

Technical Data Sheet

# Polyflam RIPP 4000 OSD K3014

Polypropylene Copolymer  
LyondellBasell Industries  
Engineering Plastics

**Product Description**

Flame-retardant PP-Copolymer, halogenfree, optimized smoke density

**General**

|                     |  |  |
|---------------------|--|--|
| Features            | <ul style="list-style-type: none"> <li>Copolymer</li> <li>Flame Retardant</li> </ul> | <ul style="list-style-type: none"> <li>Halogen Free</li> <li>Low Smoke Emission</li> </ul> |
| UL File Number      | <ul style="list-style-type: none"> <li>E86615</li> </ul>                             |  |
| Processing Method   | <ul style="list-style-type: none"> <li>Extrusion</li> </ul>                          | <ul style="list-style-type: none"> <li>Injection Molding</li> </ul>                        |
| Resin ID (ISO 1043) | <ul style="list-style-type: none"> <li>PP FR(51)</li> </ul>                          |  |

| Physical | Nominal Value (English) | Nominal Value (SI) | Test Method |
|----------|-------------------------|--------------------|-------------|
|----------|-------------------------|--------------------|-------------|

|   |                            |                            |            |
|---|----------------------------|----------------------------|------------|
| Density                                     | 1.07 g/cm <sup>3</sup>     | 1.07 g/cm <sup>3</sup>     | ISO 1183/A |
| Melt Volume-Flow Rate (MVR) (230°C/2.16 Kg) | 4.0 cm <sup>3</sup> /10min | 4.0 cm <sup>3</sup> /10min | ISO 1133   |

| Mechanical | Nominal Value (English) | Nominal Value (SI) | Test Method |
|------------|-------------------------|--------------------|-------------|
|------------|-------------------------|--------------------|-------------|

|                                 |            |          |                 |
|---------------------------------|------------|----------|-----------------|
| Tensile Modulus                 | 305000 psi | 2100 MPa | ISO 527-1/1A/1  |
| Tensile Stress                  |            |          | ISO 527-2/1A/50 |
| Yield                           | 2900 psi   | 20.0 MPa |                 |
| Break                           | 2180 psi   | 15.0 MPa |                 |
| Tensile Strain (Yield)          | 3.3 %      | 3.3 %    | ISO 527-2/1A/50 |
| Nominal Tensile Strain at Break | 50 %       | 50 %     | ISO 527-2/1A/50 |
| Flexural Modulus <sup>1</sup>   | 305000 psi | 2100 MPa | ISO 178         |
| Flexural Stress <sup>1</sup>    |            |          | ISO 178         |
| 4.0% Strain                     | 5080 psi   | 35.0 MPa |                 |
| 3.5% Strain                     | 5080 psi   | 35.0 MPa |                 |

| Impact | Nominal Value (English) | Nominal Value (SI) | Test Method |
|--------|-------------------------|--------------------|-------------|
|--------|-------------------------|--------------------|-------------|

|                                  |                            |                       |             |
|----------------------------------|----------------------------|-----------------------|-------------|
| Charpy Notched Impact Strength   |                            |                       | ISO 179/1eA |
| -22°F (-30°C)                    | 0.48 ft·lb/in <sup>2</sup> | 1.0 kJ/m <sup>2</sup> |             |
| 73°F (23°C)                      | 1.4 ft·lb/in <sup>2</sup>  | 3.0 kJ/m <sup>2</sup> |             |
| Charpy Unnotched Impact Strength |                            |                       | ISO 179/1eU |
| -22°F (-30°C)                    | 9.5 ft·lb/in <sup>2</sup>  | 20 kJ/m <sup>2</sup>  |             |
| 73°F (23°C)                      | No Break                   | No Break              |             |

| Thermal | Nominal Value (English) | Nominal Value (SI) | Test Method |
|---------|-------------------------|--------------------|-------------|
|---------|-------------------------|--------------------|-------------|

|                                   |        |         |              |
|-----------------------------------|--------|---------|--------------|
| Deflection Temperature Under Load |        |         |              |
| 66 Psi (0.45 Mpa), Unannealed     | 208 °F | 98.0 °C | ISO 75-2/Bf  |
| 264 Psi (1.8 Mpa), Unannealed     | 140 °F | 60.0 °C | ISO 75-2/ Af |
| Vicat Softening Temperature       |        |         |              |
| --                                | 165 °F | 74.0 °C | ISO 306/B50  |
| --                                | 311 °F | 155 °C  | ISO 306/A50  |

| Electrical | Nominal Value (English) | Nominal Value (SI) | Test Method |
|------------|-------------------------|--------------------|-------------|
|------------|-------------------------|--------------------|-------------|

|  |                  |                  |               |
|--|------------------|------------------|---------------|
| Surface Resistivity                      | > 1.0E+15 ohms   | > 1.0E+15 ohms   | IEC 60093     |
| Volume Resistivity                       | > 1.0E+13 ohms·m | > 1.0E+13 ohms·m | IEC 62631-3-1 |
| Electric Strength <sup>2</sup>           |                  |                  | IEC 60243-1   |
| 73°F (23°C), 0.0394 In (1.00 Mm), In Oil | 1100 V/mil       | 43 kV/mm         |               |
| Comparative Tracking Index (CTI)         | 600 V            | 600 V            | UL 746A       |

