WPG-D20000 Series Water-Based Gravure Shrink Film Ink
Technical Data Sheet

1. Product Overview

WPG-D20000 Series Shrink Film Ink is an eco-friendly water-based gravure printing ink engineered for reverse printing on PVC and PE shrink films. Specially formulated with resilient elastic resins, it withstands extreme thermal contraction during hot-air/steam tunnel shrinking without cracking, pinholing, or color flaking.

2. Product Features

- **High Thermal Shrinkage Flexibility:** Conforms elastically to film shrinkage up to 70% without graphic distortion or cracking.
- **High Color Density & Opacity:** Rich pigmentation provides vibrant graphic reproduction and high-opacity white backing.
- **Tenacious Film Adhesion:** Superior adhesion onto untreated and corona-treated shrink films under high steam temperatures.
- **Smooth Gravure Runnability:** Excellent doctor blade wipe, fast drying, and clean cylinder cell release at 35–80 m/min.
- **Eco-Friendly Low VOCs:** Water-based formulation meeting modern sustainable packaging environmental requirements.

3. Suitable Substrates

Suitable for PVC, PE, and heat-shrinkable plastic films (surface tension ≥ 38 dyne/cm recommended).

4. Technical Specifications

Property	Unit	Typical Value	Test Method / Notes
Appearance & Color	-	Viscous liquid in various colors	Visual inspection
Viscosity	s	35–65	Zahn #2 cup, 25°C
pH Value	-	8.0–9.0	Precision pH meter, 25°C
Solid Content	%		
Gloss (60°)	GU		

5. Application Guidelines

Ink Preparation	Stir thoroughly for 5–10 minutes; filter through 200-mesh screen before use. 1-pack system.
Plate / Cylinder Specs	Gravure cylinder 150–250 LPI, moderate cell depth, uniform blade pressure.
Dilution Ratio	Ethanol:deionized water = 9:1 or specialized reducer, addition ratio 5%–20%.
Press Viscosity	25–35 s (Zahn #2 cup, 25°C).
Press Speed	35–80 m/min (adjust per machine drying tunnel capacity).
Drying Method	Hot air drying, air temperature 40–55°C; ensure complete drying before rewinding.
Equipment Cleaning	Wash cylinder and ink fountains immediately with water or specialized cleaner.
Application Note	Verify film surface dyne level (≥38 dyne/cm) and conduct shrink tunnel tests before production.

6. Regulatory & Safety

Regulatory Compliance	Complies with EU RoHS 2.0 and REACH (SVHC) directives for environmental plastic compliance.
Food Contact Statement	
Usage Note	
Safety Data Sheet (SDS)	Full Safety Data Sheets (SDS) are available upon request from HCOLOR technical support.
User Responsibility	Users must independently confirm process compatibility and compliance under actual operating conditions.

7. Packaging & Storage

Standard Packaging	Standard packaging: 20 kg plastic drum; custom volumes (1 kg, 5 kg, 200 kg) available upon request.
Storage Conditions	Store tightly sealed in original drums at 5–35°C in a dry, ventilated warehouse; protect from freezing.
Shelf Life	12 months from manufacturing date in unopened original containers.
Post-Opening Care	Reseal containers tightly immediately after use; consume within 6 months to prevent surface skinning.

8. Typical Product Grades

Product Code	Key Features	Suitable Substrates	Target Applications
WPG-D20000-Shrink	High thermal shrinkage flexibility / Crack-free / High opacity	PVC, PE heat-shrink films	Beverage bottle shrink sleeve labels, condiment tamper-evident bands, daily chemical outer shrink wraps

1. Baseline Platforms & Customization: The products listed above are core baseline platforms proven through extensive commercial mass production. To meet specific line speeds, substrate surface tension variations, or demanding shrink ratios, HCOLOR provides tailored viscosity adjustments and custom PMS color matching.

2. Specialty Process Integration: If integration with functional tie-layer primers, specialty barrier coatings, or steam-resistant overprint varnishes is required, please contact HCOLOR technical support for a comprehensive turnkey formulation solution.

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.