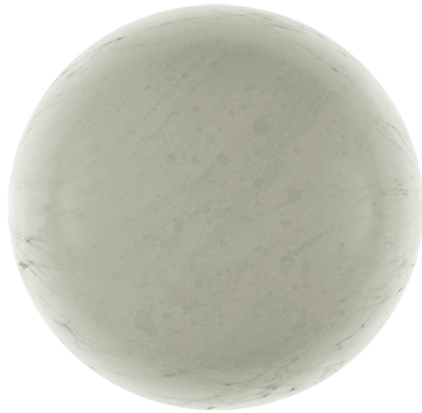


# 1.0 SG ZeroIn-MT™

## Dissolvable Ball Sealer - Medium Temperature



### Optimize Fluid Diversion and Enhance Stimulations

The near-buoyant ZeroIn-MT lightweight dissolvable ball sealer will temporarily seal perforations designed to seat on the center of the casing in horizontal/deviated wells. Vertical wells will provide the best ball action in lower rate stimulations.

#### Applications

- Plug open perforations for cleaning scale and paraffin
- Improve stimulation by diverting fluid to lower-permeability zones
- Help manage fluid in hydraulic fracturing stages and refracs

#### Features

- Compatible with standard stimulation fluid additives
- Dissolves in freshwater, brine, and acid
- Differential pressure tested with fluid up to 4000 psi [27.6 Mpa] and 200 °F [93 °C]

#### Benefits

- Maximizes perforation sealing in horizontal wells by matching the ball sealers to the specific gravity of the fluid
- Greater ball transport efficiency in horizontal laterals verse the traditional heavier (1.2 to 1.4 SG) ball sealers
- Quickly dissolves in hours after stimulation or fracturing stages
- Completely biodegradable material

### Properties

**Temperature range** 75 - 200 °F [24 - 93 °C]

**Appearance** White

**Specific gravity** 1.0 +/- 0.05

**Solubility** Compatible with freshwater, brine, and acid; incompatible with nonpolar solvents, such as diesel, benzene, xylene, kerosene, toluene

**pH fluids** 0–12

**Storage** Keep product away from moisture; do not expose to temperature higher than 130 °F [54 °C]

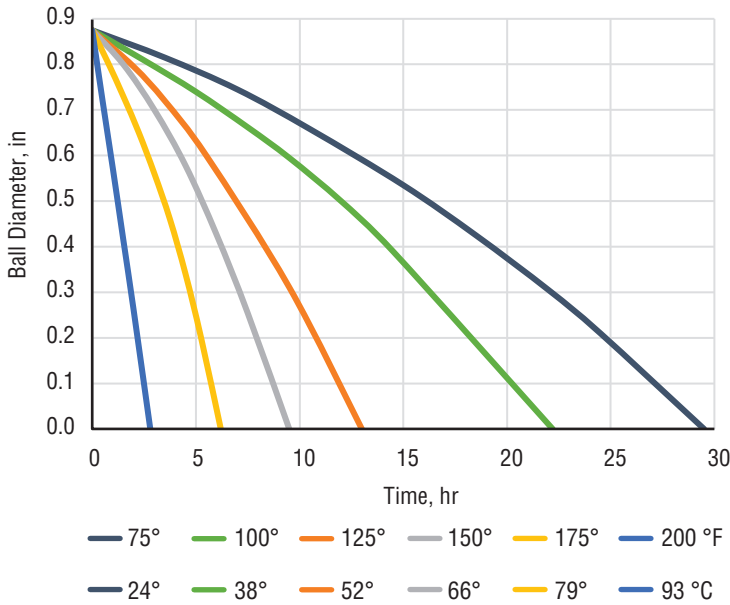
**Size** 0.50 in [13 mm]; 0.625 in [16 mm]; 0.875 in [22 mm]; 1.0 in [25 mm]; 1.25 in [32 mm]

Please soak the 1.0 SG ZeroIn-MT ball sealer in mineral oil, which prevents clumping, before inserting into the gun launcher.

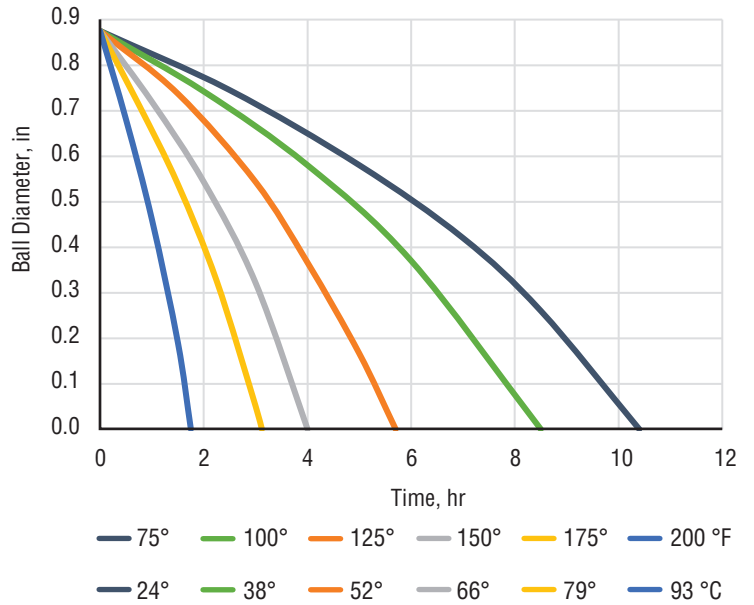


# Dissolvability Rates vs. Time

Dissolvability Curves in 2% Potassium Chloride (KCL)  
1.0 SG Zeroln-MT 0.875 in [22 mm]



Dissolvability Curves in 15% Hydrochloric Acid (HCL)  
1.0 SG Zeroln-MT 0.875 in [22 mm]



## Perforation Sealing Differential Pressure ( $\Delta P$ ) Sealing Time in Fluid vs. Temperature

Temp °F [°C]	$\Delta P$ Sealing Time* (Hours)			
	2% KCL		15% HCL	
	500 psi [3.45 Mpa]	1000 psi [6.9 Mpa]	500 psi [3.45 Mpa]	1000 psi [6.9 Mpa]
75 [24]	15	13	6.0	5.0
100 [38]	12	10	4.8	4.0
125 [52]	8.1	6.7	3.3	2.8
150 [66]	5.6	4.6	2.2	1.9
175 [79]	3.5	2.9	1.8	1.5
200 [93]	2.1	1.8	1.2	1.0

\* Time based on 0.875 in [22 mm] ball diameter capable of sealing a perforation size of 0.40 in [10 mm]

For more information about our 1.0 SG Zeroln-MT medium-temperature, dissolvable ball sealer that increases fluid efficiency, please **call us: 844-277-7373** or **email: [csr@perfsealers.com](mailto:csr@perfsealers.com)**.

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