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| Flammability                            | Nominal Value (English) |     | Nominal Value (SI) |     | Test Method          |
|---|-------------------------|-----|--------------------|-----|----------------------|
| Burning Rate                            |                         |     |                    |     |                      |
| 0.0787 In (2.00 Mm), Self-extinguishing | 0.0 in/min              |     | 0.0 mm/min         |     | ISO 3795             |
| 0.0787 In (2.00 Mm), Self-extinguishing | 0.0 in/min              |     | 0.0 mm/min         |     | FMVSS 302            |
| Flammability Classification             |                         |     |                    |     |                      |
| 0.030 In (0.75 Mm)                      | V-0                     |     | V-0                |     | IEC 60695-11-10, -20 |
| --                                      | •                       | V-0 | •                  | V-0 |                      |
|   | •                       | 5VB | •                  | 5VB |                      |
| 0.12 In (3.0 Mm)                        | V-0                     |     | V-0                |     |                      |
| Glow Wire Flammability Index            |                         |     |                    |     |                      |
| 0.030 In (0.75 Mm)                      | 1760 °F                 |     | 960 °C             |     | IEC 60695-2-12       |
| 0.06 In (1.5 Mm)                        | 1760 °F                 |     | 960 °C             |     |                      |
| 0.12 In (3.0 Mm)                        | 1760 °F                 |     | 960 °C             |     |                      |
| Glow Wire Ignition Temperature          |                         |     |                    |     |                      |
| 0.030 In (0.75 Mm)                      | 1340 °F                 |     | 725 °C             |     | IEC 60695-2-13       |
| 0.06 In (1.5 Mm)                        | 1340 °F                 |     | 725 °C             |     |                      |
| 0.12 In (3.0 Mm)                        | 1340 °F                 |     | 725 °C             |     |                      |
| Oxygen Index                            | 33 %                    |     | 33 %               |     | ISO 4589-2           |

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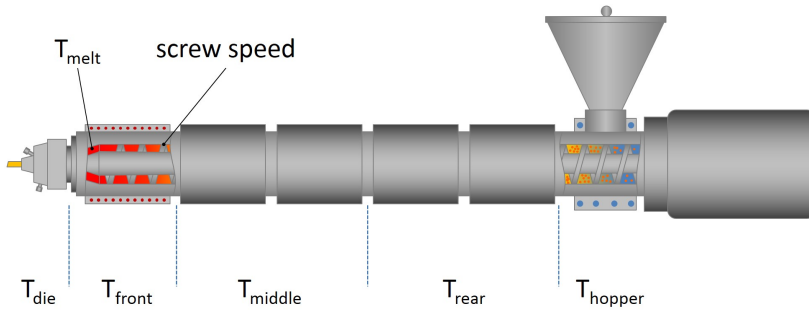


| Injection              | Nominal Value (English) | Nominal Value (SI) |
|------------------------|-------------------------|--------------------|
| Drying Temperature     | 158 to 176 °F           | 70 to 80 °C        |
| Drying Time            | 2.0 to 4.0 hr           | 2.0 to 4.0 hr      |
| Rear Temperature       | 356 °F                  | 180 °C             |
| Middle Temperature     | 392 °F                  | 200 °C             |
| Front Temperature      | 410 °F                  | 210 °C             |
| Nozzle Temperature     | 428 °F                  | 220 °C             |
| Processing (Melt) Temp | 356 to 428 °F           | 180 to 220 °C      |
| Mold Temperature       | 104 to 176 °F           | 40 to 80 °C        |
| Injection Pressure     | 11600 to 17400 psi      | 80.0 to 120 MPa    |
| Injection Rate         | Slow-Moderate           | Slow-Moderate      |
| Holding Pressure       | 5800 to 13100 psi       | 40.0 to 90.0 MPa   |
| Back Pressure          | 725 to 1450 psi         | 5.00 to 10.0 MPa   |
| Cushion                | < 0.197 in              | < 5.00 mm          |
| Screw Speed            | < 709 in/min            | < 18 m/min         |

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| Extrusion              | Nominal Value (English) | Nominal Value (SI) |
|------------------------|-------------------------|--------------------|
| Drying Temperature     | 158 to 176 °F           | 70 to 80 °C        |
| Drying Time            | 2.0 to 4.0 hr           | 2.0 to 4.0 hr      |
| Suggested Max Moisture | < 0.10 %                | < 0.10 %           |
| Melt Temperature       | 338 to 410 °F           | 170 to 210 °C      |