

Cycolac* Resin SEA2X

Europe-Africa-Middle East: COMMERCIAL

CYCOLAC SEA2X is a high flow, V-0 @ 2.3 mm flame retardant ABS with excellent processability.

| TYPICAL PROPERTIES ¹ | TYPICAL VALUE | UNIT | STANDARD |
|---|---------------|-------------------|--------------|
| MECHANICAL | | | |
| Taber Abrasion, CS-17, 1 kg | 115 | mg/1000cy | SABIC Method |
| Tensile Stress, yield, 5 mm/min | 35 | MPa | ISO 527 |
| Tensile Stress, break, 5 mm/min | 30 | MPa | ISO 527 |
| Tensile Stress, yield, 50 mm/min | 40 | MPa | ISO 527 |
| Tensile Stress, break, 50 mm/min | 35 | MPa | ISO 527 |
| Tensile Strain, yield, 5 mm/min | 2 | % | ISO 527 |
| Tensile Strain, break, 5 mm/min | 5 | % | ISO 527 |
| Tensile Strain, yield, 50 mm/min | 2 | % | ISO 527 |
| Tensile Strain, break, 50 mm/min | 5 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 2300 | MPa | ISO 527 |
| Flexural Stress, yield, 2 mm/min | 62 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 2300 | MPa | ISO 178 |
| Hardness, H358/30 | 84 | MPa | ISO 2039-1 |
| Hardness, Rockwell R | 102 | - | ISO 2039-2 |
| IMPACT | | | |
| Izod Impact, notched 80*10*4 +23°C | 17 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80*10*4 -30°C | 6 | kJ/m ² | ISO 180/1A |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 16 | kJ/m ² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm | 6 | kJ/m ² | ISO 179/1eA |
| THERMAL | | | |
| Thermal Conductivity | 0.2 | W/m-°C | ISO 8302 |
| CTE, 23°C to 60°C, flow | 8.E-05 | 1/°C | ISO 11359-2 |
| CTE, 23°C to 60°C, xflow | 8.E-05 | 1/°C | ISO 11359-2 |

¹ Typical values only. Variations within normal tolerances are possible for various colours. All values are measured at least after 48 hours storage at 230C/50% relative humidity. All properties, except the melt volume rate are measured on injection moulded samples. All samples are prepared according to ISO 294.

² Only typical data for material selection purpose. Not to be used for part or tool design.
³ This rating is not intended to reflect hazards presented this or any other material under actual fire conditions.
⁴ Own measurement according to UL.
⁵ Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

Dongguan Yi-Ming Plastic Chemical Co., Ltd.

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| THERMAL | | | |
| Ball Pressure Test, 75°C +/- 2°C | PASSES | - | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50 | 82 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 85 | °C | ISO 306 |
| HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm | 77 | °C | ISO 75/Be |
| HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm | 69 | °C | ISO 75/Ae |
| Relative Temp Index, Elec | 60 | °C | UL 746B |
| Relative Temp Index, Mech w/impact | 60 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact | 60 | °C | UL 746B |
| PHYSICAL | | | |
| Mold Shrinkage on Tensile Bar, flow (2) (5) | 0.4 - 0.7 | % | SABIC Method |
| Density | 1.21 | g/cm ³ | ISO 1183 |
| Water Absorption, (23°C/sat) | 1 | % | ISO 62 |
| Moisture Absorption (23°C / 50% RH) | 0.2 | % | ISO 62 |
| Melt Flow Rate, 220°C/10.0 kg | 53 | g/10 min | ISO 1133 |
| Melt Volume Rate, MVR at 220°C/10.0 kg | 53 | cm ³ /10 min | ISO 1133 |
| ELECTRICAL | | | |
| Volume Resistivity | >1.E+15 | Ohm-cm | IEC 60093 |
| Surface Resistivity, ROA | >1.E+15 | Ohm | IEC 60093 |
| Dielectric Strength, in oil, 0.8 mm | 35 | kV/mm | IEC 60243-1 |
| Dielectric Strength, in oil, 1.6 mm | 26 | kV/mm | IEC 60243-1 |
| Dielectric Strength, in oil, 3.2 mm | 18 | kV/mm | IEC 60243-1 |
| Relative Permittivity, 50/60 Hz | 2.8 | - | IEC 60250 |
| Relative Permittivity, 1 MHz | 2.7 | - | IEC 60250 |
| Dissipation Factor, 50/60 Hz | 0.003 | - | IEC 60250 |
| Dissipation Factor, 1 MHz | 0.007 | - | IEC 60250 |

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| ELECTRICAL | | | |
| Comparative Tracking Index | 600 | V | IEC 60112 |
| FLAME CHARACTERISTICS | | | |
| UL Recognized, 94V-0 Flame Class Rating (3) | 2.3 | mm | UL 94 |
| UL Recognized, 94-5VB Rating (3) | 2.5 | mm | UL 94 |
| Glow Wire Flammability Index 960°C, passes at | 3.2 | mm | IEC 60695-2-12 |
| Oxygen Index (LOI) | 25 | % | ISO 4589 |

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| PROCESSING PARAMETERS | TYPICAL VALUE | UNIT |
|-----------------------------|---------------|------|
| Injection Molding | | |
| Drying Temperature | 80 - 85 | °C |
| Drying Time | 2 - 4 | hrs |
| Maximum Moisture Content | 0.1 | % |
| Melt Temperature | 180 - 210 | °C |
| Nozzle Temperature | 180 - 200 | °C |
| Front - Zone 3 Temperature | 185 - 205 | °C |
| Middle - Zone 2 Temperature | 185 - 205 | °C |
| Rear - Zone 1 Temperature | 170 - 190 | °C |
| Hopper Temperature | 60 - 80 | °C |
| Mold Temperature | 40 - 80 | °C |

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