

# MULTI-YEAR CHALLENGE RESOLVED IN ONE HOUR

"You've done more for us in a single meeting than your competitors have done in the last five years combined. I wish we had found you sooner!"

## Bentec Resolves in 1 Hour OEM's 5-Year Struggle to Develop Viable Silicone Prototype

A medical device OEM had been working unsuccessfully for 5 years with a variety of competing silicone fabricators that could not meet the customer's technical specifications for a gas permeable silicone bag. Despite many years of effort, none of the competing suppliers' prototypes were thin enough to be gas permeable, strong enough to withstand a pressure test, smooth enough to easily fill with fluid or large enough to match existing industry sizes.

### The Customer's Challenge

Develop a silicone bag with a permeable wall membrane that allows trapped gasses to escape from the biofluid inside the bag, combined with the tensile strength while full of the biofluid to withstand a IO-foot drop test from multiple angles without rupturing.

#### The Bentec Solution

To address this challenge, Bentec worked within the customer's existing product validation framework and applied its proprietary silicone material science engineering expertise to generate a product solution exceeding the customer's expectations, based upon the following results:

### I. Achieved 50% Performance Improvement in Gas Permeability

In initial prototyping, Bentec produced a bag with a wall thickness that was consistently 90% thinner than competing suppliers' prototypes. After multiple iterations to find the optimal mix of gas permeability and drop-test strength, the customer eventually approved a bag with a wall thickness that was 70% thinner than competing suppliers' prototypes. Such significant reductions in wall thickness allowed Bentec to exceed the customer's goal for residual gasses retained in the fluid by 50%.

### 2. Achieved 250% Increase in Bag Size and Tensile Strength

Bentec was able to match the size of existing industry products with a bag that was 250% larger than competing suppliers' prototypes and therefore significantly heavier while full of fluid, yet still able to withstand a IO-foot drop test from multiple angles without rupturing.

#### 3. Compressed Development Time by 99.9% Bentec developed a working prototype extremely quickly, achieving in only one hour what compet-

ing suppliers could not achieve in five years.

4. Provided Valuable Assistance with Final Assembly

Through our proprietary silicone material science expertise, Bentec helped the customer develop and refine its own processes for final assembly.

#### Conclusion

If a customer has already committed substantial time and resources toward a chosen product



- Exceeded customer's performance standard by 50%
- Product 250%
  larger and stronger
  and 70% thinner
  than competition
- Commercial-grade prototype developed in 1 hour
- Final assembly expertise provided

validation path, Bentec can work within these predetermined parameters and help get their project back on track.

The improvements noted above to the gas permeable silicone bag represent just one of several recent examples whereby Bentec has helped OEM's exceed performance standards, improve quality, reduce costs and compress development time for their medical devices. Our decades of experience in silicone material science engineering and our industry-leading breadth of silicone fabrication capabilities have given us the opportunity to become a strategic business partner to our valued OEM customers.

Find out how we can exceed your expectations at **www.bentecmed.com**.

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#### **Product Development Time:** Bentec vs. The Competitors

