

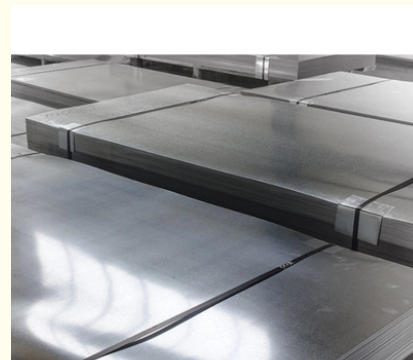


Strong Adhesion UV Metal Adhesion Resin Rapid Curing

Our Product Introduction

Basic Information

- Place of Origin: Wuhan, Hubei, China
- Brand Name: Meilun Materials
- Model Number: SNK
- Minimum Order Quantity: 20kg
- Packaging Details: 20kg/barrel, 200kg/barrel
- Payment Terms: L/C, T/T
- Supply Ability: 50T/month



Product Specification

- Highlight: UV Metal Adhesion Resin,
UV water resistant resin,
UV yellowing resistant resin



武汉美纶新材料有限公司
WUHAN MEILUN NEW MATERIALS CO., LTD

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Product Description

UV Metal Adhesion Resin

Product Description:

UV metal adhesion resin is a high-performance photocurable material specifically developed for surface treatment of metal substrates. It is widely used in consumer electronics, automotive components, household hardware, industrial equipment, and other fields. With UV high-functionality resin as the core, the product utilizes molecular structure design and functional modification to significantly enhance bonding strength with metal materials such as stainless steel, aluminum alloy, and magnesium alloy. It also integrates UV yellowing-resistant resin, UV water-resistant resin, and other key properties to ensure long-term stability in complex environments, meeting the high standards of adhesion, durability, and environmental compliance in advanced manufacturing.

Key Technological Highlights

UV High-Functionality Resin

Utilizes high-functionality monomers and prepolymers to significantly increase crosslinking density, forming a dense and tough cured film that enhances both chemical bonding and physical anchoring with metal surfaces.

UV Yellowing-Resistant Resin

Designed with an aliphatic molecular structure to prevent photooxidation reactions from aromatic components, maintaining pure color even under prolonged UV exposure or high-temperature conditions, making it ideal for light-colored or transparent coatings.

UV Water-Resistant Resin

Incorporates hydrophobic functional groups and a dense crosslinking network to effectively block moisture penetration, preventing metal substrate corrosion and coating bubbling or peeling—perfect for humid or outdoor applications.

Core Properties & Advantages

UV Strong Metal Adhesion Resin: Utilizes polar group-directed adsorption and interface reinforcement technology, achieving 5B adhesion rating (ASTM D3359) on metal substrates, solving traditional coating delamination issues.

UV Fast-Curing Resin: Supports LED-UV light source for second-level curing, compatible with high-speed production lines, significantly improving processing efficiency and reducing energy consumption.

UV High-Transparency Resin: Light transmittance >95% (400-800nm), ensuring no color interference with plated layers, perfectly showcasing metal textures and fine details.

UV High-Gloss Resin: Forms a mirror-smooth surface after curing, achieving a 60° gloss level of >120 GU, enhancing the high-end visual appeal of products.

UV Low-VOC Resin: Solvent-free formulation with VOC content <50ppm, compliant with EU REACH and China GB/T 38597 environmental regulations.

UV High-Strength Film-Forming Resin: Hardness up to 4H (pencil hardness), impact resistance >50kg·cm, offering excellent wear resistance and durability.

LED Optimized Surface Cure Resin: Enhanced photoinitiator system prevents oxygen inhibition, ensuring fast, non-tacky surface curing under LED light.

Typical Application Scenarios

Consumer Electronics: Metal phone frames, laptop casings, smartwatch housings—balancing lightweight design with scratch resistance.

Automotive Components: Wheel hub covers, door handles, interior metal trims—featuring excellent weather and chemical resistance.

Household Hardware: Stainless steel kitchenware, bathroom faucets, metal lighting fixtures—providing high-gloss protection and easy-to-clean functionality.

Industrial Equipment: Precision instrument casings, metal nameplates—meeting high-strength, corrosion-resistant, and long-term outdoor use requirements.

Working Principle

UV metal adhesion resin achieves high-efficiency bonding through the following steps:

Surface Preparation: The metal surface is cleaned and treated to remove grease, oxides, and other impurities, ensuring optimal adhesion.

Resin Coating: The UV metal adhesion resin is evenly applied to the metal surface using spraying, brushing, or dipping methods.

UV Curing: The coated resin is exposed to UV light, enabling rapid curing and forming a strong adhesive layer.

Post-Treatment: Additional processes such as polishing, coloring, or applying protective coatings can be performed as needed to enhance performance and aesthetics.

Advantages & Challenges

Advantages:

- Rapid curing
- Strong adhesion to metals
- Eco-friendly formulation
- Enhanced production efficiency and product quality

Challenges:

- Requires precise control of coating and curing processes to ensure uniform distribution and complete curing.
- Some substrates may require pre-treatment to achieve optimal adhesion.

Environmental & Process Compatibility

This product is based on UV low-VOC resin, reducing environmental pollution at the source. It is compatible with multiple coating processes, including spraying, roller coating, and dipping, and is highly compatible with LED-UV curing equipment. Its low shrinkage characteristic prevents microcracks at the metal interface, and combined with the LED-optimized surface cure resin, it simplifies the production process and improves yield rates.

Conclusion

UV metal adhesion resin leverages the synergistic enhancement of high-functionality resins and a modular multifunctional design (such as yellowing resistance, water resistance, and high transparency) to overcome technical barriers in metal substrate coating. It provides a one-stop solution with strong adhesion, high durability, and environmental compliance. Whether for premium consumer products or industrial applications in harsh environments, this product helps achieve quality upgrades and cost-efficiency improvements.

For customized development or technical consultation, please contact our engineering team!

Test Formula: (Using a 25µm wire bar)

SNK: 10g

184: 0.2g

TPO: 0.3g / 10.5g (Adjust curing speed and hardness with 5-10% GPTA)

Recommended product models(please search on the site):

SNK-2116,SNK-2117,SNK-2213,SNK-2215, SNK-2218, SNK-9201,SNK-9203

Storage and validity period:

1: This product should be stored in a cool, well-ventilated room, and strictly protected from light exposure for stable storage.

2: Keep the resin away from heat sources and store it in a dark place to prevent potential hazards or affecting the stability of resin storage.

3: When stored at room temperature, it remains stable for six months. After use, please tightly seal the container to avoid exposure to light sources and gelation.

Package:

200 kilograms/iron drum

20 kilograms/iron drum

200 kilograms/plastic drum

20 kilograms/plastic drum



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