

LOW ENERGY CURE RESIN FOR AUTOMOTIVE REFINISH AND METAL

INTRODUCTION

EBECRYL® 8412 is designed to be the primary resin for the formulation of UV curable automotive refinish body putties and general metals. It is characterized by excellent pigment wetting with good flexibility and surface hardness. EBECRYL® 8412 contains dipropylene glycol diacrylate (DPGDA) as a reactive diluent.

PERFORMANCE HIGHLIGHTS

EBECRYL® 8412 is characterized by:

- Excellent cure response under low light intensity conditions
- Good wetting of inert and reactive fillers
- Ease of application

UVA cured products containing EBECRYL® 8412 are characterized by the following performance properties:

- Excellent surface cure under low intensity light conditions
- Excellent adhesion to automotive substrates
- Good flexibility and toughness
- Low shrinkage upon cure

The actual properties of UV/EB cured products also depend on the selection of other formulation components such as reactive diluents, additives, and photo initiators.

SUGGESTED APPLICATIONS

EBECRYL® 8412 is also recommended for use in:

- Low energy cure
- Automotive end of line spot repair
- Automotive refinish putty
- General metals
- Metallized plastics topcoat and/or primer
- Flexible coatings
- Thin film solar cell

USAGE

EBECRYL® 8412 will typically constitute between 40 and 60% of the final UVA curable body putty.

SPECIFICATIONS

Appearance Clear to hazy liquid

TYPICAL PHYSICAL PROPERTIES

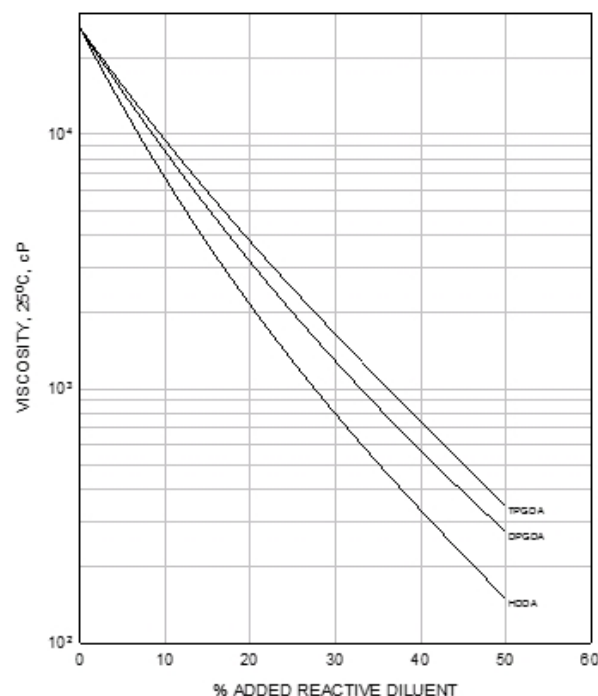
Color, Gardner scale	max. 2
Density, g/cm ³ at 25°C	1.10
Functionality, theoretical	3.0
Oligomer, % by weight	85
Viscosity, 25°C, mPa.s	27400

TYPICAL CURED PROPERTIES

Tensile, psi (MPa)	3700 (26)
Elongation at break, %	18
Toughness, psi (MPa)	550 (3.8)
Young's modulus, psi (MPa)	100000 (690)

GRAPH I

EBECRYL® 8412 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



VISCOSITY REDUCTION

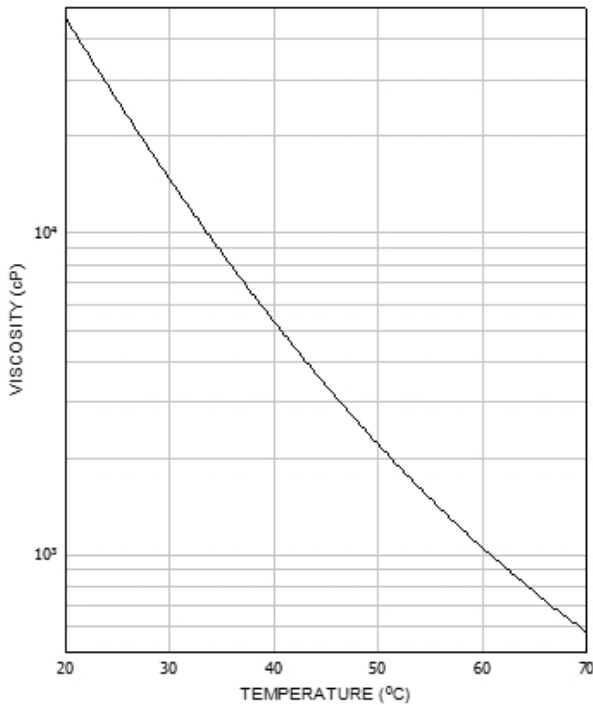
Graph I shows the viscosity reduction of EBECRYL® 8412 with dipropylene glycol diacrylate (DPGDA)⁽¹⁾, 1,6-hexanediol diacrylate (HDDA)⁽¹⁾ and tripropylene glycol diacrylate (TPGDA)⁽¹⁾. Although viscosity reductions can be achieved with non-reactive solvents, reactive diluents are preferred because they are essentially 100% converted during UV exposure to form an integral part of the coating, thus avoiding solvent emissions. The specific reactive diluent used will influence performance properties such as flexibility and adhesion.

⁽¹⁾ product of allnex

Graph II illustrates the change in viscosity of EBECRYL® 8412 with increasing temperature.

GRAPH II

EBECRYL® 8412 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL® 8412, see the Safety Data Sheet (SDS) for information on the identified hazards of the material and the recommended personal protective equipment and procedures.

STORAGE AND HANDLING

Care should be taken not to expose the product to high temperature conditions, direct sunlight, ignition sources, oxidizing agents, alkalis or acids. This might cause uncontrollable polymerization of the product with the generation of heat. Storage and handling should be in stainless steel, amber glass, amber polyethylene or baked phenolic lined containers. Procedures that remove or displace oxygen from the material should be avoided. Do not store this material under an oxygen free atmosphere. Dry air is recommended to displace material removed from the container. Wash thoroughly after handling. Keep container tightly closed. Use with adequate ventilation.

See the SDS for the recommended storage temperature range for EBECRYL® 8412.