Elvacite® 2927

Acrylic Resin

Elvacite® 2927 is a methyl methacrylate copolymer designed for use in VOC compliant coatings. Elvacite® 2927 utilizes controlled molecular architecture technology to provide lower viscosity at higher concentrations.

Performance Features and Key Benefits

- Higher solids capability than comparable, traditional acrylic resins
- Lower viscosities capability
- Good mechanical properties
- Low odor

Typical Properties[a]	
Appearance	Solid bead
Specific Gravity, 25° C	1.18
Glass Transition Temp, onset (calculated)	50°C
Molecular Weight (Mw)	23,000
Acid Number (mg KOH/g Resin)	6.9

a) *Typical physical properties listed are approximate values and should not be considered manufacturer's release specifications. Manufacturer's release specifications are subject to change without notice, please contact your Elvacite® representative for the latest product specification details.*

Preparing Solutions

Elvacite® resins dissolve at room temperature but require constant agitation to prevent solvent-swollen granules of polymer from forming agglomerates and sticking to the walls of the vessel. Important: The polymer beads should be sifted directly into the vortex of the stirred solvent to speed wetting-out and dispersion. Continuous low-shear agitation for periods of 1-12 hours, depending on the grade and concentration of resin, is recommended.

After the solution appears clear in the tank, a sample should be spread out on a Leneta card or glass. After the solvent evaporates and a film forms on the card or glass, there should not be any resin seeds. If there are any seeds, the tank should be agitated further to fully dissolve the resin. Tank agitation should not be stopped (except for sampling) until the film test indicates there are no resin seeds. Any cloudiness or residue may indicate that some polymer remains undissolved. The presence of water in the system can also cause cloudiness.

Solution time can be reduced by heating; most common solvents can be heated to approximately 49°C (120°F) without the need for reflux equipment. High-shear agitation also cuts dissolving time, but requires care to avoid overheating and excessive solvent loss.

Solvent Solubility

The table below depicts the solubility of Elvacite® 2927 at 30% solids in various solvents.

Solvent	Solubility
Toluene	C
Acetone	C
Methyl ethyl ketone	C
Dimethyl carbonate	C
Methyl isobutyl ketone	C
n-Butyl acetate	C
t-Butyl acetate	C
Ethyl acetate	C
n-Propyl acetate	C
Methyl acetate	C
Low odor mineral spirits	I
(C= Clear solution, H = Hazy solution, I = Insoluble)	

Viscosity and Gloss

The table below illustrates the high solids / reduced solution viscosity effects of the technology. Elvacite® 2016 is a standard thermoplastic acrylic resin used in solvent based coatings, while Elvacite® 2927 is prepared with the new controlled molecular architecture technology.

Solvent	**Resin Conc. (%w/w)**	**BROOKFIELD VISCOSITY at 21°C (cP)**	
		Elvacite® 2016	**Elvacite® 2927**
Toluene	40	470	78
	60	156000	5130
	65	Not measured	24100
Xylene	40	740	96
	60	234000	7850
	65	Not measured	35400
Acetone	40	262	23
	60	54000	840
	65	Not measured	3150
Methyl ethyl ketone	40	194	33
	60	55500	1050
	65	Not measured	4810
n-Butyl acetate:Propan-2-ol	40	918	78
75:25 %v/v	60	384000	5430
n-Butyl acetate:Propan-2-ol	40	2100	101
50:50 %v/v	60	580000	13100
n-Butyl acetate:Propan-2-ol	40	6850	191
25:75 %v/v	60	970000	22200

COMPLIANCE WITH FDA REGULATIONS

Pasadena, Texas, USA Grade: ELVACITE® 2927

Issue date: February 2009

We, MITSUBISHI CHEMICAL AMERICA, INC., Specialty Resins Division, confirm that Elvacite® 2927 complies with the compositional requirements of the following United States of America's Food and Drug Administration (FDA) regulations.

Elvacite® 2927 is cleared for use under the FDA 21 CFR 175.105 for adhesives used as components of articles intended for use in the packaging, transporting, or holding food.

Elvacite® 2927 is cleared for use under FDA 21 CFR 175.300 in resinous and polymeric coatings used as the food contact surface of articles intended for use in producing, packing, processing, preparing, treating, packaging, transporting, or holding food. The coating in its finished form in which it is to contact food is subject to a restriction on its chloroform soluble extractives.

Compliance with the limitation on extractives can only be demonstrated by tests carried out in the final article.

Elvacite® 2927 is cleared for use under FDA 21 CFR 175.320 in resinous and polymeric coatings for polyolefin films, provided it is intended for repeated food contact use as specified in FDA 21 CFR 175.300(a).

The coating in its finished form in which it is to contact food is subject to a restriction on its chloroform soluble extractives.

Compliance with the limitation on extractives can only be demonstrated by tests carried out in the final article.

Elvacite® 2927 is cleared for use under FDA CFR 176.170 as a component of the uncoated or coated food contact surface of paper and paperboard intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting or holding aqueous and fatty foods.

Compliance with the limitation on extractives can only be demonstrated by tests carried out in the final article.

Elvacite® 2927 is cleared for use under FDA 21 CFR 176.180 as a component of the uncoated or coated food contact surface of paper and paperboard intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding dry food.

Elvacite® 2927 is cleared under FDA 21 CFR 177.1010 as semirigid and rigid acrylic plastics articles intended for use in contact with food. The semirigid and rigid acrylic plastics in the finished form in which they are to contact food are subject to limitation on extractives

Compliance with the limitation on extractives can only be demonstrated by tests carried out on the final article.

This statement of compliance is correct at the date of issue.
As food contact regulations and product formulations are subject to change, it is the user's responsibility to ensure that they are in possession of a current statement of compliance.

For further information or samples, please contact your local distributor, or:

Mitsubishi Chemical America, Inc.
Specialty Resins Division
9675 Bayport Blvd.
Pasadena, Texas 77507
Phone (713)758-8190
www.m-chem.com/specialtyresins
MCA-SPR.sales@m-chem.com