Unit 30 | Fern Close | Pen-Y-Fan Ind Est | Oakdale | Gwent | NP11 3EH | UK
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TEST REPORT

Customer: C0273416

Jain Irrigation Systems Ltd
Jain Plastic Park
Bambhori
Jalgaon, MM 425001
India

Result	This product has satisfied the criteria set out in BS 6920: Part 1: 2014 "Specification" and thus is suitable for use with hot (up to 65°C) and cold water.
Customer Name	Jain Irrigation Systems Ltd
Product	Jain HDPE Fittings PE 100 (Blue) injection moulded, 90° bend, made from Opalene HDPE HM P50H03
Test Undertaken	BS 6920: 2014 - Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water
Job Number	J-00438810
Work Order Number	W0790467

Thank you for having your product tested by NSF Wales Ltd.

Please contact your Account Manager if you have any questions or concerns pertaining to this report.

Report Date 23-JAN-2023

Report Authorisation

Michael Bustin - Materials Testing Manager

UKAS TESTING
0626

Result Summary Section

Test	Result
Odour and flavour of water BS 6920: Part 1: 2014, Clause 4 - 23°C	Pass
Odour and flavour of water BS 6920: Part 1: 2014, Clause 4 - 65°C	Pass
Appearance of Water BS 6920: Part 1: 2014, Clause 5	Pass
Growth of Microorganisms BS 6920: Part 1: 2014, Clause 6	Pass
Extraction of substances that may be of concern to public health BS 6920: Part 1: 2014, Clause 7 - 23°C	Pass
Extraction of substances that may be of concern to public health BS 6920: Part 1: 2014, Clause 7 - 65°C	Pass
Extraction of Metals BS 6920: Part 1: 2014, Clause 8 - 65°C	Pass

Sample Details

Date of Receipt of Application Form	25/07/22
Date of Receipt of Product for Test	15/08/22
Product *	Jain HDPE Fittings PE 100 (Blue) injection moulded, 90° bend, made from Opalene HDPE HM P50H03
Nature of Material *	Polyethylene
Date Test Sample Manufactured *	22/06/22
Batch Number *	202206220662
Receipt Conditions	Good Condition
Receipt Packaging	Cardboard Box
Product Manufacturer *	Jain Irrigation Systems Ltd
Product Manufacturing Site *	India
Tradename and Reference of Product *	Jain HDPE Fittings PE 100 (Blue)
Method of Manufacture *	Injection Moulding
Typical Use of the Product *	Component in contact with potable water
Material Manufacturer *	ONGC Petro Additives Ltd
Tradename and Reference of Material *	Opalene HDPE HM P50H03
Nature of Product *	Fitting
Sampling Procedure *	Random
Address of Product Manufacturer *	Jain Plastic Park, Bambhori, Jalgaon-425001
Submitting Organization *	Jain Irrigation Systems Ltd

* denotes customer supplied information

Sample Preparation

Description/Appearance of the product	Blue, opaque, rigid elbow fitting
Max. length	110 mm
Max. diameter	69.4 mm
Surface area of one article	61608.8 mm2
Number of articles constituting a sample	0.24
Surface area for test	15026.1 mm2
Calibration mark of test container	1 L
Storage Conditions	As in BS 6920: Part 2: Section 2.1: Clause 5.2

Job Attachments:

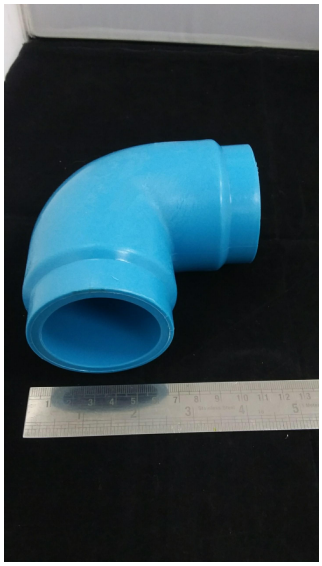

Photo 1.

Odour and flavour of water BS 6920: Part 1: 2014, Clause 4 - 23°C

Methodology: BS 6920: Part 2: Section 2.2 and in-house method PROC/MAT 004 and 006.

Date Leaching Test Started: 12-DEC-2022

First Extract - Chlorinated Test Water

Panellist	Odour Descriptor	Flavour Descriptor	Flavour Dilution Number
1	None	None	1
2	None	None	1
3	None	None	1

First Extract - Chlorine Free Test Water

Panellist	Odour Descriptor	Flavour Descriptor	Flavour Dilution Number
1	None	None	1
2	None	None	1
3	None	None	1

On the basis of these results the samples of this product referred to in this report have been found to conform to the requirements of BS 6920: Part 1: 2014, Clause 4.

Odour and flavour of water BS 6920: Part 1: 2014, Clause 4 - 65°C

Methodology: BS 6920: Part 2: Section 2.2 and in-house method PROC/MAT 004 and 006.

Date Leaching Test Started: 13-DEC-2022

First Extract - Chlorinated Test Water

Panellist	Odour Descriptor	Flavour Descriptor	Flavour Dilution Number
1	None	None	1
2	None	None	1
3	None	None	1

First Extract - Chlorine Free Test Water

Panellist	Odour Descriptor	Flavour Descriptor	Flavour Dilution Number
1	None	None	1
2	None	None	1
3	None	None	1

On the basis of these results the samples of this product referred to in this report have been found to conform to the requirements of BS 6920: Part 1: 2014, Clause 4.

