QUALITY FITS.

Product range injection molding grades with reference data

\textsuperscript{X} Durethan®

QUALITY WORKS.
Plastics with growth potential
Durethan® and Pocan® are plastic materials on the rise, offering outstanding potential for growth and innovation. Thanks to our efficient production facilities and intensive product and application development, we are one of the most competitive providers in the field.

The production of Durethan® and Pocan® is further supported by our manufacture of strategically relevant pre-production products. Our facilities in Krefeld-Uerdingen and Antwerp, among the largest of their kind, produce caprolactam and glass fibers on a global scale.

Industries and areas of application
Durethan® has a property profile that makes it ideal for applications in the automotive and electrical/electronics industries and in the construction sector.

Pocan® is used primarily in the electrical/electronics industry, although applications for this versatile material can also be found in the automotive and commercial vehicles industry, in medicine, and in the sports and leisure sectors.

Key brands and products
Durethan®: Engineering resins based on polyamide 6, polyamide 66 and co-polyamides
Pocan®: Engineering resins based on polybutylene terephthalate
Tepex®: Continuous fiber reinforced thermoplastic composite sheets
HiAnt®: Engineering expertise and joint promotion of innovation
HiAnt®
In the development of innovative applications we support our customers with extensive technical service and know-how. The name HiAnt® stands for our expertise in this area. It is derived from the words “high-tech” and “ant”. Ants are renowned for their well-organized teamwork, industriousness, interlinking through effective communication, and success through combined effort.

We make a distinction between the following key areas

**HiAnt® material development:**
Tailored material to satisfy demanding customer requirements.

**HiAnt® concept development:**
Leadership in lightweight technology to drive evolutions.

**HiAnt® Computer Aided Engineering:**
Top-notch simulation methods for exact prediction of component performance.

**HiAnt® part testing:**
State-of-the-art testing facilities for practice-oriented component qualification.

**HiAnt® processing:**
Development of material-process combinations to enable new applications.
## RANGE OF GRADES

### NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

#### NON-REINFORCED

| General Grade | B30S          | low viscosity | 8 |
|               | B315K         | low viscosity, fast cycle | 8 |
|               | B40SK         | high viscosity     | 9 |

| Improved Toughness | BC304H3.0 | high impact resistance | 9 |

| Improved Welding Performance | B315KH3.0LT | NIR transparency | 9 |

#### REINFORCED/FILLED

| General Grade | BKV15H2.0  | GF15, PA 6 CoPA | 9 |
|               | BKV15H2.0  | GF15            | 9 |
|               | BKV15H2.0  | DUS008          | 9 |
|               | BKV25H2.0  | GF25            | 11 |
|               | BKV30H2.0  | GF30            | 12 |
|               | BKV35H2.0  | GF35            | 17 |
|               | BKV40H2.0  | GF40            | 19 |
|               | 1100/30H2.0| GB30, improved surface quality, reduced warpage | 24 |

| Improved Flowability | BKV30H2.0EF | GF30, improved surface quality | 12 |
|                      | BKV30H2.0XF | GF30, extreme flow, improved surface quality | 12 |
|                      | BKV35H2.0EF | GF35, improved surface quality | 17 |
|                      | BKV40H2.0EF | GF40, improved surface quality | 19 |
|                      | BM29XH2.0EF | MD30, improved surface quality, reduced warpage | 21 |
|                      | BG30XH2.0XF | (GF+GB)30, extreme flow, improved surface quality, reduced warpage | 23 |
|                      | BG30XH3.0XF | (GF+GB)30, extreme flow, improved surface quality, reduced warpage | 23 |
|                      | BG30XXF    | (GF+GB)30, extreme flow, improved surface quality, reduced warpage  | 23 |
|                      | BM40XH2.0EF | MD40, improved surface quality, reduced warpage | 24 |
|                      | BG60XXF    | (GF+GB)60, extreme flow, improved surface quality, reduced warpage | 25 |

| High Modulus | BKV50H2.0  | GF50            | 20 |
|              | BKV50H2.0EF| GF50, improved flowability, improved surface quality | 20 |
|              | BKV55XF    | GF55, extreme flow, improved surface quality | 21 |
|              | BKV60H2.0EF| GF60, improved flowability, improved surface quality | 21 |
|              | BKV60XF    | GF60, extreme flow, improved surface quality, improved heat stabilization | 21 |

| Improved Toughness | BKV115H2.0 | GF15, PA 6 CoPA | 9 |
|                    | BKV215H2.0 | GF15, PA 6 CoPA, improved surface quality | 10 |
|                    | BKV130H2.0 | GF30, PA 6 CoPA | 13 |
|                    | BKV130H2.0 | DUS008          | 13 |
|                    | BKV135     | GF35, PA 6 CoPA | 17 |
|                    | BKV135     | DUS008          | 17 |
|                    | BKV230H2.0 | GF30, PA 6 CoPA | 15 |
|                    | BKV230H2.0 | GF30            | 15 |
|                    | BKV235H2.0 | GF35, high impact modified | 18 |
|                    | BKV140H2.0 | GF40, PA 6 CoPA, improved light and weathering stabilization | 19 |
|                    | BKV140H2.0 | DUS008          | 19 |
|                    | BKV240H2.0 | GF40, high impact modified | 19 |
## NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

### Reinforced/Filled

<table>
<thead>
<tr>
<th>Improved Surface Quality</th>
<th>BKV15GH2.0</th>
<th>GF15, PA 6 CoPA, GIT/WIT, improved light and weathering stabilization</th>
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<tbody>
<tr>
<td></td>
<td>BKV20GH2.0</td>
<td>GF20, GIT/WIT, improved light and weathering stabilization</td>
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<tr>
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<td>BKV30GH2.0</td>
<td>GF30, GIT/WIT, improved light and weathering stabilization</td>
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<tr>
<td></td>
<td>BKV50GH2.0</td>
<td>GF50, high modulus, improved flowability, improved light and weathering stabilization</td>
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| Improved Heat Stabilization | BKV30XTS1 | GF30, improved flowability, improved surface quality | 15 |
|                            | BKV30XTS3 | GF30, improved flowability, improved surface quality | 15 |
|                            | BKV35XTS1 | GF35, improved flowability, improved surface quality | 18 |

| GIT/WIT | BKV1 30GIT | GF30, PA 6 CoPA, improved toughness, improved surface quality | 13 |
|         | BKV1 30GIT DUS008 | GF30, improved toughness, improved surface quality | 13 |

| Improved Welding Performance | BKV25H2.0LT | GF25, NIR transparency | 11 |
|                              | BKV30WP    | GF30                | 16 |
|                              | BKV30XWPHV | GF30, high viscosity | 16 |
|                              | BKV30XWPLT | GF30, NIT transparency | 16 |
|                              | BKV30XWPXT | GF30, improved heat stabilization | 16 |
|                              | BG30XH3.0LT | (GF+GB)30, NIR transparency | 23 |

| Improved Light and Weathering Stabilization | BKV15W1 | GF15, PA 6 CoPA | 10 |
|                                             | BKV215H2.0 | GF15, PA 6 CoPA, improved toughness, improved surface quality | 10 |
|                                             | BKV20GW1 | GF20, GIT/WIT, improved surface quality | 11 |
|                                             | BKV30W1 | GF30 | 13 |
|                                             | BKV1 30W1 | GF30, improved toughness | 13 |
|                                             | BKV30GW1 | GF30, GIT/WIT, improved surface quality | 14 |
|                                             | BKV230W1 | GF30, PA 6 CoPA | 15 |
|                                             | BG30XW1 | (GF+GB)30, reduced warpage | 23 |

| Low Tendency to Warp | BM230H2.0 | MD30 | 21 |
|                      | BM240H2.0 | MD40 | 25 |
|                      | BM430H2.0 | MD30 | 22 |
|                      | BG30XH2.0 | (GF+GB)30, improved surface quality | 22 |

| Improved Thermal Conductivity | BTC65H3.0EF | MD65 | 25 |
|                               | BTC75H3.0EF | MD75 | 25 |

| Improved Electrical Conductivity | BCF30H2.0EF | CF30, improved flowability, improved surface quality | 24 |
|                                  | BCF30XH2.0 | (GF+CF)30 | 24 |

| MuCell | BKV35CXH2.0 | GF35, improved welding performance, improved heat stabilization | 17 |

### PA 6I

| Transparent Grade | T40ZS | Easy release | 25 |
**RANGE OF GRADES**

**NON FLAME-RETARDANT PA 66**

**NON-REINFORCED**

<table>
<thead>
<tr>
<th>Improved Toughness</th>
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<tbody>
<tr>
<td>AC30 DUS027</td>
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**REINFORCED/FILLED**

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<tr>
<th>General Grade</th>
<th>Page</th>
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<tbody>
<tr>
<td>AKV15H2.0 GF15</td>
<td>26</td>
</tr>
<tr>
<td>AKV25H2.0 GF25</td>
<td>26</td>
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<tr>
<td>AKV30H2.0 GF30</td>
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<td>AKV35H2.0 GF35</td>
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</tr>
<tr>
<td>AKV40H2.0 GF40</td>
<td>31</td>
</tr>
<tr>
<td>AKV50H2.0 GF50, high modulus</td>
<td>31</td>
</tr>
</tbody>
</table>

**Improved Flowability**

| DPAKV50H2.0EF GF50, high modulus, improved surface quality | 31   |
| AKV60XF GF60, high modulus, improved surface quality, improved heat stabilization | 31   |

**Improved Toughness**

| AKV230H2.0 GF30    | 27   |

**Improved Surface Quality**

| AKV30GH2.0 GF30, improved Light and Weathering Stabilization | 27   |
| AKV35H2.0 SR1 GF35 | 29   |

**Improved Hydrolysis Stability**

| DPAKV30HREF GF30, improved flowability, improved surface quality | 27   |
| AKV30HRH2.0 GF30   | 27   |
| AKV30GHR DUS023    | 27   |
| AKV35HRH2.0 GF35   | 29   |
| DPAKV50HRH2.0 GF50, high modulus, improved surface quality | 31   |

**Improved Heat Stabilization**

| AKV30XTS1 GF30, improved flowability, improved surface quality | 28   |
| AKV30XTS3 GF30, improved flowability, improved surface quality | 28   |
| AKV35XTS1 GF35, improved flowability, improved surface quality | 30   |
| AKV35XTS2 GF35, improved flowability, improved surface quality | 30   |

**GIT/WIT**

| AKV30GITH2.0 GF30, improved surface quality | 28   |

**Improved Welding Performance**

| AKV25H3.0LT GF25, NIR transparancy | 26   |
| AKV35LTH2.0 GF35, NIR transparancy | 29   |
| AKV35LTH3.0 GF35, NIR transparancy | 29   |

**Improved Electrical Conductivity**

| ACF30XH2.0EF (GF+CF)30, improved surface quality | 31   |
## FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

### NON-REINFORCED

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specification</th>
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<tbody>
<tr>
<td>General Grade</td>
<td>B30SF30, VDE certificate, UL94-5VA (2.0 mm), V-0 (0.4 mm)</td>
<td>32</td>
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<tr>
<td>Halogen-free</td>
<td>B30SFN30, UL94V-0 (0.4 mm), improved heat stabilization</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>B30SFN40, VDE certificate, UL94V-2 (0.4 mm)</td>
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### REINFORCED/FILLED

<table>
<thead>
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<th>Purpose</th>
<th>Specification</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Purpose</td>
<td>BKV25F30, GF25, VDE certificate, UL94-5VA (1.0 mm), V-0 (0.4 mm)</td>
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<tr>
<td>Halogen-free</td>
<td>BKV20FN01, GF18, UL94-5VA (3.0 mm), V-0 (0.75 mm)</td>
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<tr>
<td></td>
<td>BKV20FN02, GF20, UL94V-2 (0.75 mm), reduced warpage</td>
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</tr>
<tr>
<td></td>
<td>EC0 BKV20FN20, GF20, UL94V-2 (0.75 mm), reduced warpage, contains pre-consumer-recyclate</td>
<td>33</td>
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<tr>
<td></td>
<td>BKV20FN27, GF20, UL94V-2 (0.75 mm), reduced warpage</td>
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</tr>
<tr>
<td></td>
<td>BKV25FN04, GF25, UL94-5VA (1.5 mm), V-0 (0.75 mm)</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>BKV25FN27, G25, UL94V-2 (0.75 mm), reduced warpage</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>BG30FN05, G30, UL94V-0 (0.4 mm), reduced warpage</td>
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<tr>
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<td>BKV30FN04, GF30, UL94-5VA (1.5 mm), V-0 (0.75 mm)</td>
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<td>BKV45FN04, GF45, UL94-5VA (1.0 mm), V-0 (0.4 mm), improved flowability</td>
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<td>BM25FN20, MD25, UL94V-2 (0.75 mm), reduced warpage</td>
<td>35</td>
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<tr>
<td></td>
<td>BG30XF30, (GF+GB)30, UL94-5VA (1.5 mm), V-0 (0.75 mm), reduced warpage, improved surface quality</td>
<td>23, 35</td>
</tr>
<tr>
<td></td>
<td>BG30XFN01, (GF+GB)30, UL94-5VA (2.0 mm), V-0 (0.75 mm), improved flowability, improved surface quality</td>
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<tr>
<td></td>
<td>DPBM65XFM30, (GF+MD)65, VDE certificate, UL94-5VA (3.0 mm), V-0 (0.75 mm), improved flowability, reduced warpage</td>
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### FLAME-RETARDANT PA 66

<table>
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<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Halogen-free</td>
<td>A30SFN31, VDE certificate, UL94V-0 (0.4 mm), improved flowability</td>
<td>36</td>
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<tr>
<td></td>
<td>DP2801, VDE certificate, UL94V-2 (0.75 mm)</td>
<td>36</td>
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</tbody>
</table>

### REINFORCED/FILLED

<table>
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<tr>
<th>Purpose</th>
<th>Specification</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Purpose</td>
<td>AKV25F30, GF25, UL94-5VA (1.0 mm), V-0 (0.4 mm)</td>
<td>37</td>
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<tr>
<td>Halogen-free</td>
<td>AKV15FN00, GF12, UL94V-0 (0.4 mm)</td>
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<tr>
<td></td>
<td>AKV25FN04, GF25, UL94-5VA (1.5 mm), V-0 (0.4 mm)</td>
<td>37</td>
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<td>AKV30FN04, GF30, UL94-5VA (1.5 mm), V-0 (0.4 mm)</td>
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<tr>
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<td>DP2802/30, GF30, VDE certificate, UL94V-2 (0.75 mm)</td>
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<tr>
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<td>AKV30FN04LT, GF30, UL94-5VA (1.5 mm), V-0 (0.4 mm), NIR transparancy</td>
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### STABILIZATION

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<tr>
<th>Stabilizer Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>H2.0</td>
<td>Heat stabilization for black and dark colors</td>
</tr>
<tr>
<td>H3.0</td>
<td>Special heat stabilization for electro/electronic applications</td>
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<tr>
<td>XTS</td>
<td>Special heat stabilization for long-term temperatures</td>
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<tr>
<td>W1</td>
<td>Light and weathering stabilization</td>
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</tbody>
</table>
REFERENCE DATA

NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

NON-REINFORCED

<table>
<thead>
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<tr>
<td>B305</td>
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**BRIEF OUTLINE**

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT/WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

**GENERAL PROPERTIES (23 °C)**

<table>
<thead>
<tr>
<th>Property</th>
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<th>Color</th>
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<tr>
<td>Glass fiber/glass bead/filler content %</td>
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<tr>
<td>Density kg/m³</td>
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<td>IS 1183</td>
<td>1140</td>
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<tr>
<td>Water absorption (saturation value) %</td>
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<tr>
<td>Water absorption (equilibrium value) %</td>
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**MECHANICAL PROPERTIES (23 °C/50% R.H.)**

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<td>Yield strain %</td>
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<td>Nominal strain at break %</td>
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<tr>
<td>Stress at break MPa</td>
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<td>IS 527-1,2</td>
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<tr>
<td>Strain at break %</td>
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<td>IS 527-1,2</td>
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<tr>
<td>Flexural strain at flexural strength %</td>
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<tr>
<td>Flexural stress at 3.5% strain</td>
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<td>IS 178-A</td>
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<tr>
<td>Charpy impact strength 23 °C k.J/m²</td>
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<td>IS 179-1eU</td>
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<tr>
<td>Charpy impact strength -30 °C k.J/m²</td>
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<td>IS 179-1eU</td>
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<tr>
<td>Charpy notched impact strength 23 °C k.J/m²</td>
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<tr>
<td>Charpy notched impact strength -30 °C k.J/m²</td>
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<td>IS 179-1eA</td>
<td>&lt; 10</td>
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<tr>
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<tr>
<td>Izod impact strength -30 °C k.J/m²</td>
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<td>IS 180-1U</td>
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<tr>
<td>Izod notched impact strength 23 °C k.J/m²</td>
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**THERMAL PROPERTIES**

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<tbody>
<tr>
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<td>IS 11357-1,3</td>
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<tr>
<td>HDT, Method A °C</td>
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<td>IS 75-1,2</td>
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<tr>
<td>HDT, Method B °C</td>
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<tr>
<td>Coefficient of linear thermal expansion, across 10¹/K</td>
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<td>IS 22007-4</td>
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<tr>
<td>Thermal conductivity, through-plane W/(m·K)</td>
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**FIRE BEHAVIOR**

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<tbody>
<tr>
<td>Burning behavior UL 94</td>
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<td>UL 94</td>
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<tr>
<td>Glow Wire Flammability Index (GWFI) °C</td>
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<td>Glow Wire Ignition Temperature (GWIT) °C</td>
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**ELECTRIC PROPERTIES (23 °C/50% R.H.)**

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<th>Color</th>
<th>Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative permittivity; 1 MHz</td>
<td></td>
<td>EC 60250</td>
<td>3.5</td>
</tr>
<tr>
<td>Dissipation factor; 1 MHz</td>
<td>10¹</td>
<td>EC 60250</td>
<td>200</td>
</tr>
<tr>
<td>Volume resistivity Ohm·m</td>
<td></td>
<td>EC 60093</td>
<td>1E13</td>
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<tr>
<td>Surface resistivity Ohm</td>
<td></td>
<td>EC 60093</td>
<td>1E14</td>
</tr>
<tr>
<td>Comparative tracking index (CTI) Rating</td>
<td></td>
<td>EC 60112</td>
<td>600</td>
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</table>

**SHRINKAGE (Plaque 60 x 60 x 2 mm)**

<table>
<thead>
<tr>
<th>Property</th>
<th>Grade</th>
<th>Color</th>
<th>Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing conditions for shrinkage plaques °C °C/bar Melt/mold temp./holding pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molding shrinkage, parallel %</td>
<td></td>
<td>IS 294-4</td>
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</tr>
<tr>
<td>Molding shrinkage, across %</td>
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<td>IS 294-4</td>
<td></td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h %</td>
<td></td>
<td>IS 294-4</td>
<td></td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h %</td>
<td></td>
<td>IS 294-4</td>
<td></td>
</tr>
</tbody>
</table>

* for color information and other wall thicknesses see UL Yellow Card
N = no failure, Conditioning in accordance with ISO 1110 (70 °C, 62% r. h.)
### FIRE BEHAVIOR

**Relative permittivity; 1 MHz – 1 MHz**

- IEC 60250
  - 3.5
  - 4.0

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

- Thermal conductivity, through-plane: W/(m·K)

### THERMAL PROPERTIES

- Comparative tracking index (CTI)
- Surface resistivity
- Volume resistivity
- Dissipation factor; 1 MHz

### MECHANIC PROPERTIES (23 °C/50% R.H.)

- Water absorption (equilibrium value)
- Water absorption (saturation value)
- Density
- Glass fiber/glass bead/filler content

### GENERAL PROPERTIES (23 °C)

- Transparency (NIR-laser)
- High modulus
- Improved thermal or electrical conductivity
- Improved weathering stabilization
- Improved welding performance
- GIT /WIT
- High temperature stabilization
- Good surface quality
- Reduced warpage
- Improved hydrolysis stability

### BRIEF OUTLINE

- (mm) UL 94 V-2 (0.4) V-2 (0.4)

