

WRAITH™ Frac Ball



Phenom's patent pending Wraith Frac Ball is a metallic dissolvable frac ball designed to provide zone-successive isolation for frac plugs, frac sleeves and static isolation subs.

Its high shear strength allows it to maintain integrity and isolation during high pressure fracturing and the Wraith Frac Ball dissolves at controllable and predictable rates to allow production from all treated zones.

Cast and machined from an aluminum base, the Wraith Frac Ball's high shear strength is excellently suited to High Pressure, High Temperature and Horizontal/Extended Reach applications.

The Wraith Frac Ball only requires exposure to **Fresh, Salt, or Produced** water at temperatures above 100° F to begin dissolving, however faster dissolve rates may be achieved through the addition of corrosive fluids and/or an increase in temperature.

Phenom has developed an empirically proven equation which accurately and reliably predicts the dissolve rate of the Wraith Frac Ball in water based on its (compound and physical) properties and specific bottomhole temperatures.

Phenom offers two versions of the Wraith Frac Ball, **Solid & Hollow**, each currently available in five different formulations to accommodate a variety of operator requirements: **Compounds A, B, C, D & E**.

Applications

High Pressure Fracturing
Operations - Up to 10,000 psi*
High Temperature Fracturing
Operations - Up to 350° F
Vertical, Horizontal and Extended
Reach Wellbores

Features

Specific Gravity: Solid 2.7, Hollow **1.8-2.2**
Build Tolerance: ± 0.0025"
Solid version available in sizes ranging
from 0.50" - 5.00" (Standard 0.125"
increments)
Hollow version available in sizes ranging
from 3.00" - 5.00" (Standard 0.125"
increments)
Additional Metric / Imperial sizes
available on request.

Benefits

High shear strength*.
Dissolves with exposure to Fresh, Salt,
or Produced H₂O at temperatures above
100° F to allow for production from all
zones.
Dissolve rates can be increased through
the operator's additive of choice.

**Based on 0.090" seat interference. Contact your sales representative for details.*

Need a custom spec'd Wraith Frac Ball?
Contact us to discuss your requirements.

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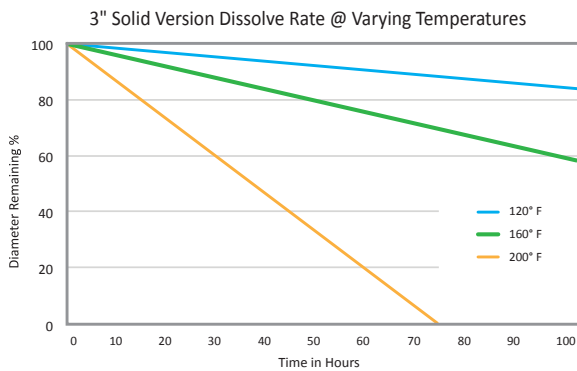
Phenom recommends using a specific Compound profile Wraith Frac Ball based on the end user's required temperature rating.

Each Compound achieves its **Optimum Dissolve Rate*** in H₂O at varying temperatures, thus are better suited to different applications.

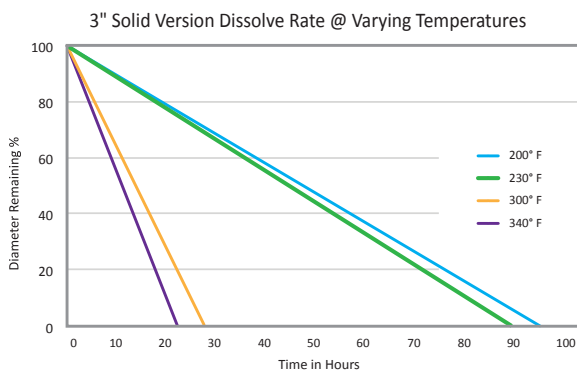
We can develop custom Compound formulations to achieve a desired dissolve rate at a specific temperature. Contact us to discuss your special order requirements.

**Determined from actual material testing in fresh H₂O.*

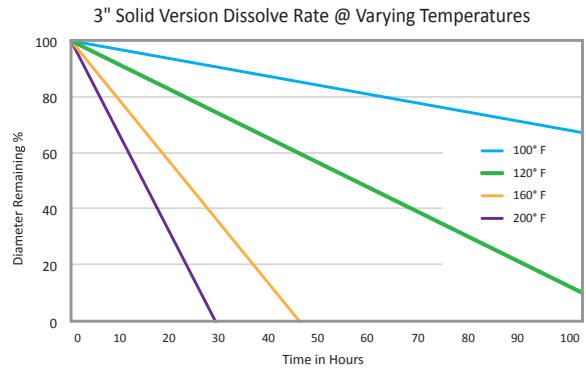
Compound B



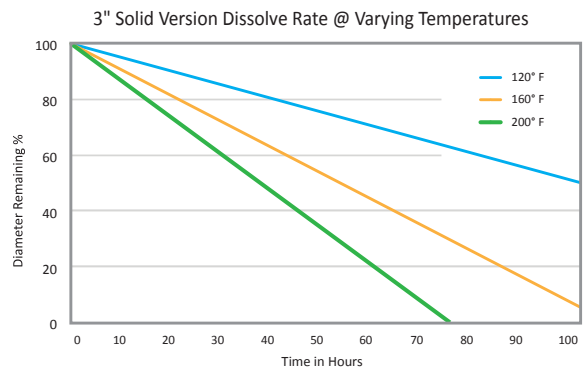
Compound D



Compound A



Compound C



Compound E

