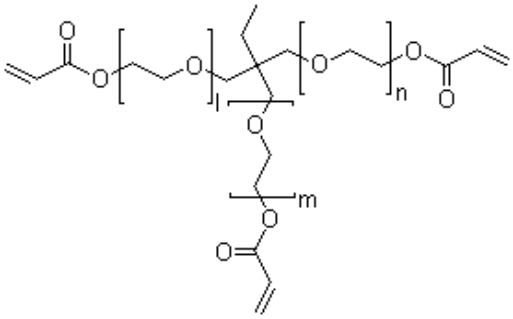
PHOTOMER® 4149
Monomer, Reactive Diluent

Product Data Sheet

General Information

PHOTOMER® 4149 is an aliphatic trifunctional acrylate of low viscosity, low skin irritancy and excellent crosslinking reactivity. In comparison to other trifunctional acrylates, it is an unusually effective reactive diluent with excellent solvency and viscosity reducing characteristics in radiation curable formulations based on epoxy, polyurethane, and polyester oligomers.

Chemical Data



Chemical Name : ethoxylated trimethyolpropane triacrylate
Molecular weight : 428 g/mol
CAS No. : 28961-43-5

Specification

Appearance	**BCM 060**	**Clean and clear liquid**
Viscosity @ 25 °C	**Brookfield, ISO 2555**	**50 - 75 mPa.s**
Colour (APHA)	**ISO 6271**	**≤ 50**
Acid Value	**NF EN ISO 660**	**≤ 0.5 mg KOH/g**
Moisture content	**Karl Fischer, ISO 4317**	**≤ 0.5 %**
Inhibitor content	**Spectrophotometer**	**≤ 500 ppm**
Solvent content	**GC Analysis**	**≤ 200 ppm**

Application

The exceptional film forming properties of PHOTOMER® 4149 makes it suitable for use in radiation curable coatings and varnishes for industrial applications, graphic arts, as well as screen printing, litho and other inks. PHOTOMER® 4149 forms homopolymers of high tensile, moderate elongation, and lower shrinkage than typical first generation trifunctional crosslinkers. It is recommended as a direct replacement for TMPTA and PETA in many UV/EB applications.

PHOTOMER® 4149 imparts hardness without the brittleness characteristic of cured polymers with high crosslink densities and high Tg's. It is intrinsically more hydrophilic than PHOTOMER® 4072 suggesting potential uses on polar substrates. The superior reactivity, viscosity reduction, and low skin irritancy properties of PHOTOMER® 4149 make it an effective crosslinking replacement monomer for first generation trifunctionals. This unusual reactive diluent imparts hardness without brittleness, enhances flexibility, contributes to solvent and abrasion resistance and provides good scuff and high gloss to radiation curable coatings.

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Features & Benefits

UV Properties

Homopolymer films (75 µm) of PHOTOMER® 4149 cured by UV reflect the intrinsic mechanical properties that can be generated from this reactive multifunctional acrylate:

- 2,800 psi tensile strength
- 5% elongation
- < 17% shrinkage on cure

Its potential utility in coating applications is also demonstrated by the excellent flexibility, chemical and abrasion resistance developed by this effective monomer on various substrates.

EB properties

Studies of EB cured neat films (75 µm) confirm the outstanding performance properties that PHOTOMER® 4149 can contribute to coatings:

- 3,600 psi tensile strength
- 10% elongation
- 99% cured at 2 megarads

Storage & Handling

Storage must be in a cool, shaded, well ventilated and dry area away from direct sources of heat and sunlight. PHOTOMER® 4149 may congeal or stratify if cold. Allow to warm to room temperature and mix well before using.
Subject to appropriate storage under the usual storage and temperature conditions, our products are durable for at least 12 months.

PHOTOMER® 4149 should be handled in accordance with good industrial practice. Further information is provided in the material safety data sheet which is available on request.

Regulatory Status

TSCA (USA), EU (Europe), IECSC (China), DSL (Canada), PICCS (Philippines), AICS (Australia), NZIoC (New Zealand), ECL (Korea), ENCS (Japan), Taiwan

Packaging

PHOTOMER® 4149 is available in 200 kg drums and 1000 kg IBCs

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