

The Need for Improved Chemical Resistance

Durable Materials for Medical Device Housings and Hardware



With over 50 years of polycarbonate manufacturing experience in the medical devices industry, you can rely on us for excellent technical expertise and support. Our focus on innovation is addressing unmet needs in the market including chemical resistance.



Selecting the right material to withstand aggressive disinfectants

Healthcare facilities are increasing their cleaning and decontamination measures to help protect patients and staff against Hospital Acquired Infections (HAIs) and viruses such as those that cause COVID-19. With this in mind, it's important for medical device manufacturers to understand which disinfectants are most compatible with the materials used in the housings and hardware of their medical devices.

A broad portfolio of chemical resistance solutions

Covestro offers a range of materials for medical device housings and hardware. Our materials have excellent chemical resistance, superior rigidity, impact strength, and higher heat resistance than FR-ABS and FR-Copolyesters. Our new Makrolon® and Makroblend® materials meet more stringent UL requirements than other FR resins.

Covestro products for medical device housings

| | Makroblend® M4000 FR | Makroblend® M5005 FR | Makrolon® M6011 FR |
|--|----------------------|----------------------|--------------------|
| Polymer Type | PC + Polyester | PC + Polyester | PC |
| Shrinkage (%) | 0.7-0.9 | 0.7-0.9 | 0.6-0.8 |
| UL 94 Rating ¹ | V-0 @ 2.0mm | V-0 @ 2.4mm | V-0 @ 1.5mm |
| Skin Contact Biocompatibility ² | Yes | Yes | Yes |
| Next Generation FR | No | Yes | Yes |

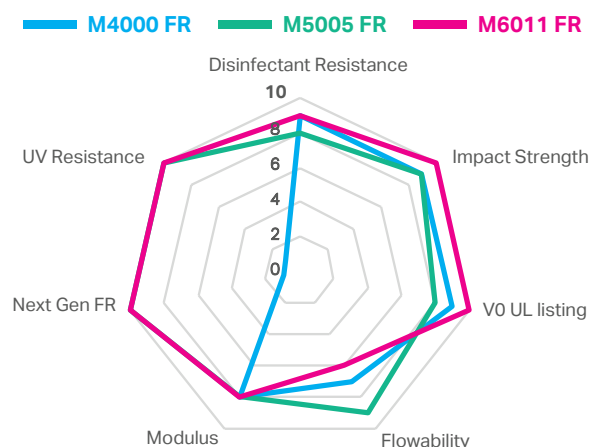
¹ For further details consult the product Yellow Card at UL.com

² Meets the testing requirements of ISO 10993-5 (Cytotoxicity) and ISO 10993-10 (Irritation and Sensitization)

Covestro offers plastics that are...



Top Covestro Products



Chemical Resistance

| | Makroblend® M4000 FR | Makroblend® M5005 FR | Makrolon® M6011 FR | Bayblend® FR 3010 |
|--|----------------------|----------------------|--------------------|-------------------|
| CaviCide® | R | R | R | R |
| Clorox Healthcare® Bleach Germicidal Wipes | R | R | R | R |
| Lysol® Disinfecting Wipes (Lemon and Lime) | R | R | R | R |
| Opti-Cide3® Surface Wipes | R | R | R | R |
| Oxivir® Tb | R | R | R | N |
| Sporicidin® | R | R | R | R |
| Super Sani-Cloth® Germicidal Wipe | R | R | R | R |
| Sani-Cloth HB | L | L | L | N |
| Virex® II 256 | R | R | R | R |

R = Resistant, L = Limited resistance, N = Not resistant

ASTM D638 Type I tensile samples were continuously subjected to wet cleaners for 24 hours at room temperature at flexural strains ranging from 0.6% to 1.0%. Pass criteria were absence of visual cracking, >98% retention of tensile strength and Yield in a ductile way, with full neck formation and >9% nominal elongation-at-break, referenced to control samples held at the same strain but not subjected to clean

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