### Durethan® reference data

**NON-REINFORCED PA 6 AND CO-POLYAMIDES**

<table>
<thead>
<tr>
<th>Color</th>
<th>Grade</th>
<th>Suffix</th>
<th>B31SKH3.0T</th>
<th>B40SK</th>
<th>BC304H3.0</th>
<th>BK15H2.0</th>
<th>BK115H2.0</th>
<th>PA 6</th>
<th>PA 6 CoPA</th>
<th>BKV15H2.0</th>
<th>BKV115H2.0</th>
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<tr>
<td>COLOR</td>
<td>GRADE</td>
<td>SUFFIX</td>
<td>1130</td>
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<td>1130</td>
<td>1140</td>
<td>1060</td>
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<td>1230</td>
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<td>1230</td>
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</tr>
</tbody>
</table>

### Properties

- **Post-shrinkage, across; 120 °C; 4 h**
- **Post-shrinkage, parallel; 120 °C; 4 h**
- **Molding shrinkage, across**
- **Molding shrinkage, parallel**
- **Processing conditions for shrinkage plaques °C/°C/bar**
  - Melt-/mold temp./holding pressure

### Comparative Tracking Index (CTI)

### Surface Resistivity

### Volume Resistivity

### Dissipation Factor; 1 MHz

### Glow Wire Ignition Temperature (GWIT)

### Glow Wire Flammability Index (GWFI)

### Thermal Conductivity, with flow

### Coefficient of Linear Thermal Expansion, across

### Coefficient of Linear Thermal Expansion, parallel

### HDT, Method Bf

### HDT, Method Af

### Melting Temperature °C

### Flexural Stress at 3.5% Strain

### Flexural Strain at Flexural Strength

### Strain at Break

### Stress at Break

### Nominal Strain at Break

### Yield Strain

### Yield Stress

### Tensile Modulus

### Water Absorption (Equilibrium Value)

### Water Absorption (Saturation Value)

### Density

### Glass Fiber/Glass Bead/Filler Content

### Transparency (NIR-laser)

### High Modulus

### Improved Thermal or Electrical Conductivity

### Improved Weathering Stabilization

### Improved Welding Performance

### GIT /WIT

### High Temperature Stabilization

### Good Surface Quality

### Reduced Warpage

### Improved Hydrolysis Stability

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**MAKE SURE YOU REFER TO FURTHER INFORMATION AND THE LATEST UPDATES AT WWW.DURETHAN.COM**

**PLEASE NOTE THAT OUR PRODUCT INFORMATION AND DATA ARE SUBJECT TO CONTINUOUS EXAMINATION AND UPDATES. MAKE SURE YOU REFER TO FURTHER INFORMATION AND THE LATEST UPDATES AT WWW.DURETHAN.COM**
## REFERENCE DATA

### NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

#### REINFORCED < 30% GF

<table>
<thead>
<tr>
<th>GRADE</th>
<th>BKV15W1</th>
<th>BKV215H2.0</th>
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<tr>
<td>COLOR</td>
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<td>901510</td>
<td>900051</td>
<td>DUS035</td>
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<tr>
<td>SUFFIX</td>
<td></td>
<td></td>
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</tbody>
</table>

### BRIEF OUTLINE

**Units**

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT/WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

### GENERAL PROPERTIES (23 °C)

<table>
<thead>
<tr>
<th>Property</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass fiber/glass bead/filler content (%)</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Density (kg/m³)</td>
<td>1230</td>
<td>1173</td>
<td>1173</td>
<td>1180</td>
<td>1180</td>
</tr>
<tr>
<td>Water absorption (saturation value) (%)</td>
<td>8.5</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>–</td>
</tr>
<tr>
<td>Water absorption (equilibrium value) (%)</td>
<td>2.6</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>–</td>
</tr>
</tbody>
</table>

### MECHANIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
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</thead>
<tbody>
<tr>
<td>Tensile modulus (MPa)</td>
<td>6000</td>
<td>3000</td>
<td>4500</td>
<td>2300</td>
<td>4300</td>
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<tr>
<td>Yield stress (MPa)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yield strain (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal strain at break (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress at break (MPa)</td>
<td>125</td>
<td>75</td>
<td>85</td>
<td>55</td>
<td>55</td>
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<tr>
<td>Strain at break (%)</td>
<td>3.0</td>
<td>12</td>
<td>4.5</td>
<td>15</td>
<td>4.5</td>
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<tr>
<td>Flexural strain at flexural strength (%)</td>
<td>5.0</td>
<td>8.0</td>
<td>5.5</td>
<td>8.5</td>
<td>5.5</td>
</tr>
<tr>
<td>Flexural stress at 3.5% strain (%)</td>
<td>180</td>
<td>90</td>
<td>125</td>
<td>55</td>
<td>120</td>
</tr>
<tr>
<td>Charpy impact strength 23 °C (kJ/m²)</td>
<td>45</td>
<td>80</td>
<td>70</td>
<td>95</td>
<td>70</td>
</tr>
<tr>
<td>Charpy impact strength -30 °C (kJ/m²)</td>
<td>35</td>
<td>35</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Charpy notched impact strength 23 °C (kJ/m²)</td>
<td>&lt; 10</td>
<td>10</td>
<td>20</td>
<td>35</td>
<td>20</td>
</tr>
<tr>
<td>Charpy notched impact strength -30 °C (kJ/m²)</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>10</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Izod impact strength 23 °C (kJ/m²)</td>
<td>35</td>
<td>70</td>
<td>60</td>
<td>90</td>
<td>60</td>
</tr>
<tr>
<td>Izod impact strength -30 °C (kJ/m²)</td>
<td>30</td>
<td>30</td>
<td>65</td>
<td>60</td>
<td>65</td>
</tr>
<tr>
<td>Izod notch impact strength 23 °C (kJ/m²)</td>
<td>&lt; 10</td>
<td>10</td>
<td>20</td>
<td>35</td>
<td>20</td>
</tr>
<tr>
<td>Izod notch impact strength -30 °C (kJ/m²)</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>10</td>
<td>10</td>
<td>10</td>
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</table>

### THERMAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
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</thead>
<tbody>
<tr>
<td>Melting temperature °C</td>
<td>213</td>
<td>214</td>
<td>214</td>
<td>214</td>
<td>214</td>
</tr>
<tr>
<td>HDT, Method Af °C</td>
<td>190</td>
<td>175</td>
<td>175</td>
<td>180</td>
<td>180</td>
</tr>
<tr>
<td>HDT, Method Bf °C</td>
<td>210</td>
<td>205</td>
<td>205</td>
<td>205</td>
<td>205</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, parallel 10⁻¹/K</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, across    10⁻¹/K</td>
<td>0.8</td>
<td>1.7</td>
<td>1.5</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Thermal conductivity, with flow W/(m·K)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal conductivity, through-plane W/(m·K)</td>
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</table>

### FIRE BEHAVIOR

<table>
<thead>
<tr>
<th>Property</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
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</thead>
<tbody>
<tr>
<td>Burning behavior LLL 94 Classification</td>
<td>HB (0.75)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Glow Wire Flammability Index (GWFI) °C</td>
<td>650 (2.0)</td>
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</tr>
<tr>
<td>Glow Wire Ignition Temperature (GWIT) °C</td>
<td></td>
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</tbody>
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### ELECTRIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative permittivity; 1 MHz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissipation factor; 1 MHz</td>
<td>10⁻¹</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Volume resistivity Ohm m</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Surface resistivity Ohm</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Comparative tracking index (CTI) Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-shrinkage, parallel 120 °C, 4 h (%)</td>
<td>0.6</td>
<td>0.8</td>
<td>0.6</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Post-shrinkage, parallel, 120 °C, 4 h (%)</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td></td>
</tr>
</tbody>
</table>

### SHRINKAGE (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Processing conditions for shrinkage plaques °C/°C/bar</th>
<th>280/80/600</th>
<th>280/80/600</th>
<th>280/80/600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molding shrinkage, parallel %</td>
<td>0.6</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Molding shrinkage, across %</td>
<td>0.6</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Post-shrinkage, parallel, 120 °C, 4 h %</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Post-shrinkage, parallel, 120 °C, 4 h %</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

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1 For test conditions and standards refer to page 8. * For color information and other wall thicknesses see UL Yellow Card.
N = no failure, Conditioning in accordance with ISO 1110 (70 °C, 62 % r. h.).
# Durethan® Reference Data

**Non Flame-Retardant PA 6 and Co-Polyamides**

## Reinforced < 30% GF

<table>
<thead>
<tr>
<th>GRADE</th>
<th>BKV15GH2.0</th>
<th>BKV20GH2.0</th>
<th>BKV20GW1</th>
<th>BKV25H2.0</th>
<th>BKV25H2.0L T</th>
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<tbody>
<tr>
<td>COLOR</td>
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<td>901510</td>
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<td>901510</td>
<td>904040</td>
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<td>SUFFIX</td>
<td>DUS035</td>
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</tbody>
</table>

### Brief Outline Units
- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

### General Properties (23 °C)

- **Glass fiber/glass bead/filler content (%):** 15, 15, 15, 15, 20, 20, 25, 25
- **Density (kg/m³):** 1230, 1173, 1173, 1180, 1240, 1280, 1280, 1320
- **Water absorption (saturation value, %):** 8.5, 7.0, 7.0, –, 7.8, –, –, 7.5
- **Water absorption (equilibrium value, %):** 2.6, 2.0, 2.0, –, 2.6, –, –, 2.2

### Mechanical Properties (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tensile modulus (MPa):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Yield stress (MPa):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Nominal strain at break (%):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Stress at break (MPa):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Strain at break (%):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Flexural strain at flexural strength (%):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Flexural stress at 3.5% strain (MPa):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Charpy impact strength 23 °C (kJ/m²):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Charpy impact strength -30 °C (kJ/m²):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Charpy notched impact strength 23 °C (kJ/m²):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Charpy notched impact strength -30 °C (kJ/m²):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Izod impact strength 23 °C (kJ/m²):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Izod impact strength -30 °C (kJ/m²):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Izod notched impact strength 23 °C (kJ/m²):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Izod notched impact strength -30 °C (kJ/m²):</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Thermal Properties

- **Melting temperature (°C):** 213, 214, 214, 214, 218, 222, 222, 222
- **HDT, Method Af (°C):** 190, 175, 175, 180, 180, 215, 215, 215
- **HDT, Method Bf (°C):** 210, 205, 200, 205, 210, 213, 213, 215
- **Coefficient of linear thermal expansion, parallel (10⁻⁴/K):** 0.3, 0.4, 0.4, 0.5, 0.3, 0.23, 0.23, 0.3
- **Coefficient of linear thermal expansion, across (10⁻⁴/K):** 0.8, 1.7, 1.5, 1.6, 0.8, 0.89, 0.89, 0.9
- **Thermal conductivity, with flow (W/(m·K)):**
- **Thermal conductivity, through-plane (W/(m·K)):**

### Fire Behavior

- **Burning behavior UL 94 Classification:** HB (0.75), HB (1.5), HB (0.75), HB (0.75), HB (0.75), HB (0.75), HB (0.75), HB (0.75)
- **Glow Wire Flammability Index (GWFI) (°C):** 650 (2.0), 650 (2.0), 650 (2.0), 650 (2.0), 650 (2.0), 650 (2.0), 650 (2.0), 650 (2.0)
- **Glow Wire Ignition Temperature (GWIT) (°C):**

### Electric Properties (23 °C/50% R.H.)

- **Relative permittivity; 1 MHz:** 3.7, 4.3, 3.74, 4.27, 3.74, 4.27, 4.0, 5.0
- **Dissipation factor; 1 MHz (10⁻⁴):**
- **Volume resistivity (Ohm·m):**
- **Surface resistivity (Ohm):**
- **Comparative tracking index (CTI):** Rating 600, 375, 400, 400, 400, 400, 400, 400

### Shrinkage (Plaque 60 x 60 x 2 mm)

- **Processing conditions for shrinkage plaques (°C/°C/bar):** 280/80/600, 280/80/600, 280/80/600, 280/80/600
- **Molding shrinkage, parallel (%):** 0.6, 0.5, 0.5, 0.35
- **Molding shrinkage, across (%):** 0.6, 0.8, 0.6, 0.54
- **Post-shrinkage, parallel; 120 °C; 4 h (%):** 0.1, 0.1, 0.1, 0.12
- **Post-shrinkage, across; 120 °C; 4 h (%):** 0.1, 0.1, 0.1, 0.19

### Comparative Data

- **HB (1.5) (650 (2.0)):**
- **HB (0.75) (650 (2.0)):**
- **HB (0.75) (650 (2.0)):**
- **HB (0.75) (650 (2.0)):**

### Please Note

*Our product information and data are subject to continuous examination and updates. Make sure you refer to further information and the latest updates at [www.durethan.com](http://www.durethan.com)*
## REFERENCE DATA

### NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

#### REINFORCED 30% GF

<table>
<thead>
<tr>
<th>GRADE</th>
<th>COLOR</th>
<th>SUFFIX</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>BKV30H2.0</td>
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<td></td>
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<tr>
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<tr>
<td>BKV30H2.0XF</td>
<td>901510</td>
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</tbody>
</table>

### BRIEF OUTLINE

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Translucence (NIR-laser)

### GENERAL PROPERTIES (23 °C)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass fiber/glass bead/filler content</td>
<td>30%</td>
</tr>
<tr>
<td>Density</td>
<td>1360 kg/m³</td>
</tr>
<tr>
<td>Water absorption (saturation value)</td>
<td>7.0%</td>
</tr>
<tr>
<td>Water absorption (equilibrium value)</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

### MECHANIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile modulus</td>
<td>9500 MPa</td>
</tr>
<tr>
<td>Yield stress</td>
<td>5800 MPa</td>
</tr>
<tr>
<td>Yield strain</td>
<td>9400 MPa</td>
</tr>
<tr>
<td>Nominal strain at break</td>
<td>5500 MPa</td>
</tr>
<tr>
<td>Stress at break</td>
<td>9000 MPa</td>
</tr>
<tr>
<td>Strain at break</td>
<td>5600 MPa</td>
</tr>
<tr>
<td>Flexural strain at flexural strength</td>
<td>170 MPa</td>
</tr>
<tr>
<td>Flexural strain at 3.5% strain</td>
<td>140 MPa</td>
</tr>
<tr>
<td>Charpy impact strength 23 °C</td>
<td>75 kJ/m²</td>
</tr>
<tr>
<td>Charpy impact strength -30 °C</td>
<td>65 kJ/m²</td>
</tr>
<tr>
<td>Charpy notched impact strength 23 °C</td>
<td>10 kJ/m²</td>
</tr>
<tr>
<td>Charpy notched impact strength -30 °C</td>
<td>&lt; 10 kJ/m²</td>
</tr>
<tr>
<td>Izod impact strength 23 °C</td>
<td>65 kJ/m²</td>
</tr>
<tr>
<td>Izod impact strength -30 °C</td>
<td>60 kJ/m²</td>
</tr>
<tr>
<td>Izod notched impact strength 23 °C</td>
<td>10 kJ/m²</td>
</tr>
<tr>
<td>Izod notched impact strength -30 °C</td>
<td>&lt; 10 kJ/m²</td>
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</tbody>
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### THERMAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Melting temperature</td>
<td>222 °C</td>
</tr>
<tr>
<td>HDT, Method Al</td>
<td>200 °C</td>
</tr>
<tr>
<td>HDT, Method Bf</td>
<td>215 °C</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, parallel</td>
<td>0.2 10⁻⁶/K</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, across</td>
<td>1.0 10⁻⁶/K</td>
</tr>
<tr>
<td>Thermal conductivity, with flow</td>
<td>200 W/(m·K)</td>
</tr>
<tr>
<td>Thermal conductivity, through-plane</td>
<td>215 W/(m·K)</td>
</tr>
</tbody>
</table>

### FIRE BEHAVIOR

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Burning behavior UL 94</td>
<td>HB (0.75)</td>
</tr>
<tr>
<td>Glow Wire Flammability Index (GWFI)</td>
<td>700 (1.5)</td>
</tr>
<tr>
<td>Glow Wire Ignition Temperature (GWIT)</td>
<td>600 (1.5)</td>
</tr>
</tbody>
</table>

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative permittivity, 1 MHz</td>
<td>3.8</td>
</tr>
<tr>
<td>Dissipation factor, 1 MHz</td>
<td>4.4</td>
</tr>
<tr>
<td>Volume resistivity</td>
<td>1E13 Ohm</td>
</tr>
<tr>
<td>Surface resistivity</td>
<td>1E13 Ohm</td>
</tr>
<tr>
<td>Comparative tracking index (CTI)</td>
<td>425 Rating</td>
</tr>
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</table>

### SHRINKAGE (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Processing conditions for shrinkage plaques</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molding shrinkage, parallel</td>
<td>0.30</td>
</tr>
<tr>
<td>Molding shrinkage, across</td>
<td>0.24</td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h</td>
<td>0.25</td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h</td>
<td>0.19</td>
</tr>
</tbody>
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1 For test conditions and standards refer to page 8

* For color information and other wall thicknesses see UL Yellow Card

N = no fail, Conditioning in accordance with ISO 1110 (70 °C, 62 % r. h.)
## NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

### REINFORCED 30% GF

<table>
<thead>
<tr>
<th>Grade</th>
<th>BKV30W1</th>
<th>BKV130H2.0</th>
<th>BKV130H2.0</th>
<th>BKV130W1</th>
<th>BKV130GIT</th>
<th>BKV130GIT</th>
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<td>Color</td>
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<td>901510</td>
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<td>Suffix</td>
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<td>DUS008</td>
<td>DUS008</td>
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<td>DUS008</td>
<td>DUS008</td>
</tr>
</tbody>
</table>

### Brief Outline
- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

### General Properties (23 °C)

<table>
<thead>
<tr>
<th>Property</th>
<th>BKV30H2.0</th>
<th>BKV30H2.0</th>
<th>BKV130H2.0</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass fiber/glass bead/filler content</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Density</td>
<td>1360 kg/m³</td>
<td>1350 kg/m³</td>
<td>1350 kg/m³</td>
<td>1360 kg/m³</td>
<td>1360 kg/m³</td>
<td>1360 kg/m³</td>
</tr>
<tr>
<td>Water absorption (saturation value)</td>
<td>7.0%</td>
<td>7.0%</td>
<td>7.0%</td>
<td>7.0%</td>
<td>6.6%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Water absorption (equilibrium value)</td>
<td>2.1%</td>
<td>2.1%</td>
<td>2.1%</td>
<td>2.1%</td>
<td>2.0%</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

