

The ABMcomposite technology offers bio-based and biodegradable high-performance ArcBiox™ compounds, which can replace oil-based plastics, such as PE, PP, ABS, PS and glass-reinforced PA, PP, PC and PBT.

ArcBiox™ A-series



Key features

- Impact resistant PLA based grades with a **bio-content of 80-95%**
- Designed for injection moulding but also suitable for sheet extrusion
- Grades for food contact applications available
- Heat resistance (HDTb) up to 100 °C with a hot mould (110 °C) and 50-60 °C with a cold mould (20-30 °C)
- Alternative for ABS, PS, PS-HI

Applications

- Technical semi-durable products
- Cosmetic packaging and applicators
- Toys

| Property, Test Condition | Standard | Unit | ArcBioX™ A-series Impact resistant PLA based ArcBioX™-grades | | | |
|--|-------------|-------------------|---|--|--|--|
| | | | A1001 Mould 110 °C (Mould 30 °C) | A1005 Mould 110 °C (Mould 30 °C) | A1008 Mould 110 °C (Mould 30 °C) | A2004 Mould 110 °C (Mould 30 °C) |
| Mechanical Properties | | | | | | |
| Flexural Strength, 23 °C | ISO 178 | MPa | 98 (79) | 87 (81) | 85 (80) | 92 (84) |
| Flexural Modulus, 23 °C | ISO 178 | MPa | 3760 (3580) | 3550 (2960) | 3300 (2900) | 3600 (3000) |
| Izod Notched Impact Strength, 23 °C | ISO 180/A | kJ/m ² | 28 (9) | 55 (19) | 55 (17) | 50 (7) |
| Izod Unnotched, 23 °C | ISO 180/U | kJ/m ² | 125 (38) | NB (NB) | NB (NB) | NB (100) |
| Charpy Notched Impact Strength, 23 °C / -30 °C | ISO 179/1eA | kJ/m ² | 30 / - (7 / 5) | 60 / - (20 / 12) | 60 / - (20 / 12) | 62 / 30 (7 / 6) |
| Charpy Unnotched, 23 °C / -30 °C | ISO 179/1eU | kJ/m ² | 130 / - (65 / 62) | NB / - (NB / 90) | NB / - (NB / 94) | NB / NB (NB / 80) |
| Tensile Stress at Yield, 23 °C | ISO 527 | MPa | 50 (47) | 46 (50) | 46 (50) | 50 (50) |
| Tensile Strain at Yield, 23 °C | ISO 527 | % | 2 (2) | 2 (2) | 2 (2) | 2 (2) |
| Tensile Stress at Break, 23 °C | ISO 527 | MPa | 40 (5) | 37 (10) | 30 (7) | 37 (30) |
| Tensile Strain at Break, 23 °C | ISO 527 | % | 13 (>10) | >5 (>5) | >5 (>5) | 12 (>5) |
| Tensile Modulus | ISO 527 | MPa | 3640 (3050) | 3400 (2950) | 3250 (2850) | 3500 (3000) |
| Ball Indentation Hardness | ISO 2039-1 | N/mm ² | 190 / HB 961 (-) | 178 / HB 961 (145 / HB 358) | 178 / HB 961 (155 / HB 358) | 178 / HB 961 (140 / HB 358) |
| Thermal Properties | | | | | | |
| Vicat Softening Temperature VST/B/50 (50N, 50°C/h) | ISO 306 | °C | 90 (-) | 85 (57) | 82 (57) | 85 (57) |
| Heat Deflection Temperature A; (1.8 MPa) | ISO 75 | °C | 64 (-) | 63 (50) | 60 (51) | 60 (51) |
| Heat Deflection Temperature B; (0.45 MPa) | ISO 75 | °C | 100 (53) | 80 (53) | 73 (53) | 70 (53) |
| Other Properties | | | | | | |
| Density | ISO 1183 | g/cm ³ | 1,2 | 1,2 | 1,2 | 1,2 |
| Melt Flow Rate [190 °C & 2.16 kg / 200 C & 5 kg] | ISO 1133 | g/10 min | - / 6 | - / 11 | - / 12 | - / 10 |
| Linear Mould Shrinkage* | ISO 294-4 | % | 1.0-1.3 ¹⁾ | 1.4-1.6 ¹⁾ | 0.1-0.3 | 0.5-0.9 ¹⁾ |
| Biocontent | | | ~88% | ~90% | ~88% | ~90% |
| Food approval** | | | No | No | No | Yes |
| Compostability*** | EN 13432 | | No | No | No | No |

The properties stated above are not for specification purposes.

Values have been measured with samples produced with mould temperature 30°C if not otherwise stated

* Shrinkage value is measured from test part (4x70x150mm) that is moulded at 30°C mould temperature if not otherwise stated. ¹⁾Molded at 110 °C.

** Please contact your ABM Sales or Technical representative for further information

*** Grades are manufactured from certified compostable plastics according to the EN 13432 standard

ABM -World's strongest biodegradable composite materials

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