

EBECRYL® 524

Diluted Acidic Polyester Resin

March 2017



INTRODUCTION

EBECRYL 524 is an acid-modified polyester resin diluted 30% by weight with the reactive diluent 1,6-hexanediol diacrylate (HDDA)⁽¹⁾. It exhibits very low color and moderate acid value. EBECRYL 524 is used as the primary or modifying oligomer in ultraviolet light (UV) or electron beam (EB) curable formulations to increase adhesion to a variety of substrates including paper, plastics and metal. It is particularly useful in UV/EB laminating adhesives.

PERFORMANCE HIGHLIGHTS

EBECRYL 524 is characterized by:

- Low color
- Acid functionality

UV cured products containing EBECRYL 524 are characterized by the following performance properties:

- Good adhesion to paper, plastic and metals
- Flexibility

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

Formulated UV/EB curable products containing EBECRYL 524 may be applied via direct or reverse roll, offset gravure, metering rod, slot die, knife over roll, air knife, curtain and immersion coating methods, as well as screen printing.

EBECRYL 524 is recommended for:

- Laminating adhesives, particularly between paper/aluminum, paper/LDPE, paper/polypropylene and aluminum/LDPE.
- Primer coatings on metal
- Metallization receptive coatings on plastics
- Improving intercoat adhesion

SPECIFICATIONS

	VALUE ¹
Acid value, mg KOH/g	25-40
Appearance	Clear to slightly hazy liquid
Color, Pt-Co scale ⁽²⁾ , max.	250
Residual solvent, ppm, max.	500
Viscosity, 25°C, cP/mPa·s	50000-70000

TYPICAL PHYSICAL PROPERTIES

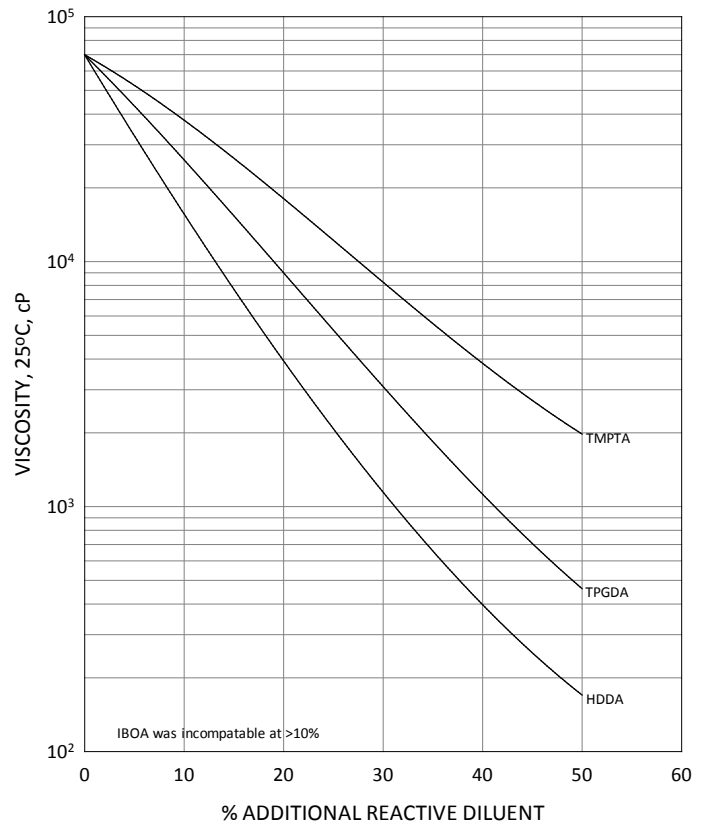
Density, g/ml at 25°C	1.22
Oligomer % by weight	70
HDDA, % by weight	30

TYPICAL CURED PROPERTIES⁽³⁾

Tensile strength, psi (MPa)	1000 (6.9)
Elongation at break, %	30
Glass transition temperature, °C ⁽⁴⁾	30

GRAPH I

EBECRYL 524 - VISCOSITY REDUCTION WITH REACTIVE DILUENTS



(1) Product of allnex
 (2) Also referred to as APHA color.
 (3) UV cured 125 μ thick films.
 (4) Determined by Dynamic Mechanical Analysis.

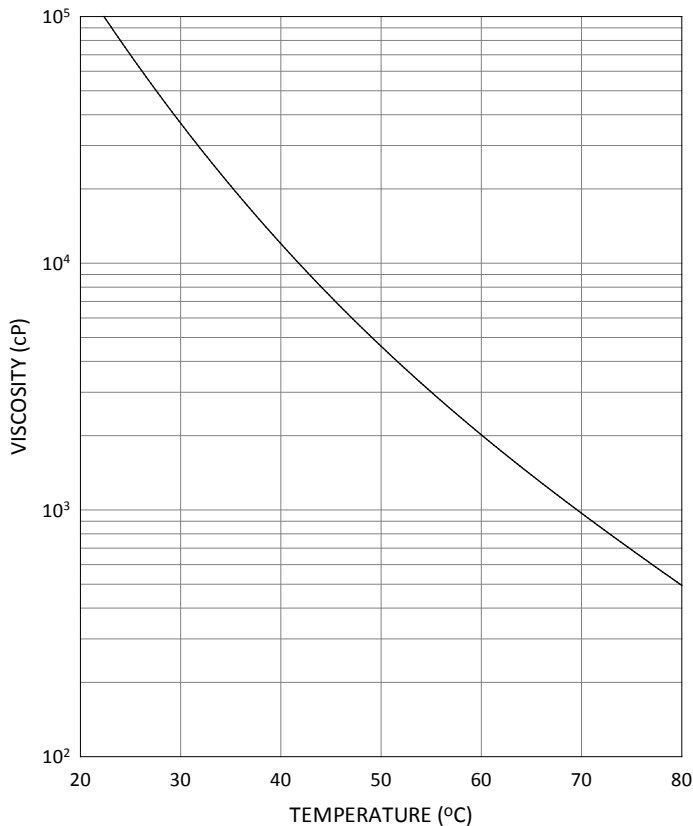
VISCOSITY REDUCTION

Graph I shows the viscosity reduction of EBECRYL 524 with 1, 6-hexanediol diacrylate (HDDA), trimethylolpropane triacrylate (TMPTA)⁽¹⁾, and tripropylene glycol diacrylate (TPGDA)⁽¹⁾. Isobornyl acrylate (IBOA)⁽¹⁾ was incompatible at levels >10%. Although viscosity reduction can be achieved with non-reactive solvents, reactive diluents are preferred because they are essentially 100 percent converted during UV/EB exposure to form a part of the coating or ink, thus reducing solvent emissions. The specific reactive diluents used will influence performance properties such as hardness and flexibility.

Graph II illustrates the change in viscosity of EBECRYL 524 with increasing temperature.

GRAPH II

EBECRYL 524 - VISCOSITY VS. TEMPERATURE



PRECAUTIONS

Before using EBECRYL 524, 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 524.

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

(1) Product of allnex

www.allnex.com

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