### Mechanical Properties (23 °C/d.a.m. conditioned)

<table>
<thead>
<tr>
<th>Property</th>
<th>BKV30H2.0</th>
<th>BKV30H2.0</th>
<th>BKV130H2.0</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
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</thead>
<tbody>
<tr>
<td>Tensile modulus</td>
<td>9500 MPa</td>
<td>5800 MPa</td>
<td>9400 MPa</td>
<td>5500 MPa</td>
<td>9000 MPa</td>
<td>5600 MPa</td>
</tr>
<tr>
<td>Yield stress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal strain at break</td>
<td>170 MPa</td>
<td>100 MPa</td>
<td>170 MPa</td>
<td>100 MPa</td>
<td>155 MPa</td>
<td>95 MPa</td>
</tr>
<tr>
<td>Stress at break</td>
<td>170 MPa</td>
<td>100 MPa</td>
<td>170 MPa</td>
<td>100 MPa</td>
<td>155 MPa</td>
<td>95 MPa</td>
</tr>
<tr>
<td>Strain at break</td>
<td>3.5%</td>
<td>6.0%</td>
<td>3.0%</td>
<td>5.8%</td>
<td>3.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Flexural strain at flexural strength</td>
<td>4.0%</td>
<td>6.0%</td>
<td>3.6%</td>
<td>5.5%</td>
<td>3.8%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Flexural stress at 3.5% strain</td>
<td>260 MPa</td>
<td>140 MPa</td>
<td>255 MPa</td>
<td>135 MPa</td>
<td>220 MPa</td>
<td>130 MPa</td>
</tr>
<tr>
<td>Charpy impact strength 23 °C</td>
<td>75 kJ/m²</td>
<td>90 kJ/m²</td>
<td>70 kJ/m²</td>
<td>80 kJ/m²</td>
<td>75 kJ/m²</td>
<td>80 kJ/m²</td>
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<tr>
<td>Charpy impact strength -30 °C</td>
<td>65 kJ/m²</td>
<td>60 kJ/m²</td>
<td>55 kJ/m²</td>
<td>55 kJ/m²</td>
<td>50 kJ/m²</td>
<td>45 kJ/m²</td>
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<tr>
<td>Charpy notched impact strength 23 °C</td>
<td>10 kJ/m²</td>
<td>20 kJ/m²</td>
<td>11 kJ/m²</td>
<td>15 kJ/m²</td>
<td>10 kJ/m²</td>
<td>20 kJ/m²</td>
</tr>
<tr>
<td>Charpy notched impact strength -30 °C</td>
<td>&lt; 10 kJ/m²</td>
<td>10 kJ/m²</td>
<td>&lt; 10 kJ/m²</td>
<td>10 kJ/m²</td>
<td>10 kJ/m²</td>
<td>&lt; 10 kJ/m²</td>
</tr>
<tr>
<td>Izod impact strength 23 °C</td>
<td>65 kJ/m²</td>
<td>80 kJ/m²</td>
<td>60 kJ/m²</td>
<td>75 kJ/m²</td>
<td>80 kJ/m²</td>
<td>90 kJ/m²</td>
</tr>
<tr>
<td>Izod impact strength -30 °C</td>
<td>60 kJ/m²</td>
<td>55 kJ/m²</td>
<td>50 kJ/m²</td>
<td>60 kJ/m²</td>
<td>50 kJ/m²</td>
<td>50 kJ/m²</td>
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### Thermal Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>BKV30H2.0</th>
<th>BKV30H2.0</th>
<th>BKV130H2.0</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting temperature °C</td>
<td>222 °C</td>
<td>221 °C</td>
<td>221 °C</td>
<td>213 °C</td>
<td>213 °C</td>
<td>213 °C</td>
</tr>
<tr>
<td>HDT, Method Af</td>
<td>200 °C</td>
<td>205 °C</td>
<td>200 °C</td>
<td>195 °C</td>
<td>195 °C</td>
<td>195 °C</td>
</tr>
<tr>
<td>HDT, Method Bf</td>
<td>215 °C</td>
<td>219 °C</td>
<td>215 °C</td>
<td>210 °C</td>
<td>210 °C</td>
<td>210 °C</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, parallel 10⁻⁴/K</td>
<td>0.2 0.2 0.2 0.2 0.2 0.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, across 10⁻⁴/K</td>
<td>1.0 1.0 1.0 0.8 0.9 1.1</td>
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### Fire Behavior

<table>
<thead>
<tr>
<th>Property</th>
<th>BKV30H2.0</th>
<th>BKV30H2.0</th>
<th>BKV130H2.0</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burning behavior UL 94 Classification</td>
<td>HB (0.75)</td>
<td>HB (0.75)</td>
<td>HB (0.75)</td>
<td>HB (1.5)</td>
<td>HB (1.5)</td>
<td>HB (1.5)</td>
</tr>
<tr>
<td>Glow Wire Flammability Index (GWFI) °C</td>
<td>&lt; 100 °C</td>
<td>&lt; 100 °C</td>
<td>&lt; 100 °C</td>
<td>&lt; 100 °C</td>
<td>&lt; 100 °C</td>
<td>&lt; 100 °C</td>
</tr>
<tr>
<td>Glow Wire Ignition Temperature (GWIT) °C</td>
<td></td>
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### Electric Properties (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>BKV30H2.0</th>
<th>BKV30H2.0</th>
<th>BKV130H2.0</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative permittivity; 1 MHz</td>
<td>3.8</td>
<td>4.4</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Dissipation factor; 1 MHz 10⁻⁴</td>
<td>170 900</td>
<td>780 900</td>
<td>150 900</td>
<td>200 900</td>
<td>200 900</td>
<td>200 900</td>
</tr>
<tr>
<td>Volume resistivity; Ohm·m</td>
<td>1E13</td>
<td>1E10</td>
<td>1E13</td>
<td>1E13</td>
<td>1E13</td>
<td>1E13</td>
</tr>
<tr>
<td>Surface resistivity; Ohm</td>
<td>1E14</td>
<td>1E12</td>
<td>1E14</td>
<td>1E12</td>
<td>1E15</td>
<td>1E15</td>
</tr>
</tbody>
</table>

### Shrinkage (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Property</th>
<th>BKV30H2.0</th>
<th>BKV30H2.0</th>
<th>BKV130H2.0</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
<th>BKV130W1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing conditions for shrinkage plaques °C/°C/bar</td>
<td>280/80/600</td>
<td>280/80/600</td>
<td>280/80/600</td>
<td>280/80/600</td>
<td>280/80/600</td>
<td>280/80/600</td>
</tr>
<tr>
<td>Molding shrinkage, parallel %</td>
<td>0.30</td>
<td>0.24</td>
<td>0.25</td>
<td>0.27</td>
<td>0.71</td>
<td>0.06</td>
</tr>
<tr>
<td>Molding shrinkage, across %</td>
<td>0.69</td>
<td>0.69</td>
<td>0.70</td>
<td>0.64</td>
<td>0.80</td>
<td>0.12</td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h %</td>
<td>0.06</td>
<td>0.08</td>
<td>0.05</td>
<td>0.06</td>
<td>0.10</td>
<td>0.06</td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h %</td>
<td>0.13</td>
<td>0.19</td>
<td>0.10</td>
<td>0.12</td>
<td>0.10</td>
<td>0.15</td>
</tr>
</tbody>
</table>

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**PLEASE NOTE THAT OUR PRODUCT INFORMATION AND DATA ARE SUBJECT TO CONTINUOUS EXAMINATION AND UPDATES. MAKE SURE YOU REFER TO FURTHER INFORMATION AND THE LATEST UPDATES AT WWW.DURETHAN.COM**
**REFERENCE DATA**

**NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES**  
**REINFORCED 30% GF**

<table>
<thead>
<tr>
<th>GRADE</th>
<th>COLOR</th>
<th>SUFFIX</th>
<th>PA 6</th>
<th>PA 6 CoPA</th>
<th>PA 6</th>
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<td>BKV130CS</td>
<td>DUS008</td>
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</tbody>
</table>

**BRIEF OUTLINE**
- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

**GENERAL PROPERTIES (23 °C)**
- Glass fiber/glass bead/filler content: % 30 30 30 30
- Density: kg/m³ 1360 1365 1360 1360
- Water absorption (saturation value): % 6.5 6.4 7.0 –
- Water absorption (equilibrium value): % 1.9 2.0 2.0 –

**MECHANIC PROPERTIES (23 °C/50% R.H.)**

<table>
<thead>
<tr>
<th></th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile modulus</td>
<td>MPA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield stress</td>
<td>MPA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield strain</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal strain at break</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress at break</td>
<td>MPA</td>
<td>180</td>
<td>110</td>
<td>180</td>
<td>110</td>
</tr>
<tr>
<td>Strain at break</td>
<td>%</td>
<td>3.0</td>
<td>7.0</td>
<td>2.7</td>
<td>6.1</td>
</tr>
<tr>
<td>Flexural strain at flexural strength</td>
<td>%</td>
<td>4.0</td>
<td>6.2</td>
<td>3.7</td>
<td>5.7</td>
</tr>
<tr>
<td>Flexural stress at 3.5% strain</td>
<td>MPA</td>
<td>145</td>
<td>260</td>
<td>156</td>
<td>220</td>
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<tr>
<td>Charpy impact strength 23 °C</td>
<td>kJ/m²</td>
<td>75</td>
<td>75</td>
<td>60</td>
<td>65</td>
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<tr>
<td>Charpy impact strength -30 °C</td>
<td>kJ/m²</td>
<td>60</td>
<td>60</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>Charpy notched impact strength 23 °C</td>
<td>kJ/m²</td>
<td>10</td>
<td>13</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>Charpy notched impact strength -30 °C</td>
<td>kJ/m²</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
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<tr>
<td>Izod impact strength 23 °C</td>
<td>kJ/m²</td>
<td>65</td>
<td>70</td>
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<td>60</td>
</tr>
<tr>
<td>Izod impact strength -30 °C</td>
<td>kJ/m²</td>
<td>55</td>
<td>55</td>
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<td>kJ/m²</td>
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<tr>
<td>Izod notched impact strength -30 °C</td>
<td>kJ/m²</td>
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<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
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</table>

**THERMAL PROPERTIES**
- Melting temperature: °C 221
- HDT, Method Af: °C 195
- HDT, Method Bf: °C 215
- Coefficient of linear thermal expansion, parallel: 10⁻⁴/K 0.3
- Coefficient of linear thermal expansion, across: 10⁻⁴/K 0.8
- Thermal conductivity, with flow: W/(m·K)
- Thermal conductivity, through-plane: W/(m·K)

**FIRE BEHAVIOR**
- Burning behavior UL 94: HB (1.5)
- Glow Wire Flammability Index (GWFI): °C 600 (2.0)
- Glow Wire Ignition Temperature (GWIT): °C

**ELECTRIC PROPERTIES (23 °C/50% R.H.)**
- Relative permittivity: 1 MHz – 4.0
- Dissipation factor: 1 MHz 10⁻⁴ 170
- Volume resistivity: Ohm·m 1E13 1E13
- Surface resistivity: Ohm 1E15 1E15
- Comparative tracking index (CTI): Rating 475

**SHRINKAGE (Plaque 60 x 60 x 2 mm)**
- Processing conditions for shrinkage plaques: °C°C/bar 280/80/600
- Molding shrinkage, parallel: % 0.27
- Molding shrinkage, across: % 0.58
- Post-shrinkage, parallel: 120 °C; 4 h: % 0.06
- Post-shrinkage, across: 120 °C; 4 h: % 0.16

---

1 For test conditions and standards refer to page 8  
2 For color information and other wall thicknesses see UL Yellow Card  
N = no failure. Conditioning in accordance with ISO 1110 (70 °C, 62 % r. h.)
<table>
<thead>
<tr>
<th>GRADE</th>
<th>COLOR</th>
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<td>BKV230H2.0/000000</td>
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<td>BKV130CS/000000</td>
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**BRIEF OUTLINE**

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT /WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

**GENERAL PROPERTIES (23 °C)**

<table>
<thead>
<tr>
<th></th>
<th>PA 6</th>
<th>PA 6 CoPA</th>
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<tbody>
<tr>
<td>Glass fiber/glass bead/filler content</td>
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<td>30%</td>
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<tr>
<td>Density</td>
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**WATER ABSORPTION**

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<tr>
<td>Water absorption (saturation value)</td>
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<tr>
<td>Water absorption (equilibrium value)</td>
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<td>2.0</td>
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**MECHANICAL PROPERTIES (23 °C/50% R.H.)**

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<tr>
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<th>PA 6 CoPA</th>
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<td>Tensile modulus</td>
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<td>Nominal strain at break</td>
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<tr>
<td>Stress at break</td>
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<td>85</td>
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<tr>
<td>Strain at break</td>
<td>3.0</td>
<td>7.0</td>
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<tr>
<td>Flexural strain at flexural strength</td>
<td>4.0</td>
<td>6.2</td>
</tr>
<tr>
<td>Flexural stress at 3.5% strain</td>
<td>145</td>
<td>260</td>
</tr>
<tr>
<td>Charpy impact strength 23 °C</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>Charpy impact strength -30 °C</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Charpy notched impact strength 23 °C</td>
<td>&lt;10</td>
<td>&lt;10</td>
</tr>
<tr>
<td>Charpy notched impact strength -30 °C</td>
<td>&lt;10</td>
<td>9.0</td>
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<tr>
<td>Izod impact strength 23 °C</td>
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<td>70</td>
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<tr>
<td>Izod impact strength -30 °C</td>
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<tr>
<td>Izod notched impact strength 23 °C</td>
<td>10</td>
<td>12</td>
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<tr>
<td>Izod notched impact strength -30 °C</td>
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**THERMAL PROPERTIES**

<table>
<thead>
<tr>
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<th>PA 6 CoPA</th>
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<tbody>
<tr>
<td>Melting temperature °C</td>
<td>221</td>
<td>219</td>
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<tr>
<td>HDT, Method Af</td>
<td>195</td>
<td>200</td>
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<tr>
<td>HDT, Method Bf</td>
<td>215</td>
<td>210</td>
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<tr>
<td>Coefficient of linear thermal expansion, parallel</td>
<td>0.19</td>
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<tr>
<td>Coefficient of linear thermal expansion, across</td>
<td>1.08</td>
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**FIRE BEHAVIOR**

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<tr>
<th></th>
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<tbody>
<tr>
<td>Burning behavior UL 94 Classification</td>
<td>HB (1.5)</td>
<td>HB (0.75)</td>
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<tr>
<td>Glow Wire Flammability Index (GWFI)</td>
<td>600 (2.0)</td>
<td>650 (2.0)</td>
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<tr>
<td>Glow Wire Ignition Temperature (GWIT)</td>
<td>600</td>
<td>650</td>
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</table>

**ELECTRIC PROPERTIES (23 °C/50% R.H.)**

<table>
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<tr>
<th></th>
<th>PA 6</th>
<th>PA 6 CoPA</th>
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</thead>
<tbody>
<tr>
<td>Relative permittivity; 1 MHz</td>
<td>4.0</td>
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<tr>
<td>Dissipation factor; 1 MHz</td>
<td>170</td>
<td>500</td>
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<tr>
<td>Volume resistivity</td>
<td>1E13</td>
<td>1E10</td>
</tr>
<tr>
<td>Surface resistivity</td>
<td>1E15</td>
<td>1E13</td>
</tr>
<tr>
<td>Comparative tracking index (CTI) Rating</td>
<td>475</td>
<td>500</td>
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**SHRINKAGE (Plaque 60 x 60 x 2 mm)**

<table>
<thead>
<tr>
<th></th>
<th>PA 6</th>
<th>PA 6 CoPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing conditions for shrinkage plaques °C/°C/bar</td>
<td>280/80/600</td>
<td>280/80/600</td>
</tr>
<tr>
<td>Molding shrinkage, parallel</td>
<td>0.27</td>
<td>0.25</td>
</tr>
<tr>
<td>Molding shrinkage, across</td>
<td>0.58</td>
<td>0.63</td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h</td>
<td>0.06</td>
<td>0.10</td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h</td>
<td>0.16</td>
<td>0.09</td>
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</table>

Please note that our product information and data are subject to continuous examination and updates. Make sure you refer to further information and the latest updates at www.durethan.com
**REFERENCE DATA**

**NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES**

**REINFORCED 30% GF**

<table>
<thead>
<tr>
<th>GRADE</th>
<th>COLOR</th>
<th>SUFIX</th>
</tr>
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<td>900116</td>
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<td>BKV30XWPHV</td>
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<td>BKV30XWPIT</td>
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<tr>
<td>BKV30XWPT</td>
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**BRIEF OUTLINE**

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

**GENERAL PROPERTIES (23 °C)**

- Glass fiber/glass bead/filler content %: 30 30 30 30 35 35 35 35 35
- Density kg/m³: 1356 1360 1360 1370 1410 1405 1405 1410
- Water absorption (saturation value) %: – 6.5 – – 6.5 6.5 – 6.5 –
- Water absorption (equilibrium value) %: 2.6 2.3 – 2.7 1.9 1.9 – 1.8 –

**MECHANIC PROPERTIES (23 °C/50% R.H.)**

- Tensile modulus MPa: 9500 5500 9800 5600 9500 7250 10000 5100 11000
- Yield stress MPa: 175 125
- Yield strain %: 3.3 4.2
- Nominal strain at break %: –
- Stress at break MPa: 180 100 170 100 175 120 170 90
- Nominal strain at break %: –
- Strain at break %: 3.7 8.4 3.0 8.0 3.6 5.8 3.5 7.5
- Flexural stress at 3.5% strain MPa: 255 135 245 120 245 160 245 120
- Charpy impact strength 23 °C kJ/m²: 75 100 80 95 70 95 90
- Charpy impact strength -30 °C kJ/m²: 60 60 10 10 60 60
- Charpy notched impact strength 23 °C kJ/m²: 10 20 12 20
- Charpy notched impact strength -30 °C kJ/m²: < 10 < 10 < 10 < 10 10
- Izod impact strength 23 °C kJ/m²: 70 60 75 85 65 75 60 85
- Izod impact strength -30 °C kJ/m²: 55 85 75 70 55 50 50 55
- Izod notched impact strength 23 °C kJ/m²: 12 20 12 11
- Izod notched impact strength -30 °C kJ/m²: < 10 < 10 < 10 9.0 9.0 8.0 7.0

**THERMAL PROPERTIES**

- Melting temperature °C: 220 222 222 222 218
- HDT, Method Af °C: 205 200 188 200 205
- HDT, Method Bf °C: 220 215 215 215 216
- Coefficient of linear thermal expansion, parallel 10⁻⁴/K: 0.2 0.2 0.2
- Coefficient of linear thermal expansion, across 10⁻⁴/K: 1.0 1.0 1.0
- Thermal conductivity, with flow W/(m·K): –
- Thermal conductivity, through-plane W/(m·K): –

**FIRE BEHAVIOR**

- Burning behavior UL 94 Classification: HB (0.75)
- Glow Wire Flammability Index (GWFI) °C: 700 (2.0)
- Glow Wire Ignition Temperature (GWIT) °C: –

**ELECTRIC PROPERTIES (23 °C/50% R.H.)**

- Relative permittivity; 1 MHz – 3.9 4.8
- Dissipation factor; 1 MHz 10⁻¹
- Volume resistivity Ohm·m 1E13 1.7E13
- Surface resistivity Ohm 1E13 3.6E13
- Comparative tracking index (CTI) Rating: 450
- Post-shrinkage, parallel; 120 °C; 4 h %: 0.05 0.06
- Post-shrinkage, across; 120 °C; 4 h %: 0.15 0.23

**SHRINKAGE (Plaque 60 x 60 x 2 mm)**

<table>
<thead>
<tr>
<th>Processing conditions for shrinkage plaques °C/°C/bar</th>
<th>280/80/-</th>
<th>280/80/600</th>
<th>280/80/500</th>
<th>280/80/600</th>
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</thead>
<tbody>
<tr>
<td>Molding shrinkage, parallel %</td>
<td>0.25</td>
<td>0.35</td>
<td>0.19</td>
<td>0.25</td>
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<tr>
<td>Molding shrinkage, across %</td>
<td>0.60</td>
<td>0.70</td>
<td>0.35</td>
<td>0.70</td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h %</td>
<td>0.05</td>
<td>0.06</td>
<td>0.06</td>
<td>0.10</td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h %</td>
<td>0.15</td>
<td>0.07</td>
<td>0.23</td>
<td>0.15</td>
</tr>
</tbody>
</table>

1 For test conditions and standards refer to page 8
2 For color information and other wall thicknesses see UL Yellow Card
3 N = no failure. Conditioning in accordance with ISO 1110 (70 °C, 62 % r.h.)
## NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

### REINFORCED > 30% GF

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<td>000000</td>
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### BRIEF OUTLINE

