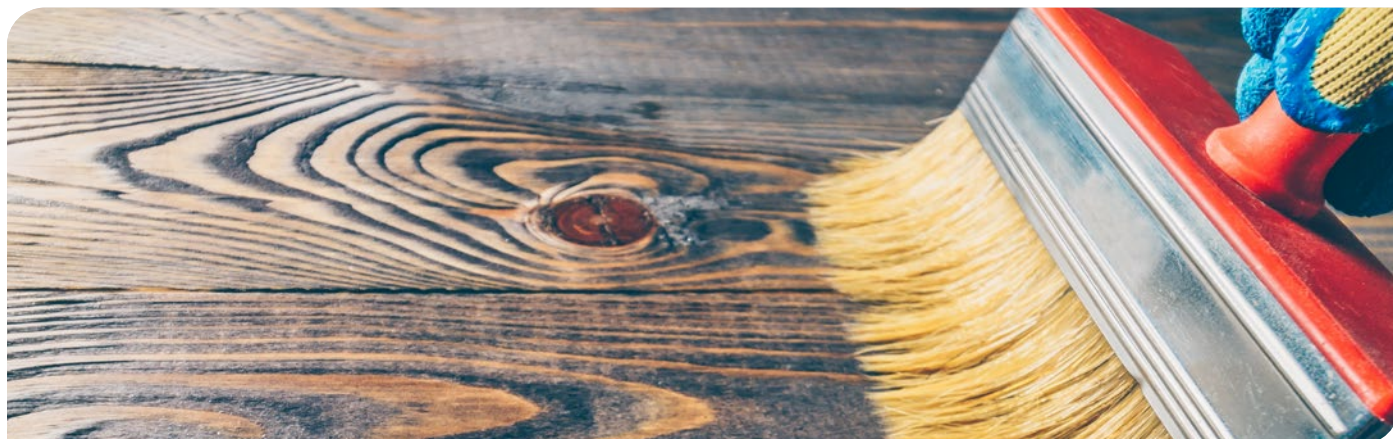


PRODUCT	TRADE NAME	SUPPLIER	FEATURES & BENEFITS
BASIC MONOMERS			
2-Ethylhexyl Acrylate	Generic	Univar Solutions	Basic, building block monomer
Ethyl Acrylate	Generic	Univar Solutions	Basic, building block monomer
Glacial Acrylic Acid	Generic	Univar Solutions	Basic, building block monomer
Methylmethacrylate	Generic	Univar Solutions	Basic, building block monomer
Methyl Acrylate	Generic	Univar Solutions	Basic, building block monomer
n-Butyl Acrylate	Generic	Univar Solutions	Basic, building block monomer
SPECIALTY MONOMERS & CO-MONOMERS			
Allyl Ureido Monomer	Sipomer® WAM	Solvay	Enhanced wet adhesion, wet scrub resistance for all acrylic and vinyl acrylic latex.
Beta-Carboethyl Acrylate	Sipomer® B-CEA	Solvay	Acidic monomer for adhesives and elastomeric coatings provides low Tg, improved adhesion and enhanced peel strength in pressure sensitive adhesives.
Behenyl Acrylate 1822 F	BEA 1822 F	BASF	Improved chemical resistance and impact strength.
Behenyl Methacrylate 1822 F	BEMA 1822 F	BASF	Improves impact strength and demonstrates low shrinkage.
Behenyl Polyethylene Glycol Methacrylate	BEPEGMA 1100	BASF	Monomer designed for manufacture of HASE thickeners with low shear viscosity efficiency and lowers Tg in alkali-swellaable latex.
	Sipomer® BEM	Solvay	
iso-Butyl Acrylate	IBA	BASF	Excellent weathering properties while providing chemical resistance.
t-Butyl Acrylate	TBA	BASF	Hydrophobic monomer with crosslinking ability improves water resistance, chemical stability, film hardness and adhesion.
t-Butyl Methacrylate	TBMA	BASF	Hydrophobic monomer with crosslinking ability improves water resistance, chemical resistance, heat resistance, film hardness and adhesion.
