



**Customer: C0273416**

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

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<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.
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Customer Name	Jain Irrigation Systems Ltd
Product	Jain HDPE Pipe PE 100 (Propel HDPE 002DP48)
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-00430283
Work Order Number	W0749441

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**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 (Propel HDPE 002DP48)
Nature of Material *	HDPE
Date Test Sample Manufactured *	30/12/21
Batch Number *	20211230117002
Receipt Conditions	Good Condition
Receipt Packaging	Bubble wrapped
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 *	Coveyance of potable water
Material Manufacturer *	Indian Oil Corporation Ltd.
Tradename and Reference of Material *	Propel HDPE 002DP48
Nature of Product *	Pipe
Sampling Procedure *	Random
Address of Product Manufacturer *	Jain Plastic Park, Bambhori, Jalgaon-425001, India

\* denotes customer supplied information

## Sample Preparation

Description/Appearance of the product	Blue, opaque, rigid pipe
Length	490 mm
Inner diameter	24.2 mm
Outer diameter	31.9 mm
Surface area of one article	87037.8 mm <sup>2</sup>
Number of articles constituting a sample	0.17
Surface area for test	15130.5 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:**

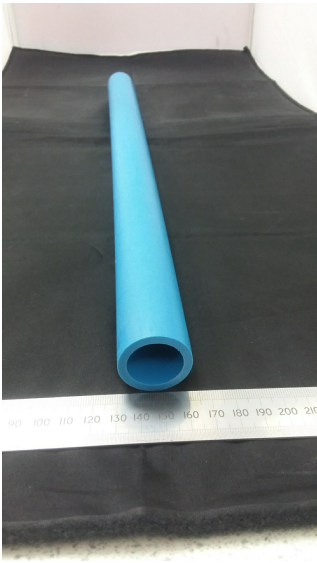


Photo 1

**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: 9-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: 26-APR-2022

***First Extract***

Name	Blank	Extract	Test Sample Effect
Colour (Hazen)	<2	<2	<2
Turbidity (FNU)	0.130	0.235	0.105

**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	0.4
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: 3-MAY-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: 26-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: 24-MAY-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	1.36
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**

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