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

### GENERAL PROPERTIES (23 °C)

<table>
<thead>
<tr>
<th></th>
<th>PA 6</th>
<th>PA 6 CoPA</th>
<th>PA 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass fiber/glass bead/filler content</td>
<td>30</td>
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<td>35</td>
</tr>
<tr>
<td>Density</td>
<td>1356</td>
<td>1360</td>
<td>1370</td>
</tr>
<tr>
<td>Water absorption (saturation value)</td>
<td>–</td>
<td>6.5</td>
<td>–</td>
</tr>
<tr>
<td>Water absorption (equilibrium value)</td>
<td>2.6</td>
<td>2.3</td>
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### MECHANICAL PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th></th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
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<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
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<tr>
<td>Tensile modulus</td>
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<td>5500</td>
<td>9800</td>
<td>5600</td>
<td>9500</td>
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<td>Yield stress</td>
<td>175</td>
<td>125</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Nominal strain at break</td>
<td>3.3</td>
<td>4.2</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Stress at break</td>
<td>180</td>
<td>100</td>
<td>170</td>
<td>100</td>
<td>175</td>
<td>120</td>
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<tr>
<td>Strain at break</td>
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<td>8.0</td>
<td>3.6</td>
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<tr>
<td>Flexural strain at flexural strength</td>
<td>4.0</td>
<td>6.5</td>
<td>4.5</td>
<td>7.0</td>
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<td>5.7</td>
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<td>Flexural stress at 3.5% strain</td>
<td>255</td>
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<td>245</td>
<td>120</td>
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<tr>
<td>Charpy impact strength 23 °C</td>
<td>75</td>
<td>100</td>
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<td>95</td>
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<tr>
<td>Charpy impact strength -30 °C</td>
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<td>60</td>
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<td>Charpy notched impact strength 23 °C</td>
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<td>Charpy notched impact strength -30 °C</td>
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<td>&lt; 10</td>
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<td>Izod impact strength 23 °C</td>
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<tr>
<td>Izod notched impact strength 23 °C</td>
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<td>12</td>
<td>&lt; 10</td>
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<tr>
<td>Izod notched impact strength -30 °C</td>
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<td>&lt; 10</td>
<td>&lt; 10</td>
<td>9.0</td>
<td>9.0</td>
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</tbody>
</table>

### THERMAL PROPERTIES

<table>
<thead>
<tr>
<th></th>
<th>Melting temperature °C</th>
<th>HDT, Method Af °C</th>
<th>HDT, Method Bf °C °C</th>
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<tbody>
<tr>
<td></td>
<td>220</td>
<td>205</td>
<td>220</td>
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<tr>
<td>Coefficient of linear thermal expansion, parallel</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
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<tr>
<td>Coefficient of linear thermal expansion, across</td>
<td>1.0</td>
<td>0.95</td>
<td>1.0</td>
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<tr>
<td>Thermal conductivity, with flow</td>
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<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Thermal conductivity, through-plane</td>
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### FIRE BEHAVIOR

<table>
<thead>
<tr>
<th>Classification</th>
<th>HB (0.75)</th>
<th>HB (1.5)</th>
<th>HB (1.5)</th>
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</thead>
<tbody>
<tr>
<td>Glow Wire Flammability Index (GWFI) °C</td>
<td>700 (2.0)</td>
<td>650 (2.0)</td>
<td>650 (2.0)</td>
</tr>
<tr>
<td>Glow Wire Ignition Temperature (GWIT) °C</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

| Relative permittivity; 1 MHz | 3.9 | 4.8 | 4.0 | 5.0 |
| Dissipation factor; 1 MHz | 1E-4 |
| Volume resistivity Ohm·m | 1E13 | 1.7E13 | 1E13 | 1E10 |
| Surface resistivity Ohm | 1E13 | 3.6E13 | 1E14 | 1E12 |
| Comparative tracking index (CTI) Rating | 450 | 475 | 600 |

### SHRINKAGE (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Processing conditions for shrinkage plaques °C/°C/bar</th>
<th>280/80/-</th>
<th>280/80/600</th>
<th>280/80/500</th>
<th>280/80/600</th>
<th>270/120/600</th>
<th>270/120/600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molding shrinkage, parallel</td>
<td>0.25</td>
<td>205</td>
<td>0.25</td>
<td>205</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molding shrinkage, across</td>
<td>0.70</td>
<td>205</td>
<td>0.70</td>
<td>205</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h</td>
<td>0.05</td>
<td>205</td>
<td>0.05</td>
<td>205</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h</td>
<td>0.15</td>
<td>205</td>
<td>0.15</td>
<td>205</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please note that our product information and data are subject to continuous examination and updates. Make sure you refer to further information and the latest updates at www.durethan.com
## REFERENCE DATA

### NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

**REINFORCED > 30% GF**

<table>
<thead>
<tr>
<th>GRADE</th>
<th>COLOR</th>
<th>SUFFIX</th>
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</thead>
<tbody>
<tr>
<td>BKV235H2.0XCP</td>
<td>900111</td>
<td></td>
</tr>
<tr>
<td>BKV35XTS1</td>
<td>901510</td>
<td></td>
</tr>
</tbody>
</table>

### BRIEF OUTLINE

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

### GENERAL PROPERTIES (23 °C)

- **Glass fiber/glass bead/filler content**: 35, 35, 40, 40, 40, 40, 40, 40, 40, 40
- **Density**: 1365, 1410, 1460, 1450, 1460, 1460, 1410, 1450, 1460, 1450
- **Water absorption (saturation value)**: –%, –%, 6.0%, 5.8%, 6.0%, –%, –%
- **Water absorption (equilibrium value)**: –%, –%, 1.8%, 1.7%, 1.6%, –%, –%

### MECHANIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>d.a.m.</th>
<th>conditioned</th>
<th>d.a.m.</th>
<th>conditioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile modulus</td>
<td>MPa</td>
<td>9500</td>
<td>5700</td>
<td>10700</td>
</tr>
<tr>
<td>Yield stress</td>
<td>MPa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield strain</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal strain at break</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress at break</td>
<td>MPa</td>
<td>165</td>
<td>110</td>
<td>180</td>
</tr>
<tr>
<td>Strain at break</td>
<td>%</td>
<td>5.5</td>
<td>11.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Flexural strain at flexural</td>
<td>%</td>
<td>5.0</td>
<td>6.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Flexural stress at 3% strain</td>
<td>MPa</td>
<td>240</td>
<td>125</td>
<td>140</td>
</tr>
<tr>
<td>Charpy impact strength 23 °C</td>
<td>kJ/m²</td>
<td>110</td>
<td>125</td>
<td>70</td>
</tr>
<tr>
<td>Charpy impact strength -30 °C</td>
<td>kJ/m²</td>
<td>120</td>
<td>110</td>
<td>60</td>
</tr>
<tr>
<td>Charpy notched impact strength 23 °C</td>
<td>kJ/m²</td>
<td>28</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Charpy notched impact strength -30 °C</td>
<td>kJ/m²</td>
<td>18</td>
<td>17</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>Izod impact strength 23 °C</td>
<td>kJ/m²</td>
<td>90</td>
<td>90</td>
<td>70</td>
</tr>
<tr>
<td>Izod impact strength -30 °C</td>
<td>kJ/m²</td>
<td>95</td>
<td>90</td>
<td>55</td>
</tr>
<tr>
<td>Izod notched impact strength 23 °C</td>
<td>kJ/m²</td>
<td>27</td>
<td>42</td>
<td>10</td>
</tr>
<tr>
<td>Izod notched impact strength -30 °C</td>
<td>kJ/m²</td>
<td>18</td>
<td>20</td>
<td>&lt; 10</td>
</tr>
</tbody>
</table>

### THERMAL PROPERTIES

- **Melting temperature**: 221 °C
- **HDT, Method Af**: 203 °C
- **HDT, Method Bf**: 220 °C
- **Coefficient of linear thermal expansion, parallel**: 10⁻⁴/K
- **Coefficient of linear thermal expansion, across**: 10⁻⁴/K
- **Thermal conductivity, with flow**: W/(m·K)
- **Thermal conductivity, through-plane**: W/(m·K)

### FIRE BEHAVIOR

- **Burning behavior UL 94 Classification**: HB (1.5), HB (0.75)
- **Glow Wire Flammability Index (GWFI)**: 650 (2.0), 650 (2.0)
- **Glow Wire Ignition Temperature (GWIT)**: °C

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

- **Relative permittivity; 1 MHz**: –
- **Dissipation factor; 1 MHz**: 10⁻¹¹
- **Volume resistivity**: Ohm·m
- **Surface resistivity**: Ohm
- **Comparative tracking index (CTI)**: Rating

### SHRINKAGE (Plate 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Processing conditions for shrinkage plaques</th>
<th>°C/°C/bar</th>
<th>290/80/600</th>
<th>280/80/600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molding shrinkage, parallel</td>
<td>%</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>Molding shrinkage, across</td>
<td>%</td>
<td>0.65</td>
<td>0.75</td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h</td>
<td>%</td>
<td>0.05</td>
<td>0.10</td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h</td>
<td>%</td>
<td>0.10</td>
<td>0.25</td>
</tr>
</tbody>
</table>

---

1. For test conditions and standards refer to page 8
2. For color information and other wall thicknesses see UL Yellow Card
3. N = no failure. Conditioning in accordance with ISO 1110 (70 °C, 62% r. h.)
## NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

### REINFORCED > 30% GF

<table>
<thead>
<tr>
<th>Grade</th>
<th>PA 6</th>
<th>PA 6 CoPA</th>
<th>PA 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKV40H2.0</td>
<td>BKV40H2.0EF</td>
<td>BKV140H2.0</td>
<td>BKV140H2.0</td>
</tr>
<tr>
<td>901510</td>
<td>900116</td>
<td>900051</td>
<td>900051</td>
</tr>
<tr>
<td></td>
<td></td>
<td>901510</td>
<td>DUS008</td>
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</tbody>
</table>

### BRIEF OUTLINE
- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

### GENERAL PROPERTIES (23 °C)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass fiber/glass bead/filler content</td>
<td>%</td>
</tr>
<tr>
<td>Density</td>
<td>kg/m³</td>
</tr>
<tr>
<td>Water absorption (saturation value)</td>
<td>%</td>
</tr>
<tr>
<td>Water absorption (equilibrium value)</td>
<td>%</td>
</tr>
</tbody>
</table>

### MECHANIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile modulus</td>
<td>MPa</td>
</tr>
<tr>
<td>Yield stress</td>
<td>MPa</td>
</tr>
<tr>
<td>Nominal strain at break</td>
<td>%</td>
</tr>
<tr>
<td>Stress at break</td>
<td>MPa</td>
</tr>
<tr>
<td>Strain at break</td>
<td>%</td>
</tr>
<tr>
<td>Flexural strain at flexural strength</td>
<td>%</td>
</tr>
<tr>
<td>Flexural stress at 3.5% strain</td>
<td>MPa</td>
</tr>
<tr>
<td>Charpy impact strength 23 °C</td>
<td>kJ/m²</td>
</tr>
<tr>
<td>Charpy impact strength -30 °C</td>
<td>kJ/m²</td>
</tr>
<tr>
<td>Charpy notched impact strength 23 °C</td>
<td>kJ/m²</td>
</tr>
<tr>
<td>Charpy notched impact strength -30 °C</td>
<td>kJ/m²</td>
</tr>
<tr>
<td>Izod impact strength 23 °C</td>
<td>kJ/m²</td>
</tr>
<tr>
<td>Izod impact strength -30 °C</td>
<td>kJ/m²</td>
</tr>
<tr>
<td>Izod notched impact strength 23 °C</td>
<td>kJ/m²</td>
</tr>
<tr>
<td>Izod notched impact strength -30 °C</td>
<td>kJ/m²</td>
</tr>
</tbody>
</table>

### THERMAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting temperature</td>
<td>°C</td>
</tr>
<tr>
<td>HDT, Method Af</td>
<td>°C</td>
</tr>
<tr>
<td>HDT, Method Bf</td>
<td>°C</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, parallel</td>
<td>10⁻⁴/K</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, across</td>
<td>10⁻⁴/K</td>
</tr>
<tr>
<td>Thermal conductivity, with flow</td>
<td>W/(m·K)</td>
</tr>
<tr>
<td>Thermal conductivity, through-plane</td>
<td>W/(m·K)</td>
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</tbody>
</table>

### FIRE BEHAVIOR

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burning behavior UL 94 Classification</td>
<td></td>
</tr>
<tr>
<td>Glow Wire Flammability Index (GWFI)</td>
<td>°C</td>
</tr>
<tr>
<td>Glow Wire Ignition Temperature (GWIT)</td>
<td>°C</td>
</tr>
</tbody>
</table>

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative permittivity; 1 MHz</td>
<td>–</td>
</tr>
<tr>
<td>Dissipation factor; 1 MHz</td>
<td>10⁻⁴</td>
</tr>
<tr>
<td>Volume resistivity</td>
<td>Ohm·m</td>
</tr>
<tr>
<td>Surface resistivity</td>
<td>Ohm</td>
</tr>
<tr>
<td>Comparative tracking index (CTI)</td>
<td>Rating</td>
</tr>
</tbody>
</table>

### SHRINKAGE (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Processing conditions for shrinkage plaques</th>
<th>°C/°C/bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molding shrinkage, parallel</td>
<td>%</td>
</tr>
<tr>
<td>Molding shrinkage, across</td>
<td>%</td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h</td>
<td>%</td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h</td>
<td>%</td>
</tr>
</tbody>
</table>

### PLEASE NOTE THAT OUR PRODUCT INFORMATION AND DATA ARE SUBJECT TO CONTINUOUS EXAMINATION AND UPDATES.

MAKE SURE YOU REFER TO FURTHER INFORMATION AND THE LATEST UPDATES AT WWW.DURETHAN.COM
REFERENCE DATA

NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

<table>
<thead>
<tr>
<th>GRADE</th>
<th>COLOR SUFFIX</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKV50H2.0</td>
<td>9 01510</td>
<td>REINFORCED &gt; 30% GF</td>
</tr>
<tr>
<td>BKV50H2.0EF</td>
<td>900116</td>
<td></td>
</tr>
<tr>
<td>BKV50H2.0EF</td>
<td>900051</td>
<td></td>
</tr>
</tbody>
</table>

BRIEF OUTLINE

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

GENERAL PROPERTIES (23 °C)

- Glass fiber/glass bead/filler content %: 50, 50, 50, 55, 60, 60, 30 (GF+MD), 30 MD
- Density kg/m³: 1570, 1570, 1570, 1620, 1700, 1693, 1360, 1360
- Water absorption (saturation value) %: –, –, –, 3.6, –, 7.0, ~7.0, ~7.0
- Water absorption (equilibrium value) %: –, –, –, 1.3, –, 2.2, ~2.2, ~2.2

MECHANIC PROPERTIES (23 °C/50% R.H.)

- Tensile modulus MPa: 16300, 9800, 16200, 10000, 16400, 11000
- Yield stress MPa
- Yield strain %
- Nominal strain at break %
- Stress at break MPa: 220, 140, 215, 140, 220, 140
- Strain at break %: 3.0, 5.0, 2.7, 3.5, 2.5, 4.3
- Flexural strain at flexural strength %: 3.0, 5.0, 3.1, 4.4, 3.0, 4.0
- Flexural stress at 3.5% strain MPa: –, –, –, –, –, 220
- Charpy impact strength 23 °C kJ/m²: 100, 100, 100, 85
- Charpy impact strength -30 °C kJ/m²: 85, 80, 95, 85
- Charpy notched impact strength 23 °C kJ/m²: 20, 25
- Charpy notched impact strength -30 °C kJ/m²: 15, 13
- Izod impact strength 23 °C kJ/m²: 85, 80, 85, 80
- Izod impact strength -30 °C kJ/m²: 80, 80, 80, 90
- Izod notched impact strength 23 °C kJ/m²: 20, 25
- Izod notched impact strength -30 °C kJ/m²: 12, 12

THERMAL PROPERTIES

- Melting temperature °C: 222, 222, 222
- HDT, Method Af °C: 205, 210, 204
- HDT, Method Bf °C: 215, 220
- Coefficient of linear thermal expansion, parallel 10⁻⁴/K: 0.2, 0.12, 0.2
- Coefficient of linear thermal expansion, across 10⁻⁴/K: 0.7, 0.9
- Thermal conductivity, with flow W/(m·K)
- Thermal conductivity, through-plane W/(m·K)

FIRE BEHAVIOR

- Burning behavior UL 94 Classification
- Glow Wire Flammability Index (GWFI) °C
- Glow Wire Ignition Temperature (GWIT) °C

ELECTRIC PROPERTIES (23 °C/50% R.H.)

- Relative permittivity; 1 MHz: 4.3, 5.0, 4.2, 4.8
- Dissipation factor; 1 MHz: 10⁻¹: 240, 890, 170, 774
- Volume resistivity Ohm·m: 1E14, 1E14, 1E11, 7E12, 4E9
- Surface resistivity Ohm: 1E13, 1E13
- Comparative tracking index (CTI) Rating: 550, 400

SHRINKAGE (Plaque 60 x 60 x 2 mm)

- Processing conditions for shrinkage plaques °C/°C/bar: 280/80/600, 280/80/600
- Molding shrinkage, parallel %: 0.19, 0.20
- Molding shrinkage, across %: 0.60, 0.60
- Post-shrinkage, parallel; 120 °C; 4 h %: 0.04, 0.05
- Post-shrinkage, across; 120 °C; 4 h %: 0.08, 0.10

N = no failure, Conditioning in accordance with ISO 1110 (70 °C, 62% r. h.)
* For test conditions and standards refer to page 8, 8 for color information and other wall thicknesses see UL Yellow Card.
### NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

#### REINFORCED > 30% GF

<table>
<thead>
<tr>
<th>GRADE</th>
<th>BKV55XF</th>
<th>BKV60H2.0EF</th>
<th>BKV60XF</th>
<th>BM29XH2.0EF</th>
<th>BM230H2.0</th>
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<tbody>
<tr>
<td>FILLER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>901510</td>
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<tr>
<td></td>
<td>DUS060</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### FILLER

- 9 01510
- 900116
- 900116
- 900116
- 900116
- 900116
- 901510

---

#### BRIEF OUTLINE

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT /WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

---

#### GENERAL PROPERTIES (23 °C)

- Glass fiber/glass bead/filler content
  - % 50
  - 55
  - 60
  - 30 (GF+MD)
  - 30 MD
- Density
  - kg/m³ 1570
  - 1620
  - 1700
  - 1693
  - 1360
  - 1360
- Water absorption (saturation value)
  - % 5.0
  - –
  - –
  - ~7.0
- Water absorption (equilibrium value)
  - % 1.5
  - –
  - –
  - ~2.2

---

#### MECHANICAL PROPERTIES (23 °C/50% R.H.)

### tensile modulus
- MPa 16300
- 9800
- 16200
- 10000
- 16400
- 11000
- 17300
- 10500
- 20000
- 12000
- 20200
- 13000
- 6500
- 2900
- 5000
- 2000

### Yield stress
- MPa

### Nominal strain at break %
- 3.0
- 5.0
- 2.7
- 3.5
- 2.5
- 4.3
- 3.5
- 2.4
- 3.5
- 2.3
- 2.8
- 3.0
- 1.3

### Strain at break %
- 3.0
- 5.0
- 2.7
- 3.5
- 2.5
- 4.3
- 3.5
- 2.4
- 3.5
- 2.3
- 2.8
- 3.0
- 20
- 10
- 45

### Flexural strain at flexural strength %
- 3.0
- 5.0
- 3.1
- 4.4
- 3.0
- 4.0
- 3.0
- 3.5
- 2.8
- 3.6
- 2.6
- 4.0
- 7.5
- 5.5
- 8.0

### Flexural stress at 3.5% strain MPa
- 220
- 210
- 235
- 175
- 80
- 130
- 55
- 105
- 65
- 290
- 50

### Charpy impact strength 23 °C kJ/m²
- 100
- 100
- 100
- 85
- 90
- 85
- 90
- 88
- 35
- 110
- 80
- 120
- N
- 13

### Charpy impact strength -30 °C kJ/m²
- 85
- 80
- 95
- 122
- N
- 95
- 80
- 80
- 30
- 30
- 80
- 95

### Charpy notched impact strength 23 °C kJ/m²
- 20
- 25
- 10
- 15
- 10
- 20
- 15
- 20
- 16
- 20
- 15
- < 10
- < 10
- < 10
- 13

### Charpy notched impact strength -30 °C kJ/m²
- 15
- 12
- 10
- 15
- < 10
- < 10
- < 10
- < 10
- < 10

### Izod impact strength 23 °C kJ/m²
- 85
- 85
- 85
- 80
- 90
- 90
- 80
- 80
- 30
- 30
- 80
- 95

### Izod impact strength -30 °C kJ/m²
- 80
- 80
- 85
- 80
- 90
- 80
- 80
- 30
- 30
- 80
- 95

### Izod notched impact strength 23 °C kJ/m²
- 20
- 25
- 17
- 20
- 10
- 20
- 15
- 20
- 16
- 20
- 15
- < 10
- < 10
- < 10
- 13

