

PERMEABILITY LABORATORY TEST REPORT

Laboratory Report Number: LR2363.1
Customer Reference: Hydroprufe LG
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Prepared For: FIS Products
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Report Versions
LR2363 Original Report
LR2363.1 Added Permeation Breakthrough Curves

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Sample Identification

Samples of 2-pack Hydroprufe LG Red Batch 07103022 sampled 11/07/2021 were received for testing.

Equipment used

Versaperm Permeability Meter MK IV, configured to run ISO15105-2 equal pressure method with calibrated quantitative mass spectrometer, Hiden QPR-20, as sensor

Test Conditions

Sample Preparation: The components were blended according to their supplied ratios and drawn down at a nominal wet film thickness of 1mm on a release substrate, and allowed to cure at room temperature for 7 days.

Sample Conditioning: After removal of the release layer, samples were stored for 2 days in a desiccator at 23°C.

Test Gas: Analytical grade liquids were injected to generate organic vapours as described in the Test Results.

Carrier Gas and for Baseline: Zero grade N2

Atmospheric Pressure: Tested over several days pressure ranged 990-1015 mbar.

Test Date: Completed 19/08/2021

Sample Dimensions

Trade Name/ Identification	Minimum Thickness / mm	Maximum Thickness / mm	Mean Thickness / mm
Hydroprufe LG Red Batch 07103022	0.90	1.0	0.95

Test Methods

Organic Vapour Transmission Rate.

This test was carried out using the method ISO 15105-2 *Plastics — Film and sheeting — Determination of gas-transmission rate - Part 2: Equal-pressure method*. The sample was clamped into the measuring area cell, and dry nitrogen passed over both sides at 100ml/min. For plain samples the measuring chamber area was 50cm² (diameter 80mm). After 24 hours, the atmospheric content had been removed from the sample and chamber and a stable base line was reached. The test liquid was then injected into the chamber below the sample, ensuring that no liquid is in direct contact with the sample. The organic vapour is thus presented to the sample at the saturated vapour pressure of the solvent, with the overall pressure at atmospheric pressure. There is no overall differential pressure across the sample. Dry nitrogen continued to flow at 100ml/min over the other side of the sample. As the gas permeated through the sample, it was swept by the carrier gas to the mass spectrometer. The carrier gas was sampled daily until a stable reading was obtained, typically between 3 and 7 days.

Test Results

Trade Name / Identification	Vapour Tested	Gas Transmission Rate (GTR)
		Liquid mg/(m ² .day)
Hydroprufe LG Red Batch 07103022	Vinyl Chloride	0.283
	Ethyl Benzene	0.376
	Trichlorethene	5.44
	Xylene	0.376
	Naphthalene	0.013
	Benzene	0.117
	Toluene	0.326
	Hexane	0.242
	Tetrachlorethene	1.91

Appendix: Permeation breakthrough curves are attached.

Conclusions

These results indicate an excellent barrier to the organic vapours tested, even at the minimum recommended thickness.



Appendix: Permeation Breakthrough curves.

