Delivering Excellence, Propelling India's Progress

IndianOil – The Energy of India

Indian Oil Corporation (IndianOil) is India's largest commercial enterprise, with sales turnover of ₹5,06,428 crore and profits of ₹21,346 crore for the year 2017-18. It is also the leading Indian corporate in Fortune's prestigious 'Global 500' listing of the world's largest corporates, ranked at the 137th position for the year 2018.

As India's flagship national oil company, IndianOil's business interests straddle the entire hydrocarbon value-chain – from refining, pipeline transportation and marketing of petroleum products to exploration & production of crude oil & gas, marketing of natural gas and petrochemicals, besides forays into alternative energy and globalisation of downstream operations.

Petrochemicals: World-scale Plants, World-class Technologies

IndianOil is one of the largest players in the domestic Petrochemicals market, offering a full slate of Petrochemical products and intermediates under the brand name PROPEL. The Corporation made its big-ticket entry into Petrochemicals with the commissioning of the country's largest LAB (Linear Alkyl Benzene, used in the production of detergents) plant at its Koyali Refinery in August 2004. An integrated PX/PTA (Paraxylene/Purified Terephthalic Acid) complex came up at Panipat in Haryana in 2006 with a world-scale capacity of 553 KTA. A world-class Naphtha Cracker of 857 KTA Ethylene capacity with downstream polymer units, set up at Panipat in 2010, is the largest operating Naphtha cracker capacity in India. Its downstream unit produces about 46 grades of polymers catering to diverse range of applications.

Brief details of Polymer plants are given below:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Technology &amp; Licensor</th>
<th>Capacity (KTA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polypropylene</td>
<td>Spheripol II – LyondellBasell, Italy</td>
<td>600 (2X300)</td>
</tr>
<tr>
<td>Dedicated HDPE</td>
<td>Hostalen – LyondellBasell, Germany</td>
<td>300</td>
</tr>
<tr>
<td>LLDPE/HDPE Swing</td>
<td>Sclairtech Nova Chemicals, Canada</td>
<td>350</td>
</tr>
</tbody>
</table>

IndianOil has already implemented Petrochemical projects worth ₹20,500 crore. Further plans are on the anvil for various petrochemicals projects. As part of this mega plan, IndianOil is setting up a polypropylene plant with a capacity of 700 KTA at its Paradip Refinery, which is expected to be commissioned in December 2018.
### LLDPE / HDPE Grade Slate : Sclairtech Swing Plant

