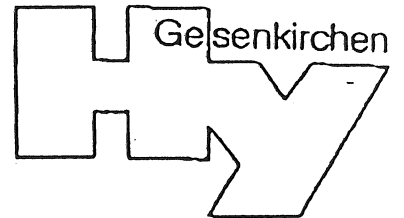


Hygiene-Institut des Ruhrgebiets, Gelsenkirchen

Institut für Umwelthygiene und Umweltmedizin
Direktor (kom.) : Dr. Elmar Schrammeck



Hygiene-Institut Postfach 10 12 45 · 45872 Gelsenkirchen

Rothhauser Straße 19
45879 Gelsenkirchen
Telefon (02 09) 15 86-0
Telefon Durchwahl (02 09) 15 86- 163
Telefax (02 09) 15 86- 300

45879 Gelsenkirchen, 07.06.1994
Dir.Tgb.-Nr.: C 271/94/st

TEST CERTIFICATE

of 07. June 1994

In accordance with the recommendations of the Working Group
"Trinkwasserbelange" of the Kunststoff-Kommission des Bundesgesundheitsamtes
(Plastics Commission of the German Federal Agency)

for

TECHNICHEM S.A.
Z.I. DE FLEURUS

Test Material: Coating based on TECHNIPOX E A/TECHNIPOX E B

Reference: Letter of 15. April 1994
Ref: Dr. Jar/cou

Specimen: Plates measuring 200 mm x 200 mm x 5 mm

Date of receipt of test items: 25. April 1994

**Date of performance of the test:
(experimental)** 29. April 1994 to 09. May 1994

Application: Containers and equipment for use with drinking water
- cold water -

Composition: TECHNIPOX E A
TECHNIPOX E B

Both components, according to details supplied by the manufacturer
comply with the XL. Empfehlung (XLth Recommendation) of the
Plastics Commission of the German Federal Health Agency.

Test Method:

The coating TECHNIPOX E A/TECHNIPOX E B was tested according to the methods published by the Working Group "Trinkwasserbelange" (Drinking Water Affairs) of the Plastics Commission of the German Federal Health Agency ("Gesundheitliche Beurteilung von Kunststoffen und anderen nichtmetallischen Werkstoffen im Rahmen des Lebensmittel- und Bedarfsgegenständengesetzes für den Trinkwasserbereich", Bundesgesundheitsblatt 20. Jahrg. 1977, S. 124 ff.).

Test Results:

After the third and final test period (7th - 9th day) no effect on the test water by the coating could be established with regard to colour, clarity, odour and foam formation.

The release of organic compounds defined as Total Organic Carbon (TOC), for the entire test period lies below the determination limit of 1 mg/m² per day (limit for container M = 10 mg/m² per day TOC). Free chlorine consumption of 6,5 mg/m² per day also lies below the container limit of M = 8,0 mg/m² per day.

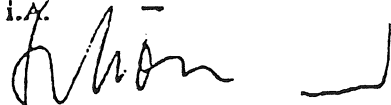
According to the details supplied by you, the original materials contained neither phenols nor aromatic amines. No tests on these parameters were therefore carried out.

Assessment:

On the grounds of the test results, the coating TECHNIPOX E A/TECHNIPOX E B meets the requirements for container coatings as laid down in the "Kunststoff-Trinkwasser-Empfehlungen" (Plastics-Drinking Water Recommendations).

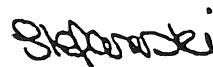
This Test Certificate is only valid as long as the quality of the material tested corresponds to that of the manufactured product, with regard to raw materials, composition and processing.

Der Direktor des Instituts
i.A.



(Dr. Schössner)

Sachbearbeiterin



(Stefanski)

Water Reaction to the coating system **TECHNIPOX E A/TECHNIPOX E B**
 - Cold water -

Test Conditions:

Migration Test: Test surface of 3440 cm² in 3280 ml test water (deionized, unchlorinated).
 Chlorine Consumption Test: Test surface 820 cm² in 3640 ml test water (deionized, chlorinated, 0,6 mg Cl₂).
 Preparation: 24 hours soaking and 2 hours rinsing
 Test Periods: Three times for 3 days (72 hours)

	Test water			Changes versus Control Water
	1st - 3rd day	4th - 6th day	7th - 9th day	7th - 9th day
Colour	Colourless	Colourless	Colourless	None
Clarity	Clear	Clear	Clear	None
Odour	None	None	None	None
OTLV* (@ 20°C)	1	1	1	None
Tendency to Foam	None	None	None	None
Coating Area Values M = mg/m ² per day				Limit for Container
				M = mg/m ² per day
Total Organic Carbon (TOC)	<1	<1	<1	10
Chlorine Consumption (Free Chlorine)	>7	6,9	6,5	8

* Odour Threshold Limit Value