Appearance of Water BS 6920: Part 1: 2014, Clause 5 - 65°C

Methodology: BS 6920: Part 2: Section 2.3 and in-house methods PROC/MAT 004, PROC/MAT 027 (colour) and PROC/MAT 030 (turbidity).

Date Leaching Test Started: 22-NOV-2022

First Extract

Name	Blank	Extract	Test Sample Effect
Colour (Hazen)	<2	<2	<2
Turbidity (FNU)	<0.1	<0.1	<0.1

On the basis of these results the samples of this product referred to in this report have been found to conform to the requirements of BS 6920: Part 1: 2014, Clause 5.

Growth of Microorganisms BS 6920: Part 1: 2014, Clause 6

Methodology: BS 6920: Part 2: Section 2.4 and in-house method PROC/MIC 001.

Date Test Started: 1-NOV-2022

Incubation temperature: (30 ±1) °C

Units: mg $L^{-1}O_2$

Mean Dissolved Oxygen Difference	Day 49
Test Sample	0.6
Positive Reference (paraffin wax)	5.9
Negative Reference (glass)	0.2

Mean Dissolved Oxygen	Day 49
Test Water Control	8.0

Comments: At the end of this test, the test sample showed no change in colour or appearance.

On the basis of these results the samples of this product referred to in this report have been found to conform to the requirements of BS 6920: Part 1: 2014, Clause 6.

Extraction of substances that may be of concern to public health BS 6920: Part 1: 2014, Clause 7 - 23°C

Methodology: BS 6920: Part 2: Section 2.5 and in-house methods PROC/MAT 004 and PROC/MIC 004.

Date Leaching Test Started: 23-NOV-2022

Cell concentration used: 5×10^5

Cell morphology: Confluent growth of elongated cells, some round cells and cell debris. Media orange/pink in colour.

Sample/Control	Cell Morphology	Response
Test Sample	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
Blank	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
Negative Control	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
Positive Control	All cells rounded and mainly still in suspension. Media pink in colour.	Cytotoxic

On the basis of these results the samples of this product referred to in this report have been found to conform to the requirements of BS 6920: Part 1: 2014, Clause 7.

Extraction of substances that may be of concern to public health BS 6920: Part 1: 2014, Clause 7 - 65°C

Methodology: BS 6920: Part 2: Section 2.5 and in-house methods PROC/MAT 004 and PROC/MIC 004.

Date Leaching Test Started: 22-NOV-2022

Cell concentration used: 5×10^5

Cell morphology: Confluent growth of elongated cells, some round cells and cell debris. Media orange/pink in colour.

Sample/Control	Cell Morphology	Response
Test Sample	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
Blank	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
Negative Control	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
Positive Control	All cells rounded and mainly still in suspension. Media pink in colour.	Cytotoxic

On the basis of these results the samples of this product referred to in this report have been found to conform to the requirements of BS 6920: Part 1: 2014, Clause 7.

Extraction of Metals BS 6920: Part 1: 2014, Clause 8 - 65°C

Methodology: BS 6920: Part 2: Section 2.6 and in-house methods PROC/MAT 006 (leachate preparation) and PROC/ING 003 (ICPMS analysis).

Date Leaching Tests Started: 17-JAN-2023

First Extract

Metal (µg/L)	MAC (µg/L)	LOD (µg/L)	Blank (µg/L)	Sample 1 (µg/L)	Sample 2 (µg/L)
Aluminium	200	20	<20	<20	<20
Antimony	5	0.5	<0.5	<0.5	<0.5
Arsenic	10	1	<1	<1	<1
Boron	1000	100	<100	<100	<100
Cadmium	5	0.5	<0.5	<0.5	<0.5
Chromium	50	5	<5	<5	<5
Iron	200	20	<20	<20	<20
Lead	10	1	<1	<1	<1
Manganese	50	5	<5	<5	<5
Mercury	1	0.1	<0.1	<0.1	<0.1
Nickel	20	2	<2	<2	<2
Selenium	10	1	<1	<1	<1

Analytical Method - ICPMS Inductively Coupled Plasma Mass Spectrometry
MAC - Maximum admissible concentration
LOD - Required limit of detection

On the basis of these results the samples of this product referred to in this report have been found to conform to the requirements of BS 6920: Part 1: 2014, Clause 8.

<< *Testing Laboratories* >>

Flag	Id	Address
All work performed at: (Unless otherwise specified)	NSF_WALES	NSF Wales Ltd. NSF Wales Ltd Unit 30 Fern Close Pen-Y-Fan Industrial Estate Oakdale, Newport NP11 3EH, UK

NOTES

1. This report is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service (UKAS). NSF Wales is UKAS accredited against ISO/IEC 17025:2017 for calibration and testing, laboratory numbers 0248 and 0626 respectively. For details of the laboratory Schedule of Accreditation please see the UKAS website (www.ukas.org).
2. The laboratory provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes.
3. Reported conformity statements have been applied in line with the decision rule inherent in the applicable testing standard.
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5. Opinions and interpretations in this report are outside the scope of UKAS Accreditation.
6. The results specified in this report relate only to the sample(s) of the product submitted for testing. Any change in the source or nature of the product or materials used in the product, method of manufacture or application could affect the performance of the product.
7. This test report does not constitute approval or endorsement of the product by either NSF Wales or its parent companies.
8.
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