



# Redeye

PARTS FOR PROTOTYPE AND PRODUCTION • ON DEMAND

# ABSi

Methyl methacrylate-acrylonitrile-butadiene-styrene copolymer



Redeye is the only company that gives engineers the ability to manufacture real ABSi industrial thermoplastic parts direct from digital files. ABSi parts can be used from conceptual prototyping through design verification through direct digital manufacturing. Its strength is superior to ABS and the translucent nature of ABSi is beneficial for monitoring material flow and light transmission, most commonly used for medical and automotive applications. When combined with FDM (Fused Deposition Modeling) systems, ABSi gives you Real Parts™ that are visually unique, dimensionally accurate, durable and hold shape over time.

| Mechanical Properties <sup>1</sup> | Test Method | Imperial     | Metric    |
|------------------------------------|-------------|--------------|-----------|
| Tensile Strength                   | ASTM D638   | 5,400 psi    | 37 MPa    |
| Tensile Modulus                    | ASTM D638   | 277,700 psi  | 1,915 MPa |
| Tensile Elongation                 | ASTM D638   | 3.1 %        | 3.1 %     |
| Flexural Strength                  | ASTM D790   | 8,830 psi    | 61 MPa    |
| Flexural Modulus                   | ASTM D790   | 264,000 psi  | 1,820 MPa |
| IZOD Impact, notched               | ASTM D256   | 1.9 ft-lb/in | 101.4 J/a |
| IZOD Impact, un-notched            | ASTM D256   | 4.1 ft-lb/in | 218.9 J/a |

| Thermal properties                    | Test Method | Imperial                     | Metric                        |
|---------------------------------------|-------------|------------------------------|-------------------------------|
| Heat Deflection Temperature @ 66 psi  | ASTM D648   | 188° F                       | 87° C                         |
| Heat Deflection Temperature @ 264 psi | ASTM D648   | 163° F                       | 73° C                         |
| Glass Transition Temperature (Tg)     | DMA (SSYS)  | 240° F                       | 116° C                        |
| Coefficient of Thermal Expansion      | ASTM D696   | 6.7x10 <sup>-6</sup> in/in/F | 12.1*10 <sup>-5</sup> mm/mm/C |
| Melt Point                            | -----       | Not Applicable <sup>2</sup>  | Not Applicable <sup>2</sup>   |

| Other                | Test Method | Imperial |
|----------------------|-------------|----------|
| Specific Gravity     | ASTM D792   | 1.08     |
| Rockwell Hardness    | ASTM D785   | R108     |
| Flame Classification | UL 94       | HB       |

**APPEARANCE:** translucent (natural), red translucent and amber translucent.

**APPLICATIONS:** automotive lenses or other applications where transparency is required.

### BENEFITS of Direct Digital Manufacturing:

- Multiple design iterations -design engineers have the flexibility to modify geometry's while in production, which incurs cost and time penalties when tooling starts
- Bridge manufacturing - rapid manufacturing allows you to start production while waiting for your tool to build
- Jigs and Fixtures - Use additive fabrication as a light-weight, lower cost tool for assembly and manufacturing aids during the production of your parts
- Just-in-time or lean manufacturing - DDM can conserve cash flow for manufacturers
- Alpha and Beta product releases - produce accurate, durable products during the early design validation stages - even if you already committed to tooling

*The information presented are typical values intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. End-use material performance can be impacted (+/-) by, but not limited to, part design, end-use conditions, test conditions, etc. Actual values will vary with build conditions.*

<sup>1</sup> Build orientation is on side edge. <sup>2</sup> Do to amorphous nature, material does not display a melting point.

For more information about Redeye services and materials, contact your representative at +1 866-882-6934 or visit [www.redeyeondemand.com](http://www.redeyeondemand.com)

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