## Comparison Between AKV30 H2.0 & VYDYNE R530H

| Property Category | Durethan AKV 30 HR H2.0 | Vydyne R530H BK02 |
|---|---|---|
| Base Polymer | PA 66 (Polyamide 66) | PA 66 (Polyamide 66) |
| Glass Fiber Content | 30% | 30% |
| Additives / Stabilizers | Heat stabilized, hydrolysis resistant | Heat stabilized, hydrolysis resistant, lubricated |
| Color / Appearance | Natural / Black | Black |
| Processing Method | Injection molding | Injection molding |
| Density (23°C) | 1.36 g/cm³ | 1.37 g/cm³ |
| Molding Shrinkage (Across/Flow) | 0.9 / 0.4% | 0.9 / 0.4% |
| Water Absorption (23°C, 24h / equilibrium) | 5.5% / 2.0% | 0.9% / 1.9% |
| Tensile Modulus (23°C, dry / conditioned) | 9700 / 6100 MPa | 10000 / 7400 MPa |
| Tensile Strength (23°C, dry / conditioned) | 180 / 120 MPa | 195 / 126 MPa |
| Elongation at Break (dry / conditioned) | 3.5% / 8% | 3% / 5% |
| Flexural Modulus (dry / conditioned) | 8600 / 5400 MPa | 9600 / 6800 MPa |
| Flexural Strength (dry / conditioned) | 280 / 180 MPa | 270 / 170 MPa |
| Notched Charpy Impact (23°C) | 10–20 kJ/m² | 11–13 kJ/m² |
| Unnotched Charpy Impact (23°C) | 75–85 kJ/m² | 75–90 kJ/m² |
| Heat Deflection Temp (1.8 MPa) | 245°C | 250°C |
| Vicat Softening Temperature | 254°C | — |
| Melting Point | 262°C | 260°C |
| Linear Thermal Expansion (Flow / Transverse) | 3.0E-5 / 9.0E-5 cm/cm·°C | 2.2E-5 / 1.1E-4 cm/cm·°C |
| Volume Resistivity (23°C) | 1E15 Ω·cm | 1E11 Ω·cm |
| Dielectric Strength (1 mm) | 35 kV/mm | 31–20 kV/mm |
| Comparative Tracking Index (CTI) | 450 V | 250–399 V |
| UL 94 Flammability | HB (1.6–3.2 mm) | HB (0.75–3 mm) |
| Glow Wire Flammability Index | 650°C (2 mm) | 675°C (all thicknesses) |
| Oxygen Index | 26% | — |
| Processing Temperature (melt) | 280–300°C | 285–305°C |
| Mold Temperature | 80–120°C | 65–95°C |
| Drying Temperature / Time | 80°C / 2–6 h | 80°C / 4 h |

**Summary :-**

Both materials are PA66 compounds reinforced with 30% glass fiber and heat/hydrolysis stabilized. They show very similar mechanical, thermal, and electrical characteristics. Durethan AKV 30 HR H2.0 has slightly higher electrical resistivity, while Vydyne R530H BK02 offers slightly higher tensile and flexural stiffness with smoother processing and better surface appearance. These two grades are functionally interchangeable for most applications involving high stiffness, heat resistance, and dimensional stability.




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