Cyclohexyl Methacrylate	CHMA	BASF	Offers excellent chemical resistance, hydrophobicity and weathering.
iso-Decyl Acrylate F	IDA F	BASF	Improved adhesion and hydrophobicity.
iso-decyl ethacrylate	IDA F	BASF	Offers excellent chemical resistance, hydrophobicity and weathering.

PRODUCT	TRADE NAME	SUPPLIER	FEATURES & BENEFITS
SPECIALTY MONOMERS & CO-MONOMERS (CONT.)			
iso-Tridecyl Methacrylate	C13 MA	BASF	Offers excellent chemical resistance, hydrophobicity and weathering.
2-Ethylhexyl Methacrylate F	2-EHMA F	BASF	Offers excellent chemical resistance, hydrophobicity and weathering.
Ethyleneurea Methacrylate Ester	Sipomer® WAM E W50	Solvay	Enhanced wet adhesion, superior wet-scrub resistance and enhanced solvent resistance, 50% in water.
	UMA 25%	BASF	Enhanced wet adhesion, superior wet-scrub resistance and enhanced solvent resistance, 25% in MMA.
Ethylmethacrylate Phosphate & Alkyl Methacrylate Phosphate	Sipomer® PAM 4000	Solvay	Improved adhesion to metallic substrated when incorporated into acrylic or styrene acrylic systems. Also enhances polymer stability and gloss
Heptadecyl Acrylate	C17 Acrylate	BASF	Hydrophobic monomer for adhesive, caulk and sealant applications provides low Tg, imparts water resistance, chemical resistance, enhanced weatherability and improved cohesive strength.
4-Hydroxybutyl Acrylate	4-HBA	BASF	Excellent weathering and performance for long-term applications.
2-Hydroxyethyl Acrylate	2-HEA	BASF	Excellent weathering and performance for long-term applications.
Hydroxyethylcaprolactone Acrylate	HECLA	BASF	Offers excellent overall properties and is used in development of oligomers.
Hydroxypropyl Acrylate	HPA	BASF	Excellent weathering and performance for long-term applications.
	Sipomer® IBOA	Solvay	Reactive diluent for radiation curable systems provides high Tg, hydrophobic nature improves abrasion, water and chemical resistance.
Isobornyl Methacrylate	Sipomer® IBOMA-HP	Solvay	High Tg hydrophobic monomer providing chemical / water resistance, better gloss & mar resistance, and low viscosity in high solid systems.
	LA 1214F	BASF	For adhesive and caulk applications provides low Tg for enhanced flexibility, low shrinkage and impact resistance, while improving chemical resistance, water resistance and weatherability.
Lauryl Methacrylate	LMA 1214F	BASF	Hydrophobic monomer, as co-monomer for coating resins improves water resistance, weather resistance and flexibility.
	Sipomer® HPM 100	Solvay	Provides high adhesive power on many substrates, enhanced mechanical properties and improved chemical and water resistance to the polymer systems when producing HASE associative thickeners.
Methacrylic Ester Monomers	Sipomer® HPM 400	Solvay	Monomer system designed to confer high efficiency to shear thinning HASE systems. HASE prepared with HPM 400 have twice the efficiency of traditional cellulosic thickeners.
	Sipomer® WAM II	Solvay	Provides enhanced wet-adhesion, wet-scrub resistance and solvent resistance in a wide range of latex systems.
Phosphate Ester of Polypropylene Glycol	Sipomer® PAM 100	Solvay	Improved adhesion to inorganic substrates. High mono/di alkyl phosphate ratio & low residual acid.
	Sipomer® PAM 200	Solvay	Polymerizable surfactant with improved adhesion to inorganic substrates. Excellent compatability and anti-corrosion.
Polyalkoxyl Polyarylphenol ethylenic methacrylate	Sipomer® SEM-25	Solvay	Specially designed for alkali soluble applications and mid to high shear HASE polymer.
2-Propylheptyl Acrylate	2-PHA	BASF	Improves weathering and adhesion.