### Izod notched impact strength -30 °C kJ/m²
- 12
- 12
- 15
- 10
- 15
- < 10
- < 10
- < 10
- < 10
- < 10

---

#### THERMAL PROPERTIES

- Melting temperature °C
  - 222
  - 222
  - 220
  - 221
  - 210
  - 210
  - 210
- HDT, Method Af °C
  - 205
  - 210
  - 204
  - 208
  - 213
  - 213
  - 190
- HDT, Method Bf °C
  - 215
  - 220
  - 218
  - 220
  - 210
  - 210
  - ~185

### Coefficient of linear thermal expansion, parallel 10⁻⁴/K
- 0.2
- 0.12
- 0.12
- 0.12
- 0.11
- 0.4
- 0.7

### Coefficient of linear thermal expansion, across 10⁻⁴/K
- 0.7
- 0.9
- 0.9
- 0.75
- 0.85
- 0.85
- 0.85

### Thermal conductivity, with flow

### Thermal conductivity, through-plane

---

#### FIRE BEHAVIOR

- Burning behavior UL  94 Classification
  - HB (0.75)
  - HB (1.5)
  - HB (3.2)
- Glow Wire Flammability Index (GWFI) °C
  - 650 (2.0)
- Glow Wire Ignition Temperature (GWIT) °C

---

#### ELECTRIC PROPERTIES (23 °C/50% R.H.)

- Relative permittivity; 1 MHz
  - –
  - –
  - 4.2
  - 4.8
  - 4.7
  - 5.1
  - 4.3

### Dissipation factor; 1 MHz 10⁻⁴
- 240
- 890
- 170
- 774
- 177
- 651
- 240

### Volume resistivity Ohm·m
- 1E14
- 1E11
- 7E12
- 4E9
- 5.8E12
- 8E9
- 3.9E12

### Surface resistivity Ohm
- 1E13
- 1E13
- 1E16
- 1E13
- 1E13

### Comparative tracking index (CTI) Rating
- 550
- 400
- 600
- 425
- 525 (475)
- HB (1.5)
- HB (3.2)

---

#### SHRINKAGE (Plaque 60 x 60 x 2 mm)

- Processing conditions for shrinkage plaques °C/°C/bar
  - 280/80/600
  - 280/80/600
  - 280/80/600
  - 280/80/600
  - 280/80/600
  - 280/80/600
- Molding shrinkage, parallel %
  - 0.19
  - 0.20
  - 0.2
  - 0.32
  - 0.25
  - 0.45
  - 0.03
  - 0.05
  - 0.10
  - 0.06
  - 0.07
  - 0.20

### Post-shrinkage, parallel; 120 °C; 4 h %
- 0.04
- 0.05
- 0.1
- 0.03
- 0.05
- 0.10

### Post-shrinkage, across; 120 °C; 4 h %
- 0.08
- 0.10
- 0.1
- 0.06
- 0.07
- 0.20

---

PLEASE NOTE THAT OUR PRODUCT INFORMATION AND DATA ARE SUBJECT TO CONTINUOUS EXAMINATION AND UPDATES. MAKE SURE YOU REFER TO FURTHER INFORMATION AND THE LATEST UPDATES AT WWW.DURETHAN.COM
# REFERENCE DATA

## NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

<table>
<thead>
<tr>
<th>FILLER</th>
<th>GRADE</th>
<th>COLOR</th>
<th>SUFIX</th>
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<tr>
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<td>BG300H2.0</td>
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<tr>
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<td>BG320H2.0F</td>
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## BRIEF OUTLINE

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT/WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

## GENERAL PROPERTIES (23 °C)

<table>
<thead>
<tr>
<th>Glass fiber/glass bead/filler content</th>
<th>%</th>
<th>30 MD</th>
<th>30 (GF+GB)</th>
<th>30 (GF+GB)</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Density</th>
<th>kg/m³</th>
<th>1370</th>
<th>1350</th>
<th>1320</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Water absorption (saturation value)</th>
<th>%</th>
<th>7.1</th>
<th>7.0</th>
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<table>
<thead>
<tr>
<th>Water absorption (equilibrium value)</th>
<th>%</th>
<th>2.0</th>
<th>2.2</th>
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## MECHANIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Tensile modulus</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
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<td></td>
<td>4700</td>
<td>1450</td>
<td>6300</td>
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<td></td>
<td>3100</td>
<td>5300</td>
<td>2800</td>
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<table>
<thead>
<tr>
<th>Yield stress</th>
<th>MPa</th>
<th>70</th>
<th>35</th>
</tr>
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<tbody>
<tr>
<td>Yield strain</td>
<td>%</td>
<td>5.0</td>
<td>&gt; 100</td>
</tr>
<tr>
<td>Nominal strain at break</td>
<td>%</td>
<td>5.0</td>
<td>&gt; 100</td>
</tr>
</tbody>
</table>

| Strain at break | % | 3.5 | 10 |
| Stress at break | MPa | 70 | 35 |
| Flexural stress at 3.5% strain | MPa | 75 | N |
| Charpy impact strength | kJ/m² | 50 | 40 |
| Charpy impact strength -30 °C | kJ/m² | - | - |
| Charpy notched impact strength | kJ/m² | 10 | 10 |
| Charpy notched impact strength -30 °C | kJ/m² | 10 | 10 |
| Izod impact strength | kJ/m² | 65 | 50 |
| Izod impact strength -30 °C | kJ/m² | 50 | 35 |
| Izod notched impact strength | kJ/m² | 10 | 10 |
| Izod notched impact strength -30 °C | kJ/m² | 10 | 10 |

## THERMAL PROPERTIES

| Melting temperature | °C | 222 | 222 |
| HDT, Method AI | °C | 75 | 190 | 185 |
| HDT, Method BI | °C | 175 | 210 | 210 |
| Coefficient of linear thermal expansion, parallel | 10⁻⁵/K | 0.8 | 0.3 | 0.4 |
| Coefficient of linear thermal expansion, across | 10⁻⁵/K | 0.7 | 0.9 | 1.1 |
| Thermal conductivity, with flow | W/(m·K) | |
| Thermal conductivity, through-plane | W/(m·K) | |

## FIRE BEHAVIOR

| Burning behavior UL 94 | Classification | HB (1.5) |
| Glow Wire Flammability Index (GWFI) | °C | 650 (2.0) |
| Glow Wire Ignition Temperature (GWIT) | °C | |

## ELECTRIC PROPERTIES (23 °C/50% R.H.)

| Relative permittivity; 1 MHz | – | 4.0 |
| Dissipation factor; 1 MHz | 10⁻¹ | 189 |
| Volume resistivity | Ohm·m | 1E13 |
| Surface resistivity | Ohm | 1E14 |
| Comparative tracking index (CTI) | Rating | 325 | 475 |

## SHRINKAGE (Plaque 60 x 60 x 2 mm)

| Processing conditions for shrinkage plaques | °C/°C/bar | 280/80/600 | 280/80/600 |
| Molding shrinkage, parallel | % | 1.20 | 0.55 |
| Molding shrinkage, across | % | 1.10 | 0.80 |
| Post-shrinkage, parallel; 120 °C; 4 h | % | 0.30 | 0.10 |
| Post-shrinkage, across; 120 °C; 4 h | % | 0.20 | 0.10 |

Footnotes:
- N = no failure. Conditioning in accordance with ISO 1110 (70 °C, 62 % r. h.).
- For test conditions and standards refer to page 8. * for color information and other wall thicknesses see UL Yellow Card.
### NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

#### Filler

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<tr>
<th>Grade</th>
<th>BM430H2.0</th>
<th>BG30XH2.0</th>
<th>BG30XH3.0</th>
<th>BG30XXF</th>
<th>BG30XW1</th>
<th>BG30XH3.0L</th>
<th>T</th>
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**General Properties (23 °C)**

<table>
<thead>
<tr>
<th>Property</th>
<th>BM430H2.0</th>
<th>BG30XH2.0</th>
<th>BG30XH3.0</th>
<th>BG30XXF</th>
<th>BG30XW1</th>
<th>BG30XH3.0L</th>
<th>T</th>
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</thead>
<tbody>
<tr>
<td>Glass Fiber/Glass Bead/Filler Content</td>
<td>30 MD</td>
<td>30 MD</td>
<td>30 MD</td>
<td>30 MD</td>
<td>30 MD</td>
<td>30 MD</td>
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</tr>
<tr>
<td>Density (kg/m³)</td>
<td>1370</td>
<td>1350</td>
<td>1320</td>
<td>1320</td>
<td>1360</td>
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<tr>
<td>Water Absorption (Saturation Value)</td>
<td>7.1</td>
<td>7.0</td>
<td>–</td>
<td>–</td>
<td>7.0</td>
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<tr>
<td>Water Absorption (Equilibrium Value)</td>
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**Mechanical Properties (23 °C/50% R.H.)**

<table>
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<tr>
<th>Property</th>
<th>BM430H2.0</th>
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<th>BG30XH3.0</th>
<th>BG30XXF</th>
<th>BG30XW1</th>
<th>BG30XH3.0L</th>
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<tbody>
<tr>
<td>Tensile Modulus (MPa)</td>
<td>4700</td>
<td>1450</td>
<td>6300</td>
<td>3100</td>
<td>5300</td>
<td>2800</td>
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<td>Yield Stress (MPa)</td>
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<td>Nominal Strain at Break (%)</td>
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<td>Strain at Break (%)</td>
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<td></td>
<td></td>
<td>5.0</td>
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<td>Flexural Strain at Flexural Strength (%)</td>
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<td>7.8</td>
<td>4.5</td>
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<td>6.0</td>
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<td>Flexural Stress at 3.5% Strain (MPa)</td>
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<td>35</td>
<td>170</td>
<td>75</td>
<td>140</td>
<td>70</td>
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<td>Charpy Impact Strength (23 °C) (kJ/m²)</td>
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<tr>
<td>Charpy Impact Strength (-30 °C) (kJ/m²)</td>
<td>60</td>
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<td>35</td>
<td>35</td>
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<td>Charpy Notched Impact Strength (23 °C) (kJ/m²)</td>
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<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
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<tr>
<td>Charpy Notched Impact Strength (-30 °C) (kJ/m²)</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
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<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
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<tr>
<td>Izod Impact Strength (23 °C) (kJ/m²)</td>
<td>65</td>
<td>30</td>
<td>50</td>
<td>40</td>
<td>50</td>
<td>40</td>
<td></td>
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<tr>
<td>Izod Impact Strength (-30 °C) (kJ/m²)</td>
<td>50</td>
<td>55</td>
<td>25</td>
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<td>30</td>
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<tr>
<td>Izod Notched Impact Strength (23 °C) (kJ/m²)</td>
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<td>&lt; 10</td>
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<tr>
<td>Izod Notched Impact Strength (-30 °C) (kJ/m²)</td>
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<td>&lt; 10</td>
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**Thermal Properties**

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<tr>
<th>Property</th>
<th>BM430H2.0</th>
<th>BG30XH2.0</th>
<th>BG30XH3.0</th>
<th>BG30XXF</th>
<th>BG30XW1</th>
<th>BG30XH3.0L</th>
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<tbody>
<tr>
<td>Melting Temperature (°C)</td>
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<td>222</td>
<td>220</td>
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<td>HDT, Method Af (°C)</td>
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<td>HDT, Method Bf (°C)</td>
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<tr>
<td>Coefficient of Linear Thermal Expansion, Parallel (10⁻⁴/K)</td>
<td>0.8</td>
<td>0.3</td>
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<td>0.4</td>
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<td>Coefficient of Linear Thermal Expansion, Across (10⁻⁴/K)</td>
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<td>Thermal Conductivity, With Flow (W/(m·K))</td>
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<td>Thermal Conductivity, Through-Plane (W/(m·K))</td>
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**FIRE BEHAVIOR**

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<tr>
<th>Property</th>
<th>BM430H2.0</th>
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<th>BG30XW1</th>
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<td>Classification</td>
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<tr>
<td>Glow Wire Flammability Index (GWFI) (°C)</td>
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<tr>
<td>Glow Wire Ignition Temperature (GWIT) (°C)</td>
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**Electric Properties (23 °C/50% R.H.)**

<table>
<thead>
<tr>
<th>Property</th>
<th>BM430H2.0</th>
<th>BG30XH2.0</th>
<th>BG30XH3.0</th>
<th>BG30XXF</th>
<th>BG30XW1</th>
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<td>Relative Permittivity (1 MHz)</td>
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<td>Dissipation Factor (1 MHz)</td>
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<td>Volume Resistivity (Ohm·m)</td>
<td>1E13</td>
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<td>Surface Resistivity (Ohm)</td>
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<td>Comparative Tracking Index (CTI)</td>
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<td>475</td>
<td>475</td>
<td>475</td>
<td>375</td>
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**Shrinkage (Plaque 60 x 60 x 2 mm)**

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<tr>
<th>Processing Conditions for Shrinkage Plaques (°C/°C/bar)</th>
<th>BM430H2.0</th>
<th>BG30XH2.0</th>
<th>BG30XH3.0</th>
<th>BG30XXF</th>
<th>BG30XW1</th>
<th>BG30XH3.0L</th>
<th>T</th>
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</thead>
<tbody>
<tr>
<td>Molding Shrinkage, Parallel (%)</td>
<td>1.20</td>
<td>0.55</td>
<td>0.40</td>
<td>0.60</td>
<td>0.50</td>
<td>0.5</td>
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<tr>
<td>Molding Shrinkage, Across (%)</td>
<td>1.10</td>
<td>0.80</td>
<td>0.60</td>
<td>0.75</td>
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<tr>
<td>Post-Shrinkage, Parallel (%)</td>
<td>0.30</td>
<td>0.10</td>
<td>0.20</td>
<td>0.10</td>
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<td>0.2</td>
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<tr>
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<td>0.10</td>
<td>0.20</td>
<td>0.15</td>
<td>0.15</td>
<td>0.2</td>
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Please note that our product information and data are subject to continuous examination and updates. Make sure you refer to further information and the latest updates at www.durethan.com.
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### NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

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<thead>
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<th>GRADE</th>
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<th>SUFFIX</th>
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### BRIEF OUTLINE

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<th>UNITS</th>
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<tbody>
<tr>
<td>Improved flowability</td>
<td>□</td>
</tr>
<tr>
<td>Improved toughness</td>
<td>□</td>
</tr>
<tr>
<td>Improved hydrolysis stability</td>
<td>□</td>
</tr>
<tr>
<td>Reduced warpage</td>
<td>□</td>
</tr>
<tr>
<td>Good surface quality</td>
<td>□</td>
</tr>
<tr>
<td>High temperature stabilization</td>
<td>□</td>
</tr>
<tr>
<td>GIT / WIT</td>
<td>□</td>
</tr>
<tr>
<td>Improved welding performance</td>
<td>□</td>
</tr>
<tr>
<td>Improved weathering stabilization</td>
<td>□</td>
</tr>
<tr>
<td>Improved thermal or electrical conductivity</td>
<td>□</td>
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<tr>
<td>High modulus</td>
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<td>MuCell</td>
<td>□</td>
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<tr>
<td>Transparency (NIR-laser)</td>
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### GENERAL PROPERTIES (23 °C)

<table>
<thead>
<tr>
<th>Glass fiber/glass bead/filler content</th>
<th>% 30 CF</th>
<th>30 (GF+CF)</th>
<th>30 (GB)</th>
<th>40 (GF+MD)</th>
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<tbody>
<tr>
<td>Density (kg/m³)</td>
<td>1260</td>
<td>1334</td>
<td>1351</td>
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<td>Water absorption (saturation value)</td>
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<tr>
<td>Water absorption (equilibrium value)</td>
<td>2.2</td>
<td>1.7</td>
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### MECHANIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Tensile modulus (MPa)</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
<th>d.a.m. conditioned</th>
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<td>1900</td>
<td>9900</td>
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<tr>
<td>Yield strain (%)</td>
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<tr>
<td>Stress at break (MPa)</td>
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<tr>
<td>Strain at break (%)</td>
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<tr>
<td>Flexural strain at flexural strength (%)</td>
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<td>3.0</td>
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<td>Flexural strain at 3.5% strain (MPa)</td>
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<td>Charpy impact strength 23 °C (kJ/m²)</td>
<td>50</td>
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<tr>
<td>Charpy notched impact strength 23 °C (kJ/m²)</td>
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<td>15</td>
<td>11</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
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<td>&lt; 10</td>
<td>&lt; 10</td>
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<td>&lt; 10</td>
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<tr>
<td>Izod impact strength 23 °C (kJ/m²)</td>
<td>50</td>
<td>55</td>
<td>65</td>
<td>65</td>
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<td>Izod impact strength -30 °C (kJ/m²)</td>
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<td>40</td>
<td>60</td>
<td>60</td>
<td>30</td>
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<tr>
<td>Izod notched impact strength 23 °C (kJ/m²)</td>
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<td>15</td>
<td>10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
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<tr>
<td>Izod notched impact strength -30 °C (kJ/m²)</td>
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<td>&lt; 10</td>
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### THERMAL PROPERTIES

| Melting temperature (°C) | 221 | 220 | 220 | 220 |
| HDT, Method Af (°C)      | 210 | 205 | 75  | 195 |
| HDT, Method Bf (°C)      | 220 | 219 | 180 | 215 |
| Coefficient of linear thermal expansion, parallel (10⁻⁴/K) | 0.1 | 0.2 | 0.8 | 0.28 |
| Coefficient of linear thermal expansion, across (10⁻⁴/K) | 0.9 | 0.9 | 0.8 | 0.85 |
| Thermal conductivity, with flow (W/(m·K)) |                    |                    |                    |                    |
| Thermal conductivity, through-plane (W/(m·K)) |                    |                    |                    |                    |

### FIRE BEHAVIOR

| Burning behavior UL 94 Classification | HB (0.75) |
| GloW Wire Flammability Index (GWFI) (°C) |                    |
| GloW Wire Ignition Temperature (GWIT) (°C) |                    |

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

| Relative permittivity; 1 MHz |                    |
| Dissipation factor; 1 MHz |                    |
| Volume resistivity (Ohm·m) | 2E03 |
| Surface resistivity (Ohm) | 4EO4 |
| Comparative tracking index (CTI) Rating | 150 |

### SHRINKAGE (Plaque 60 x 60 x 2 mm)

| Processing conditions for shrinkage plaques (°C/°C/bar) | 280/80/600 | 280/80/600 | 290/80/600 |
| Molding shrinkage, parallel (%) | 0.10 | 0.22 | 0.31 |
| Molding shrinkage, across (%) | 0.45 | 0.77 | 0.72 |
| Post-shrinkage, parallel; 120 °C; 4 h (%) | 0.05 | 0.03 | 0.05 |
| Post-shrinkage, across; 120 °C; 4 h (%) | 0.10 | 0.08 | 0.11 |

* For test conditions and standards refer to page 8
* For color information and other wall thicknesses see UL Yellow Card
N = no failure, Conditioning in accordance with ISO 1110 (70 °C, 62 % r. h.)
## NON FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

### FILLER

<table>
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<th>Grade</th>
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<th>BCF30XH2.0</th>
<th>BTC65H3.0EF</th>
<th>BTC75H3.0EF</th>
<th>BM40XH2.0EF</th>
<th>BM240H2.0</th>
<th>BG60XXF</th>
<th>BTC65H3.0EF</th>
<th>BTC75H3.0EF</th>
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### NON-REINFORCED