<table>
<thead>
<tr>
<th>Product</th>
<th>Sector</th>
<th>Grade</th>
<th>MFI (L/10)</th>
<th>Density</th>
<th>Special Characteristics</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>LLDPE</td>
<td>LLFILM</td>
<td>010F185</td>
<td>0.90</td>
<td>0.918</td>
<td>Good processability, Low gel, Good mechanical properties. Excellent optical properties.</td>
<td>Liquid packaging film, Multilayer film for adhesive lamination, Carrier bags, Drip lateral.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>010F18A</td>
<td>0.9</td>
<td>0.918</td>
<td>Good processability, Good mechanical properties, does not contain slip and antblock.</td>
<td>Multilayer film for adhesive lamination, Mulch film, Drip lateral, Cling film.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>020F18A</td>
<td>2.0</td>
<td>0.918</td>
<td>Easy processability, Low gel, does not contain slip and antblock.</td>
<td>Cast film, stretching film, Drip laterals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>030F18A</td>
<td>3.0</td>
<td>0.918</td>
<td>Good processability, Low gel, does not contain slip and antblock.</td>
<td>Base resin for XLPE compounds, Cast stretch film.</td>
</tr>
<tr>
<td></td>
<td>DRIPLATER</td>
<td>010L225</td>
<td>1.1</td>
<td>0.922</td>
<td>Excellent processability, Good strength, Controlled morphology, Low gel content.</td>
<td>Drip lateral pipes for high speed extruders.</td>
</tr>
<tr>
<td>LLDPE</td>
<td>ROTATIONAL MOLDING</td>
<td>042R35A</td>
<td>4.5</td>
<td>0.935</td>
<td>Very good processability, Ease in de-moulding, Good mechanical strength.</td>
<td>Overhead water tanks, Left tanks, Septic tanks, Chemical storage tanks, Toys, Garden furniture.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>040R40A</td>
<td>4.9</td>
<td>0.904</td>
<td>Superior mechanical strength, Excellent rigidity, impact resistance and Easy Processability</td>
<td>Septic Tanks, Rainwater Harvesting Tanks, Underground Tanks, Manholes &amp; Chambers, Insulated Containers, Automobile Parts, Oil-Grease Tanks, Material Handling Equipments.</td>
</tr>
<tr>
<td>LLDPE</td>
<td>INJECTION MOLDING</td>
<td>500M24A</td>
<td>50</td>
<td>0.924</td>
<td>Very good flow and processability.</td>
<td>Carrier resin for master batches, Injection moulding of flat and large warpage-free products and lids.</td>
</tr>
<tr>
<td>LLDPE</td>
<td>EXTRUSION COATING</td>
<td>065E24A</td>
<td>6.5</td>
<td>0.924</td>
<td>Good processability, Lower neck-in, Good adhesion on substrates.</td>
<td>Extrusion coating on HDPE Resista fabric, Paper etc. Base resin for XLPE compounds.</td>
</tr>
<tr>
<td></td>
<td>INJECTION / COMPRESSION MOLDING</td>
<td>020M52</td>
<td>2</td>
<td>0.952</td>
<td>Superior Processability, Superior Mechanical properties</td>
<td>Compression-injection molded Caps and Closures, Injection molded closures, sheet for textile cartons.</td>
</tr>
<tr>
<td>HDPE</td>
<td>INJECTION MOLDING</td>
<td>080M60</td>
<td>8</td>
<td>0.960</td>
<td>Good processability, Superior mechanical properties, Good ESCR property.</td>
<td>Crates for vegetables, milk, fish and material handling, Injection molded Pallets, Caps &amp; Closures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>080M55</td>
<td>8</td>
<td>0.955</td>
<td>Good processability, Superior mechanical properties</td>
<td>Caps &amp; Closures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>080M60U</td>
<td>8</td>
<td>0.960</td>
<td>UV stabilised, Good processability, Superior mechanical properties, Good ESCR property.</td>
<td>Soft drink crates, Industrial crates for outdoor usage, Injection molded Pallets, Caps &amp; Closures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>180M50</td>
<td>20</td>
<td>0.950</td>
<td>Excellent flow properties, very good processability, DFM approved.</td>
<td>Houseware, Thin wall injection moulded products.</td>
</tr>
<tr>
<td>HDPE</td>
<td>RAFFIA</td>
<td>010E52</td>
<td>0.9</td>
<td>0.952</td>
<td>Excellent orientation characteristics, Low water carry over, Excellent mechanical properties.</td>
<td>Woven sacks for fertilizer packaging, Wrapping fabric, Tarpaulin, Agri grade net, Raschel bags, Extruded sheets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>012E50</td>
<td>1.2</td>
<td>0.950</td>
<td>Narrow MWD, Excellent orientation characteristics, Low water carry over. Superior mechanical properties.</td>
<td>Tarpaulin, Woven sacks for wrapping fabrics, Monofilaments for mosquito nets, fishing nets, etc.</td>
</tr>
</tbody>
</table>