Stearyl Acrylate	SA 1618F	BASF	Hydrophobic monomer for coating, adhesive and UV-cure systems provides water resistance, chemical resistance, enhanced weatherability and low shrinkage.

PRODUCT	TRADE NAME	SUPPLIER	FEATURES & BENEFITS
SPECIALTY MONOMERS & CO-MONOMERS (CONT.)			
Stearyl Acrylate 18	SA 18	BASF	Improves impact strength and demonstrates low shrinkage.
Stearyl Methacrylate	SMA 1618F	BASF	Hydrophobic co-monomer improves water repellancy, resistance against polar solvents and functions as internal plasticizer in coatings and reactive resins.
Stearyl Polyethylene Glycol Methacrylate	SPEGMA 1100	BASF	Monomers designed for manufacture of HASE thickeners with mid-to-high shear viscosity efficiency.
Ureido Methacrylate	UMA 25% in MMA	BASF	Increased Adhesion to wood and metal when formulate in Emulsion Polymerization.
Ureido Methacrylate	UMA 50W in water	BASF	Supplied 50% solids in water for easy incorporation into the Emulsion Polymerization process.
EMULSIFIERS			
ANIONIC			
Alkyl Alkoxyate Sulfate	DOWFAX™ AS Series	Dow Chemical	Provides outstanding emulsion and formulation stability, quick wetting, low foam and rapid foam collapse.
Ammonium Lauryl Sulfate	Rhodapon® L-22 EP	Solvay	Primary anion emulsifier provides excellent stability and particle size control for full range of acrylic and vinyl polymers as well as alkyd emulsions.
Ammonium Nonylphenol Sulfate	TRITON™ XN-45S	Dow Chemical	An efficient nucleator and good stabilizer for general purpose emulsion polymerization.
Aqueous Dioctyl Sodium sulfosuccinate	Geroon® 99	Solvay	Highly efficient, low VOC surfactant which improves flow & leveling of paints while reducing crawl & cut-through.
Disodium Alkyl Diphenyloxide Sulfonate	Rhodacal® DSB	Solvay	Widely used emulsifier - either by itself or with other emulsifiers. Low CMC emulsifier that gives excellent particle-size control.
	Rhodafac® RS 610	Solvay	Primary emulsifier imparts excellent water resistance, corrosion inhibition, scrub resistance and adhesion in acrylic, styrene acrylic, vinyl acrylic, VEOVA and VAE latex systems.
Ethoxylated Phosphate Ester	Rhodafac® RS 710	Solvay	Offers good water resistance and provides freeze thaw stability for acrylic based emulsions.
	TRITON™ QS-44	Dow Chemical	Offers good water resistance and provides freeze thaw stability for acrylic based emulsions.
Formulated APE-Free Anionic	Abex® 2005	Solvay	Extremely efficient emulsifier achieves nano-size particles in acrylic and styrene acrylic latex systems.
Isopropyl Amine Dodecyl Benzene Sulfonate	Rhodacal® 330	Solvay	IPA salt of highly concentrated branched dodecylbenzenesulfonic acid [DDBSA] used as a dispersing agent and emulsifier.
Monoester Sulfosuccinate	Aerosol® EF-810	Solvay	Primary emulsifier imparts excellent water resistance, corrosion inhibition, scrub resistance and adhesion in acrylic, styrene acrylic, vinyl acrylic, VEOVA and VAE latex systems.
Phosphate Polyether Ester	TRITON™ XQS-20	Dow Chemical	An efficient electrostatic emulsion stabilizer with buffering ability and corrosion inhibition characteristics.
Sodium Alpha Olefin Sulfonate	Rhodacal® A246L	Solvay	APE-free emulsifier for good emulsion stability and particle size control in acrylic, styrene acrylic and SBR latex systems.
Sodium Disulfonate	DOWFAX™ 2A1	Dow Chemical	Versatile emulsifier provides improved mechanical stability and lower foam compared to other anionics in acrylic, styrene acrylic, and SBR latex, with good ion tolerance.
