PETIA

Pentaerythritol Acrylate

February 2017



Tetra- to tri- acrylate ester ratio ~ 1/1

INTRODUCTION

PETIA is a multifunctional reactive diluent with a high degree of acrylic unsaturation and finds use in a variety of ultraviolet light (UV) and electron beam (EB) curable coatings and ink systems where a high degree of crosslinking is desired. PETIA is a mixture of predominantly the tri- and tetra-acrylate esters of pentaerythritol. PETIA has a higher ratio of tri- to tetra-acrylate ester than the similar product EBECRYL 180, and therefore remains liquid at normal ambient temperatures.

PERFORMANCE HIGHLIGHTS

PETIA is characterized by:

- · High acrylate functionality
- Residual hydroxyl content
- Very low vapor pressure
- Liquid at 25°C

UV/EB curable formulated products containing PETIA are characterized by:

- Rapid photo response
- High cross-link density
- Excellent hardness
- Excellent chemical resistance

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

SUGGESTED APPLICATIONS

PETIA finds application in UV/EB cured coatings and ink systems. PETIA is an especially useful diluent where fast cure speed, hardness and high gloss properties are required.

| SPECIFICATIONS | VALUE |
|--|--------------|
| Acid value, mg KOH/g, max. | 10 |
| Appearance | Clear liquid |
| Color, Pt-Co scale ⁽¹⁾ , max. | 70 |
| Viscosity, 25°C, cP/mPa·s | 700-1500 |

TYPICAL PHYSICAL PROPERTIES

| Density, g/ml at 25°C | 1.18 |
|--------------------------------|--------|
| Flash point, Setaflash, °C | >100 |
| Formula weight, triacrylate | 298 |
| tetraacrylate | 352 |
| Vapor pressure, mm Hg, at 25°C | <0.001 |
| at 100°C | <0.01 |

CHEMICAL ABSTRACT SERVICE NUMBER

3524-68-3

2-Propenoic acid, 2-(hydroxymethyl)-2-[[(1-oxo-2-propenyl) oxy]methyl]-1,3-propanediyl ester

4986-89-4

2-Propenoic acid, 2,2-bis[[(1-oxo-2-propenyl) oxy]methyl]-1,3-propanediyl ester

PRECAUTIONS

Before using PETIA, 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.

PETIA may crystallize if exposed to low temperatures, particularly in temperatures below 4°C. Crystallized PETIA may be safely melted by placing the container in a controlled temperature water bath or heated room, no warmer than 120°F (49°C), for a period of 24 hours or less. Steam or electrical heating systems, which generate localized hot spots, should never be used to melt this product. Material being melted in 55-gallon drums should be agitated at regular intervals to assure redistribution of polymerization inhibitor and oxygen.

See the SDS for the recommended storage temperature range for PETIA.

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

www.allnex.com

Disclaimer: allnex Group companies ('allnex') decline any liability with respect to the use made by anyone of the information contained herein. The information contained herein represents allnex's best knowledge thereon without constituting any express or implied guarantee or warranty of any kind (including, but not limited to, regarding the accuracy, the completeness or relevance of the data set out herein). Nothing contained herein shall be construed as conferring any license or right under any patent or other intellectual property rights of allnex or of any third party. The information relating to the products is given for information purposes only. No guarantee or warranty is provided that the product and/or information is adapted for any specific use, performance or result and that product and/or information do not infringe any allnex and/or third party intellectual property rights. The user should perform his/her own tests to determine the suitability for a particular purpose. The final choice of use of a product and/or information as well as the investigation of any possible violation of intellectual property rights of allnex and/or third parties remains the sole responsibility of the user.

Notice: Trademarks indicated with **, ***Or ** as well as the allnex name and logo are registered, unregistered or pending trademarks of Allnex IP s.à.r.l. or its directly or indirectly of filiated allnex Group companies.

©2017 allnex Group. All Rights Reserved. PETIA - TDS 2/27/2017