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### General Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>23 °C/50% R.H.</th>
<th>23 °C</th>
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</thead>
<tbody>
<tr>
<td>Glass fiber/glass bead/filler content</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>kg/m³</td>
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</tr>
<tr>
<td>Water absorption (saturation value)</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Water absorption (equilibrium value)</td>
<td>%</td>
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</tbody>
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### Mechanical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>23 °C/50% R.H.</th>
<th>23 °C</th>
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<tbody>
<tr>
<td>Tensile modulus</td>
<td>MPa</td>
<td></td>
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<tr>
<td>Yield stress</td>
<td>MPa</td>
<td></td>
</tr>
<tr>
<td>Nominal strain at break</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Stress at break</td>
<td>MPa</td>
<td></td>
</tr>
<tr>
<td>Strain at break</td>
<td>%</td>
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</tr>
<tr>
<td>Flexural strain at flexural strength</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Flexural stress at 3.5% strain</td>
<td>MPa</td>
<td></td>
</tr>
<tr>
<td>Charpy impact strength</td>
<td>kJ/m²</td>
<td></td>
</tr>
<tr>
<td>Charpy notched impact strength</td>
<td>kJ/m²</td>
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<td>Izod impact strength</td>
<td>kJ/m²</td>
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<tr>
<td>Izod notched impact strength</td>
<td>kJ/m²</td>
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### Thermal Properties

<table>
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<th>23 °C/50% R.H.</th>
<th>23 °C</th>
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<tr>
<td>Melting temperature</td>
<td>°C</td>
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<tr>
<td>HDT, Method Af</td>
<td>°C</td>
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<tr>
<td>HDT, Method Bf</td>
<td>°C</td>
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</tr>
<tr>
<td>Coefficient of linear thermal expansion, parallel</td>
<td>10⁻⁴/K</td>
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</tr>
<tr>
<td>Coefficient of linear thermal expansion, across</td>
<td>10⁻⁴/K</td>
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<tr>
<td>Thermal conductivity, with flow</td>
<td>W/(m·K)</td>
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<td>Thermal conductivity, through-plane</td>
<td>W/(m·K)</td>
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### Fire Behavior

<table>
<thead>
<tr>
<th>Property</th>
<th>Classification</th>
<th>Glow Wire Flammability Index (GWFI)</th>
<th>Glow Wire Ignition Temperature (GWIT)</th>
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<tr>
<td>Burning behavior UL 94</td>
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### Electric Properties

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<th>Property</th>
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<tr>
<td>Relative permittivity; 1 MHz</td>
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<tr>
<td>Dissipation factor; 1 MHz</td>
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<tr>
<td>Volume resistivity</td>
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<tr>
<td>Surface resistivity</td>
<td>Ohm</td>
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<tr>
<td>Comparative tracking index (CTI)</td>
<td>Rating</td>
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### Shrinkage

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<th>Property</th>
<th>Conditioned Plaques</th>
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<tr>
<td>Processing conditions for shrinkage plaques</td>
<td>°C/°C/bar</td>
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<tr>
<td>Molding shrinkage, parallel</td>
<td>%</td>
</tr>
<tr>
<td>Molding shrinkage, across</td>
<td>%</td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h</td>
<td>%</td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h</td>
<td>%</td>
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**Please note that our product information and data are subject to continuous examination and updates. Make sure you refer to further information and the latest updates at www.durethan.com**
# REFERENCE DATA

## NON FLAME-RETARDANT PA 66

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### BRIEF OUTLINE
- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

### GENERAL PROPERTIES (23 °C)
- Glass fiber/glass bead/filler content: % – 15 25 25 30 30 30 30 30
- Density: kg/m³ 1110 1240 1320 1320 1360 1295 1323 1360 1360 1343
- Water absorption (saturation value): % – 7.0 6.0 6.0 5.5—
- Water absorption (equilibrium value): % – 2.4 2.1 2.1 2.0—

### MECHANIC PROPERTIES (23 °C/50% R.H.)

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<thead>
<tr>
<th>Property</th>
<th>d.a.m.</th>
<th>conditioned</th>
<th>d.a.m.</th>
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<td>1100</td>
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<tr>
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<tr>
<td>Yield strain %</td>
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<td>Nominal strain at break %</td>
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<td>Charpy notched impact strength 23 °C kJ/m²</td>
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### THERMAL PROPERTIES

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<tr>
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<th>d.a.m.</th>
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<td>263</td>
<td>263</td>
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<tr>
<td>HDT, Method Af °C</td>
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<td>&gt; 250</td>
<td>&gt; 250</td>
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<td>0.3</td>
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<td>Thermal conductivity, with flow W/(m·K)</td>
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<tr>
<td>Thermal conductivity, through-plane W/(m·K)</td>
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<td></td>
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</tr>
</tbody>
</table>

### FIRE BEHAVIOR

<table>
<thead>
<tr>
<th>Property</th>
<th>d.a.m.</th>
<th>conditioned</th>
<th>d.a.m.</th>
<th>conditioned</th>
<th>d.a.m.</th>
<th>conditioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burning behavior UL 94 Classification</td>
<td>HB (0.75)</td>
<td>HB (0.75)</td>
<td>HB (1.5)</td>
<td>HB (1.5)</td>
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<tr>
<td>Glow Wire Flammability Index (GWFI) °C</td>
<td>650</td>
<td>650</td>
<td>650</td>
<td>650</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glow Wire Ignition Temperature (GWIT) °C</td>
<td></td>
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### ELECTRIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>d.a.m.</th>
<th>conditioned</th>
<th>d.a.m.</th>
<th>conditioned</th>
<th>d.a.m.</th>
<th>conditioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative permittivity, 1 MHz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Dissipation factor, 1 MHz</td>
<td>10^-1</td>
<td>170</td>
<td>700</td>
<td>200</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td>Volume resistivity Ohm·m m</td>
<td></td>
<td>1E13</td>
<td>1E10</td>
<td>1E13</td>
<td>1E10</td>
<td></td>
</tr>
<tr>
<td>Surface resistivity Ohm</td>
<td></td>
<td>1E15</td>
<td>1E12</td>
<td>1E13</td>
<td>1E12</td>
<td></td>
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<tr>
<td>Comparative tracking index (CTI) Rating</td>
<td></td>
<td>425</td>
<td>400</td>
<td>500</td>
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<td></td>
</tr>
</tbody>
</table>

### SHRINKAGE (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Property</th>
<th>d.a.m.</th>
<th>conditioned</th>
<th>d.a.m.</th>
<th>conditioned</th>
<th>d.a.m.</th>
<th>conditioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing conditions for shrinkage plaques °C/°C/bar</td>
<td>280/80/600</td>
<td>290/80/600</td>
<td>290/80/600</td>
<td>290/80/600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molding shrinkage, parallel %</td>
<td>1.3</td>
<td>0.7</td>
<td>0.5</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molding shrinkage, across %</td>
<td>1.8</td>
<td>1.0</td>
<td>1.1</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C, 4 h %</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C, 4 h %</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 For test conditions and standards refer to page 8  * for color information and other wall thicknesses see UL Yellow Card
N = no failure, Conditioning in accordance with ISO 1110 (70 °C, 62 % r. h.)
## NON FLAME-RETARDANT PA 66

### REINFORCED 30% GF

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>COLOR</td>
<td>000000</td>
<td>901510</td>
<td>901510</td>
<td>904040</td>
<td>901510</td>
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<td>901510</td>
<td>901510</td>
<td>901510</td>
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</tbody>
</table>

### BRIEF OUTLINE

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

### GENERAL PROPERTIES (23 °C)

<table>
<thead>
<tr>
<th>Glass fiber/glass bead/filler content</th>
<th>15</th>
<th>25</th>
<th>25</th>
<th>30</th>
<th>30</th>
<th>30</th>
<th>30</th>
<th>30</th>
<th>30</th>
<th>30</th>
<th>30</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (kg/m³)</td>
<td>1110</td>
<td>1240</td>
<td>1320</td>
<td>1320</td>
<td>1360</td>
<td>1295</td>
<td>1323</td>
<td>1360</td>
<td>1360</td>
<td>1343</td>
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<tr>
<td>Water absorption (saturation value)</td>
<td>7.0</td>
<td>6.0</td>
<td>6.0</td>
<td>5.5</td>
<td>–</td>
<td>–</td>
<td>5.5</td>
<td>6.0</td>
<td>–</td>
<td>–</td>
<td>5.5</td>
<td>6.0</td>
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<tr>
<td>Water absorption (equilibrium value)</td>
<td>2.4</td>
<td>2.1</td>
<td>2.1</td>
<td>2.0</td>
<td>–</td>
<td>–</td>
<td>2.0</td>
<td>2.0</td>
<td>–</td>
<td>–</td>
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### MECHANIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Tensile modulus (MPa)</th>
<th>3000</th>
<th>1100</th>
<th>6200</th>
<th>3800</th>
<th>9000</th>
<th>5700</th>
<th>8400</th>
<th>6000</th>
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<tbody>
<tr>
<td>Yield stress (MPa)</td>
<td>70</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Nominal strain at break (%)</td>
<td>20</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Stress at break (MPa)</td>
<td>120</td>
<td>75</td>
<td>160</td>
<td>110</td>
<td>160</td>
<td>115</td>
<td>175</td>
<td>110</td>
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<tr>
<td>Strain at break (%)</td>
<td>3.0</td>
<td>8.0</td>
<td>3.0</td>
<td>6.0</td>
<td>3.0</td>
<td>6.0</td>
<td>3.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Flexural strain at flexural strength (%)</td>
<td>6.5</td>
<td>8.8</td>
<td>4.0</td>
<td>8.0</td>
<td>5.0</td>
<td>7.0</td>
<td>4.0</td>
<td>6.0</td>
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<tr>
<td>Flexural stress at 3.5% strain (MPa)</td>
<td>80</td>
<td>30</td>
<td>175</td>
<td>90</td>
<td>230</td>
<td>140</td>
<td>220</td>
<td>145</td>
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<tr>
<td>Charpy impact strength 23 °C (kJ/m²)</td>
<td>35</td>
<td>60</td>
<td>55</td>
<td>70</td>
<td>60</td>
<td>80</td>
<td>75</td>
<td>80</td>
</tr>
<tr>
<td>Charpy impact strength -30 °C (kJ/m²)</td>
<td>35</td>
<td>40</td>
<td>45</td>
<td>45</td>
<td>50</td>
<td>60</td>
<td>60</td>
<td>85</td>
</tr>
<tr>
<td>Charpy notched impact strength 23 °C (kJ/m²)</td>
<td>&lt; 10</td>
<td>25</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>10</td>
<td>11</td>
<td>10</td>
<td>12</td>
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<tr>
<td>Charpy notched impact strength -30 °C (kJ/m²)</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
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<tr>
<td>Izod impact strength 23 °C (kJ/m²)</td>
<td>30</td>
<td>45</td>
<td>50</td>
<td>60</td>
<td>65</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>Izod impact strength -30 °C (kJ/m²)</td>
<td>30</td>
<td>35</td>
<td>55</td>
<td>85</td>
<td>85</td>
<td>65</td>
<td>60</td>
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### THERMAL PROPERTIES

<table>
<thead>
<tr>
<th>Melting temperature (°C)</th>
<th>261</th>
<th>263</th>
<th>263</th>
<th>263</th>
<th>263</th>
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</thead>
<tbody>
<tr>
<td>HDT, Method Af (°C)</td>
<td>70</td>
<td>230</td>
<td>240</td>
<td>240</td>
<td>242</td>
</tr>
<tr>
<td>HDT, Method Bf (°C)</td>
<td>&gt; 250</td>
<td>&gt; 250</td>
<td>&gt; 250</td>
<td>&gt; 250</td>
<td>&gt; 250</td>
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<tr>
<td>Coefficient of linear thermal expansion, parallel (10⁻⁴/K)</td>
<td>0.8</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, across (10⁻⁴/K)</td>
<td>1.1</td>
<td>0.9</td>
<td>1.1</td>
<td>1.1</td>
<td>0.9</td>
</tr>
</tbody>
</table>

### FIRE BEHAVIOR

- Burning behavior UL 94 Classification
  - HB (0.75) HB (0.75) HB (1.5) HB (1.5) HB (0.75) HB (1.5)
- Glow Wire Flammability Index (GWFI) (°C): 650 (2.0) 650 (2.0) 650 (2.0) 700 (0.75 - 3.0) 650 (2.0) 650 (2.0)
- Glow Wire Ignition Temperature (GWIT) (°C)

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Relative permittivity; 1 MHz</th>
<th>4.0</th>
<th>4.0</th>
<th>4.0</th>
<th>4.0</th>
<th>4.0</th>
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<tbody>
<tr>
<td>Dissipation factor; 1 MHz</td>
<td>170</td>
<td>700</td>
<td>200</td>
<td>750</td>
<td>190</td>
</tr>
<tr>
<td>Volume resistivity (Ohm·m)</td>
<td>1E13</td>
<td>1E10</td>
<td>1E13</td>
<td>1E10</td>
<td>1E13</td>
</tr>
<tr>
<td>Surface resistivity (Ohm)</td>
<td>1E15</td>
<td>1E12</td>
<td>1E14</td>
<td>1E12</td>
<td>1E15</td>
</tr>
</tbody>
</table>

### SHrinkage (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Processing conditions for shrinkage plaques °C/°C/bar</th>
<th>280/80/600</th>
<th>290/80/600</th>
<th>290/80/600</th>
<th>290/80/600</th>
<th>290/80/600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molding shrinkage, parallel (%)</td>
<td>1.3</td>
<td>0.7</td>
<td>0.5</td>
<td>0.5</td>
<td>0.49</td>
</tr>
<tr>
<td>Molding shrinkage, across (%)</td>
<td>1.8</td>
<td>1.0</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h (%)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.13</td>
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<tr>
<td>Post-shrinkage, across; 120 °C; 4 h (%)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.13</td>
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Please note that our product information and data are subject to continuous examination and updates. Make sure you refer to further information and the latest updates at www.durethan.com.
### REFERENCE DATA

**NON FLAME-RETARDANT PA 66**

**REINFORCED 30% GF**

<table>
<thead>
<tr>
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<th>COLOR</th>
<th>SUFFIX</th>
<th>PA 66</th>
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<td>AKV30GTH2.0</td>
<td></td>
<td>AKV30XTS1</td>
</tr>
<tr>
<td></td>
<td>900116</td>
<td></td>
<td>901510</td>
</tr>
<tr>
<td></td>
<td>AKV30XTS3</td>
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<td>901510</td>
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#### BRIEF OUTLINE

**UNITS**

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

#### GENERAL PROPERTIES (23 °C)

- **Glass fiber/glass bead/filler content**: % 30 30 30 30 35 35 35 35 35
- **Density**: kg/m³ 1368 1360 1360 1410 1410 1400 1400 1410
- **Water absorption (saturation value)**: % 6.0 – – 5.0 5.0 – – 5.2
- **Water absorption (equilibrium value)**: % 2.0 – – 1.7 1.8 2.1 – 1.7

#### MECHANIC PROPERTIES (23 °C/50% R.H.)

- **Tensile modulus**: MPa 9200 6600 9900 6000 10000 6000 11200 7500 11200 7500 10800 7500 11000 7500 11500 7800
- **Yield stress**: MPa
- **Nominal strain at break**: %
- **Stress at break**: MPa 190 120 175 110 175 110 200 125 190 130 192 119 195 125 195 135
- **Yield strain %**:
- **Strain at break %**: 4.0 6.0 3.0 5.5 3.0 5.0 3.1
- **Charpy impact strength 23 °C**: kJ/m² 70 80 65 65 80 60 80 80
- **Charpy impact strength -30 °C**: kJ/m² 60 60 55 55
- **Charpy notched impact strength 23 °C**: kJ/m² 10 15 9.0 10 15
- **Charpy notched impact strength -30 °C**: kJ/m² < 10 < 10 8.0 < 10 < 10
- **Izod impact strength 23 °C**: kJ/m² 60 70 50 80 60 75
- **Izod impact strength -30 °C**: kJ/m² 50 50 55 55
- **Izod notched impact strength 23 °C**: kJ/m² 10 15 10 10 10
- **Izod notched impact strength -30 °C**: kJ/m² < 10 < 10 < 10 < 10

#### THERMAL PROPERTIES

- **Melting temperature °C**: 260 263 262
- **HDT, Method Af °C**: 230 235 235
- **HDT, Method Bf °C**: 250
- **Coefficient of linear thermal expansion, parallel 10^-4/K**: 0.3 0.25 0.25
- **Coefficient of linear thermal expansion, across 10^-4/K**: 0.8 0.9 0.95
- **Thermal conductivity, with flow W/(m·K)**
- **Thermal conductivity, through-plane W/(m·K)**

#### FIRE BEHAVIOR

- **Burning behavior UL 94 Classification**: HB (1.5)
- **Glow Wire Flammability Index (GWFI) °C**: 650 (2.0)
- **Glow Wire Ignition Temperature (GWIT) °C**

#### ELECTRIC PROPERTIES (23 °C/50% R.H.)

- **Relative permittivity, 1 MHz** – 3.8 4.2
- **Dispersion factor, 1 MHz**: 10^-1 160 700
- **Volume resistivity Ohm·m**: 1E13 1E10
- **Surface resistivity Ohm**: 1E15 1E13
- **Comparative tracking index (CTI) Rating**: 475 625

#### SHRINKAGE (Plaque 60 x 60 x 2 mm)

- **Processing conditions for shrinkage plaques °C/C/bar**: 290/80/600 290/80/600
- **Molding shrinkage, parallel %**: 0.37 0.35
- **Molding shrinkage, across %**: 1.02 1.00
- **Post-shrinkage, parallel; 120 °C; 4 h %**: 0.07 0.05
- **Post-shrinkage, across; 120 °C; 4 h %**: 0.05 0.10

---

1 For test conditions and standards refer to page 8
2 For color information and other wall thicknesses see UL Yellow Card
3 N = no failure, Conditioning in accordance with ISO 1110 (70 °C, 62% r. h.)
## NON FLAME-RETARDANT PA 66

### REINFORCED > 30% GF

<table>
<thead>
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<th>GRADE</th>
<th>AKV35H2.0</th>
<th>AKV35H2.0</th>
<th>AKV35LTH2.0</th>
<th>AKV35LTH3.0</th>
<th>AKV35HRH2.0</th>
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<tr>
<td>SR1</td>
<td>901510</td>
<td>901510</td>
<td>904040</td>
<td>904040</td>
<td>901510</td>
</tr>
</tbody>
</table>

### BRIEF OUTLINE
- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT/WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

### GENERAL PROPERTIES (23 °C)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass fiber/glass bead/filler content (%)</td>
<td>30 30 30 35 35 35 35 35</td>
</tr>
<tr>
<td>Density (kg/m³)</td>
<td>1368 1360 1360 1410 1410 1400 1400 1410</td>
</tr>
<tr>
<td>Water absorption (saturation value) (%)</td>
<td>6.0 – – 5.0</td>
</tr>
<tr>
<td>Water absorption (equilibrium value) (%)</td>
<td>2.0 – – 1.7</td>
</tr>
</tbody>
</table>

### MECHANIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile modulus (MPa)</td>
<td>9200 6600 9900 6000 10000 6000 11200 7500 11200 7500 10800 7500 11000 7500 11500 7800</td>
</tr>
<tr>
<td>Yield stress (MPa)</td>
<td></td>
</tr>
<tr>
<td>Nominal strain at break (%)</td>
<td></td>
</tr>
<tr>
<td>Stress at break (MPa)</td>
<td>190 120 175 110 175 110</td>
</tr>
<tr>
<td>Strain at break (%)</td>
<td>4.0 6.0 3.0 5.5 3.0 5.0</td>
</tr>
<tr>
<td>Flexural strain at flexural strength (%)</td>
<td>4.5 6.0 4.0 5.0 3.7 5.0</td>
</tr>
<tr>
<td>Flexural stress at 3.5% strain (MPa)</td>
<td>260 160 260 150 270 155 280 165 170 288 198 170 288 198 280 165 170 288 198 280</td>
</tr>
<tr>
<td>Charpy impact strength 23 °C (kJ/m²)</td>
<td>70 80 65 65 80 85</td>
</tr>
<tr>
<td>Charpy impact strength -30 °C (kJ/m²)</td>
<td>60 60 55 50 70 75</td>
</tr>
<tr>
<td>Charpy notched impact strength 23 °C (kJ/m²)</td>
<td>10 15 9.0 10 15</td>
</tr>
<tr>
<td>Charpy notched impact strength -30 °C (kJ/m²)</td>
<td>&lt; 10 &lt; 10 8.0 &lt; 10 &lt; 10</td>
</tr>
<tr>
<td>Izod impact strength 23 °C (kJ/m²)</td>
<td>60 70 50 80 60 75 75 75 60 65 75 75 60 75 75</td>
</tr>
<tr>
<td>Izod impact strength -30 °C (kJ/m²)</td>
<td>50 50 55 55 65 65</td>
</tr>
<tr>
<td>Izod notched impact strength 23 °C (kJ/m²)</td>
<td>10 15 10 10 15</td>
</tr>
<tr>
<td>Izod notched impact strength -30 °C (kJ/m²)</td>
<td>&lt; 10 &lt; 10 10 &lt; 10 &lt; 10</td>
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### THERMAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting temperature (°C)</td>
<td>260 263 262 263 260 262</td>
</tr>
<tr>
<td>HDT, Method Af (°C)</td>
<td>230 235 235 250 250 230 245</td>
</tr>
<tr>
<td>HDT, Method Bf (°C)</td>
<td>250 &gt; 250 &gt; 250 250</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, parallel (10⁻⁴/K)</td>
<td>0.3 0.25 0.25 0.3 0.2 0.2 0.2</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, across (10⁻⁴/K)</td>
<td>0.8 0.9 0.95 0.9 1.0 0.7 0.7 0.8</td>
</tr>
<tr>
<td>Thermal conductivity, with flow (W/(m·K))</td>
<td></td>
</tr>
<tr>
<td>Thermal conductivity, through-plane (W/(m·K))</td>
<td></td>
</tr>
</tbody>
</table>

### FIRE BEHAVIOR

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burning behavior UL 94</td>
<td>HB (1.5) HB (0.75) HB (1.5) HB (1.5)</td>
</tr>
<tr>
<td>Glow Wire Flammability Index (GWFI) (°C)</td>
<td>650 (2.0) 600 (2.0) 650 (2.0) 650 (2.0)</td>
</tr>
<tr>
<td>Glow Wire Ignition Temperature (GWIT) (°C)</td>
<td></td>
</tr>
</tbody>
</table>

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative permittivity; 1 MHz</td>
<td>3.8 4.2 4.0 4.0 4.0 4.0 3.6</td>
</tr>
<tr>
<td>Dissipation factor; 1 MHz</td>
<td>160 700 150 650 150 650 150</td>
</tr>
<tr>
<td>Volume resistivity (Ohm·m)</td>
<td>1E13 1E10</td>
</tr>
<tr>
<td>Surface resistivity (Ohm)</td>
<td>1E15 1E15</td>
</tr>
<tr>
<td>Comparative tracking index (CTI)</td>
<td>475 625</td>
</tr>
</tbody>
</table>

### SHRINKAGE (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing conditions for shrinkage plaques °C/bar</td>
<td>290/80/600 290/80/600</td>
</tr>
<tr>
<td>Molding shrinkage, parallel (%)</td>
<td>0.37 0.91</td>
</tr>
<tr>
<td>Molding shrinkage, across (%)</td>
<td>0.05 0.07</td>
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<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h (%)</td>
<td>4.0 150 1E13 425</td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h (%)</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Please note that our product information and data are subject to continuous examination and updates. Make sure you refer to further information and the latest updates at www.durethan.com.
## REFERENCE DATA

### NON FLAME-RETARDANT PA 66

<table>
<thead>
<tr>
<th>GRADE</th>
<th>COLOR</th>
<th>SUFFIX</th>
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<tbody>
<tr>
<td>PA 66</td>
<td>AKV35XTS1</td>
<td>901510</td>
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<tr>
<td></td>
<td>AKV35XTS2</td>
<td>901510</td>
</tr>
</tbody>
</table>

### BRIEF OUTLINE

- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT /WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- Transparency (NIR-laser)

### GENERAL PROPERTIES (23 °C)

<table>
<thead>
<tr>
<th>Glass fiber/glass bead/filler content</th>
<th>% 35</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density kg/m³</td>
<td>1410</td>
<td>1430</td>
</tr>
<tr>
<td>Water absorption (saturation value)</td>
<td>%</td>
<td>– 4.5</td>
</tr>
<tr>
<td>Water absorption (equilibrium value)</td>
<td>%</td>
<td>– 1.7</td>
</tr>
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### MECHANIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Tensile modulus MPa</th>
<th>d.a.m.</th>
<th>conditioned</th>
<th>d.a.m.</th>
<th>conditioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield stress MPa</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield strain %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal strain at break %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress at break MPa</td>
<td>185</td>
<td>105</td>
<td>200</td>
<td>130</td>
</tr>
<tr>
<td>Strain at break %</td>
<td>3.2</td>
<td>5.0</td>
<td>3.2</td>
<td>5.0</td>
</tr>
<tr>
<td>Flexural strain at flexural strength</td>
<td>%</td>
<td>3.5</td>
<td>5.0</td>
<td>3.7</td>
</tr>
<tr>
<td>Flexural stress at 3.5% strain MPa</td>
<td>280</td>
<td>140</td>
<td>300</td>
<td>185</td>
</tr>
<tr>
<td>Charpy impact strength 23 °C kJ/m²</td>
<td>75</td>
<td>85</td>
<td>65</td>
<td>85</td>
</tr>
<tr>
<td>Charpy impact strength -30 °C kJ/m²</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charpy notched impact strength 23 °C kJ/m²</td>
<td>10</td>
<td>15</td>
<td>10</td>
<td>12</td>
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<tr>
<td>Charpy notched impact strength -30 °C kJ/m²</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>Izod impact strength 23 °C kJ/m²</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Izod impact strength -30 °C kJ/m²</td>
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<td></td>
</tr>
<tr>
<td>Izod notched impact strength 23 °C kJ/m²</td>
<td>10</td>
<td>15</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Izod notched impact strength -30 °C kJ/m²</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
</tr>
</tbody>
</table>

### THERMAL PROPERTIES

| Melting temperature °C               | 261    | 250         |
| HDT, Method Af °C                    | 235    | 235         |
| HDT, Method Bf °C                    | 250    | 250         |
| Coefficient of linear thermal expansion, parallel 10⁻⁶/K | 0.20  | 0.8         |
| Coefficient of linear thermal expansion, across 10⁻⁶/K | 0.95  | 0.2         |
| Thermal conductivity, with flow W/(m·K) |        |             |
| Thermal conductivity, through-plane W/(m·K) |        |             |

### FIRE BEHAVIOR

- Burning behavior UL 94 Classification
- Glow Wire Flammability Index (GWFI) °C
- Glow Wire Ignition Temperature (GWIT) °C

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

| Relative permittivity; 1 MHz – |        |             |
| Dissipation factor; 1 MHz 10⁻¹ |        |             |
| Volume resistivity Ohm·m       |        |             |
| Surface resistivity Ohm         |        |             |
| Comparative tracking index (CTI) Rating | 525  |             |

### SHRINKAGE (Plaque 60 x 60 x 2 mm)

| Processing conditions for shrinkage plaques °C/°C/bar | 290/80/600 |
| Molding shrinkage, parallel % | 0.35 | 0.20 |
| Molding shrinkage, across % | 0.90 | 0.80 |
| Post-shrinkage, parallel; 120 °C; 4 h % | 0.05 | 0.10 |
| Post-shrinkage, across; 120 °C; 4 h % | 0.15 | 0.15 |

---

1 For test conditions and standards refer to page 8  
2 For color information and other wall thicknesses see UL Yellow Card  
N = no failure, Conditioning in accordance with ISO 1110 (70 °C, 62 % r. h.)
## Non Flame-Retardant PA 66

### Reinforced > 30% GF

<table>
<thead>
<tr>
<th>PA 66</th>
<th>Filler</th>
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<tbody>
<tr>
<td>DPAK50H2.0</td>
<td>ACF30XH2.0EF</td>
</tr>
<tr>
<td>901510</td>
<td>901510</td>
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</table>

**BRIEF OUTLINE**
- Improved flowability
- Improved toughness
- Improved hydrolysis stability
- Reduced warpage
- Good surface quality
- High temperature stabilization
- GIT / WIT
- Improved welding performance
- Improved weathering stabilization
- Improved thermal or electrical conductivity
- High modulus
- MuCell
- Transparency (NIR-laser)

### General Properties (23 °C)

<table>
<thead>
<tr>
<th>Grade</th>
<th>AKV35XTS1</th>
<th>AKV35XTS2</th>
<th>AKV40H2.0</th>
<th>AKV50H2.0</th>
<th>AKV60XF</th>
<th>ACF30XH2.0EF</th>
<th>DPAKV50HRH2.0</th>
</tr>
</thead>
<tbody>
<tr>
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<td>901510</td>
<td>901510</td>
<td>901510</td>
<td>901510</td>
<td>900116</td>
<td>901510</td>
<td>900116</td>
</tr>
</tbody>
</table>

#### Glass Fiber/Glass Bead/Filler Content
- 35% 35% 40% 50% 50% 50% 60% 30% (GF+CF)

#### Density
- 1410 kg/m³ 1430 kg/m³ 1460 kg/m³ 1570 kg/m³ 1535 kg/m³ 1570 kg/m³ 1680 kg/m³ 1300 kg/m³

#### Water Absorption (Saturation Value)
- 4.5%

#### Water Absorption (Equilibrium Value)
- 1.7%

### Mechanical Properties (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Conditioned</th>
<th>Conditioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Modulus (MPa)</td>
<td>10700</td>
<td>6800</td>
</tr>
<tr>
<td>Yield Stress (MPa)</td>
<td>185</td>
<td>105</td>
</tr>
<tr>
<td>Nominal Strain at Break (%)</td>
<td>3.2</td>
<td>5.0</td>
</tr>
<tr>
<td>Stress at Break (MPa)</td>
<td>280</td>
<td>140</td>
</tr>
<tr>
<td>Strain at Break (%)</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Flexural Strain at Flexural Strength (%)</td>
<td>3.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Flexural Stress at 3.5% Strain (MPa)</td>
<td>280</td>
<td>140</td>
</tr>
<tr>
<td>Charpy Impact Strength (23 °C) (kJ/m²)</td>
<td>75</td>
<td>85</td>
</tr>
<tr>
<td>Charpy Impact Strength (-30 °C) (kJ/m²)</td>
<td>60</td>
<td>55</td>
</tr>
<tr>
<td>Charpy Notched Impact Strength (23 °C) (kJ/m²)</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Charpy Notched Impact Strength (-30 °C) (kJ/m²)</td>
<td>&lt; 10</td>
<td>&lt; 10</td>
</tr>
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</table>

### Thermal Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting Temperature (°C)</td>
<td>261</td>
</tr>
<tr>
<td>HDT, Method Af (°C)</td>
<td>235</td>
</tr>
<tr>
<td>HDT, Method Bf (°C)</td>
<td>250</td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion, Parallel (10⁻⁴/K)</td>
<td>0.20</td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion, Across (10⁻⁴/K)</td>
<td>0.95</td>
</tr>
<tr>
<td>Thermal Conductivity, With Flow W/(m·K)</td>
<td>0.00</td>
</tr>
<tr>
<td>Thermal Conductivity, Through-Plane W/(m·K)</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Electrical Properties (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Permittivity; 1 MHz</td>
<td>4.0</td>
</tr>
<tr>
<td>Dissipation Factor; 1 MHz</td>
<td>150</td>
</tr>
<tr>
<td>Volume Resistivity (Ohm·m)</td>
<td>1E15</td>
</tr>
<tr>
<td>Surface Resistivity (Ohm)</td>
<td>1E15</td>
</tr>
<tr>
<td>Comparative Tracking Index (CTI)</td>
<td>525</td>
</tr>
</tbody>
</table>

### Fire Behavior

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burning Behavior UL 94 Classification</td>
<td>HB (0.75)</td>
</tr>
<tr>
<td>Glow Wire Flammability Index (GWFI) (°C)</td>
<td>600 (2.0)</td>
</tr>
<tr>
<td>Glow Wire Ignition Temperature (GWIT) (°C)</td>
<td>-</td>
</tr>
</tbody>
</table>

### Shrinkage (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing Conditions for Shrinkage Plaques °C/°C/bar</td>
<td>290/80/600</td>
</tr>
<tr>
<td>Molding Shrinkage, Parallel (%)</td>
<td>0.35</td>
</tr>
<tr>
<td>Molding Shrinkage, Across (%)</td>
<td>0.90</td>
</tr>
<tr>
<td>Post-Shrinkage, Parallel; 120 °C; 4 h (%)</td>
<td>0.05</td>
</tr>
<tr>
<td>Post-Shrinkage, Across; 120 °C; 4 h (%)</td>
<td>0.15</td>
</tr>
</tbody>
</table>

PLEASE NOTE THAT OUR PRODUCT INFORMATION AND DATA ARE SUBJECT TO CONTINUOUS EXAMINATION AND UPDATES. MAKE SURE YOU REFER TO FURTHER INFORMATION AND THE LATEST UPDATES AT WWW.DURETHAN.COM
**BRIEF OUTLINE**

- VDE certificate
- Thin wall applications
- Halogen-free
- Halogen and Phosphorus free
- Ignitability GWIT ≥ 775
- Reduced warpage
- Improved warpage performance

**GENERAL PROPERTIES (23 °C)**

- Glass fiber/glass bead/filler content
- Density
- Water absorption (saturation value)
- Water absorption (equilibrium value)

**MECHANIC PROPERTIES (23 °C/50% R. H.)**

- Tensile modulus
- Yield stress
- Yield strain
- Nominal strain at break
- Stress at break
- Strain at break
- Flexural strain at flexural strength
- Flexural stress at 3.5% strain
- Nominal strain at break
- Stress at break
- Strain at break

**THERMAL PROPERTIES**

- Melting temperature
- HDT, Method Af
- HDT, Method Bf
- Coefficient of linear thermal expansion, parallel
- Coefficient of linear thermal expansion, across

**FIRE BEHAVIOR**

- Burning behavior UL 94
- Glow Wire Flammability Index (GWFI)
- Glow Wire Ignition Temperature (GWIT)

**ELECTRIC PROPERTIES (23 °C/50% R. H.)**

- Relative permittivity
- Dissipation factor
- Volume resistivity
- Surface resistivity
- Comparative tracking index (CTI)

**SHRINKAGE (Plaque 60 x 60 x 2 mm)**

- Processing conditions for shrinkage plaques
- Molding shrinkage, parallel
- Molding shrinkage, across
- Post-shrinkage, parallel: 120 °C; 4 h
- Post-shrinkage, across: 120 °C; 4 h

---

**REFERENCE DATA**

**FLAME-RETARDANT PA 6 AND CO-POLYAMIDES**

<table>
<thead>
<tr>
<th>GRADE</th>
<th>COLOR</th>
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**NON-REINFORCED**

<table>
<thead>
<tr>
<th>FLAME-RETARDANT PA 6 AND CO-POLYAMIDES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRIEF OUTLINE</td>
</tr>
<tr>
<td>UNITS TEST CONDITIONS STANDARDS</td>
</tr>
<tr>
<td>VDE certificate</td>
</tr>
<tr>
<td>Thin wall applications</td>
</tr>
<tr>
<td>Halogen-free</td>
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<td>Halogen and Phosphorus free</td>
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<td>Ignitability GWIT ≥ 775</td>
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<tr>
<td>Reduced warpage</td>
</tr>
<tr>
<td>Improved warpage performance</td>
</tr>
</tbody>
</table>

**GENERAL PROPERTIES (23 °C)**

- Glass fiber/glass bead/filler content %
- Density kg/m³
- Water absorption (saturation value) %
- Water absorption (equilibrium value) %

**MECHANIC PROPERTIES (23 °C/50% R. H.)**

- Tensile modulus MPa
- Yield stress MPa
- Yield strain %
- Nominal strain at break %
- Stress at break MPa
- Strain at break %
- Flexural strain at flexural strength %
- Flexural stress at 3.5% strain MPa
- Nominal strain at break %
- Stress at break MPa
- Strain at break %

**THERMAL PROPERTIES**

- Melting temperature °C
- HDT, Method Af °C
- HDT, Method Bf °C
- Coefficient of linear thermal expansion, parallel 10⁻⁴/K
- Coefficient of linear thermal expansion, across 10⁻⁴/K

**FIRE BEHAVIOR**

- Burning behavior UL 94
- Glow Wire Flammability Index (GWFI)
- Glow Wire Ignition Temperature (GWIT)

**ELECTRIC PROPERTIES (23 °C/50% R. H.)**

- Relative permittivity
- Dissipation factor
- Volume resistivity
- Surface resistivity
- Comparative tracking index (CTI)

**SHRINKAGE (Plaque 60 x 60 x 2 mm)**

- Processing conditions for shrinkage plaques °C/C/bar
- Molding shrinkage, parallel %
- Molding shrinkage, across %
- Post-shrinkage, parallel: 120 °C; 4 h %
- Post-shrinkage, across: 120 °C; 4 h %

---

* for color information and other wall thicknesses see UL Yellow Card
N = no failure, Conditioning in accordance with ISO 1110 (70 °C, 62% r. h.)

