**INTRODUCTION**

Hexanediol diacrylate (HDDA) is a difunctional reactive diluent that is commonly used as a component of ultraviolet light (UV) and electron beam (EB) curable coatings and inks. HDDA is particularly useful in coatings and inks where improved elasticity, weathering and adhesion are desired in combination with excellent water resistance.

**PERFORMANCE HIGHLIGHTS**

HDDA is characterized by:
- Very low viscosity
- Low color
- Efficient reduction of oligomer viscosity

UV/EB curable formulated products containing HDDA are characterized by:
- Improved elasticity
- Improved weathering
- Good cure response at low cross-link density
- Improved adhesion
- Good water resistance

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

**SUGGESTED APPLICATIONS**

HDDA is especially useful in UV/EB curable coatings and inks where improved adhesion, increased elasticity and good weathering are desired. HDDA is recommended for use in:
- Improved adhesion to plastics, metal and glass
- Exterior durable coatings and inks

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid value, mg KOH/g, max.</td>
<td>0.4</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Color, Pt-Co scale(2), max.</td>
<td>40</td>
</tr>
<tr>
<td>Residual solvent, wt. %, max.</td>
<td>0.09</td>
</tr>
<tr>
<td>Viscosity, 25°C, cP/mPa·s</td>
<td>5 - 8</td>
</tr>
<tr>
<td>Water, wt. %, max.</td>
<td>0.1</td>
</tr>
</tbody>
</table>

**TYPICAL PHYSICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density, g/ml at 25°C</td>
<td>1.02</td>
</tr>
<tr>
<td>Flash point, Setaflash, °C</td>
<td>&gt;100</td>
</tr>
<tr>
<td>Formula weight</td>
<td>226</td>
</tr>
</tbody>
</table>

**CHEMICAL ABSTRACT SERVICE NUMBER**

13048-33-4
2-Propenoic acid, 1,6-hexanediyl ester

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(1) Test methods are available upon request.
(2) Also referred to as APHA color.

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STORAGE AND HANDLING

Before using HDDA, consult the Safety Data Sheet for additional information on safety and handling procedures, and recommended personal protective equipment.

The recommended storage temperature range for HDDA is 13-38°C (55-100°F). HDDA will crystallize at temperatures lower than 10°C (50°F). Crystallized HDDA can be thawed by placing the container in an environment warmed to a maximum of 38°C (100°F) until completely liquefied. Electrical heating bands/tapes or direct exposure to live steam should never be used for heating as these can cause uncontrolled polymerization. Periodic agitation/mixing of the HDDA during thawing is recommended. Crystallized HDDA that has been properly thawed is unaffected in quality and is suitable for use.

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. This material should not be stored for more than 2 years.

PRECAUTIONS

Avoid contact with eyes and skin. Direct contact with this material may cause moderate eye and skin irritation. Contact with skin may cause a cross-allergic reaction in persons already sensitized to acrylate materials. Wash thoroughly after handling. Keep container tightly closed. Use with adequate ventilation.

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