	Rhodacal® DS-4	Solvay	Good co-emulsifier in combination with nonionics for acrylic, styrene acrylic and alkyd latex systems, while providing good balance of adhesion and cohesion in acrylic PSA latex.
Sodium Dodecyl Benzene Sulfonate	Rhodacal® DS-10	Solvay	High purity flake form of Sodium (branched) Dodecyl Benzene Sulfonate used as an emulsifier for small-particle size latex. Suitable for acrylics, styrene acrylics and styrene butadiene binders as well as moisture sensitive systems.

PRODUCT	TRADE NAME	SUPPLIER	FEATURES & BENEFITS
EMULSIFIERS (CONT.)			
ANIONIC (cont.)			
Sodium Dodecyl (linear) Benzene Sulfonate	Rhodacal® LDS-22	Solvay	Primary emulsifier
Sodium Laureth Sulfate	Rhodapex® LA-300	Solvay	Primary anion emulsifier provides excellent stability and particle size control for full range of acrylic and vinyl polymers as well as alkyd emulsions.
Sodium Lauryl Sulfate	Rhodapon® UB STD	Solvay	Primary anion emulsifier provides excellent stability and particle size control for full range of acrylic and vinyl polymers as well as alkyd emulsions.
Proprietary	Abex® Series	Solvay	Specially formulated emulsifiers used in acrylic, styrene acrylic, vinyl acrylic, vinyl veova, etc. Improves small particle size control, grit reduction and stability of pre-monomer emulsion.
NONIONIC			
Alcohol Ethoxylate	ECOSURF™ EH Series	Dow Chemical	Distinguished by their low aquatic toxicity and biodegradability, these are low foam and odor, quick wetting surfactants.
Aliphatic Alcohol Ethoxylates	Rhodasurf® TLA 3040	Solvay	APE-free co-emulsifier provides enhanced stability especially in SBR and alkyd emulsions, in addition to improved freeze-thaw stability, mechanical stability, ion tolerance and less foam.
	Abex® 2535	Solvay	APE-free emulsifier for full range of acrylic latex systems provides additional stability to polymer dispersions.
	TERGITOL™ 15-S-9	Dow Chemical	APE-free emulsifier effective for all types of latex systems that improves latex stability, mechanical stability and ion tolerance.
	TERGITOL™ 15-S-40	Dow Chemical	APE-free emulsifier effective for all types of latex systems that improves latex stability, mechanical stability and ion tolerance.
	TERGITOL™ TMN Series	Dow Chemical	Highly branched hydrophobe, superior wetting, low surface tension and excellent dispersant providing improved freeze thaw resistance.
Alkyl Phenol Ethoxylates	Igepal® CO 630	Solvay	Mainstay, versatile surfactants effective for all types of latex systems that improves latex stability, ion tolerance, mechanical stability and thermal stability.
	Igepal® CO 897	Solvay	
	TRITON™ X-405	Dow Chemical	
EO/PO Block Copolymers	Antarox®	Solvay	APE free, low-foaming surfactants.
	TERGITOL™ XD Series	Dow Chemical	Provides monomer stability and significant surface tension reduction at low concentrations while improving colloidal stability including chemical, storage and freeze thaw stability.
LA Ethoxylate	Rhodasurf® L-4, L-7/90, LA-12/80 LA-9/85,	Solvay	APE Free, low foaming wetting and dispersing agents.
Nonylphenol Ethoxylate	Igepal® CO series	Solvay	Mainstay, versatile surfactant effective for all types of latex systems that improves latex stability, ion tolerance, mechanical stability and thermal stability. Mainstay, versatile surfactant effective for all types of latex systems that improves latex stability, ion tolerance, mechanical stability and thermal stability.
Octylphenol Ethoxylate	Igepal® CA series	Solvay	Mainstay, versatile surfactant effective for all types of latex systems that improves latex stability, ion tolerance, mechanical stability and thermal stability.
Oleyl Alcohol Ethoxylate	Rhodasurf® ON-870 & ON-877	Solvay	APE Free primary surfactant for acrylic, vinyl acrylic, and styrene-acrylic polymers.



