

## HDPE Product information: NATURAL GRADES

| Grade                | MFI<br>g/10<br>min | Processing<br>Method   | Features  | Typical Applications  |
|----------------------|--------------------|--|---|---|
| <i>FILMS</i>         |                    |  |   |   |
| b-J53-10             | 10                 | <ul style="list-style-type: none"> <li>Film extrusion</li> </ul> | <ul style="list-style-type: none"> <li>Excellent drawability</li> <li>Good extrudability</li> <li>High stiffness</li> <li>High tensile strength</li> <li>Good toughness</li> </ul>  | <ul style="list-style-type: none"> <li>General purpose thin films</li> <li>T-shirt bags, grocery sacks and liners</li> </ul>  |
| J53-08 N2000         | 8                  | <ul style="list-style-type: none"> <li>Film extrusion</li> </ul> | <ul style="list-style-type: none"> <li>Bimodal HDPE</li> <li>Excellent drawability</li> <li>Good extrudability and bubble stability</li> <li>High tensile strength</li> <li>Very high stiffness</li> <li>Excellent toughness</li> </ul>       | <ul style="list-style-type: none"> <li>Production of very thin film produced at high line speed</li> <li>Downgauging in all thin film applications</li> </ul>   |
| <i>BLOW MOULDING</i> |                    |  |   |   |
| B53-35H-011          | 0.35               | <ul style="list-style-type: none"> <li>Blow moulding</li> </ul>  | <ul style="list-style-type: none"> <li>Easy processing</li> <li>High top load resistance</li> <li>Good environmental stress cracking resistance (ESCR)</li> <li>Good impact strength</li> <li>Meets FDA requirements of 21CFR.1520</li> </ul> | <ul style="list-style-type: none"> <li>Household chemicals, pharmaceutical and cosmetic containers</li> </ul>   |
| ZBM58-30HS           | 0.3                | <ul style="list-style-type: none"> <li>Blow moulding</li> </ul>  | <ul style="list-style-type: none"> <li>Bimodal HDPE</li> <li>High rigidity</li> <li>Outstanding environmental stress cracking resistance</li> </ul>   | <ul style="list-style-type: none"> <li>Blow moulded containers up to 30 liters capacity for packaging chemicals, most household products oils, foodstuffs and pharmaceuticals</li> <li>Sheet extrusion</li> </ul> |

|                           |     |   |  |   |
|---------------------------|-----|---|--|---|
|                           |     |   | <ul style="list-style-type: none"> <li>• High impact strength</li> <li>• Easy processing</li> <li>• Medium die swell</li> </ul>  |   |
| b-HM5411EA                | 10  | <ul style="list-style-type: none"> <li>• Large Blow moulding</li> </ul> | <ul style="list-style-type: none"> <li>• Very high environmental stress crack resistance</li> <li>• Good rigidity</li> <li>• High melt strength</li> <li>• High impact strength</li> </ul>   | <ul style="list-style-type: none"> <li>• High performance blow moulded containers typically of 1-60 liters capacity for packaging aggressive products</li> <li>• Robust industrial and technical mouldings</li> </ul> |
| HM4560UA                  | 6   | <ul style="list-style-type: none"> <li>• Large Blow moulding</li> </ul> | <ul style="list-style-type: none"> <li>• Excellent environmental stress crack resistance (ESCR)</li> <li>• High melt strength</li> <li>• High impact strength</li> <li>• Excellent chemical resistance</li> <li>• Excellent weathering resistance</li> </ul> | <ul style="list-style-type: none"> <li>• High performance blow moulded containers up to 5000 liters capacity for packaging aggressive products. Resistant to UV induced degradation.</li> </ul>                       |
| <b>INJECTION MOULDING</b> |     |   |  |   |
| T60-800                   | 8.5 | <ul style="list-style-type: none"> <li>• Injection moulding</li> </ul>  | <ul style="list-style-type: none"> <li>• High rigidity</li> <li>• Good impact strength</li> <li>• Meets FDA requirements of 21CFR 177.1520</li> </ul>  | <ul style="list-style-type: none"> <li>• Crates</li> <li>• Recycle</li> <li>• Bins</li> <li>• Hardhats</li> <li>• General purpose injection moulding</li> </ul>   |
| T50-2000                  | 20  | <ul style="list-style-type: none"> <li>• Injection moulding</li> </ul>  | <ul style="list-style-type: none"> <li>• High processability</li> <li>• High gloss</li> <li>• Reasonably good impact strength and rigidity balance</li> <li>• Meets FDA requirements of 21CFR 177.1520</li> </ul>  | <ul style="list-style-type: none"> <li>• Caps and closures</li> <li>• Toys</li> <li>• Housewares</li> <li>• General purpose</li> </ul>  |
| ZIM53-08                  | 0.8 | <ul style="list-style-type: none"> <li>• Injection moulding</li> </ul>  | <ul style="list-style-type: none"> <li>• Outstanding ESCR</li> <li>• Excellent impact strength</li> <li>• Good processability (MI 2 look alike viscosity)</li> </ul>   | <ul style="list-style-type: none"> <li>• Technical moulding</li> <li>• Caps and closures</li> </ul>   |

## BLACK GRADES

| Grade        | MFI<br>g/10<br>min | Processing<br>Method   | Features   | Typical Applications  |
|--------------|--------------------|--|--|---|
| <i>PIPE</i>  |                    |  |  |   |
| INpipe100 SR | 0.29               | <ul style="list-style-type: none"> <li>• Pipe extrusion</li> </ul> | <ul style="list-style-type: none"> <li>• Bimodal Black HDPE</li> <li>• Exceptional environmental stress crack resistance</li> <li>• High stiffness</li> <li>• High impact strength (Rapid Crack Propagation)</li> <li>• Good processability</li> </ul> | <ul style="list-style-type: none"> <li>• Classified PE100 in accordance with ISO 12162 based on ISO 9080 analysis. PE 100 compounds are usually used for water &amp; gas transportation as described in ISO 4427 and 4437 respectively</li> <li>• Classified PE100RC in accordance with PAS1075 and is suitable for sandless laying and no dig trenchless techniques</li> </ul> |
| b-TUB171     | 0.85               | <ul style="list-style-type: none"> <li>• Pipe extrusion</li> </ul> | <ul style="list-style-type: none"> <li>• Black MDPE</li> <li>• Good environmental stress crack resistance</li> <li>• Good flexibility (coilability)</li> <li>• Good processability</li> </ul>  | <ul style="list-style-type: none"> <li>• Classified PE 80 in accordance with ISO 12162 based on ISO 9080 analysis. PE 80 compounds are usually used for water &amp; gas transportation as described in ISO 4427 and 4437 respectively.</li> </ul>   |
| TUB121N3000  | 0.3                | <ul style="list-style-type: none"> <li>• Pipe extrusion</li> </ul> | <ul style="list-style-type: none"> <li>• Bimodal Black HDPE</li> <li>• Outstanding environmental stress crack resistance</li> <li>• High stiffness</li> <li>• High impact strength (Rapid Crack Propagation)</li> <li>• Good processability</li> </ul> | <ul style="list-style-type: none"> <li>• Classified PE 100 in accordance with ISO 12162 based on ISO 9080 analysis. PE 100 compounds are usually used for water &amp; gas transportation as described in ISO 4427 and 4437 respectively.</li> </ul>   |