UOP-2000 Series UV Gravure Embossing Varnish
Technical Data Sheet

1. Product Overview

High-build UV gravure embossing varnish engineered for rotogravure printing units. Delivers generous coating film thickness, pronounced three-dimensional tactile relief, sharp contour edge definition, and precise pattern replication. Exhibits outstanding scuff resistance and anti-blocking performance. Primarily used in spot 3D tactile embossing embellishments on cigarette packaging, liquor cartons, and luxury gift boxes.

2. Product Features

- **Pronounced 3D Tactile Relief:** Heavy ink film build with upright tactile profile and razor-sharp edge definition;
- **Precise Pattern Reproduction:** Smooth gravure transfer; excellent resolution of fine lines and 3D micro-text;
- **High Scuff & Abrasion Resistance:** Balanced hardness and toughness, preventing scuffing during large-batch stacking;
- **High-Speed Gravure Runnability:** Optimized for high-speed gravure lines (100–180 m/min) with stable transfer and zero misting;
- **Eco-Friendly & Low Odor:** Fast cure response and low residual volatiles, compliant with modern green packaging regulations.

3. Suitable Substrates

Suitable for gold/silver foil board, SBS ivory board, and coated art paper substrates.

4. Technical Specifications

Property	Unit	Typical Value	Test Method / Notes
Appearance & Color	-	Light yellow transparent liquid	Visual inspection
Viscosity	s	40–100	Coating Cup #4, 25±0.5°C
Solid Content	%	≥97	GB/T 33374-2016
Gloss (60°)	GU	20–90	60° angle, GB/T 13217.2-2024

5. Application Guidelines

Ink Preparation	Contains specialty leveling aids and micro-wax powders; stir thoroughly before dispensing.
Plate / Cylinder Specs	22–60 μm cylinder cell depth.
Dilution Ratio	Use dedicated UV thinner or n-propyl acetate as recommended by HCOLOR technical support.
Press Viscosity	18–30 s (Coating Cup #4, 25°C).
Press Speed	100–180 m/min.
Drying Method	High-pressure mercury UV lamp system.
Equipment Cleaning	Use ethyl acetate for temporary halts; use dedicated wash for extended downtime.
Application Note	Evaluate embossed relief height and interlayer adhesion under actual press conditions prior to mass production.

6. Regulatory & Safety

Regulatory Compliance	Complies with RoHS and REACH (SVHC) directives.
Food Contact Statement	Formulated for non-direct food contact outer packaging only. For specific food-contact migration compliance, please contact HCOLOR technical department for dedicated project evaluation.
Usage Note	
Safety Data Sheet (SDS)	Available upon customer request.
User Responsibility	Users must independently verify regulatory compliance, performance, and fitness for intended purpose under actual operational conditions.

7. Packaging & Storage

Standard Packaging	20 kg / 25 kg plastic pails; 1,000 kg IBC containers (custom packaging available upon request).
Storage Conditions	Store strictly protected from light in tightly sealed containers. Keep in a dry, cool, and well-ventilated warehouse at 5–25°C, away from fire, heat sources, and strong oxidizers. Strictly avoid direct exposure to sunlight and workshop fluorescent lighting to prevent dark polymerization.
Shelf Life	12 months from production date in unopened original containers.
Post-Opening Care	Reseal immediately and tightly after dispensing; recommended to use within 6 months.

8. Typical Product Grades

Product Code	Key Features	Suitable Substrates	Target Applications
UOP-2199C	Superior leveling, crisp and sharp contour edges	Paper substrates	Cigarette packaging, luxury gift cartons
UOP-2558D	High gloss clarity, excellent leveling and high slip	Paper substrates	Cigarette packaging, luxury gift cartons
UOP-2449B	Non-yellowing, high abrasion and scuff resistance	Paper substrates	Cigarette packaging, luxury gift cartons

1. Baseline Platforms & Customization: The products listed above are core baseline platforms proven through extensive commercial mass production. To meet specific press speeds (e.g., ultra-high-speed inline coating), substrate absorbency variations, or demanding rub/crease-crack resistance requirements, HCOLOR provides tailored viscosity adjustments, customized additive packages, and bespoke functional performance development.

2. Specialty Process Integration: If specialized finishes such as drip-off / drip-relief combination effects or tactile matte finishes are required, please contact HCOLOR technical support for a comprehensive turnkey printing formulation.

9. Disclaimer

1. The data are typical values intended for product selection and technical reference only. Unless otherwise agreed in writing, they do not constitute guaranteed specifications.

2. The information contained herein is based on our current knowledge and experience and is provided in good faith for general application guidance only. It does not constitute a legal warranty, guarantee, or binding technical specification. Users are strictly responsible for evaluating and confirming product suitability, process compatibility, and commercial usability under their actual operating conditions and production equipment prior to commercial use.