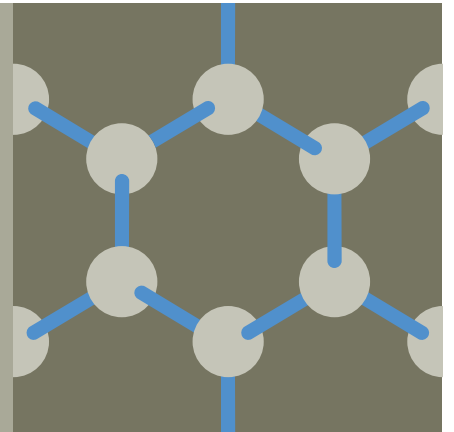




ACE
**The Reactive Diluent
for UV Curing
Applications**



ACE™ Hydroxyl Acrylate Monomer

ACE, a mono-functional epoxy acrylate monomer is the reaction product of acrylic acid and *Cardura™ E10P*.

Cardura™ E10P is the glycidyl ester of *Versatic™ acid 10*, a highly branched saturated carboxylic acid containing 10 carbon atoms.

Characteristics:

- Clear liquid
- Viscosity: < 300 mPa·s
- High flame / flash point
- Low colour
- Low volatility
- EINECS and TSCA listed
- Homopolymer T_g: 0 °C
- Low acid and epoxy residuals
- Free of heavy metal and tin catalysts
- Theoretical OH value: 5.7 %
- Low irritancy level: draize value 0.9

ACE has a unique structure combining a bulky hydrophobic tail, a pendant hydroxyl group and an acrylate functionality.

ACE is a low volatility monoacrylate reactive diluent, the ideal monomer for use in radiation cure and dual cure applications. Its acrylate functionality has excellent UV reactivity. The addition of ACE to UV cure acrylate formulations provides a combination of hydroxyl functionality and hydrophobicity.

Applications:

ACE can be used in UV curable applications as reactive diluent for UV formulations/oligomers or as building block for acrylate oligomers synthesis.

ACE is also an attractive building block for solvent borne acrylic resins and emulsion polymers. ACE based acrylic resins are used in a large variety of applications. Typical examples of end uses are pigment pastes, automotive coatings and general industrial coatings such as metal, plastic, leather and wood coatings.

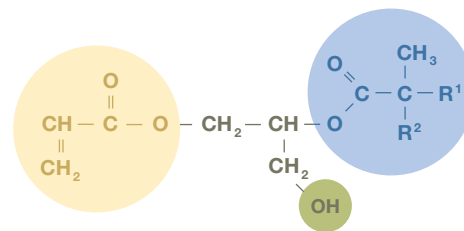


Structural Features:

- Acrylate functionality

Performance Characteristics:

- Excellent UV reactivity



Acrylic Acid Adduct

of Cardura



Structural Features:

- Hydroxyl group

Performance Characteristics:

- Cure with isocyanates or melamines
- Oligomer synthesis

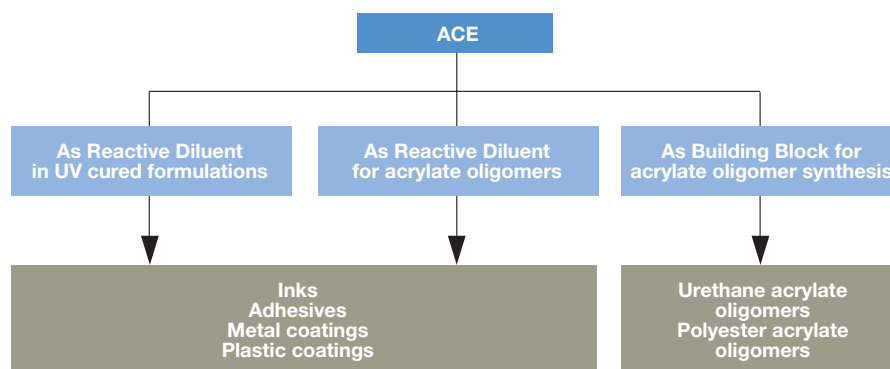


Structural Features:

- Bulky structure

Performance Characteristics:

- Superior outdoor durability
- Improved gloss
- Improved pigment utilization
- Low resin viscosity
- Enhanced adhesion to plastics
- Hydrophobicity
- Improved chemical resistance



Adhesion to Thermoplastics:

ACE is an ambivalent molecule combining hydrophobic and polar properties. With its unique structure, ACE contributes to an improved adhesion to polyolefins, polyethylene terephthalate and polyvinylchloride substrates.

