TERVES
ENGINEERED RESPONSE

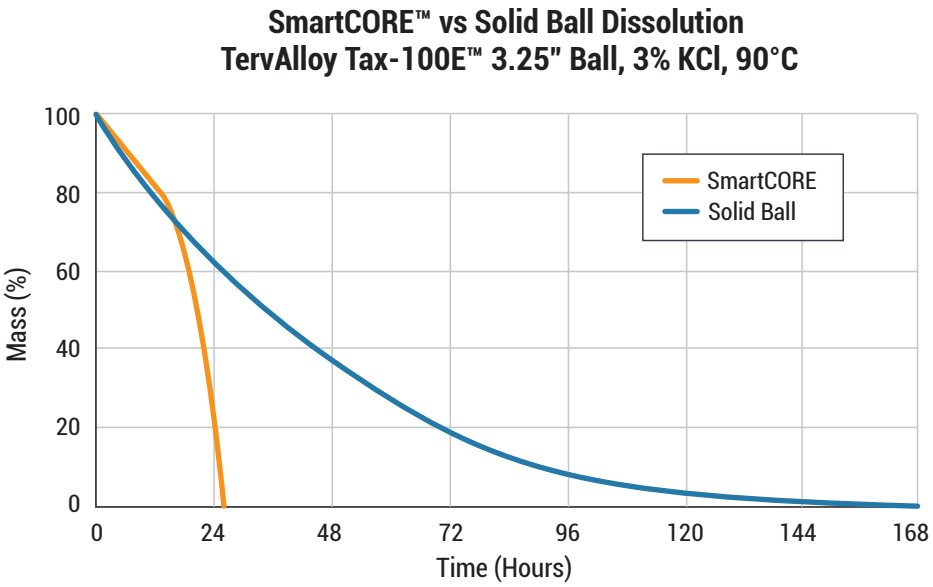
DATASHEET
SmartCORE™ FRAC BALLS

PRODUCT DESCRIPTION: DISSOLVABLE ALLOY FRAC BALLS

SmartCORE™ Frac Balls are created from Terves' patent-pending **DissolvAssist™** technology, allowing the creation of a truly *intelligent* dissolving frac ball. SmartCORE™ dissolvable frac balls are designed to hold pressure while fracking a stage and then quickly dissolve to allow faster well "communication" while greatly reducing or eliminating solid byproduct normally created by dissolvable frac balls.

SmartCORE™ Advantages

- Reduces or eliminates dissolution sensitivity to water source (brine, freshwater, brackish water, temperature)
- Accelerates removal and ensures complete dissolution
- Can greatly reduce or eliminate formation of solid byproducts, such as Magnesium Hydroxide



Dissolution Studies: Comparative studies were done to analyze the impact of the SmartCORE™ design on frac ball dissolution performance. 3.25" frac balls were dissolved in a 3% KCl solution at 90C until full dissolution was observed. The SmartCORE™ design showed a greater than 6 times faster full dissolution time compared to solid frac balls, 26 hours to full dissolution vs 167 hours for solid balls*.

**Typical solid ball dissolution profile*

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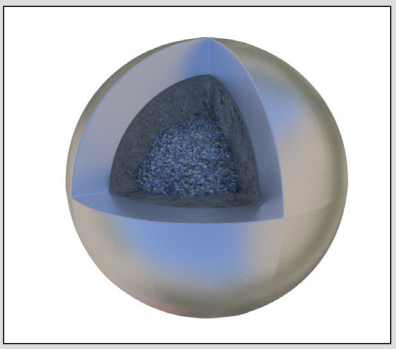

SmartCORE™ Frac Ball

A sample of Terves' dissolvable Alloy, **TervAlloy**, was dissolved in a 3% KCl solution and compared to a sample dissolved using **SmartCORE™** technology. The resulting solid byproduct is greatly reduced in the SmartCORE™ sample on the right versus the control sample on the left.

Part No. SC011619

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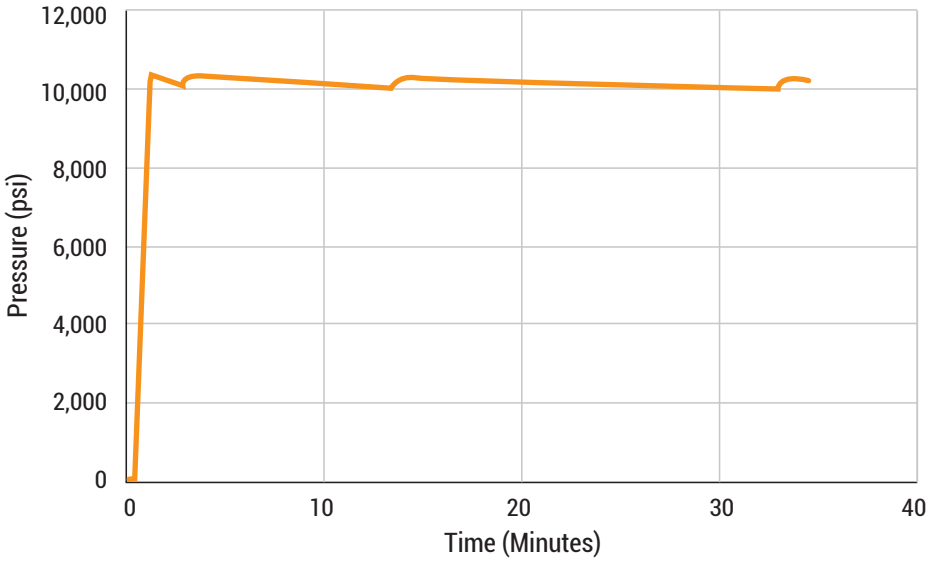
SmartCORE™, TervAlloy Tax-100E™
3.25" Ball, 3.00" x 30° Seat, Ambient Temperature



On-Seat Pressure Studies: SmartCORE™ frac balls were shown to have comparable on-seat pressure performance to solid dissolvable frac balls. Balls of 3.25" diameter were placed on a 3.00", 30 degree seat and pressurized to 10,000 psi at ambient temperatures. The SmartCORE™ balls held pressure for 30+ minutes before tests were manually ended.

DISCLAIMER: The information provided in this document is intended to assist manufacturers and specifiers in the selection and use of Terves' products. All data noted should be understood to be average and expected performance, and is provided to serve as a general guideline only. This information **does not represent and is not to serve as minimum specification standards.** For further information contact Terves directly. All Terves commercially available products have patents or patents pending in the United States and in a variety of countries. For the latest patent information on this specific product contact Terves directly.

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