



# PERF SEALERS®

Get more ball action



**Seal more perforations** The Zeroln™ lightweight, dissolvable ball sealer is launching a new era in the oilfield. Now, you can seal more perforations with significantly greater ball action to divert stimulation fluids in vertical or horizontal wells. The traditional, heavier, dissolvable ball sealer is considerably less efficient.

Our patent-pending, 0.9-, 1.0-, and 1.1-low specific gravity (SG) ball sealer—comprised of water-soluble or acid-soluble polymer with glass-bead microspheres—offers superior fluid diversion. In vertical wells, you can optimize efficiency compared with a rubber-coated neoprene (RCN) ball sealer that becomes stuck in perforations, requiring a scraper run, or causing you to recapture the balls at surface. In horizontal wells, our technology offers two greater efficiency factors. Our lightweight ball sealer travels farther into the lateral and maximizes the number of sealed perforations, regardless of their orientation.

We've engineered an industry-exclusive ball sealer that plugs more perforations, holds pressure, and dissolves within hours, improving well treatment or well completion performance.

[www.perfsealers.com](http://www.perfsealers.com)

## Increase Ball Sealer Efficiency

	ZeroIn lightweight, dissolvable ball sealer	Traditional dissolvable ball sealers
Specific gravity	0.9 to 1.1	1.2 to 1.3
Vertical wells: average blocked perforation efficiency in water	> 55%; 0.9 SG	< 20%
Horizontal wells: average blocked perforation efficiency in water	> 70%; varying SG	< 30%; single SG
Horizontal wells: average ball velocity	Same as carrier fluid velocity	Minimum 50 ft/min <sup>1</sup>

### Look for the pressure spike

Waiting to see the pressure spike on a ball job can be a frustrating experience. We know because we've been there. That is why we invented this lightweight dissolvable ball sealer that meets your performance standard in vertical and horizontal wells. Our 0.9-SG lightweight or floating ball is best in a vertical well (Figure 1). A combination of our 0.9-SG, 1.0-SG, and 1.1-SG ball sealers is best in a horizontal well because of the perforations' varying orientation (Figure 2).

#### Ball Sealer SG vs. Blocked Perforation Percentage Vertical Wells

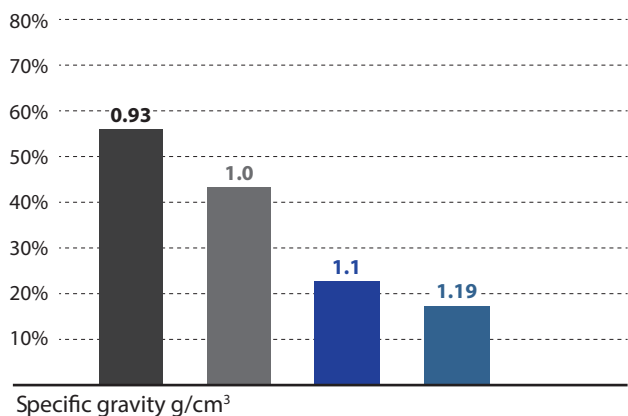


Figure 1: Test using 30 ft, 6.094-in. pipe (ID) with 120 perforations at 4 shots/ft with an average total flow rate of 2, 4, and 6 bpm in water.<sup>1</sup>

#### Ball Sealer SG vs. Blocked Perforation Percentage Horizontal Wells

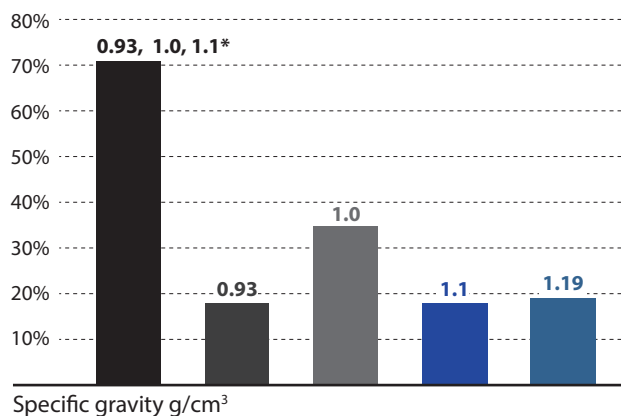


Figure 2: Test using 30 ft, 6.094-in. pipe (ID) with 120 perforations at 4 shots/ft with an average total flow rate of 2, 4, and 6 bpm in water. \*This total calculates the cumulative blocked perforations using 25% of 0.93-SG ball sealers, 50% of 1.0-SG, and 25% of 1.1-SG.<sup>1</sup>

For more information about our ZeroIn lightweight, dissolvable ball sealer's greater ball action that seals more perforations, please call us at 844-277-7373 or email: [csr@perfsealers.com](mailto:csr@perfsealers.com).

[www.perfsealers.com](http://www.perfsealers.com)