

# P4402



## High Density Polyethylene

## Pipe Extrusion

### Product Description:

HDPE P4402 is a natural colored grade produced with the latest Mitsui CX slurry polymerization

Technology exhibiting following features:

- ✓ Very Good Processing Properties
- ✓ Good mechanical properties
- ✓ Excellent Stress Crack Resistance
- ✓ Good external appearance

HDPE P4402 is recommended for following applications:

- ✓ PE-63 pressure pipes for drinking water & Irrigation
- ✓ Steel pipe lining
- ✓ Ducting

### Typical Properties:

Sr. No.	Properties	Test Method	Units	Values*
<b>Physical Properties</b>				
1	Melt Flow Index ( 190°C & 2.16 kg)	ASTM D1238	g / 10 min	0.25
2	Density (at 23 °C)	ASTM D1505	gm/cm <sup>3</sup>	0.944
<b>Mechanical Properties</b>				
3	Tensile Strength @ Yield (50mm / min)	ASTM D638	MPa	20
4	Elongation @ Break (50mm / min)	ASTM D638	%	>500
5	Notched Izod Impact Strength (at 23 °C)	ASTM D256A	J/m	>200
6	Flexural Modulus	ASTM D790A	Mpa	900
7	Hardness	ASTM D2240	Shore D	60
8	ESCR (F <sub>50</sub> , 10% Igepal Soln. v/v)	ASTM D1693B	Hours	>600
<b>Thermal Properties</b>				
9	Vicat Softening Point (10N)	ASTM D1525	°C	120
10	Heat Deflection Temperature (0.455 Mpa)	ASTM D648	°C	65
11	Oxidative Induction Time (OIT)	ASTM D3895	Minutes	>30
* Mechanical Properties tested on Compression Molded Specimen.				
* Typical Values and not to be taken as specification limits, values may change without any prior notice.				

### Recommended Processing Temperature: 180 – 220 °C

Disclaimer: OPaL assumes no liability whatsoever in respect of application, processing or any use made of the afore - mentioned information or products, or any consequence thereof. The user undertakes all liability in respect of the application, processing or use of the afore - mentioned information or product, whose quality and other properties he shall verify, or any consequence thereof. No liability whatsoever shall attached to any of the OPaL companies for any infringement of the rights owned or controlled by a third party in intellectual, industrial or other property by reason of application, processing or use of the afore-mentioned information or products by the user.

## Provisional Technical Datasheet

# P4402



### **Regulatory Requirements:**

HDPE Pipe grade P4402 shall meet the requirements stipulated in IS 10146:1982 on 'Specification of Polyethylene for safe use in contact with Foodstuff, Pharmaceutical & Drinking water'. The grade and Additives incorporated in this grade shall meet the positive list of constituents as prescribed in IS 10141:1982. The Grade and the additives incorporated in it shall also comply with the FDA: CFR Title 21,177.1520, Olefin Polymers.

### **Storage & Handling:**

Prevent Polyethylene Material from direct exposure to sunlight & heat to avoid quality deterioration. The storage location should be dry, dust free and the Storage temperature should not exceed 50 °C. Non - compliance to these precautionary measures can lead to degradation of the product causing Color changes, Odor & inadequate product performance.

### **Health and Safety Information:**

The product described herein may require precautions in handling and use because of toxicity, flammability, or other consideration. The Material Safety Data Sheet (MSDS) contains the available product health and safety information for this material and can be found at [www.opalindia.in](http://www.opalindia.in). Before using any material, a customer is advised to consult the MSDS for the product under consideration for use.



### **ONGC Petro additions Ltd**

Disclaimer: OPaL assumes no liability whatsoever in respect of application, processing or any use made of the afore - mentioned information or products, or any consequence thereof. The user undertakes all liability in respect of the application, processing or use of the afore - mentioned information or product, whose quality and other properties he shall verify, or any consequence thereof. No liability whatsoever shall attached to any of the OPaL companies for any infringement of the rights owned or controlled by a third party in intellectual, industrial or other property by reason of application, processing or use of the afore-mentioned information or products by the user.

Contact: ONGC Petro Additions Ltd., Polymer Marketing Group: 1st Floor, Omkara Complex, Sai Chowkdi, Manjalpur, Vadodara 390011, Gujarat,India  
Telephone: +91 265 6192600, Fax: +91 265 6192666, Corporate Site: [www.opalindia.in](http://www.opalindia.in) PARC/2016/03 - 00