WLG80000 Series Water-Based Gravure Paper Inks

1. Product Overview

WLG80000 Series is a high-performance eco-friendly water-based rotogravure ink system developed by Haocai for modern paper and paper-plastic composite packaging, covering three core application platforms: cigarette packaging, high-grade packaging paper/hygiene materials, and aseptic liquid milk packaging extrusion coating. Featuring high color strength, sharp dot rendition, and outstanding press stability, it delivers excellent mechanical durability and converting suitability, fully satisfying high-speed rotogravure printing requirements.

2. Product Features

- High Tinting Strength: Ultra-fine pigment dispersion delivering rich, saturated colors with vivid shade development and crisp dot reproduction.
- Broad Press Speed Latitude: Anti-shearing and anti-skinning stability with superior ink laydown, running stably at 80–300 m/min on high-speed rotogravure presses.
- Robust Intercoat & Substrate Adhesion: Tenacious bond strength on assorted cardboards, high-density metallized transfer paper, and extrusion-coated PE surfaces.
- Outstanding Specialty Resistance: Milk packaging grades resist water immersion, high-temperature heat sealing, hydrogen peroxide sterilization, and extrusion thermal laminating.
- Superb Rub Resistance & Converting Suitability: High film toughness, crease and burst resistance, enabling smooth operation on high-speed cigarette packaging lines (up to 1,000 packs/min).
- Low-Odor & Eco-Friendly: Pure aqueous chemistry with ultra-low VOC emissions; cigarette grades strictly comply with tobacco industry standard YC/T 207.

3. Suitable Substrates

Suitable for white cardboard, gold/silver card, coated art paper, woodfree paper, matte paper, kraft paper, metallized transfer paper, non-aluminum high-gloss paper, PE-coated paper, and aseptic liquid packaging base paper.

4. Technical Specifications

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

Property	Unit	Typical Value	Test Method / Notes
Appearance & Color	-	Homogeneous free-flowing liquid in various colors	Visual inspection
Viscosity	s	35–50 (supplied) / 15–22 (press)	Ford #4 cup, 25±0.5°C
pH Value	-	8.0–9.5	Precision pH meter, 25°C
Fineness	μm	≤ 15	Finest grind gauge, GB/T 13217.3-2024
Solid Content	%	35–48 (varies by color)	Oven drying, 105°C × 2 h

5. Application Guidelines

Ink Preparation	Stir thoroughly for 10 minutes until completely homogeneous; filtration through 200 mesh screen is recommended before loading into ink sump. 1-pack water-based ink.
Plate / Cylinder Specs	Electromechanically engraved or laser-etched gravure cylinders, screen count 150–220 LPI (60–90 L/cm), moderate cell depth.
Dilution Ratio	Standard diluent: Ethanol:Deionized Water = 1:1, addition ratio 20%–40% (adjust based on press speed and target operating viscosity).
Press Viscosity	Recommended operating press viscosity: 15–22 s (Ford #4 cup, 25°C).
Press Speed	80–300 m/min (optimize according to drying oven length and heated air flow volume).
Drying Method	Graduated hot air drying, drying chamber air temperature 60–90°C; ensure complete drying before rewinding or die-cutting.
Equipment Cleaning	Clean printing cylinders and circulating pipelines immediately after press stoppage with water or specialized mild alkaline aqueous cleaners to prevent dry skinning.
Application Note	Prior to initial commercial production, thorough trials must be conducted under actual operating conditions to verify ink adhesion, opacity, die-cutting, and sterilization suitability.

6. Regulatory & Safety

Regulatory Compliance	Complies with EU RoHS 2.0 heavy metal limits, REACH (SVHC) candidate list, and China Environmental Labelling (Ten-Ring) certification.
Tobacco Standard	Cigarette packaging grades (WLG80000-Tobacco) strictly meet and exceed tobacco industry standard YC/T 207 VOC limit requirements.
Food Contact Statement	Milk packaging extrusion grades comply with food outer packaging ink standards without toxic heavy metal migration; specific migration verification available upon project confirmation.
SDS & Responsibility	Full Safety Data Sheets (SDS) are available upon request; users must independently confirm process suitability and regulatory compliance prior to full-scale adoption.

7. Packaging & Storage

Standard Packaging	Standard packaging: 20 kg plastic pail; custom packaging: 5 kg/pail or custom volumes available upon request.
Storage Conditions	Store tightly sealed in original containers. Keep in a dry, cool, and well-ventilated warehouse at 5–35°C, away from heat and open flame; strictly protect from freezing and direct sunlight.
Shelf Life	12 months from production date in unopened original containers.
Post-Opening Care	Reseal immediately and tightly after dispensing to prevent surface skinning from water evaporation and contamination by dust or airborne particulates.

8. Typical Product Grades

Product Code	Key Features	Suitable Substrates	Target Applications
WLG80000-Tobacco	Cigarette gravure water-based ink / Strict VOC compliance with YC/T 207 / Anti-smear rub durability	Metallized transfer paper, non-aluminum transfer paper, gold/silver card, white cardboard	Cigarette hard/soft pack outer cartons, cigarette carton outers, inner frame liners, tipping paper
WLG80000-Packaging	Packaging paper gravure water-based ink / High color saturation / Superb color laydown & fast drying	Coated art paper, woodfree paper, white cardboard, kraft paper, specialty packaging papers	Luxury cosmetic boxes, boutique gift boxes, paper shopping bags, hygiene disposable outer packaging
WLG80000-Milk	Aseptic milk packaging gravure ink / Hydrogen peroxide sterilization resistance / Anti-delamination under thermal extrusion	PE-coated paper, liquid aseptic composite board, paper-plastic laminates	Pasteurized milk cartons, Tetra Pak, SIG Combibloc, ambient aseptic liquid beverage cartons

1. Baseline Platforms & Customization: The products listed above are core baseline platforms of the WLG80000 Series proven through extensive commercial mass production. To meet specific press speeds (e.g., ultra-high-speed printing above 300 m/min), functional substrate ink absorption variations, or demanding rub/crease-crack resistance requirements, Haocai provides tailored viscosity adjustments, custom spot color blending, and bespoke functional performance development.

2. Specialty Process Integration: If specialized water-based overprint varnishes, matte varnishes, or localized anti-blocking primer sealers are required to achieve high-contrast finishing effects, please contact Haocai technical support for a comprehensive turnkey formulation.

9. Disclaimer

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.