

WaterSafe60®

Technical Data Sheet

POTABLE WATER SAFE, ACID FREE WATER TREATMENT, WELL SERVING/DRILLING AID

WaterSafe60® is an environmentally friendly and fully functional replacement for traditional acids commonly used in water treatment, well servicing, and drilling.

- Well Cleaning Aid

- Descaler

Until now, the only effective way to reduce the pH of your re-claimed water has been to use harsh mineral acids. While these acids lower the pH of the water you want to discharge, they pose significant challenges in their storage and use.

- Drilling Fluid

- Pipe Cleaning Aid

WaterSafe60® safely lowers pH in water without the use of harsh mineral acids. This is done through the power of SynTech® the world's only synthetic acid. SynTech® carries a triple-zero HMIS score, is rated non-corrosive, non-fuming, 100% biodegradable, non-mutagenic to fish and wildlife.

- Corrosion and Scale Control

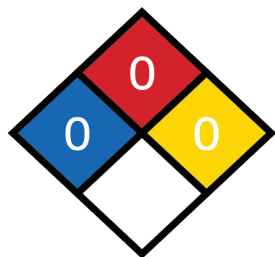
- Well Drilling Aid

- Well Rehabilitation Aid

With that said, SynTech® outperforms hydrochloric acid formulations in a wide variety of industries every day. In fact, SynTech® formulations have proven to be 15% faster dissolving calcium carbonate than Muriatic acid. WaterSafe60 can be used for a variety of descaling, rehabilitation, titration and corrosion control uses and is certified to NSF/ANSI 60 specifications for use on potable water systems and wells. It's even Kosher Pareve approved.

- pH Adjustment

WaterSafe60® has no harsh smell or dangerous fumes and has been proven to pose no inhalation risk, exceeds all D.O.T and OSHA requirements and requires no secondary containment. WaterSafe60® can be delivered in concentrated form and diluted on site or delivered to meet your needs by your Heartland Energy Group representative.



Refer to Use Instructions on the following page for specific use levels.

The formula and its ingredients meet or exceed the EPA's Safer Choice program requirements for both the safety of the environment and the user.





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Pipe cleaning aid:

Product may be used at concentrations up to 100% depending on severity of fouling. Close off or disconnect section of pipe to be cleaned. Drain and fill with WaterSafe60® at desired concentration. It is recommended for effective cleaning to use at no less than 15% dilution strength. Allow product to work for at least 30 minutes or longer as necessary. Drain and flush pipes with fresh water checking pH to ensure it returns to normal before reestablishing connections. Recommended Dosage: 175-500 gallons WaterSafe60® per 1000 gallons water.

Well drilling aid:

When used as a well drilling aid WaterSafe60® will help to prolong the life of your equipment and enhance drilling efficiency by helping to soften hard minerals and formations. Simply replace a portion of the water used in your drilling fluid with the desired percentage of WaterSafe60®. Do not alter your drilling procedure. When purging the well check pH to ensure it returns to normal levels. Recommended Dosage: 50-150 gallons WaterSafe60® per 1000 gallons water.

Well rehabilitation Aid:

Calculate the approximate volume of the system to be cleaned including the volume of the casing, screen, bore hole annulus, and all associated plumbing. Inject the calculated volume of fluid in to well at desired concentration after verifying that supply connections are shut off or otherwise disconnected. Allow product to work for sufficient amount of time (at least 30 minutes). Following use purge the system until pH returns to normal levels or until at least twice the volume injected is removed. If necessary, sanitize the well following treatment. Maximum dosage 20 gallons WaterSafe60® per 1000 gallons water.

Corrosion & Scale Control:

For use to inhibit corrosion and control scale product must be dosed into system using an injection or metering pump. Effective product dosage is based on a variety of factors. For general corrosion and scale control in systems with normal or below normal water hardness recommended dosage is between 2-10 mg/L. In systems with high levels of mineral hardness dosages up to but not exceeding 80 mg/L may be used. It is best to start at a lower dosage and periodically inspect for scale buildup to determine if higher dosage levels are necessary.

pH Adjustment:

For use to control and adjust the pH of a system it is recommended that your process control system feature pH probes upstream and downstream of product injection point for best accuracy. It is suggested that a bench titration be performed to determine use level for your specific system as the effect on pH will be varied dependent upon water quality. In most cases less WaterSafe60® will be needed in comparison to mineral acids to perform the same adjustment. Maximum use Level is 80 mg/L.

