

Hygiene-Institut des Ruhrgebiets

Institut für Umwelthygiene und Toxikologie

Director: Dr. Thomas-Benjamin Seiler

Legal Entity: Verein des Hygiene-Instituts des Ruhrgebiets e.V.



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Gelsenkirchen, 05.05.2025

TEST REPORT according to the requirements of DIN EN 12873-1:2014-09 and DIN EN 1420:2016-05

Order of: 08-November-2024

Field of application: Ancillaries (P1) for pipes with $80 \text{ mm} \leq \text{ID} < 300 \text{ mm}$
cold water and warm water (23 °C and 60 °C)

Product: Aqua Plus PPR Fittings

Test Specimen: fittings elbow 160/90 SDR11 segments (green) made of PPR,
surface: 2447.9 cm² (manufacturer's information)

Production Place: Interplast S.A., Industrial Area of Komotini, 69100 Komotini – Greece

Date of receipt: 26-November-2024

Sampler: samples sent

Start of migration test: 04-February-2025

End of migration test: 13-February-2025

The Director of the Hygiene-Institute
on behalf of

Dr. rer. nat. Damian Pleschka
Head of the Department for
water hygienic material testing

This test report consists of 3 pages.

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Directorate: Prof. Dr. Jürgen Kretschmann (Head), Andrea Henze, Joachim Löchte, Dr. Frank Obenaus, Dr. Thomas-Benjamin Seiler (Executive Member), Dr. Dirk Waider

Test results cold water (23 °C)

Product: Fittings Elbow 160/90 SDR 11

Specimen: fittings elbow 160/90 SDR11 segments (green) made of PPR, surface: 651 cm² (manufacturer's information)

Formulation: submitted and checked (no.: 12573)

Conversion factor: 1 (Ancillaries for pipes with 80 mm ≤ ID < 300 mm)

SV-ratio migration test according to DIN EN 12873-1:2014-09: 6.86 dm² / 1.37 dm³ ± 5.01 dm⁻¹

SV-ratio odour/flavour test according to DIN EN 1420:2016-05: 3.68 dm² / 2.45 dm³ ± 1.50 dm⁻¹

Parameter	Method	Test cycle / Result			Requirements according to KTW-BWGL ¹⁾
		1 4 th day	2 7 th day	3 10 th day	
Colour [mg/l Pt] / (pH value)	DIN EN ISO 7887:2012-04 method C	< 2 / (6.5)	< 2 / (5.7)	< 2 / (5.7)	≤ 10 mg/l Pt
Turbidity [FNU]	DIN EN ISO 7027-1:2016-11	< 0.1	< 0.1	< 0.1	≤ 0.5 FNU
Tendency to foam formation	HY-14.5, 2008-11	none	none	none	n.s.e.
Threshold odour number (23 °C)	DIN EN 1622:2006-10	1	1	1	≤ 2
Total organic carbon (TOC) C _{tap} mg/l	DIN EN 1484:2019-04	0.03	0.01	0.01	≤ 0.5
Formulation specific parameters with restrictions		Six formulation specific parameters with restrictions were analysed within the test water fractions. The Guidance Levels are passed. ^{2) 3)}			Guidance Level passed

The test water fractions for the analysis of odour, turbidity, colour and foam formation were prepared according to DIN EN 1420:2016-05.

The test water fractions for the analysis of TOC, additional parameters and formulation specific parameters were prepared according to DIN EN 12873-1:2014-09 or DIN EN 12873-2:2005-04.

¹⁾ KTW-BWGL, Annex A (status 2022-03)

²⁾ results are partially not accredited

³⁾ the formula specific parameters were partially analysed in accredited third laboratories (D-PL-11140-04-00)

n.s.e. = not significantly effected

Test results warm water (60 °C)

Product: Fittings Elbow 160/90 SDR 11
Specimen: fittings elbow 160/90 SDR11 segments (green) made of PPR, surface: 651 cm² (manufacturer's information)
Formulation: submitted and checked (no.: 12573)

Conversion factor: 1 (Ancillaries for pipes with 80 mm ≤ ID < 300 mm)
SV-ratio migration test according to DIN EN 12873-1:2014-09: 6.86 dm² / 1.37 dm³ ± 5.01 dm⁻¹
SV-ratio odour/flavour test according to DIN EN 1420:2016-05: 3.68 dm² / 2.45 dm³ ± 1.50 dm⁻¹

Parameter	Method	Test cycle / Result				Requirements according to KTW-BWGL ¹⁾
		1 2 nd day	2 3 rd day	3 4 th day	7 10 th day	
Colour [mg/l Pt] / (pH value)	DIN EN ISO 7887:2012-04 method C	< 2 / (6.4)	< 2 / (5.8)	< 2 / (5.8)	< 2 / (5.7)	≤ 10 mg/l Pt
Turbidity [FNU]	DIN EN ISO 7027-1:2016-11	< 0.1	< 0.1	< 0.1	< 0.1	≤ 0.5 FNU
Tendency to foam formation	HY-14.5, 2008-11	none	none	none	none	n.s.e.
Threshold odour number (23 °C)	DIN EN 1622:2006-10	1	1	1	1	≤ 4
Total organic carbon (TOC) C _{lap} mg/l	DIN EN 1484:2019-04	0.04	0.03	0.03	< 0.02	≤ 0.5
Formulation specific parameters with restrictions	Six formulation specific parameters with restrictions were analysed within the test water fractions. The Guidance Levels are passed. ^{2) 3)}					Guidance Level passed

The test water fractions for the analysis of odour, turbidity, colour and foam formation were prepared according to DIN EN 1420:2016-05.

The test water fractions for the analysis of TOC, additional parameters and formulation specific parameters were prepared according to DIN EN 12873-1:2014-09 or DIN EN 12873-2:2005-04.

¹⁾ KTW-BWGL, Annex A (status 2022-03)

²⁾ results are partially not accredited

³⁾ the formula specific parameters were partially analysed in accredited third laboratories (D-PL-11140-04-00)

n.s.e. = not significantly effected