Hygiene-Institut des Ruhrgebiets
Institut für Umwelthygiene und Toxikologie
Direktor: Prof. Dr. rer. nat. L. Dunemann
Träger: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V.

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Reference-No.: **K-243106-14-Ko**
Contact person: Dr. Andreas Koch

Gelsenkirchen, 07.05.2014

TEST CERTIFICATE
according to the KTW-Guideline

Product: **moulded parts made of Noryl FE1630PW-73701**

Test specimen: base, black (surface: 10 cm²)

The test specimen meets the requirements according to the test report-no.: **K-243106-14-Ko dated 07.05.2014** for the following applications and temperatures, as far as technically suited.

Applications:	**cold water (23°C)**	**warm water (60°C)**	**hot water (85°C)**
Pipes with DN < 80 mm (domestic distribution)	---	---	---
Pipes of diameter 80 mm ≤ DN < 300 mm (supply pipes)	---	---	---
Pipes of diameter DN ≥ 300 mm (main pipes)	---	---	---
Fittings for pipes with DN < 80 mm	passed	---	passed
Fittings for pipes with 80 mm ≤ DN < 300 mm	passed	---	passed
Fittings for pipes with DN ≥ 300 mm	passed	---	passed
Sealings for pipes with DN < 80 mm	passed	---	passed
Sealings for pipes with 80 mm ≤ DN < 300 mm	passed	---	passed
Sealings for pipes with DN ≥ 300 mm	passed	---	passed
Tanks in the domestic installations including repair systems	---	---	---
Tanks other than in domestic installations including repair systems	---	---	---

If pipes, sealings or fittings and ancillaries do not differ in their material composition and process of manufacture, testing of the smallest diameter of the product range is sufficient.

This test certificate is valid beginning with the date of issue and is ending by **07.05.2019** as far as there are no changes in the formula. After this time it can be extended for further 5 years if demanded.

The Director of the Hygiene-Institute
on behalf of

Dr. rer. nat. Andreas Koch
Head of the Dept. for water
hygienic material testing

HYGIENE-INSTITUT DES RUHRGEBIETS Institut für Umwelthygiene und Toxikologie

The assessment was based on the assumption that the used starting substances and monomers used to manufacture the product may completely known and no other substances are present in the product. The validity of this document expires in case of modifications in the composition of the product or the processing conditions. The results and evaluations refer to the groups of test items. This document may not be published without our written permission only complete and unchanged or duplicated.

ilac-MRA DAkkS Deutsche Akkreditierungsstelle D-PL-13042-02-00

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Reference-No.: **K-243106-14-Ko**
Contact person: Dr. Andreas Koch

Gelsenkirchen, 07.05.2014

TEST REPORT
according to the KTW-Guideline

Order of:	11.02.2014
Field of application:	Fittings for pipes with DN < 80 mm cold water and hot water (23°C and 85°C)
Product:	**moulded parts made of Noryl FE1630PW-73701**
Test Specimen:	base, black (surface: 10 cm²)
Date of receipt:	28.01.2014
Sampler:	transmitted by mail
Start of migration test:	25.02.2014
End of test:	02.04.2014

The Director of the Hygiene-Institute
on behalf of

Dr. rer. nat. Andreas Koch
Head of the Dept. for water
hygienic material testing

This test report consists of 3 pages.

The assessment was based on the assumption that the used starting substances and monomers used to manufacture the product may completely known and no other substances are present in the product. The validity of this document expires in case of modifications in the composition of the product or the processing conditions. The results and evaluations refer to the groups of test items. This document may not be published without our written permission only complete and unchanged or duplicated.

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test results cold water (23°C)

Product: **moulded parts made of Noryl FE1630PW-73701**
Specimen: base, black (surface: 10 cm²)
Formulation: submitted and checked (No. 4629)

Conversion factor: 4
S/V-ratio migration test: 9,80 dm² / 1,96 dm³ ≙ 5,00 dm^{-1}
S/V-ratio odour/flavour test: 2,80 dm² / 1,87 dm³ ≙ 1,50 dm^{-1}

Parameter	Method	Test cycle / Result 1 4. day	2 7. day	3 10. day	**Requirements for fittings for pipes DN < 80 mm**
Colour	Hy-KTW-14.05	colorless	colorless	colorless	n.s.e..
Turbidity	Hy-KTW-14.05	clear	clear	clear	n.s.e..
Tendency to foam formation	Hy-KTW-14.05	none	none	none	n.s.e..
Threshold odour number (23°C)	DIN EN 1622	1-2 *)	1-2 *)	1	< 2
Threshold flavour number (23°C)	DIN EN 1622	n.e.	n.e.	1	< 2
Total organic carbon (TOC) mg/dm² x d	DIN EN 1484	< 0,010	< 0,010	< 0,010	≤ 0,125
Formulation specific parameters with restrictions		The guidance levels are passed [1)]			Guidance Level passed

*) tentative determination of Threshold odour number

n.s.e..: not significant effected
n.e.: not examined

[1)] Attached results are partially not accredited.

test results hot water (85°C)

Product: **moulded parts made of Noryl FE1630PW-73701**
Specimen: base, black (surface: 10 cm^2)
Formulation: submitted and checked (No. 4629)

Conversion factor: 4
S/V-ratio migration test: 9,80 dm^2 / 1,96 dm^3 ≙ 5,00 dm^{-1}
S/V-ratio odour/flavour test: 2,80 dm^2 / 1,87 dm^3 ≙ 1,50 dm^{-1}

Parameter	Methode	Test cycle / Result 1 2. Day	2 3. Day	3 4. Day	6 9. Day	7 10. Day	**Requirements for fittings for pipes DN < 80 mm**
Colour	Hy-KTW-14.05	colorless	colorless	colorless	colorless	colorless	n.n.b.
Turbidity	Hy-KTW-14.05	clear	clear	clear	clear	clear	n.n.b.
Tendency to foam formation	Hy-KTW-14.05	none	none	none	none	none	n.n.b.
Threshold odour number (23°C)	DIN EN 1622	18 *)	14 *)	12 *)	9 *)	4	≤ 4
Threshold flavour number (23°C)	DIN EN 1622	n.e.	n.e.	n.e.	n.e.	4	≤ 4
Total organic carbon (TOC) mg/dm^2 x d	DIN EN 1484	0,044	0,030	0,027	0,016	<0,014	≤ 0,125
Formulation specific parameters with restrictions		The guidance levels are passed [1)]					Guidance Level passed

*) tentative determination of Threshold odour number
n.s.e..: not significant effected
n.e.: not examined
[1)] Attached results are partially not accredited.