

# Innovation Case

## Silbione® Biomedical ADH1 M200 - Implantable Grade Adhesive

Silbione

### The Challenge

The healthcare industry is quickly growing and ever-changing. Innovation is being driven by advancements in scientific research, therapeutic discoveries, regulatory requirements, emerging global economies, and a shift to value-based payment systems. As a result, Medical Device and Pharmaceutical developers are designing new technologies and drug delivery methods to be more efficient and/or effective than traditional routes.

These innovative devices often utilize a combination of components made from various materials to achieve their unique functionalities. Designers are challenged with finding adhesive solutions that can provide strong bonding to a variety of materials, fast cure and simplified manufacturing processes to improve productivity and reduce cost, and support the device regulatory compliance now and the future.



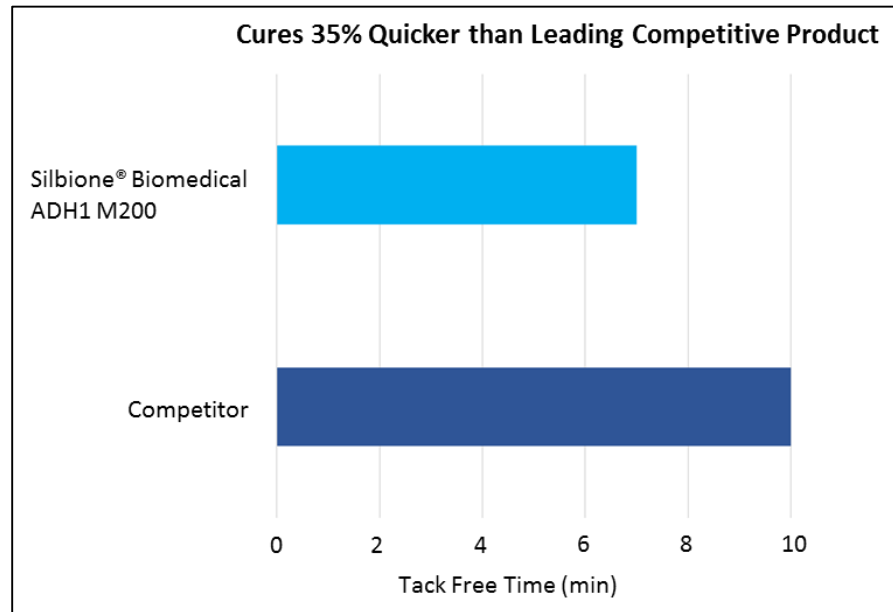
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### What Our Experts have accomplished

To help engineers overcome these challenges, our technical experts developed Silbione® Biomedical ADH1 M200, a single-component silicone adhesive that is specifically designed for implant applications. This adhesive is capable of forming high strength elastic bonds to silicone, polyester, metals, polyurethane, and other substrates. It cures faster than the leading competitive product under ambient conditions without the need for a heat or humidity chamber, and contains no tin, solvents or plasticizers.



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### Results

Our experts tested the adhesive performance of Silbione® Biomedical ADH1 M200 on variety of substrates with different surface preparation. Cohesive failure is the desired outcome where the coupling of the adhesive and the substrate is stronger than the adhesive itself. With Silbione® Biomedical ADH1 M200, one can successfully couple the substrates with no surface treatment or any one of the treatment options shown below .

Comparison of adhesion results using various methods of surface preparation and Silbione Biomedical ADH1 M200

Substrate	No Surface Treatment	OpenAir Plasma	Silbione M&P Primer	Plasma + Primer
Thermoplastic Polyurethane Substrates				
Carbothane PC 3572 D	Cohesive	Cohesive	Cohesive	Cohesive
Pellethane 2363-75D	Cohesive	Cohesive	Cohesive	Cohesive
Pellethane 2363-90A	Adhesive	Adhesive	Cohesive	Cohesive
Tecothane 1075-75D	Adhesive	Cohesive	Cohesive	Cohesive
Tecothane Soft AR62A	Adhesive	Adhesive	Cohesive	Cohesive
Tecoflex RG-80A	Adhesive	Adhesive	Cohesive	Cohesive
Metallic Substrates				
Aluminum	Adhesive	Cohesive	Cohesive	Cohesive
Stainless Steel	Adhesive	Cohesive	Cohesive	Cohesive
Titanium	Adhesive	Cohesive	Cohesive	Cohesive
Silicone Substrates				
Silbione HCRA 4150	Cohesive	Cohesive	Cohesive	Cohesive

Silbione Biomedical ADH1 M200 was successfully bonded to each of the substrates.



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### Silbione® Biomedical Grade Silicones

Silbione® Biomedical grade silicones meet the highest standards, complying with the Elkem Silicones Quality Management System.

### Biocompatibility

The biocompatibility of Silbione® Biomedical grade silicones is tested according to applicable ISO 10993/USP Class VI procedures.



Silbione® implant grade silicones are also given full Master-file Support through Device Master Access Files (MAF) at the FDA Center for Devices and Radiological Health (CDRH).

For more information, [contact our experts!](#)