



average n = 1

INTRODUCTION

β -carboxyethyl acrylate (β -CEA) is a mixture of reactive esters, each of which contain both acrylate and carboxylic acid functionality in the same molecule. Referring to the included structural formula, this mixture contains some unreacted acrylic acid (n=0), along with higher adducts of acrylic acid (n=1,2,3...). The dimer (n=1), i.e. β -CEA, is the largest single component, and the average molecular weight is equivalent to that of the dimer. β -CEA will polymerize when exposed to sources of free radicals. Because of its carboxylic acid functionality, β -CEA is useful as an adhesion promoter.

PERFORMANCE HIGHLIGHTS

β -CEA is characterized by:

- Low color
- Moderate viscosity

UV/EB curable formulated products containing β -CEA are characterized by:

- Good adhesion to a variety of substrates
- Low T_g

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

SUGGESTED APPLICATIONS

β -CEA is a diluent compatible with a wide range of acrylates used in UV/EB curing applications. Good adhesion to many different substrates makes β -CEA useful in a variety of overprint varnishes, inks, and coatings.

SPECIFICATIONS

Acid value, meq KOH/g	6.10 - 6.70
Acid value, mg KOH/g	342.2 - 375.9
Appearance	Clear liquid
Color, Apha	max. 200
Ester rank, meq KOH/g	6.40 - 7.00
Inhibitor (MEHQ), ppm	900-1100
Viscosity, 25°C, mPa.s	70 - 100
Water, wt. %	max. 1.000

TYPICAL PHYSICAL PROPERTIES

Density, g/ml at 25°C	1.21
Flash point, °C	87
Melting point, °C	< -35
Molecular weight, theoretical average	144

PRECAUTIONS

Before using β -CEA, 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 β -CEA.