

BIORES-SILICONE



Ideal for parts that need to withstand flexing, compression, and bending.

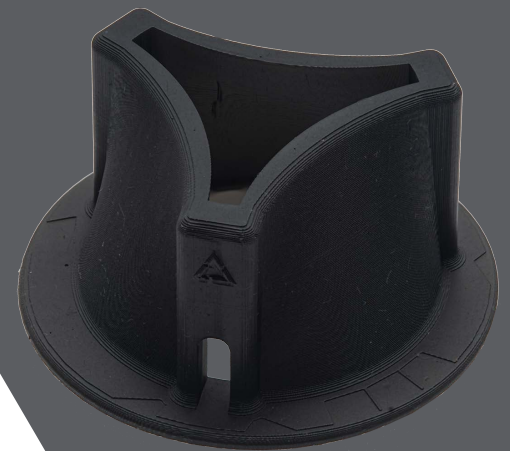


Offering a combination of biocompatibility, high precision, surface finish, and tear resistance, our medical-grade silicone is ISO 10993 approved for prolonged skin contact of up to 30 days.

Even through repeated cycles, Resilient-Silicone resin will spring back quickly its original shape.

KEY FEATURES

- Elastomeric
- Tear resistant
- Quick return
- Durometer of 65-70 Shore A



BIORES-SILICONE B9R-BIO-SIL

	METRIC	IMPERIAL	METHOD
TENSILE PROPERTIES			
Tensile Strength	3.3 MPa	.48 ksi	ASTM D412
Tensile Modulus	1.6 MPa	.23 ksi	ASTM D638-14
Tear Strength	11.4 kN/m	8408.21 lbf/ft	ASTM D624-C
Elongation at Break	205%	205%	ASTM D638-14
TEMPERATURE PROPERTIES			
Glass Transition (Tg)	-58 °C	-72.4 °F	DSC
SHORE "A" HARDNESS			
	65-70	65-70	ASTM D2240
COMPRESSION SET			
72 hrs @ 23 °C	2.3%	2.3%	ASTM D395-B
72 hrs @ 70 °C	1.1%	1.1%	ASTM D395-B
REBOUND RESILIENCE			
16" Drop Height	13%	13%	ASTM D2632
VISCOSITY			
	3150 CPS @ 25 °C	3150 CPS @ 77 °F	
SPECIFIC GRAVITY			
	1.03	1.03	ASTM D792

BIORES-SILICONE B9R-BIO-SIL

BIORES-SILICONE is a monomer based on acrylic esters which may be suitable for a range of 3D printed medical applications. The product has been tested according to ISO 10993-5 and 10993-10 guidelines for prolonged skin contact applications up to 30 days.

Instructions for Use

PPE: Use nitrile gloves, protective jacket and protective lenses.

Resin Preparation: Prior to printing, shake the bottle of resin for 2 minutes and then pour into the vat and stir for an additional 2 minutes to make sure the liquid is uniform.

3D Printing: Pour liquid resin into the resin vat of your B9Creations 3D printer. Choose your material layer thickness. Print.

Cleaning:

Note: The clean unit should be a designated ultra clean unit with fresh isopropyl alcohol (IPA) and all tools (spatulas tweezers and anything used to handle the print) should be precleaned with fresh IPA. Sample is printed and prior to curing, cleaned in fresh IPA. The details are described below.

Precure Cleaning

1. Scrape off excess resin from the build table with a clean rubber spatula (print remains on the build table)
2. Clean the printed samples on the build table in the B9Clean XL unit, using a dedicated "ultra clean" unit for the bio-resin with fresh IPA for the standard clean cycle (10 minutes)
3. Remove samples from build table, place in mesh basket and repeat clean cycle

Biocompatibility Testing

Resin printed and processed as outlined in this document has been tested in accordance with ISO 10993-5:2009, Biological evaluation of medical devices - Part 5: Tests for in vitro cytotoxicity, and ISO 10993-10:2010, Biological evaluation of medical devices - Part 10: Tests for irritation and skin sensitization (GPMT). Biores-Silicone passed the requirements for biocompatibility according to the above tests. If tested according to the procedures above the material does not contain leachable substances that may cause cytotoxicity. B9Creations makes no representation and is not responsible for the results of any biocompatibility tests other than those specified above.

DISCLAIMER

Biocompatibility results may vary if protocols are used other than those outlined in this document Do not use Biores-Silicone in medical applications involving implantation in the human body or contact with body fluids or tissues. B9CREATIONS LLC. MAKES NO REPRESENTATION, WARRANTY OR IMPLIED WARRANTY CONCERNING THE SUITABILITY OF THESE MATERIALS FOR USE IN THE IMPLANTATION IN THE HUMAN BODY OR IN CONTACT WITH BODY FLUIDS OR TISSUES. IT IS THE SOLE RESPONSIBILITY OF THE MANUFACTURER OF THE END-USE-PRODUCT TO DETERMINE THE BIOCOMPATIBILITY OF ALL PRINTED PARTS FOR THEIR RESPECTIVE USES.

Please see the product SDS for further regulatory and safety information.

4. Remove samples from clean unit

5. Place samples in small container and detail clean with fresh IPA in a squirt bottle, swirl samples in container as needed to remove any uncured resin and make sure that all resin has been removed from holes and corners of the parts

6. Carefully pat dry and place on clean paper towel then allow to completely dry

Post Curing:

Immerse the Part in DI water and post cure the Part in B9Creations Model Cure XL for 30 minutes. Flip the part over halfway through the curing time, 15 minutes.

Curing Procedures:

Adjust the light intensity to level 16.

Adjust the duty cycle to level 10.

Adjust the working time to 30 minutes.

Biocompatibility Processing:

1. Remove the parts from the post cure unit and blot dry with absorbent paper or cloth. Fully submerge in fresh 50% isopropyl alcohol/water for 2 hours such that there is at least 25 mm of 50% alcohol/water above the parts. Agitation is not required.

2. Remove the parts from the isopropyl alcohol. Submerge the parts in a bath of fresh deionized water for 30 minutes.

3. Remove the parts and air dry.