### EKATO HIGH PERFORMANCE IMPELLERS

<table>
<thead>
<tr>
<th>IMPELLER TYPE</th>
<th>VISCOPROP</th>
<th>ISOJET</th>
<th>ISOJET-B</th>
<th>COMBIJET</th>
<th>PHASEJET</th>
<th>GASJET</th>
<th>INTERMIG</th>
<th>PARAVISC</th>
<th>COAXIAL</th>
<th>TORUSJET</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLOW DIRECTION</td>
<td>Axial</td>
<td>Axial</td>
<td>Axial</td>
<td>Radial</td>
<td>Radial</td>
<td>Axial</td>
<td>Axial</td>
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</tr>
<tr>
<td>PREFERRED ARRANGEMENT</td>
<td>Axial</td>
<td>Axial</td>
<td>Axial</td>
<td>Radial</td>
<td>Radial</td>
<td>Axial</td>
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</tr>
<tr>
<td>BLENDING</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
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<td>● ● ● ●</td>
<td>● ● ● ●</td>
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<tr>
<td>SUSPENDING</td>
<td>●</td>
<td>●</td>
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<td>●</td>
<td>●</td>
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<td>●</td>
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<tr>
<td>DISPERSING</td>
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<tr>
<td>HEAT TRANSFER</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<td>●</td>
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<tr>
<td>FLOW RANGE</td>
<td>Turbulent / transitional / laminar</td>
<td>Turbulent / transitional / laminar</td>
<td>Turbulent</td>
<td>Turbulent</td>
<td>Turbulent</td>
<td>Turbulent</td>
<td>Turbulent</td>
<td>Turbulent / transitional / laminar</td>
<td>Turbulent / transitional / laminar</td>
<td>Turbulent / transitional / laminar</td>
</tr>
<tr>
<td>VISCOSITY RANGE</td>
<td>≤ 40,000 [mPas]</td>
<td>≤ 2,000 [mPas]</td>
<td>≤ 10,000 [mPas]</td>
<td>≤ 10,000 [mPas]</td>
<td>≤ 2,000 [mPas]</td>
<td>≤ 20,000 [mPas]</td>
<td>≤ 1,000,000 [mPas]</td>
<td>≤ 1,000,000 [mPas]</td>
<td>≤ 100,000 [mPas]</td>
<td></td>
</tr>
<tr>
<td>FEATURES</td>
<td>Universal mixing impeller for a wide viscosity range</td>
<td>Variable blade angles</td>
<td>Centrifugal pump with a wide range of flow and dispersion of very high gas rates</td>
<td>Axial</td>
<td>Axial</td>
<td>Axial</td>
<td>Axial</td>
<td>Axial</td>
<td>Axial</td>
<td>Axial</td>
</tr>
<tr>
<td>APPLICATIONS</td>
<td>Polymerization / suspension / emulsion, leaching, crystallization, precipitation, storage tanks</td>
<td>Polymerization / suspension, precipitation</td>
<td>Biotechnology, fermentation, precipitation, crystallization</td>
<td>Biotechnology</td>
<td>Biotechnology</td>
<td>Biotechnology</td>
<td>Biotechnology</td>
<td>Biotechnology</td>
<td>Biotechnology</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>INDUSTRIES</td>
<td>Formulated consumer products, chemicals, polymers, gas storage tanks, water treatment, biomass &amp; biorefineries, minerals processing</td>
<td>Hydrodynamics, chemicals, polymers, biomass &amp; biorefineries, AP production</td>
<td>Chemicals, biotechnology, pharmaceuticales, food</td>
<td>Chemicals, biotechnology, pharmaceuticales, food</td>
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<td>Chemicals, biotechnology, pharmaceuticales, food</td>
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<tr>
<td>DIAMETER RATIO</td>
<td>0.3 – 0.7 [d / d]</td>
<td>0.05 – 0.5 [d / d]</td>
<td>0.2 – 0.7 [d / d]</td>
<td>0.2 – 0.6 [d / d]</td>
<td>0.2 – 0.5 [d / d]</td>
<td>0.3 – 0.8 [d / d]</td>
<td>0.3 – 0.8 [d / d]</td>
<td>0.9 – 0.8 [d / d]</td>
<td>0.9 – 0.8 [d / d]</td>
<td>0.9 – 0.8 [d / d]</td>
</tr>
<tr>
<td>SPEED</td>
<td>Medium</td>
<td>High</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>TP SPEED</td>
<td>3 – 10 [m/s]</td>
<td>4 – 15 [m/s]</td>
<td>3 – 10 [m/s]</td>
<td>4 – 15 [m/s]</td>
<td>4 – 15 [m/s]</td>
<td>8 – 15 [m/s]</td>
<td>1 – 9 [m/s]</td>
<td>&lt; 2 [m/s]</td>
<td>&lt; 2 (5 – 30) [m/s]</td>
<td>2 – 15 [m/s]</td>
</tr>
</tbody>
</table>

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**EKATO SPECIAL IMPELLERS**

- **DISOLVING CERAMIC**
  - Application of high shear for dissolving or deglomeration purposes or establishing emulsions (stable droplet sizes)

- **EPOX-R**
  - A wear-optimized impeller which is ideal for use in pressure oxidation autoclaves (hydrodynamics)

- **EPAL**
  - Designed for continuously operating horizontal vessels (e.g. leaching autoclaves)

- **ISOPAS**
  - Impeller for mixing and driving of products with a wide range of flow properties

- **HEICAL RIBBON**
  - Impeller for high-viscosity media and low shear applications, special applications in emulsion polymerization

- **SOLIDFOIL**
  - Perfect handling of continuously flowing solids, e.g. stripping manner residues from polymers

- **WINGJET**
  - A wear-optimized impeller for side entry impellers with an excellent axial flow and dispersion of very high gas rates (fine gas dispersion, storage tanks)

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*The impeller selection and the areas of operation may differ for individual cases.*

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**Legend:** ● ● ● ● = excellent | ● ● ● = very good | ● = good

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