U-Cure 9399

聚氨酯丙烯酸酯 / Polyurethane Acrylate

9-Functional Polyurethane Acrylate Resin

KASTER

Innovation in Polymer Chemistry

昆山卡斯特高分子材料有限公司

技术资料表　Technical Data Sheet (TDS)

1　产品介绍 Product Introduction

U-Cure 9399 是一种高性能的九官能团聚氨酯丙烯酸酯树脂。其分子设计使其在紫外线（*UV*）照射下具有极高的反应活性，固化后能够形成极其致密的交联网络，专门用于追求极致硬度和物理抗性的涂层系统。

U-Cure 9399 is a high-performance 9-functional polyurethane acrylate resin. Its molecular design provides extremely high reactivity under UV radiation, forming a dense cross-linked network. It is specifically designed for coating systems requiring extreme hardness and resistance.

2　物理及力学特性 Physical & Mechanical Properties

性能参数 Properties	典型指标 Typical Value	测试标准 Standard
外观 Appearance	透明澄清液体 / Clear Liquid	Visual
粘度 Viscosity (cps @ 60°C)	7,000 - 15,000	ASTM D2196
固含量 Solid Content (%)	100%	GB/T 1725
官能度 Functionality	9	Theoretical
NCO 残存 NCO Content (%)	$<$ 0.2%	-
色数 Color (Gardner)	$\leq$ 1	ASTM D1544

3　核心特性 Key Product Features

- **固化速度快 (Fast Curing)**
  极高的官能度确保了卓越的反应活性，在传统汞灯及 *LED-UV (365/385/395nm)* 体系下均表现出极高效率。
  High functionality ensures excellent reactivity under both mercury lamps and LED-UV systems.
- **极高硬度与耐磨性 (Superior Hardness & Abrasion Resistance)**
  超高交联密度显著提升漆膜的铅笔硬度，在钢丝绒测试中表现卓越。
  Ultra-high cross-linking density enhances pencil hardness and steel wool resistance.
- **优异的光学性能 (Excellent Optical Properties)**
  具有高透光率和极低雾度，非常适合光学膜片应用。
  High light transmittance and low haze, ideal for optical film applications.

4　建议应用 Product Applications

- **PET 光学膜加硬 (PET Optical Film Hard Coating)**
  提供 *3H-5H* 以上的铅笔硬度，并保持良好的光学透明度。
  Provides pencil hardness above 3H-5H while maintaining optical clarity.

- **真空电镀面漆 (Vacuum Plating Topcoat)**
  作为面漆使用，提供出色的表面防护及耐化学性能。
  Used as a topcoat for excellent surface protection and chemical resistance.
- **UV 涂料与油墨 (UV Coatings & Inks)**
  适用于高硬度要求的塑胶漆、木器漆及高性能油墨。
  Suitable for plastic/wood coatings requiring extreme hardness.

5 常见问题解答 Q&A

Q: 如何平衡极高官能度带来的收缩力？ (How to balance high shrinkage?)

A: 建议在经电晕或 *Primer* 处理的底材上使用，或添加低收缩单体配套使用。
Apply on primed substrates or use with low-shrinkage monomers to balance adhesion.

6 储存与安全 Storage and Safety

- **储存 (Storage)***: 密封避光存放于 -10°C 至 35°C 环境。保质期 12 个月。*
  Store in sealed, light-proof containers at -10°C to 35°C. Shelf life is 12 months.
- **安全 (Safety)***: 对眼睛有刺激性。操作请佩戴个人防护装备，详见 SDS。*
  Irritating to eyes. Wear personal protective equipment. Refer to SDS for details.

联系方式 Contact Information

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