

WaterSafe AR

Technical Data Sheet

Water Safe AR is a safe yet functional replacement for traditional hydrochloric acid treatments and other commonly used water well treatments. It is non-regulated by US DOT, Canadian TDG and carries a triple zero hazardous materials information system score. Water Safe AR biodegrades in 10 days or less and is approved by the US EPA as a Designed for the Environment product. Our standard Water Safe AR formula includes iron control agents, de-mulsifiers and requires no organic acid additions or corrosion inhibitors under most conditions.

FEATURES AND BENEFITS:

- An excellent choice for fracs, spearhead treatments, injection wells and disposal wells and annular soaks
- Requires no organic acid additions to help retard reaction rates
- Standard formula includes surfactant and de-mulsifier system
- Requires no iron control agent addition for most applications
- EPA DfE formula; biodegradable in 10 days or less; approved for direct discharge; made with Cleangredients and DfE ingredients approved by the EPA
- Safe on most metals, piping and pumping equipment
- Non toxic; non fuming; non mutagenic; no VOC's
- No secondary containment required as per Chapter 62-761F.A.C.
- Eliminates foulants
- An excellent choice for work-over projects, bullhead treatments and cement remediation
- Requires no additional corrosion inhibitor step for most applications
- 100% biodegradable, acid free and naturally inhibited

TYPICAL PHYSICAL PROPERTIES:

Appearance and Color	Colorless to slight yellow liquid
Initial Freeze Point	-24.88°F (-31.6°C)
Odor	Odorless to mild soapy odor
Solubility in water	100%
Flashpoint	None
Specific Gravity	1.152 ± 0.04

DIRECTIONS FOR USE:

Recommended Dilution Rates: 30-100% with H₂O based on the severity of the build-up and the reaction rate required for the project.

Note: Water Safe AR concentrate contains iron control agents and de-mulsifiers. No organic acid or corrosion inhibitors are required due to the power of our patented Syntech®.

A typical ratio for an acid frac is one part Water Safe AR and one part H₂O. Blending ratios may vary based on specific applications and recommendations from your consultants at Heartland Energy Group, Ltd.

STORAGE AND HANDLING:

Water Safe AR has a storage life of better than one year. Keep container closed when not in use. As with all chemical products and materials, take care as to where you store them. Safety glasses are suggested for use when handling this product. No special gloves or protective equipment are required when handling this product.

When pumping this product, it is strongly recommended to use manufacturer approved hose couplings or fittings. **DO NOT USE ALUMINUM FITTINGS.** 316 Stainless Steel, polypropylene, polyethylene are recommended.

PACKAGING:

Water Safe AR is shipped in bulk tanker trucks from the manufacturing facility. Smaller packaging quantities are available upon request.

DISSOLVING PROPERTIES

ACID TYPE	% CaCO ₃
Water Safe AR 100% Solution	100.00%
Water Safe AR 50% - 1050 Blend	96.76%
Water Safe AR - 1030 Blend	54.00%
7 ½ HCl	46.48%
15% HCl	87.39%
7 ½ HCl + 100 gpt of 85% Acetic Acid	75.08%
15% HCl + 100 gpt of 85% Acetic Acid	97.87%
10% Acetic Acid	21.00%
15% Acetic Acid	63.09%

Each test above was conducted with 1 cubic inch of material placed in 50 ml of solution and allowed to soak for 8 hrs at 100°F.

Recommendations given in this data sheet are based on tests believed to be reliable. However, the use of the information is beyond the control of Heartland Energy Group, Ltd., and no guarantee, expressed or implied is made to the results obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage from the misuse of the product as such, or in combination with other materials. This bulletin is not to be taken as a license to operate under or recommendation to infringe any patent.

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