SOF5000 Series Solvent-based Paper Overprint Varnish Technology Data Sheet

1. Product Overview

SOF5000 Series is an ester/alcohol-soluble paper overprint gloss varnish specially developed for cigarette packaging, widely applied to cigarette outer cartons, inner frame liners, tipping paper, and prestige packaging. It is designed for overprint varnishing on woodfree paper, coated art paper, matte coated paper, white cardboard / grey-back duplex board, kraft paper, pressure-sensitive paper, laser transfer paper, metallized transfer paper, and laminated papers to impart high specular gloss. Formulated with an ester/alcohol-soluble resin system, it delivers fast drying kinetics and a low residual odor profile.

2. Product Features

- **Excellent Leveling:** Smooth, uniform coating laydown with rapid self-leveling.
- **High Specular Gloss:** Generates an enamel-like, deep gloss and full film build.
- **Strong Adhesion:** Superior intercoat and substrate adhesion to various papers and laminated boards.
- **Fast Drying:** Rapid solvent release from ester/alcohol-soluble system, preventing set-off.
- **High Clarity & Transparency:** Crystal-clear film enhancing underlying graphic brilliance.
- **Low Odor & Eco-Friendly:** Clean ester/alcohol-soluble formulation with low odor, ideal for tobacco packaging overprint.

3. Suitable Substrates

Suitable for woodfree paper, coated art paper, matte coated paper, white cardboard / grey-back duplex board, kraft paper, pressure-sensitive paper, laser transfer paper, metallized transfer paper, and laminated papers.

4. Technical Specifications

Property	Unit	Typical Value	Test Method / Notes
Appearance & Color	-	Transparent viscous liquid	Visual inspection
Viscosity	s	35–55	Zahn #2 cup, 25°C
Solid Content	%	25–35	Oven method, 120°C × 2 h
Gloss (60°)	GU	50–60	60° angle

5. Application Guidelines

Ink Preparation	Stir thoroughly for 5–10 minutes prior to use. Filtration through ≥200 mesh screen is recommended before loading onto press. 1-pack system; consume promptly after opening.
Plate / Cylinder Specs	Gravure / Surface: cylinder screen 150–250 LPI, cell depth 35–55 µm, moderate doctor blade pressure.
Dilution Ratio	Standard diluent: n-Propyl acetate : Ethyl acetate : Anhydrous ethanol = 3:3:3; Dilution ratio 30%–50% (adjust based on press speed and target operating viscosity).
Press Viscosity	Operating viscosity 18–25 s (Zahn #2 cup, 25°C).
Press Speed	80–250 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 thorough drying before rewinding.
Equipment Cleaning	Clean printing cylinders and varnish circulating systems promptly after printing with solvent diluent or dedicated cleaning agents to prevent varnish drying and clogging.
Application Note	Prior to initial commercial production, thorough trials must be conducted under actual operating conditions to verify intercoat adhesion between base ink and varnish, drying kinetics, and post-finishing compatibility on target substrates.

6. Regulatory & Safety

Regulatory Compliance	Complies with RoHS and REACH (SVHC) directives.
Food Contact Statement	Formulated for non-direct food contact secondary packaging. If specialized food contact compliance or low-migration performance is required, project-specific technical evaluation and formulation confirmation by HCOLOR are required.
Usage Note	VOC content complies with domestic cigarette packaging regulations; suitable for domestic cigarette packaging printing.
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 packaging: 18 kg / drum. Custom packaging: Other specifications 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 fire, heat sources, and strong oxidizers. Avoid direct sunlight and high temperatures; protect from frost. Keep containers tightly sealed to prevent solvent evaporation.
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
SOF5000 Series	High gloss / Ester/alcohol-soluble system	Paper and laminated papers	Cigarette outer packaging / Inner frame liners / Tipping paper

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., high-speed overprint 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 gloss levels, superior scratch resistance, or custom surface finishing formulations 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.