PRODUCT	TRADE NAME	SUPPLIER	FEATURES & BENEFITS
EMULSIFIERS (CONT.)			
NONIONIC (cont.)			
Tridecyl Alcohol Ethoxylate	Rhodasurf® BC Series	Solvay	APE Free, low foaming wetting and dispersing agents.
	Rhodasurf® TLA 3040, 4050, 5050	Solvay	APE-free co-emulsifier provides enhanced stability especially in SBR and alkyd emulsions, in addition to improved freeze-thaw stability, mechanical stability, ion tolerance and less foam.
Proprietary	Abex® Series	Solvay	Specially formulated emulsifiers used in acrylic, styrene acrylic, vinyl acrylic, vinyl veova, etc. Improves small particle size control, grit reduction and stability of pre-monomer emulsion.
	ECOSURF™ SA Series	Dow Chemical	New generation "green" seed oil based surfactants are readily biodegradable with low aquatic toxicity, excellent surface tension reduction, low foam and no gel formation.
	TERGITOL™ L Series	Dow Chemical	APE free, low foaming surfactants.
STABILIZERS			
2-Amino-2-Methyl-1-Propanol	AMP-95®	Angus Chemical	Low odor, zero VOC stabilizer gives improved gloss and opacity, scrub resistance and weathering as well as improved color acceptance of an emulsion polymer.
Benzyl PEG t-Octylphenyl Ether	TRITON™ CF-10	Dow Chemical	Low foaming stabilizer, enhances freeze-thaw stability.
Ethylene Modified PVOH	Exceval™	Kuraray America Inc.	Colloidal emulsion stabilizer providing increased water resistance and improved storage stability of emulsion polymers.
PolyVinyl Alcohol	Poval™	Kuraray America Inc.	Partially saponified colloidal emulsion stabilizer.
Sodium Allyloxy Hydroxypropyl Sulfonate	Sipomer® COPS-I	Solvay	Polymerizable co-stabilizer for all acrylic and vinyl/styrene/acrylic latex that reduces coagulum and grit even in high solids systems; reduces surfactant loading, leading to enhanced water resistance, reduced foaming and reduced surfactant leaching.
POLYMERIZABLE SURFACTANTS			
Functional Phosphated Monomer	Sipomer® PAM 600	Solvay	Polymerizable surfactant for pre-emulsion that improves water resistance, adhesion to metal, glass and concrete; in combination with conventional surfactant, provides <100 nm APS and reduces surfactant leaching and foaming.

PRODUCT	TRADE NAME	SUPPLIER	FEATURES & BENEFITS
WETTING AGENTS			
Di-Ester Sulfosuccinate	AEROSOL® LF-4	Solvay	Low-foam dynamic wetter for pressure sensitive adhesives.
	AEROSOL® WA 300	Solvay	Excellent dynamic wetter with improved mechanical stability and less foam for PSA; imparts low viscosity with minimum grit and coagulum.
DEFOAMERS			
Defoamer	Rhodoline® DF 540	Solvay	Excellent dynamic wetter with improved mechanical stability and less foam for PSA; imparts low viscosity with minimum grit and coagulum.
	Rhodoline® 670	Solvay	Zero VOC, silicone free oil-based defoamer for in-process vinyl, vinyl acrylic, VAE and acrylic latex processing.
	Rhodoline® 635	Solvay	Zero VOC, silicone free oil-based defoamer for in-process foam control in acrylic, vinyl acrylic and VAE latex.
	Rhodoline® 646	Solvay	Zero VOC oil-based defoamer for in-process vinyl and natural latex foam control.
	Rhodoline® 990	Solvay	Silicone-free, oil-free defoamer for acrylic, vinyl acrylic, VAE and SBR latex systems; has broad range of 21CFR regulatory clearances and meets BfR XXXIV requirements.
	Rhodoline® 999	Solvay	Silicone-free, oil-free defoamer for acrylic, vinyl acrylic and VAE latex systems.



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