### HDPE and HMHDPE Grade Slate : Dedicated (Hostalen) Plant

<table>
<thead>
<tr>
<th>Sector</th>
<th>Grade</th>
<th>MFI (L/10)</th>
<th>Density</th>
<th>Special Characteristics</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMFilm</td>
<td>002D50</td>
<td>0.22</td>
<td>0.950</td>
<td>Bimodal grade with very good processability with high molecular weight, Excellent dart impact strength.</td>
<td>Counter bags, Shopping bags, Films for wrapping, Liners.</td>
</tr>
<tr>
<td></td>
<td>003D49</td>
<td>0.30</td>
<td>0.948</td>
<td>Bimodal grade with good processability and bubble stability. Grade exhibits superior gloss of films.</td>
<td>Counter bags, Shopping bags, Films for wrapping with higher gloss.</td>
</tr>
<tr>
<td>GPBM</td>
<td>012B54</td>
<td>1.20</td>
<td>0.954</td>
<td>Bimodal grade with very good processability, Good balance of stiffness, ESCR and impact properties, DFM approved.</td>
<td>Blow moulded containers for edible &amp; lubricating oil packaging, Pharmaceutical &amp; other general purpose packaging, DWC pipe.</td>
</tr>
<tr>
<td>MBM</td>
<td>003B52</td>
<td>0.35</td>
<td>0.952</td>
<td>Bimodal HMHD grade with very good processability, High stiffness, toughness &amp; good ESCR properties.</td>
<td>Blow moulded containers upto 100 litres, Sheet extrusion, DWC Pipe, Blow moulded water tanks.</td>
</tr>
<tr>
<td>LBM</td>
<td>001D52</td>
<td>0.12</td>
<td>0.952</td>
<td>Bimodal HMHD grade with good processability, Good balance of stiffness and impact properties.</td>
<td>Large containers and L-Ring drums for packaging of industrial products upto 220 litres.</td>
</tr>
<tr>
<td>PPE</td>
<td>002D48</td>
<td>0.22</td>
<td>0.948</td>
<td>Bimodal grade with good processability, Excellent impact &amp; stiffness, Classified as MRS 10.0 material (PE-100) (Esca certification)</td>
<td>Pressure pipes for water &amp; gas transportation, Irrigation pipes, etc.</td>
</tr>
<tr>
<td></td>
<td>004D44</td>
<td>0.44</td>
<td>0.946</td>
<td>Bimodal grade with very good processability, Classified as MRS 8.0 material (PE-80)</td>
<td>Pressure pipe for water and gas transportation.</td>
</tr>
<tr>
<td></td>
<td>010D45</td>
<td>0.9</td>
<td>0.945</td>
<td>Bimodal grade with good processability, Classified as MRS 6.3 material (PE-63)</td>
<td>Sprinkler pipes, Bore well pipes, DWC pipes, Ducts &amp; non-pressure pipes.</td>
</tr>
<tr>
<td></td>
<td>010D45U</td>
<td>1.0</td>
<td>0.945</td>
<td>Bimodal grade with good processability, specially formulated for toteaduct applications. It is UV stabilized grade, CACT approval for OFC ducts for telecom applications.</td>
<td>Teleducts for OFC, DWC pipes.</td>
</tr>
<tr>
<td>Family</td>
<td>Sector</td>
<td>Grade</td>
<td>MFI(1g)</td>
<td>Special Characteristics</td>
<td>Application</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------</td>
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<td>------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>HOMO POLYMER</td>
<td>INJECTING Moulding</td>
<td>1030MG</td>
<td>3</td>
<td>Good balance of impact and rigidity, Good processability</td>
<td>Industrial products, Household products, General purpose extrusion, Blending with Raffia.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1060MG</td>
<td>6</td>
<td>Good balance of impact and rigidity, Good processability</td>
<td>Industrial products, Household products. Also used in blends in Thermoforming &amp; Raffia.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1110MAS</td>
<td>11</td>
<td>A superior grade having high flow, very high stiffness with excellent gloss. The grade offers better productivity and reduces energy consumption. DMF approved.</td>
<td>Furniture, Household articles &amp; Auto components where high stiffness is required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1200MC</td>
<td>20</td>
<td>Good flow characteristics, high clarity, good processability</td>
<td>Syringe barrel application, multivent products high clarity initiate products hangers for garments.</td>
