

If you're using Sulfamic Acid...

...get better performance with

The Gentle Outperformer



MSA is the Purest Cost-Effective Proton Commercially Available:

- Non-oxidizing, high purity, efficient catalyst – yields low color, high quality products
- Completely soluble in water, forming solutions with high equivalent conductance
- High solubility for alkaline earth and heavy metals
- Readily biodegradable
- A strong acid with an advantaged toxicity and ecotoxicity profile
- Better cost of use

If you're using Sulfamic Acid, you should know that:

- MSA is completely soluble in water while the solubility of sulfamic acid is limited to 17.5% at 20°C.
- MSA is a low viscosity liquid with a melting point of -60°C; no toxic dust formed.
- Calcium and many other salts dissolve better in MSA, making it an excellent descaling agent.
- MSA is readily biodegradable.
- MSA is thermally stable to 180°C. Sulfamic acid decomposes to emit ammonia and oxides of sulfur and nitrogen. Water solutions of sulfamic acid slowly hydrolyze to ammonium sulfate and bisulfate.
- MSA is very oxidatively and reductively stable, compatible with such oxidizers as hydrogen peroxide (at less than 30%). Sulfamic acid is incompatible with strong oxidizers such as nitric acid and chlorine.



A Versatile Green Acid
that's The Gentle Outperformer

Potential uses of MSA instead of Sulfamic acid?

- Cleaners and descalers
- Household equipment, e.g., copper-ware, steam irons, humidifiers, dishwashers, toilet bowls, tartar removal of false teeth
- Marine equipment, including salt water stills
- Wells (water, oil, and gas)
- Concrete, brick, and other masonry
- Dairy equipment, e.g., pasteurizers, evaporators, preheaters, and storage tanks
- Industrial equipment, e.g., boilers, condensers, heat exchangers, and preheaters, paper-mill equipment, air-conditioning systems
- Food-processing equipment, brewery equipment; sugar evaporators
- pH adjustment: dye manufacture, bleaching,
- Electroplating:
 - Replace nickel sulfamate (plating and electroforming)
 - Plating of cobalt, cadmium, iron, and lead
- Leather processing
- Cement additives (calcium/magnesium salts)



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As a world-scale chemicals activity and the leader in sulfonyls, Arkema brings you a world of innovation. With the use of research and production methods at the leading edge of technology and presence in international markets, a wide range of Arkema's services and solutions are at your disposal.

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BEFORE HANDLING THIS MATERIAL, READ AND UNDERSTAND THE MSDS (MATERIAL SAFETY DATA SHEET) FOR ADDITIONAL INFORMATION ON PERSONAL PROTECTIVE EQUIPMENT AND FOR SAFETY, HEALTH AND ENVIRONMENT INFORMATION.

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Arkema Inc. • 2000 Market Street • Philadelphia, PA 19103 • Office: (215) 419-7000 • Toll Free: 800-628-4453 • Fax: (215) 419-7944 • www.arkemagroup.com

Arkema • 4-8 Cours Michelet • La Defense 10 • F-92091 Paris • La Defense Cedex, France • Phone: (33) 1-49-00-75-32 • Fax: (33) 1-49-00-50-30 • www.arkemagroup.com