Enhanced Pigment Utilization:

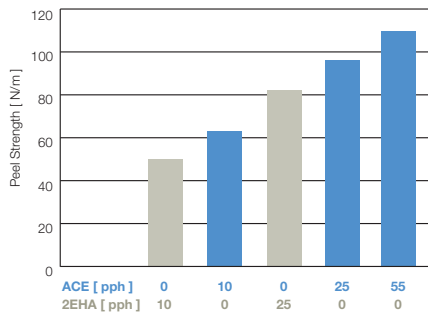
ACE combines hydrophobicity and polarity. This explains the improved pigment utilization in pigmented UV formulations.

Dual cure:

ACE has a pendant hydroxyl group which allows cure with cross-linkers, like melamine formaldehyde and polyisocyanate resins. The pendant hydroxyl group can also be used for further oligomerization.

Laminating Adhesive Formulation. Increased Adhesion to Polypropylene.

Peel Strength OPP / OPP laminate

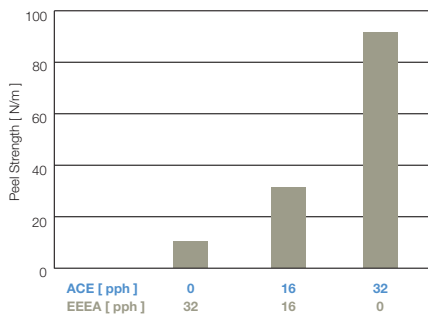


ACE provides a significant improvement in adhesion to polypropylene compared to EHA.

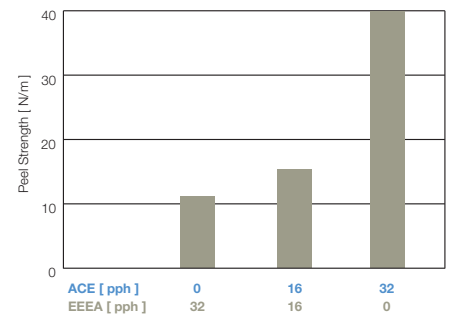
2EHA: 2-Ethylhexyl acrylate
Urethane acrylate based formulation

Pressure Sensitive Adhesive Formulation. Increased Adhesion to Polypropylene and Polyethylene Terephthalate.

Peel Strength PSAs / OPP



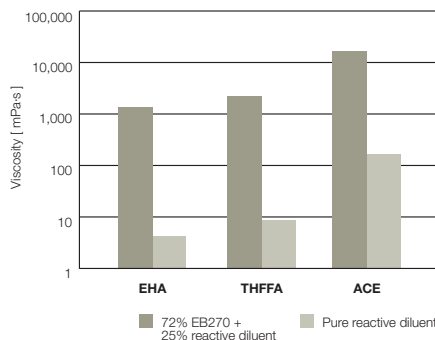
Peel Strength PSAs / PET



EEEA: 2-(2-ethoxyethoxy) ethyl acrylate
Urethane acrylate based formulation

Addition of ACE to a standard UV PSA formulation improves adhesion performance to various plastic substrates such as polypropylene or polyethylene terephthalate.

Viscosity of Reactive Diluents and Their Resin Solution.



ACE has a lower viscosity cutting power than other diluents but brings additional benefits of low volatility and improved adhesion performance.

EHA: 2-Ethylhexyl acrylate
THFFA: Tetrahydrofurfuryl acrylate
EB270: Ebecryl 270, Cytec Aliphatic urethane acrylate

The Global Leader in Thermoset Resins

As the world's largest producer of thermoset resins and the leader in adhesive and structural resins and coatings, Hexion Specialty Chemicals meets customers' specific application needs with a total solutions approach of products and services.

Hexion offers the broadest range of thermoset resin technologies and unmatched technical support – and provides them around the globe.

With our extensive research and development capabilities and applications know-how, we are uniquely able to work in partnership with customers to co-develop better products and systems.

Plus, Hexion's worldwide production network facilitates assured supply and prompt delivery wherever our customers do business.

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