WPG-B30000 Series Water-Based Gravure Plastic Low-VOC Ink Technology Data Sheet

1. Product Overview

WPG-B30000 Series is an advanced water-based gravure low-VOC printing ink engineered for plastic films. Specially formulated for food packaging film bags/pouches, courier bags, plastic bags, and assorted flexible plastic film packaging. It delivers superior gravure surface printing performance on BOPP, PET, and PE films, characterized by ultra-low VOC emissions and environmentally friendly water-based chemistry.

2. Product Features

- **High Color Density:** Rich, vibrant, and saturated coloration with superior hiding power.
- **Strong Adhesion:** Outstanding bond strength and anchorage on BOPP, PET, and PE films.
- **Low-VOC Formulation:** Ultra-low VOC emissions, minimal residual odor, and eco-friendly water-based profile.
- **Fast Drying:** Rapid solvent release and drying profile, maximizing printing efficiency.
- **Excellent Printability:** Clean dot reproduction, sharp highlight definition, and smooth ink transfer.
- **High Rub Resistance:** Robust scuff and abrasion resistance ensuring durable printed finishes.

3. Suitable Substrates

Suitable for plastic film substrates including BOPP, PET, PE, and related surface-treated polymer films.

4. Technical Specifications

Property	Unit	Typical Value	Test Method / Notes
Appearance & Color	-	Viscous liquid in various colors	Visual inspection
Viscosity	s	25–45	Zahn #2 cup, 25°C
pH Value	-	8.0–9.0	25°C
Solid Content	%	-	Oven drying, 130°C × 2 h
Gloss (60°)	GU	-	60° angle

5. Application Guidelines

Ink Preparation	Stir thoroughly for 5–10 minutes prior to use. Filtration through a ≥200 mesh screen is recommended before loading onto press. Single-component system; consume promptly after opening.
Plate / Cylinder Specs	Gravure surface printing: cylinder screen 150–250 LPI, moderate cell depth, moderate doctor blade pressure.
Dilution Ratio	Deionized water or dedicated aqueous diluent, addition ratio 1%–10% (adjust based on press speed and target operating viscosity).
Press Viscosity	Operating viscosity 20–35 s (Zahn #2 cup, 25°C).
Press Speed	30–70 m/min (suitable for high-speed printing; optimize based on press model and drying capacity).
Drying Method	Hot air drying, air temperature 60–90°C; ensure complete drying before rewinding.
Equipment Cleaning	Clean printing cylinders and ink circulating systems promptly after printing with water or dedicated aqueous cleaning agents to prevent ink drying and clogging.
Application Note	Prior to initial commercial production, thorough trials must be conducted under actual operating conditions to verify ink adhesion, drying profile, and post-finishing compatibility on target substrates.

6. Regulatory & Safety

Regulatory Compliance	Complies with RoHS and REACH (SVHC) directives.
Food Contact Statement	Formulated for printing on food packaging film bags/pouches, courier bags, plastic bags, and assorted flexible plastic packaging. For direct-contact applications involving food or pharmaceuticals, specific customer compliance evaluations are required.
Usage Note	VOC content complies with China national standard GB 38507-2020.
Safety Data Sheet (SDS)	Safety Data Sheets (SDS) are available upon request.
User Responsibility	Users must independently verify product suitability, regulatory compliance, and processing performance under actual commercial production conditions prior to full-scale adoption.

7. Packaging & Storage

Standard Packaging	Standard: 20 kg / plastic drum. Custom packaging available upon request.
Storage Conditions	Store tightly sealed in original containers. Keep in a dry, cool, and well-ventilated warehouse at 5–35°C, protected from direct sunlight and rain. Strictly protect from freezing; prevent winter frost damage or high-temperature degradation.
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
WPG-B30000 Series	High color density / Low VOC emissions / Fast drying	BOPP, PET, PE plastic films	Food packaging film, courier bags, shopping carrier bags

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.