



**Customer: C0273416**

Jain Irrigation Systems Ltd  
Jain Plastic Park N.H. No 6  
P.O. Box 72  
Bambhori  
425001  
India

---

<b>Result</b>	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 Pipe PE 100 (OPaLene 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-00430282
Work Order Number	W0749441

---

**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** 30-JUN-2022

**Report Authorisation**

Michael Bustin - Materials Testing Manager



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	20/01/22
Date of Receipt of Product for Test	21/02/22
Product *	Jain HDPE Pipe PE 100 (OPaLene HM "P50H03)
Nature of Material *	HDPE
Date Test Sample Manufactured *	29/12/21
Batch Number *	20211229117002
Receipt Conditions	Good Condition
Receipt Packaging	Bubble wrap
Product Manufacturer *	Jain Irrigation Systems Ltd
Product Manufacturing Site *	India
Tradename and Reference of Product *	Jain HDPE Pipe PE 100
Method of Manufacture *	Extrusion
Typical Use of the Product *	Component in contact with potable water
Material Manufacturer *	ONGC Petro Additions Limited
Tradename and Reference of Material *	OPaLene HM "P50H03
Nature of Product *	Pipe
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 pipe
Length	490 mm
Inner diameter	15.4 mm
Outer diameter	20.2 mm
Surface area of one article	55070.4 mm <sup>2</sup>
Number of articles constituting a sample	0.27
Surface area for test	15031.4 mm <sup>2</sup>
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: 4-MAY-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: 2-MAY-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: 19-APR-2022

***First Extract***

Name	Blank	Extract	Test Sample Effect
Colour (Hazen)	<2	<2	<2
Turbidity (FNU)	0.0990	0.108	0.009

**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: 12-APR-2022

Incubation temperature: (30 ±1) °C

Units: mg L<sup>-1</sup>O<sub>2</sub>

Mean Dissolved Oxygen Difference	Day 49
Test Sample	0.7
Positive Reference (paraffin wax)	6.2
Negative Reference (glass)	0.0

Mean Dissolved Oxygen	Day 49
Test Water Control	7.6

**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: 19-APR-2022

Cell concentration used:  $5 \times 10^5$

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

Sample/Control	Cell Morphology	Response
<b>Test Sample</b>	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
<b>Blank</b>	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
<b>Negative Control</b>	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
<b>Positive Control</b>	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: 19-APR-2022

Cell concentration used:  $5 \times 10^5$

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

Sample/Control	Cell Morphology	Response
<b>Test Sample</b>	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
<b>Blank</b>	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
<b>Negative Control</b>	Confluent growth of elongated cells, some round cells and cell debris. Media pink in colour.	Non-Cytotoxic
<b>Positive Control</b>	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: 25-APR-2022

**First Extract**

<b>Metal (µg/L)</b>	<b>MAC (µg/L)</b>	<b>LOD (µg/L)</b>	<b>Blank (µg/L)</b>	<b>Sample 1 (µg/L)</b>	<b>Sample 2 (µg/L)</b>
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](http://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.
4. Test reports utilise the simplified test report format option allowed by ISO/IEC 17025:2017 (reference clause 7.8.1.3). This simplified report does not include all of the information on the report specified by ISO/IEC 17025:2017 (clauses 7.8.2 to 7.8.7) but as stated in the standard this data is held by the laboratory and is available to the client on request.
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. The contents of this report are the copyright of NSF Wales Ltd and all rights are reserved. No part of this publication may be reproduced, stored in a retrieval system in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without prior written consent of NSF Wales Ltd.
9. Any queries regarding this report should be addressed to the authorised signatory at NSF Wales. Copies of reports are retained by NSF Wales for ten years after issue.
10. Non UKAS accredited tests or tests which have been subcontracted will be identified in the following manner:
  - Tests marked † are not included in the laboratory's ISO 17025 accreditation schedule.
  - Tests marked ‡ have not been performed by NSF Wales and have been performed at an approved subcontract laboratory.
11. We draw to your attention that reports issued by the accredited test laboratories do not of themselves constitute approval by the Water Regulations Advisory Scheme or the test laboratory. Only a letter from the Scheme, citing a Directory Reference number can be regarded as indicating approval.
12. Materials and products intended for use by public water supply company in the preparation or conveyance of water may need to satisfy more comprehensive toxicological requirements as specified by the Drinking Water Inspectorate. These additional requirements are necessary to ensure water Company usage complies with Regulation 31 of the Water Supply (Water Quality) Regulations 2010.