

EBECRYL[®] 8412

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)⁽¹⁾ 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 photoinitiators.

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

SMT ⁽²⁾	VALUE
002-A	Clear to hazy liquid

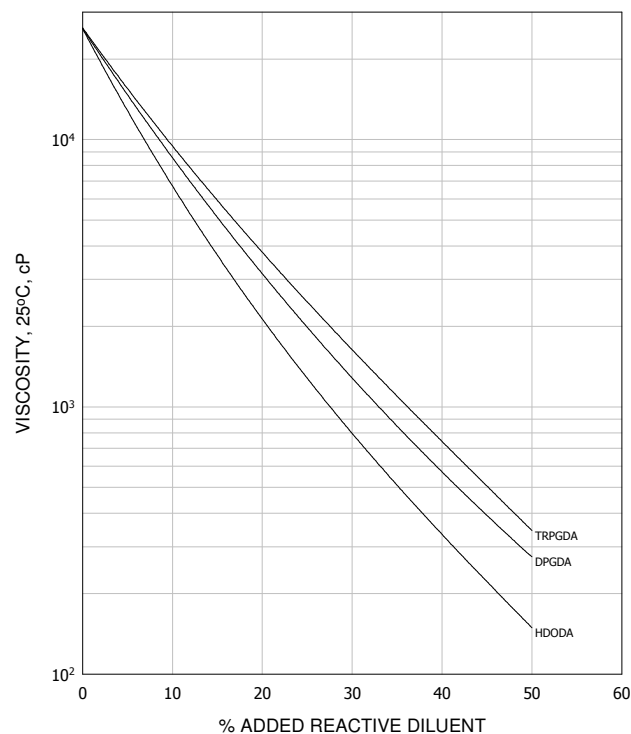
TYPICAL PHYSICAL PROPERTIES

Color, Gardner scale	<3
Density, g/ml at 25°C	1.10
Functionality, theoretical ⁽³⁾	3.0
Oligomer, % by weight	85
Viscosity at 25°C, cP	30000

TYPICAL CURED PROPERTIES ⁽⁴⁾

Tensile, psi	3700
Elongation at break, %	18
Modulus, psi	100000
Toughness, psi	550

Graph I
EBECRYL 8412
Viscosity Reduction with Reactive Diluents



(1) Product of Cytec Industries Inc.

(2) Standard Methods of Testing available upon request.

(3) Theoretical determination based on the undiluted oligomer.

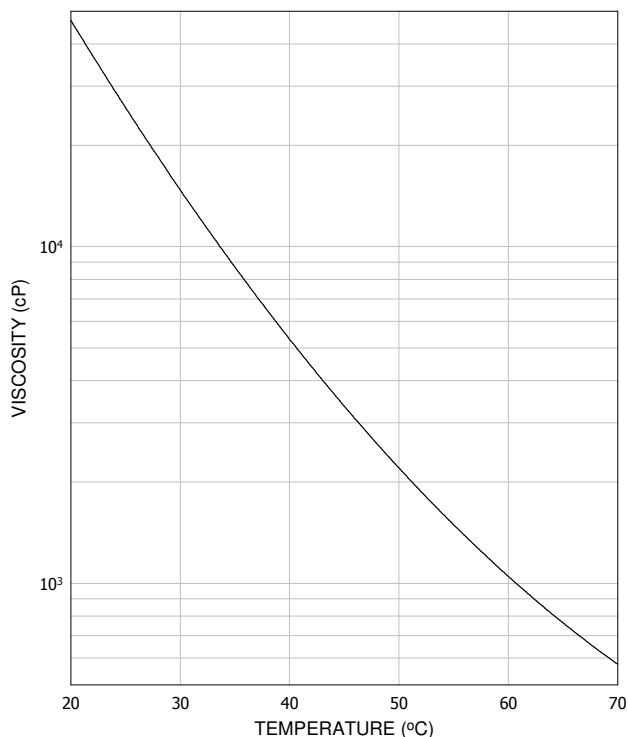
(4) UV Cured 125 μ thick films.

VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 8412 with dipropylene glycol diacrylate (DPGDA), 1,6-hexanediol diacrylate (HDODA)⁽¹⁾, and tripropylene glycol diacrylate (TRPGDA)⁽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.

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

Graph II
EBECRYL 8412
Viscosity vs. Temperature



(1) Product of Cytec Industries Inc.

STORAGE AND HANDLING

Before using EBECRYL 8412, consult the **Material Safety Data Sheet** for additional information on hazards, handling procedures, and recommended protective equipment.

The maximum recommended storage temperature for EBECRYL 8412 is 40°C (104°F). 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.

PRECAUTIONS

Avoid contact with eyes, skin and clothing. Direct contact with this material may cause severe eye and moderate skin irritation. Repeated or prolonged dermal contact may cause allergic skin reactions. Wash thoroughly after handling. Use with adequate ventilation. Keep container closed.

Please refer to the Cytec **Guide to Safety, Health and Handling of Acrylate Oligomers and Monomers** for additional information on the safe handling of acrylates.

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