

DIPENTAERYTHRITOL PENTA/HEXAACRYLATE

INTRODUCTION

EBECRYL® 896 is a multifunctional monomer which polymerizes when exposed to sources of free radicals. It is composed primarily of the pentaacrylate and hexaacrylate esters of dipentaerythritol. EBECRYL® 896 is particularly useful in UV (ultraviolet) and EB (electron beam) curable inks and coatings where improved cure response, hardness and scratch/abrasion resistance are required.

PERFORMANCE HIGHLIGHTS

EBECRYL® 896 is characterized by:

- High acrylate functionality
- Lower viscosity compared with standard DPHA
- Low in acid value resulting in better ink/water balance when used in litho inks

UV/EB cured products based on EBECRYL® 896 are characterized by the following performance properties:

- Fast cure response
- High cross-link density
- Improved scratch and abrasion resistance
- Excellent hardness
- Good chemical resistance

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

SUGGESTED APPLICATIONS

Formulated UV/EB curable products containing EBECRYL® 896 may be applied by lithographic, screen, gravure, direct or reverse roll, and curtain coating methods. EBECRYL® 896 is recommended for use in:

- UV/EB curable inks and coatings where fast cure response high cross-link density are desired

TYPICAL PHYSICAL PROPERTIES

Acid value	max. 0.2
Appearance	Clear liquid
Color, Gardner	max. 2
Density, g/cm ³	1.16
Functionality, theoretical	~5.5
Molecular weight, theoretical	520
Viscosity at 25°C, mPa.s	~6000

PRECAUTIONS

Before using EBECRYL® 896, 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.

EBECRYL® 896 can become partially crystalline during storage at ambient temperatures. Crystallization does not impact the quality of the product. Before use, crystallized material should be fully liquified by heating for 48 hours at 60°C. Ovens or hotboxes are recommended methods of heating. Heating bands or blankets should not be used. It is recommended that during heating the material be agitated at regular intervals to assure redistribution of polymerization inhibitor and oxygen.

See the SDS for the recommended storage temperature range for EBECRYL® 896.