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MAKE SURE YOU REFER TO FURTHER INFORMATION AND THE LATEST UPDATES AT WWW.DURETHAN.COM
# Durethan® Reference Data

## Flame-Retardant PA 6 and Co-Polyamides

### Non-Reinforced

<table>
<thead>
<tr>
<th>Grade</th>
<th>B30SFN40</th>
<th>BKV20FN01</th>
<th>BKV20FN20</th>
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### Reinforced < 30% GF

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## Brief Outline

- UNITS
- TEST CONDITIONS
- STANDARDS

- VDE certificate
- Thin wall applications
- Halogen-free
- Halogen and Phosphorus free
- Ignitability GWIT ≥ 775
- Reduced warpage
- Improved welding performance

## General Properties (23 °C)

- Glass fiber/glass bead/filler content % – ISO 3451-1
- Density kg/m³ – ISO 1183
- Water absorption (saturation value) % Water at 23 °C – ISO 62
- Water absorption (equilibrium value) % 23 °C; 50% r. h. – ISO 62

## Mechanical Properties (23 °C/50% R.H.)

- Tensile modulus MPa 1 mm/min – ISO 527-1,-2
- Yield stress MPa 50 mm/min – ISO 527-1,-2
- Yield strain % 50 mm/min – ISO 527-1,-2
- Nominal strain at break % 50 mm/min – ISO 527-1,-2
- Stress at break MPa 5 mm/min – ISO 527-1,-2
- Strain at break % 5 mm/min – ISO 527-1,-2
- Flexural strain at flexural strength % 2 mm/min – ISO 178-A
- Flexural stress at 3.5% strain MPa 2 mm/min – ISO 178-A
- Charpy impact strength 23 °C kJ/m² – ISO 179-1eU
- Charpy impact strength -30 °C kJ/m² – ISO 179-1eU
- Charpy notched impact strength 23 °C kJ/m² – ISO 179-1eA
- Charpy notched impact strength -30 °C kJ/m² – ISO 179-1eA
- Izod impact strength 23 °C kJ/m² – ISO 180-1U
- Izod impact strength -30 °C kJ/m² – ISO 180-1U
- Izod notched impact strength 23 °C kJ/m² – ISO 180-1A
- Izod notched impact strength -30 °C kJ/m² – ISO 180-1A

## Thermal Properties

- Melting temperature °C 10 °C/min – ISO 11357-1,-3
- HDT, Method Af °C 1.80 MPa – ISO 75-1,-2
- HDT, Method Bf °C 0.45 MPa – ISO 75-1,-2
- Coefficient of linear thermal expansion, parallel 10-4/K – ISO 11359-1,-2
- Coefficient of linear thermal expansion, across 10-4/K – ISO 11359-1,-2

## Fire Behavior

- Burning behavior UL 94*
- Classification
- Glow Wire Flammability Index (GWFI) °C – IEC 60695-2-12
- Glow Wire Ignition Temperature (GWIT) °C – IEC 60695-2-13

## Electric Properties (23 °C/50% R.H.)

- Relative permittivity; 1 MHz – IEC 60250
- Dissipation factor; 1 MHz – IEC 60250
- Volume resistivity Ohm·m – IEC 60093
- Surface resistivity Ohm – IEC 60093
- Comparative tracking index (CTI) Rating Test solution A – IEC 60112
- PLC class UL 746A

## Shrinkage (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Processing conditions for shrinkage plaques °C/°C/bar</th>
<th>Melt-/mold temp./holding pressure</th>
<th>Molding shrinkage, parallel % – ISO 294-4</th>
<th>Molding shrinkage, across % – ISO 294-4</th>
<th>Post-shrinkage, parallel; 120 °C; 4 h % – ISO 294-4</th>
<th>Post-shrinkage, across; 120 °C; 4 h % – ISO 294-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>260/80/600</td>
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<td>1.1</td>
<td>1.1</td>
<td>0.4</td>
<td>0.4</td>
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<tr>
<td>260/80/600</td>
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<td>0.9</td>
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<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>4E13</td>
<td>5.3E15</td>
<td>6E13</td>
<td>8.6E15</td>
<td>600</td>
<td>600</td>
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<tr>
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<td>525</td>
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<td>0</td>
<td>0</td>
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</tbody>
</table>

## Additional Properties

- 5VA (3.0)
- V0 (0.4) V0 (0.75) V2 (0.75) V2 (0.75) V2 (0.75)
- 960 (0.4 - 3.0) 960 (0.75 - 3.0) 960 (0.75 - 3.0) 960 (0.75 - 3.0)
- 750 (0.75 - 3.0) 775 (0.75 - 3.0) 775 (0.75 - 3.0) 700 (0.75 - 3.0)
- 0.9 0.9 0.9 0.6 0.6 0.6 0.6 0.6 0.6
- 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3
## REFERENCE DATA

### FLAME-RETARDANT PA 6 AND CO-POLYAMIDES

#### REINFORCED 30% GF

<table>
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<th>GRADE</th>
<th>COLOR</th>
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<tr>
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<tr>
<td>BKV25FN04</td>
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<tr>
<td>BKV25FN27</td>
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</tr>
<tr>
<td>BKV30FN04</td>
<td>000000</td>
</tr>
</tbody>
</table>

### BRIEF OUTLINE

**Units**

- VDE certificate
- Thin wall applications
- Halogen-free
- Halogen and Phosphorus free
- Ignitability GWIT ≥ 775
- Reduced warpage
- Improved welding performance

### GENERAL PROPERTIES (23 °C)

- Glass fiber/glass bead/filler content: %
- Density: kg/m³
- Water absorption (saturation value): %
- Water absorption (equilibrium value): %

### MECHANIC PROPERTIES (23 °C/50% R.H.)

- Tensile modulus: MPa
- Yield stress: MPa
- Yield strain: %
- Nominal strain at break: %
- Stress at break: MPa
- Strain at break: %
- Flexural strain at flexural strength: %
- Flexural stress at 3.5% strain: MPa
- Charpy impact strength 23 °C: kJ/m²
- Charpy impact strength -30 °C: kJ/m²
- Charpy notched impact strength 23 °C: kJ/m²
- Charpy notched impact strength -30 °C: kJ/m²
- Izod impact strength 23 °C: kJ/m²
- Izod impact strength -30 °C: kJ/m²
- Izod notched impact strength 23 °C: kJ/m²
- Izod notched impact strength -30 °C: kJ/m²

### THERMAL PROPERTIES

- Melting temperature: °C
- HDT, Method Af: °C
- HDT, Method Bf: °C
- Coefficient of linear thermal expansion, parallel: 10⁻⁴/K
- Coefficient of linear thermal expansion, across: 10⁻⁴/K

### FIRE BEHAVIOR

- Burning behavior UL 94:
- SVB / 5VA from mm
- V0, V1, V2 from mm
- Classification
- Glow Wire Flammability Index (GWFI): °C
- Glow Wire Ignition Temperature (GWIT): °C

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

- Relative permittivity: 1 MHz
- Dissipation factor: 1 MHz
- Volume resistivity: Ohm·m
- Surface resistivity: Ohm
- Comparative tracking index (CTI): Rating
- CTI: PLC class

### SHRINKAGE (Plaque 60 x 60 x 2 mm)

- Processing conditions for shrinkage plaques: °C/°C/bar
- Molding shrinkage, parallel: %
- Molding shrinkage, across: %
- Post-shrinkage, parallel: 120 °C; 4 h
- Post-shrinkage, across: 120 °C; 4 h

---

1 For test conditions and standards refer to p. 32
2 for color information and other wall thicknesses see UL Yellow Card

N = no failure, Conditioning in accordance with ISO 1110 (70 °C, 62% r. h.)

Please note that our product information and data are subject to continuous examination and updates: make sure you refer to further information and the latest updates at www.durethan.com
**FLAME-RETARDANT PA 6 AND CO-POLYAMIDES**

<table>
<thead>
<tr>
<th>FILLER</th>
<th>30% GF</th>
<th>&gt; 30% GF</th>
<th>30% GF</th>
<th>&gt; 30% GF</th>
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<tbody>
<tr>
<td>30% GF</td>
<td>30% GF</td>
<td>30% GF</td>
<td>30% GF</td>
<td>30% GF</td>
</tr>
<tr>
<td>BKV25F30</td>
<td>BKV30FN04</td>
<td>BM25FN20</td>
<td>BG30XFN30</td>
<td>BG30XFN01</td>
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**BRIEF OUTLINE**
- UNITS
  - VDE certificate
  - Thin wall applications
  - Halogen-free
  - Halogen and Phosphorus free
  - Ignitability GWIT ≥ 775
  - Reduced warpage
  - Improved welding performance

**GENERAL PROPERTIES (23 °C)**
- Glass fiber/glass bead/filler content %
  - 25
  - 25
  - 25
  - 30
  - 30
  - 45
  - 25 (GF+GB)
  - 30 (GF+GB)
  - 65 (GF+MD)

<table>
<thead>
<tr>
<th></th>
<th>1400</th>
<th>1570</th>
<th>1380</th>
<th>1630</th>
<th>1390</th>
<th>1690</th>
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<tbody>
<tr>
<td>Density kg/m³</td>
<td>1600</td>
<td>1382</td>
<td>1340</td>
<td>1423</td>
<td>1410</td>
<td>1570</td>
</tr>
<tr>
<td>Water absorption (saturation value) %</td>
<td>4.3</td>
<td>4.9</td>
<td>7.0</td>
<td>4.6</td>
<td>6.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Water absorption (equilibrium value) %</td>
<td>1.3</td>
<td>1.6</td>
<td>2.1</td>
<td>1.5</td>
<td>1.8</td>
<td>1.1</td>
</tr>
</tbody>
</table>

**MECHANIC PROPERTIES (23 °C/50% R.H.)**
- Tensile modulus MPa
  - 11000
  - 7300
  - 9800
  - 6100
  - 5600
  - 2300
  - 10300
  - 6700
  - 5400
  - 2100
  - 15600
  - 10000
  - 5700 |
| | 6700 | 5400 | 2100 |
| Yield stress MPa | 80 | 90 | 125 |
| Yield strain % | 3.0 | 8.0 | |
| Stress at break MPa | 150 | 90 | 125 |
| Strain at break % | 2.3 | 4.4 | 3.4 |
| Flexural strain at flexural strength % | 2.5 | 4.0 | 3.3 |
| Flexural stress at 3.5% strain MPa | 120 | 135 | 55 |
| Charpy impact strength 23 °C kJ/m² | 55 | 55 | 65 |
| Charpy impact strength -30 °C kJ/m² | 45 | 50 | 30 |
| Charpy notched impact strength 23 °C kJ/m² | 10 | 15 | <10 |
| Charpy notched impact strength -30 °C kJ/m² | <10 | <10 | <10 |
| Izod impact strength 23 °C kJ/m² | 50 | 55 | 55 |
| Izod impact strength -30 °C kJ/m² | 45 | 50 | 30 |
| Izod notched impact strength 23 °C kJ/m² | 10 | 15 | <10 |
| Izod notched impact strength -30 °C kJ/m² | <10 | <10 | <10 |

**THERMAL PROPERTIES**
- Melting temperature °C
  - 222
  - 220
  - 222
  - 220
  - 220
  - 220
  - 220
  - 220
  - 220
  - 220
  - 220
  - 220
  - 220
  - 220

<table>
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<tr>
<th></th>
<th>222</th>
<th>220</th>
<th>220</th>
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</thead>
<tbody>
<tr>
<td>HDT, Method Af °C</td>
<td>205</td>
<td>200</td>
<td>170</td>
</tr>
<tr>
<td>HDT, Method Bf °C</td>
<td>215</td>
<td>219</td>
<td>210</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>219</th>
<th>210</th>
<th>190</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient of linear thermal expansion, parallel 10^-4/K</td>
<td>0.2</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, across 10^-4/K</td>
<td>0.9</td>
<td>0.8</td>
<td>0.9</td>
</tr>
</tbody>
</table>

**FIRE BEHAVIOR**
- Burning behavior UL 94*
  - 5VB (1.0)
  - 5VA (1.5)
  - 5VA (1.5)
  - 5VA (1.0)
  - 5VA (2.0)
  - 5VA (3.0)

<table>
<thead>
<tr>
<th></th>
<th>5VB (1.0)</th>
<th>5VA (1.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-0, V-1, V-2 from mm Classification</td>
<td>V-0 (0.4)</td>
<td>V-0 (0.75)</td>
</tr>
<tr>
<td>Glow Wire Flammability Index (GWFI) °C</td>
<td>960 (0.4 - 3.0)</td>
<td>960 (0.75 - 3.0)</td>
</tr>
<tr>
<td>Glow Wire Ignition Temperature (GWIT) °C</td>
<td>850 (0.4 - 3.0)</td>
<td>775 (0.75)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>850 (0.4 - 3.0)</th>
<th>775 (0.75)</th>
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</thead>
<tbody>
<tr>
<td>ELECTRIC PROPERTIES (23 °C/50% R.H.)</td>
<td>Relative permittivity; 1 MHz – 3.9</td>
<td></td>
</tr>
<tr>
<td>Dissipation factor; 1 MHz 10^-4</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>Volume resistivity Ohm·m</td>
<td>3.4 E12</td>
<td>5.1E13</td>
</tr>
<tr>
<td>Surface resistivity Ohm</td>
<td>4.1 E13</td>
<td>9 E14</td>
</tr>
<tr>
<td></td>
<td>1E15</td>
<td></td>
</tr>
<tr>
<td>Comparative tracking index (CTI) Rating</td>
<td>400</td>
<td>600</td>
</tr>
<tr>
<td>PLC class</td>
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<td>0</td>
</tr>
<tr>
<td>SHRINKAGE (Plaque 60 x 60 x 2 mm)</td>
<td>Processing conditions for shrinkage plaques °C/°C/bar</td>
<td>280/80/600</td>
</tr>
<tr>
<td>Molding shrinkage, parallel %</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Molding shrinkage, across %</td>
<td>0.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h %</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h %</td>
<td>0.1</td>
<td>0.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>0.1</th>
<th>0.2</th>
</tr>
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<tbody>
<tr>
<td>2E13</td>
<td>1E15</td>
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<tr>
<td>550</td>
<td>600</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
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<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>0.8</td>
<td>0.6</td>
<td>0.9</td>
</tr>
<tr>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
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<tr>
<td>0.8</td>
<td>0.6</td>
<td>0.9</td>
</tr>
<tr>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>
## GENERAL PROPERTIES (23 °C)

- Glass fiber/glass bead/filler content: %
- Density: kg/m³
- Water absorption (saturation value): %
- Water absorption (equilibrium value): %

## MECHANIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Tensile modulus</th>
<th>Yield stress</th>
<th>Yield strain</th>
<th>Nominal strain at break</th>
<th>Stress at break</th>
<th>Strain at break</th>
<th>Flexural strain at flexural strength</th>
<th>Flexural stress at 3.5% strain</th>
<th>Charpy impact strength 23 °C</th>
<th>Charpy impact strength -30 °C</th>
<th>Charpy notched impact strength 23 °C</th>
<th>Charpy notched impact strength -30 °C</th>
<th>Izod impact strength 23 °C</th>
<th>Izod impact strength -30 °C</th>
<th>Izod notched impact strength 23 °C</th>
<th>Izod notched impact strength -30 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>A30SFN31/31 DP2801 / AKV25F30</td>
<td>3800</td>
<td>85</td>
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<td>55</td>
<td>265</td>
<td>80</td>
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<td>55</td>
<td>35</td>
<td>55</td>
<td>&lt;10</td>
<td>10</td>
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<tr>
<td>AKV25FN04 / T DP2802/30</td>
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<td>50</td>
<td>155</td>
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<td>80</td>
<td>80</td>
<td>105</td>
<td>265</td>
<td>75</td>
<td>90</td>
<td>80</td>
<td>40</td>
<td>80</td>
<td>&lt;10</td>
<td>10</td>
</tr>
<tr>
<td>AKV30FN04 / T DP2802/30</td>
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<td>120</td>
<td>120</td>
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<td>60</td>
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<td>120</td>
<td>265</td>
<td>200</td>
<td>120</td>
<td>110</td>
<td>60</td>
<td>120</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>AKV30FN04L T DP2802/30</td>
<td>1400</td>
<td>120</td>
<td>135</td>
<td>135</td>
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<td>120</td>
<td>110</td>
<td>135</td>
<td>135</td>
<td>80</td>
<td>120</td>
</tr>
</tbody>
</table>

## THERMAL PROPERTIES

- Melting temperature: °C
- HDT, Method AI: °C
- HDT, Method BF: °C
- Coefficient of linear thermal expansion, parallel: 10⁻⁴/K
- Coefficient of linear thermal expansion, across: 10⁻⁴/K

## ELECTRIC PROPERTIES (23 °C/50% R.H.)

| Relative permittivity; 1 MHz | 4.0 |
| Dissipation factor; 1 MHz | 10⁻¹⁴ |
| Volume resistivity | 1E12 |
| Surface resistivity | 1E15 |
| Comparative tracking index (CTI) | 600 |

## SHRINKAGE (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Processing conditions for shrinkage plaques</th>
<th>%</th>
</tr>
</thead>
</table>

## BRIEF OUTLINE

- VDE certificate:
- Thin wall applications:
- Halogen-free:
- Halogen and Phosphorus-free:
- Ignotility GWIT ≥ 775:
- Reduced warpage:
- Improved welding performance:

## FLAME-RETARDANT PA 66

### NON-REINFORCED

<table>
<thead>
<tr>
<th>Grade</th>
<th>Color</th>
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<tbody>
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<tr>
<td>DP2801</td>
<td>000000</td>
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<tr>
<td>AKV15FN00</td>
<td>000000</td>
</tr>
</tbody>
</table>

### REINFORCED < 30% GF

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>A30SFN31</td>
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<td>DP2801</td>
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<tr>
<td>AKV15FN00</td>
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</tr>
</tbody>
</table>

1 For test conditions and standards refer to p. 32
2 For color information and other wall thicknesses see UL Yellow Card
N = no failure, Conditioning in accordance with ISO 1110 (70 °C, 62 % r. h.)

Please note that our product information and data are subject to continuous examination and updates. Make sure you refer to further information and the latest updates at [WWW.DURETHAN.COM](http://WWW.DURETHAN.COM)
### THERMAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Melting temperature °C</td>
<td>265</td>
</tr>
<tr>
<td>HDT, Method Af °C</td>
<td>80</td>
</tr>
<tr>
<td>HDT, Method Bf °C</td>
<td>210</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, parallel 10⁻⁴/K</td>
<td>0.3</td>
</tr>
<tr>
<td>Coefficient of linear thermal expansion, across 10⁻⁴/K</td>
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### FIRE BEHAVIOR

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burning behavior UL 5VB / 5VA</td>
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</tr>
<tr>
<td>Classification V-0, V-1, V-2</td>
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</tr>
<tr>
<td>Glow Wire Flammability Index (GWFI) °C</td>
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</tr>
<tr>
<td>Glow Wire Ignition Temperature (GWIT) °C</td>
<td>775</td>
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</tbody>
</table>

### ELECTRIC PROPERTIES (23 °C/50% R.H.)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Relative permittivity; 1 MHz</td>
<td>4.0</td>
</tr>
<tr>
<td>Dissipation factor; 1 MHz 10⁻⁴</td>
<td>10⁻⁴</td>
</tr>
<tr>
<td>Volume resistivity Ohm·m</td>
<td>1E12</td>
</tr>
<tr>
<td>Surface resistivity Ohm</td>
<td>1E15</td>
</tr>
<tr>
<td>Comparative tracking index (CTI)</td>
<td>600</td>
</tr>
</tbody>
</table>

### SHRINKAGE (Plaque 60 x 60 x 2 mm)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing conditions for shrinkage plaques °C/°C/bar</td>
<td>260/80/600 270/80/600 280/80/600</td>
</tr>
<tr>
<td>Molding shrinkage, parallel %</td>
<td>1.1</td>
</tr>
<tr>
<td>Molding shrinkage, across %</td>
<td>1.1</td>
</tr>
<tr>
<td>Post-shrinkage, parallel; 120 °C; 4 h %</td>
<td>0.1</td>
</tr>
<tr>
<td>Post-shrinkage, across; 120 °C; 4 h %</td>
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### EXTREME TEMPERATURES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>5VA (1.0)</td>
<td>V-2 (0.75)</td>
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<tr>
<td>5VA (1.5)</td>
<td>V-2 (0.75)</td>
</tr>
<tr>
<td>V-0 (0.4)</td>
<td>V-2 (0.75)</td>
</tr>
<tr>
<td>960 (0.4 - 3.0)</td>
<td>960 (0.4 - 3.0)</td>
</tr>
<tr>
<td>875 (0.4), 900 (0.75 - 3.0)</td>
<td>775 (0.75)</td>
</tr>
<tr>
<td>750 (0.4 - 3.0)</td>
<td>775 (0.75)</td>
</tr>
<tr>
<td>5E13</td>
<td>5E13</td>
</tr>
<tr>
<td>3E16</td>
<td>3E16</td>
</tr>
<tr>
<td>600</td>
<td>600</td>
</tr>
</tbody>
</table>

### TANKING RESISTANCE

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>280/80/600</td>
<td>0.4</td>
</tr>
<tr>
<td>270/80/600</td>
<td>0.7</td>
</tr>
<tr>
<td>270/80/600</td>
<td>0.1</td>
</tr>
<tr>
<td>270/80/600</td>
<td>0.3</td>
</tr>
<tr>
<td>260/80/600</td>
<td>0.4</td>
</tr>
<tr>
<td>260/80/600</td>
<td>0.7</td>
</tr>
<tr>
<td>260/80/600</td>
<td>0.1</td>
</tr>
<tr>
<td>260/80/600</td>
<td>0.3</td>
</tr>
</tbody>
</table>

---

**LANXESS Durethan® reference data**
Durethan® is available in a large number of colors. We use a six-digit number to precisely characterize the color, which follows on after the grade designation. The first two digits specify the color class, while the remaining digits are used for administrative purposes in the color laboratory. The material’s natural color generally has the designation “000000”.

<table>
<thead>
<tr>
<th>Color class</th>
<th>First two digits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATURAL</td>
<td>00</td>
</tr>
<tr>
<td>WHITE</td>
<td>01</td>
</tr>
<tr>
<td>YELLOW</td>
<td>10</td>
</tr>
<tr>
<td>ORANGE</td>
<td>20</td>
</tr>
<tr>
<td>RED</td>
<td>30</td>
</tr>
<tr>
<td>PURPLE</td>
<td>40</td>
</tr>
<tr>
<td>BLUE</td>
<td>50</td>
</tr>
<tr>
<td>GREEN</td>
<td>60</td>
</tr>
<tr>
<td>GRAY</td>
<td>70</td>
</tr>
<tr>
<td>BROWN</td>
<td>80</td>
</tr>
<tr>
<td>BLACK</td>
<td>90</td>
</tr>
</tbody>
</table>

Example:
Durethan® BKV30H3.0 000000: natural color
Durethan® BKV30H2.0 901510: black
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