

U-Cure 93721

高强韧双重固化 UV 树脂

High Crosslinking & Toughness Dual-Cure UV 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 93721 是一种改性二官能团含羟基聚氨酯丙烯酸酯树脂。其设计核心在于利用高浓度的羟基 (OH=160) 在 UV 固化后形成第一层交联网络，并通过后续的热固化过程构建极高密度的二次交联体系。该产品在保持聚氨酯特有的高韧性的同时，展现出卓越的耐化学性和机械强度。

U-Cure 93721 is a modified difunctional hydroxy-functional urethane acrylate resin. Its core design leverages a high hydroxyl concentration (OH=160) to form an initial UV-cured network, followed by a secondary high-density crosslinking through thermal curing. This product exhibits excellent chemical resistance and mechanical strength while maintaining the high toughness characteristic of polyurethanes.

2 核心特性 Key Product Features

- 超高交联密度 (Ultra-High Crosslinking Density)**
通过高羟基值与异氰酸酯的充分反应，构建致密的双重交联网络，显著提升漆膜的硬度与耐溶剂性。
Achieves a dense dual-crosslinking network via high hydroxyl value reaction, significantly enhancing film hardness and solvent resistance.
- 卓越的冲击韧性 (Superior Impact Toughness)**
特殊的聚氨酯链段设计，使其在极高硬度下仍保有优异的柔韧性与抗开裂性能。
Special urethane segment design ensures excellent flexibility and anti-cracking properties even under high hardness conditions.
- 附着力与耐候性 (Adhesion & Weatherability)**
对极性基材具有强大的化学锚定力，且由于交联结构稳定，具有极佳的耐候表现。
Provides strong chemical anchoring to polar substrates and exhibits superior weatherability due to its stable crosslinked structure.

3 物理及力学特性 Physical 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)	3,000 - 5,000	ASTM D2196
官能度 Functionality	2	Theoretical
色数 Color (Gardner)	≤ 1	ASTM D1544
NCO 残存 NCO Content (%)	< 0.2%	Titration
固含量 Solid Content (%)	100%	GB/T 1725
羟基值 Hydroxyl Value (mg KOH/g)	~ 160	Internal Method

4 建议应用 Product Applications

- 高性能 3C 塑胶涂料 (*High-Performance 3C Plastic Coatings*)
适用于手机、笔记本电脑等需要高耐磨、高抗冲击性能的涂层。
Suitable for coatings requiring high wear and impact resistance on electronics like smartphones and laptops.
- 工业金属防护 (*Industrial Metal Protection*)
在需要兼顾漆膜硬度 (交联) 与弯折性能 (韧性) 的金属件上表现优异。
Excels on metal parts that require a balance of film hardness and bending performance.

5 常见问题解答 Q&A

Q: 如何平衡高交联与高韧性? (How to balance high crosslinking and toughness?)

A: U-Cure 93721 采用弹性聚氨酯骨架, 通过均匀分布的交联点避免应力集中, 实现“硬而不脆”。
U-Cure 93721 uses an elastic polyurethane backbone with uniform crosslinking to avoid stress concentration, achieving "hardness without brittleness."

Q: 双重固化体系中 OH:NCO 的推荐配比是多少? (Recommended OH:NCO ratio in dual-cure systems?)

A: 建议使用摩尔比 $OH:NCO = 1:1.1 - 1.3$ 。以市售 Bayer Desmodur N3390 (NCO含量 ~19.6%) 为例, 每 100 份 U-Cure 93721 建议添加约 67.6 - 79.9 份 N3390 (重量比)。
Recommended molar ratio is $OH:NCO = 1:1.1 - 1.3$. Taking Bayer Desmodur N3390 (NCO ~19.6%) as an example, for every 100 parts of U-Cure 93721, we suggest adding approximately 67.6 - 79.9 parts of N3390 by weight.

6 储存与安全 Storage and Safety

- 储存 (*Storage*): 建议储存于 -10 至 35°C 环境。高交联型树脂需严防水分进入以防羟基失效。
Store at -10 to 35°C. High crosslinking resins must be kept strictly away from moisture to prevent OH degradation.
- 包装 (*Packaging*): 200kg/桶 (*Standard 200kg Drums*)。
- 安全 (*Safety*): 请参考 SDS, 操作时佩戴防护器材。
Refer to SDS; wear protective equipment during handling.

联系方式 Contact Information

昆山卡斯特高分子材料有限公司 Kunshan Kaster Polymer Co., Ltd.
地址: 江苏省昆山市玉山镇祖冲之路 1666 号清华科技园
Address: Tsinghua Science Park, No. 1666 Zuchongzhi Road, Kunshan, Jiangsu, China
Tel: 0512-50137234 Fax: 0512-50137230 Web: www.kasterchem.com