Descaler:

OFF-LINE USE:

Product may be used at concentrations up to 100% depending on severity of fouling. Isolate equipment or pipe to be cleaned. Drain and fill with WaterSafe60® at desired concentration. It is recommended for effective cleaning to use at no less than 15% dilution strength. Allow product to work for at least 30 minutes or longer as necessary. Drain and flush pipes with fresh water checking pH to ensure it returns to normal before reestablishing connections. Recommended Dosage: 175-500 gallons WaterSafe60® per 1000 gallons water.

ON-LINE USE:

For on-line use for scale removal and control product must be dosed into system using an injection or metering pump. Effective product dosage is based on a variety of factors. For adequate scale removal and control in systems with normal or below normal water hardness recommended dosage is between 2-10 mg/L. In systems with high levels of mineral hardness dosages up to but not exceeding 80 mg/L may be used. It is best to start at a lower dosage and periodically inspect for scale buildup to determine if higher dosage levels are necessary.

Technical Data

BIODEGRADABLE: Yes/100%	FLAMMABILITY: Non-Flammable
FORM: Liquid	BOILING POINT: 253° F
ODOR: Mild Odor	SOLUBILITY IN WATER: 100%
COLD STABILITY: -16° F	VOCs: None
DETERGENCY: Moderate	VOLATILE BY VOLUME: N/A
PHOSPHATES: None	CARCINOGENS: None
WETTING ABILITY: Excellent	SHELF LIFE: 1 Year

Storage and Handling

WaterSafe60® has a shelf life of more than one year.
Product is freeze/thaw stable.
Keep container closed when not in use.
Safety glasses are suggested when handling this product.
No special gloves or protective equipment are required.
Due to the product's low pH, aluminum piping and fittings should not be used.
Consult your authorized WaterSafe60® representative for tank, piping, valve, hose coupling and fitting recommendations.

WaterSafe60® is typically sold in 275 gallon totes but can be packaged in smaller containers as well as bulk delivery.
Rinse empty container and discard as per federal, state and local regulations.

Additional Studies & Results: When tested, WaterSafe60® showed no potential for the generation of Carbon Dioxide under NIOSH 7903 OSHA & ACGIH testing protocols governing workplace environments.

DOT STATEMENT

Non-D.O.T. Regulated/Non-D.O.T. Hazardous
EXEMPT as per 49 CFR 173.154(d) (2) <6.25 mmpy

Dilution Specification

Please refer to the product label.

Toxicity Studies

Toxicity Limits: Test Procedure OECD 202, 48 hr. LC 50 and LD 50 (rat oral: NON-TOXIC)

Mutagenicity Limits: OECD Guidelines Sec. 471 Chemicals: NON-MUTAGENIC

Dermal Irritation & Corrosion
A modified Draize method was used as described in OECD Guidelines for the Testing of Chemicals Sec. 404 and complies with the requirements of OECD Principles of GLP, Annex revised as of July 1992.

WaterSafe60® is classified as a "Mild Skin Irritant".

Biodegradation & Aquatic Safety
Test Procedure: Hach Reactor Digestion method for Waste Water and Sea Water. Hach Reactor Digestion Method is a semi-micro adaptation of the Standard Methods.

WaterSafe60® is 100% Biodegradable.

Classifications & Approvals

D.O.T - Non-Regulated

TDG - Non-Regulated to and through Canada

SARA 313 311/312 - This product does not contain any ingredients that are subject to the reporting requirements.

California Prop 65 - This product does not contain any ingredients known to the state of California to cause cancer, birth defects or any other reproductive harm.

FDA - Approved as Safe (GRAS)

NSF/ANSI/CAN/60

Clean Air Act
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.

Clean Water Act
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.