

PROVISIONAL TDS



2 K Overprint Varnish Rotoester

Solvent based overprint varnish for flexible packaging

70GL140194 2 K Matt Varnish Rotoester
70GL271848 2 K Gloss Varnish Rotoester
70GL540515 2K High COF Rotoester

70GH376287 Fast Hardener for 2K Systems
70GH446825 Med. Hardener for 2K Systems
70GH551200 Fast Hardener MIL for 2K Systems

Description

An Ethylacetate, vinyl-based 2-component varnish, designed for a wide range of applications requiring an effective protection of the print. This product provides outstanding heat, chemical and mechanical resistance.

Printing process

Gravure printing. Flexo application is possible using acetate resistant plates.

Applications

Surface printing.

Suitable for food and beverage packaging.

Substrates: PE, BOPP, Coex OPP, chem PET, corona PET, NC tr. Aluminium, Annealed Aluminium, Paper.

Minimum surface tension: PE, BOPP, Coex OPP: 38 mN/m; Corona PET: 52 mN/m (mN/m = dynes/cm)

Hardener Fast Hardener for 2K Systems (70GH376287), standard hardener for this varnish.
Fast Hardener MIL for 2K Systems (70GH551200), alternative to the standard hardener when low content of free monomeric isocyanate is required.
Med. Hardener for 2K System (70GH446825), allows a slower viscosity increase after addition. Please use it only after agreement with our Technical Support.

Curing conditions This product can be used only in combination with the hardener 70GH446825 or 70GH376287, or 70GH551200 with the following ratio: 100 parts of varnish, 50 parts of hardener (Temp > 10°C).
The varnish becomes tacky-free with the usual timing of the printing process. The below mentioned fastness properties are normally achieved after 7 days at room temperature.

Properties

Dry content (Matt, 140194)	64% ± 2	Dry content Hardener (446825)	48% ± 2
Dry content (Gloss, 271848)	57% ± 2	Dry content Hardener (376287)	50% ± 2
Dry content (H. COF, 540515)	57% ± 2	Dry content Hardener (551200)	50% ± 2
Adhesion	5		
Rub resistance	5	Water resistance	5
Scratch resistance	5	Deep freeze resistance	5
Heat-resistance	180 – 200 °C	Solvent resistance	5

Rating scale (1 to 5 based on Gecko product range) 1= worst value, 5= best value

Note: all technical properties are a guideline only and depend on final application. For details about exact test methods which are the basis for info about fastness properties given above please refer to the general test method overview.

Printing viscosity

Diluents	Flexographic printing 20 – 25 s DIN 4		Gravure Printing 13 – 18 s DIN 4	
Slow	n-Propyl Acetate	100	Ethylacetate/ n-Propyl Acetate	80:20
Standard	Ethylacetate/ n-Propyl Acetate	80:20	Ethyl Acetate	100
Fast				
Retarder	Methoxy Propyl Acetate	5% max.	Methoxy Propyl Acetate	3% max.

Notes

Dilution The ideal printing viscosity is based on the mixing of 100 parts of varnish, 50 parts of hardener and 50 parts of ethyl acetate. All solvents and equipment must be water and alcohol free in order to prevent non-curing of the 2 component reaction.

Mixing This product must be mixed with the hardener before the dilution. After the preparation, the 2-component mixture must be used within 4 hours. It is recommended to prepare the 2 K mixture shortly before the start of the print run, and in the minimum appropriate amount. In case of long print runs, it is strongly suggested not to prepare all the 2 K mixture necessary for the whole job before the start, but instead to start printing with a small batch of 2 K mixture (10 – 20 kg) and regularly add to the pump tank small batches of freshly prepared 2 K mixture.

Pot Life With Pot Life is usually indicated the time in which a 2 component mixture can be used before it expires and is not usable anymore. In the printing industry there are various interpretation of the concept of Pot Life, some more focused on viscosity increase, other on the performance of the cured coating layer. In our TDS, Pot Life is in strong correlation with the increase of viscosity, and this may differ from the Pot Life correlated to physical and mechanical properties. As the decrease of properties could be effective before any increase of viscosity is visible, please test the application before industrial production

and, as a general approach, prepare always the smallest quantity of 2K system necessary for the work, in order to use the 2K mixture as rapidly as possible. This is due to the fact that once the 2 Component are mixed together, the crosslinking reaction starts and stops only when all the reactive function have crosslinked with the other component of the mixture. The reaction speed is strongly dependent on the components of the system used.

Cleaning

The cured coating is insoluble in standard solvent used for dilution. It is necessary to prevent the drying of the products during the downtime, when the press stops it is better to leave the product in slow recirculation and at the same time lift the doctor blade.

Instructions for the use of printing inks for the production of primary food packaging

For information on the use of printing inks, varnishes and additives for the manufacture of food packaging please refer to the respective „**Statement of Composition**". This information is provided to allow the calculation of possible levels of migration of evaluated substances in a worst case situation.

Migration tests at **huber**group laboratories with printed samples made from commercially available OPP film (film thickness: 35 µ, printed wet ink: 6 g/m², with 95 % ethanol as the food simulant) and PE film (film thickness: 50 µ, printed wet ink: 6 g/m², with 95 % ethanol as the food simulant) showed no migration of substances above legal limits. Based on the results of these migration tests, we expect that the printed inks enable the final printed products to comply with the legal requirements for packaging for all kinds of foodstuff.

The manufacturer of the finished article and the filler have the legal responsibility to prove by appropriate migration testing that it is fit for its intended purpose.

In order to maintain low residual solvents concentration in the printed film, the printer must ensure sufficient drying of the inks, especially when retarders have been added. Residual solvent content must be regularly monitored.

The inks must not be used in the manufacture of packaging where the printed ink layer is intended to come into contact with foodstuff (direct food contact).

Health & Safety

The material safety data sheets contain all relevant information for the generation of appropriate internal plant instructions. The user is responsible for all local legislation requirements.

Ink Handling

Please refer to General Guidelines for handling inks for flexible packaging.

Storage Conditions

Store the material in the original packaging at a temperature not below 5°C and not in direct contact with sunlight.

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Contact addresses for advice and further information can be found under www.hubergroup.com

This Technical information sheet reflects the current state of our knowledge. It is designed. Due to the many variables in materials for printing, design construction, processing conditions and test criteria, this Technical Data Sheet can only be of an advisory nature. Our data reflect the latest state of our knowledge and are based on the characteristics established in the laboratory and on practical experience. Because there are many factors under the control of the user which may affect processing or application/use, it is necessary for the user to carry out appropriate tests to determine whether the product(s) is technically and safely suitable for the particular purpose, prior to use. **hubergroup** disclaims any liability for applications for which this ink series is not foreseen. No warranties of any kind, either expressed or implied, are made regarding the products here described. The English version is the master document, on which to refer for any translations.