</tr>
<tr>
<td></td>
<td>EXTRUSION COATING</td>
<td>1350EG</td>
<td>35</td>
<td>Excellent flow characteristics, Low neck-in &amp; good processability, Good surface finish &amp; excellent adhesion to substrate.</td>
<td>Extrusion coating on substrate PP Raffia fabrics, Lean blend with LDPE.</td>
</tr>
<tr>
<td></td>
<td>RAFFIA</td>
<td>1030RG</td>
<td>3.5</td>
<td>Good processability, Low water carryover, Good balance of tenacity &amp; elongation.</td>
<td>Woven sacks for Cement, Chemicals, Fertilizer, Food grain packaging, FIBC for bulk industrial packaging applications.</td>
</tr>
<tr>
<td></td>
<td>BOPP FILM</td>
<td>1030FG</td>
<td>3</td>
<td>Get free, Good stretchability and processability.</td>
<td>General purpose &amp; co-extruded BOPP films, Metallizable film, CastPP films, etc.</td>
</tr>
<tr>
<td></td>
<td>TO FILM</td>
<td>1100FS</td>
<td>10</td>
<td>Very good processability, Excellent gloss and clarity, contains Slip and Amtblock.</td>
<td>TO films for packaging of snacks and bakery foods, Garment packaging, Textiles over wraps.</td>
</tr>
<tr>
<td></td>
<td>FIBER AND FILAMENT</td>
<td>1200YG</td>
<td>20</td>
<td>Good melt strength, stable extrusion even at high spinning speeds and stretch ratios.</td>
<td>Lower denier bulk continuous fibre, Continuous Fibre and Staple fibres, High tenacity continuous filament for drap. Low denier staple fibres for spun bond and non-woven.</td>
</tr>
<tr>
<td></td>
<td>INJECTION Moulding</td>
<td>2120MC</td>
<td>12</td>
<td>Excellent clarity &amp; good processability, grade offers higher productivity and energy saving opportunities in processing. DMF approved.</td>
<td>Transparent injection moulded rigid containers, Houseware, Syringes, ISBM bottles.</td>
</tr>
<tr>
<td>IMPACT CO-POLYMER</td>
<td>INJECTION Moulding</td>
<td>3030MG</td>
<td>3.5</td>
<td>Medium flow, Good stiffness and high impact strength balance.</td>
<td>Injection moulding of components for automobiles, Home appliances and Industrial products, Caps &amp; Closures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4080MA</td>
<td>8</td>
<td>Medium flow for easy processing, Good impact &amp; stiffness balance, anti-static properties.</td>
<td>Paint, Pails, Furniture and industrial components.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4100MH</td>
<td>10</td>
<td>Medium flow, Very good processability, Long term heat ageing, Good impact &amp; stiffness balance.</td>
<td>Battery containers, Industrial mouldings, Components requiring long heat, exposure like under the hood automotive components.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5080MG</td>
<td>10</td>
<td>Good processability, No break (Superior impact strength).</td>
<td>High impact automotive components, impact modifier in specially PP-compounds.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3120MA</td>
<td>12</td>
<td>Medium flow, Good processability, Good impact and stiffness balance, Anti-static properties.</td>
<td>Home appliances, Automotive components, PP compound for automotive components, Houseware, Molded furniture, Luggage shells.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3400MN</td>
<td>40</td>
<td>High flow, Good processability, Low warpage, Nucleated grade.</td>
<td>Home appliances, PP Compound for automotive components, Thin wall Injection Moulding.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3650MN</td>
<td>65</td>
<td>High flow, Good processability, Low warpage, Nucleated grade.</td>
<td>PP Compounding for automotive components, TWIM, Appliances.</td>
</tr>
<tr>
<td></td>
<td>EXTRUSION COATING</td>
<td>3250MG</td>
<td>25</td>
<td>High flow, Very good processability, Low neck-in.</td>
<td>Extrusion coating on PP Raffia fabric, Sandwich Lamination of Raffia fabric with BOPP film or Craft Paper etc. in blends with suitable grades of LDPE.</td>
</tr>
</tbody>
</table>
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