

ELVACITE®

ACRYLIC RESINS

Elvacite® 75

Elvacite® 75 acrylic resin is a medium molecular weight methyl methacrylate copolymer. It is used in solid surface formulations and in seam sealer for solid surface when adequate stabilizer (inhibitor) is also used in the seam sealer formulation. It has low reactivity which permits its use in many reactive systems to reduce shrinkage and control viscosity.

Elvacite® 75 can also be used as the primary binder in adhesive formulations for anchor bolts and in coatings for vinyl and many plastics offering good chemical and abrasion resistance.

Performance Features and Key Benefits

- Reactive systems to reduce shrinkage and control viscosity
- Solid surface all-acrylic formulations
- Solid surface seam sealer
- Solid surface and anchor bolt adhesive formulations
- Vinyl topcoats to provide excellent abrasion resistance
- Plastic coatings to improve chemical and abrasion resistance

| Typical Properties ^a of Elvacite® 75 | |
|---|------------|
| Appearance | Solid bead |
| Specific Gravity, 25° C | 1.19 |
| Glass Transition Temp, onset | 113°C |
| Molecular Weight (Mw) | 100,000 |
| <i>a) Typical physical properties listed are approximate values and should not be considered manufacturers release specifications. Manufacturers release specifications are subject to change without notice, please contact your Dianal America Representative for the latest product specification details.</i> | |

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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.

| Starting Formula for Acrylic Solid Surface Countertop Sheet | |
|--|--|
| Raw Material | Weight % |
| ATH (Alumina Trihydrate) SS grade | 50 to 66% (can go up to 66% for thick sheet > 6 mm) |
| MMA (Methyl Methacrylate Monomer) | 30 to 40% inhibited with 10 ppm Topanol A |
| Elvacite 75 bead resin | 6 to 15% |
| Pigment compatible with MMA | 2 to 5 % |
| EGDMA crosslinker | 0.3 to 0.7% |
| Dispersant for ATH in MMA | 1 to 2% per manufacturer recommendation |
| Initiator (peroxide) system | 1 to 3% |
| promoter mix | 0.5 to 1% per initiator supplier recommendation |
| Internal Release Agent | 0.05 to 0.5% |
| Bubble release agent | 0.1 to 1.0% per supplier recommendation |

Note: % to be adjusted by decreasing MMA/ Elvacite® 75 as needed to add up to 100% depending on optimum formulation by experiment.

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Solvent Solubility

Table below depicts the solubility of Elvacite® 75 at 30% solids in various solvents.
(S = Soluble, H = Cloudy/hazy solution, C= Clear solution, I = Insoluble)

| Solvent | Solubility | Rating |
|--------------------------|------------|--------|
| Acetone | S | H |
| Toluene | S | H |
| Dimethyl carbonate | S | C |
| n-propyl acetate | S | H |
| Methyl ethyl ketone | S | C |
| Methyl isobutyl ketone | I | - |
| Ethyl acetate | S | C |
| 2-propanol | I | - |
| Low odor mineral spirits | I | - |
| Isopropyl alcohol | I | - |

Viscosity and Gloss

The table below illustrates typical viscosities of Elvacite® 75 in varying solvents at 30% solids.

| Solvent | Viscosity (cP) | Gloss (60°) |
|--------------------|----------------|-------------|
| Acetone | 1360 | 78 |
| Toluene | 172 | 81 |
| Dimethyl carbonate | 450 | - |
| n-propyl acetate | 506 | - |

Resin Compatibility

Elvacite® 75 is compatible with the following Elvacite® Resin Grades: 2008C, 2009, 2010, 2013, 2021C, 2041, and 2051.

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