

Technical Bulletin

Envirocip MSA

High-Performance Acid CIP Cleaner

Product Description

ENVIROCIP MSA is a concentrated, low-foaming unique acid cleaning formulation developed for the removal of mineral scale, milkstone, beerstone, organic residues and other inorganic deposits from equipment and process surfaces.

ENVIROCIP MSA is phosphate, nitrate & sulphate free and can be described as able to meet more stringent environmental & safety requirements than other CIP acid cleaners.

ENVIROCIP MSA combines methanesulfonic acid (MSA), lactic acid and formic acid with ATMP chelating/sequestering technology to provide broad-spectrum acid cleaning performance while maintaining excellent scale penetration and metal-ion sequestration.

The formulation is particularly suited to Clean-in-Place (CIP) applications in the food, beverage, dairy, brewery and winery industries.

Key Features and Benefits

- High-performance MSA-based acid CIP cleaner
- Is phosphate, nitrate & sulphate free
- Excellent removal of milkstone and mineral scale
- Effective against beerstone and beverage-processing deposits
- Lactic acid provides additional organic and mineral soil dissolution
- Formic acid provides strong acid cleaning activity and assists deposit penetration
- ATMP provides sequestration of calcium and other metal ions
- Helps prevent redeposition of dissolved mineral salts
- Low-foaming formulation suitable for circulation CIP
- Suitable for stainless-steel process equipment when used at recommended concentrations
- Suitable for dairy, brewery, winery and beverage-processing applications
- Effective over a broad range of CIP temperatures

Application

Recommended for periodic or routine acid CIP cleaning of dairy processing equipment, milk tanks and silos, pasteurisers and heat exchangers, milk and beverage pipelines, filling equipment, brewery fermentation vessels, bright beer tanks, beer transfer lines, winery tanks and process vessels, filtration equipment, food-processing vessels and CIP circulation systems.

Directions for Use

ENVIROCIP MSA should be applied through a conventional CIP circulation system.

1. Pre-rinse

Rinse equipment with potable water until substantially free of product residues and gross soil.

2. Acid CIP

Circulate ENVIROCIP MSA solution at 0.5–3.0% v/v. Typical starting concentration: 1.0–2.0% v/v. Recommended solution temperature: 50–80°C. Typical circulation time: 10–30 minutes.

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The optimum concentration, temperature and contact time should be established for each installation according to soil type and equipment configuration.

3. Final rinse

Drain the acid solution and rinse thoroughly with potable water until the return water is free from acid residues and the required final rinse specification is achieved.

Recommended Starting Conditions

Application	Concentration	Temperature	Contact Time
General beverage CIP	0.5–1.5%	50–70°C	10–20 min
Dairy / milkstone	1.0–2.0%	60–75°C	15–30 min
Brewery / beerstone	1.0–2.5%	60–80°C	15–30 min
Heavy mineral scale	2.0–3.0%	60–80°C	20–30 min
Winery equipment	0.5–2.0%	50–70°C	10–30 min

These conditions are recommendations only. CIP parameters should be validated against the particular equipment, soil load and cleaning requirements.

CIP Control

For automated CIP systems, concentration should preferably be controlled by conductivity, acid titration, automated chemical dosing or validated concentration curves. Castle Chemicals can provide a titration procedure and concentration-control chart for ENVIROCIP MSA.

Material Compatibility

ENVIROCIP MSA is primarily intended for use on acid-resistant stainless-steel process equipment. It may be suitable for other acid-resistant materials including certain plastics and elastomers. Before use on aluminium, galvanised surfaces, mild steel, copper, brass, zinc, sensitive elastomers or painted surfaces, a compatibility test should be conducted. Do not allow concentrated ENVIROCIP MSA to remain in contact with sensitive metals.

Important Safety Information

ENVIROCIP MSA is an acidic concentrated cleaning chemical. Avoid contact with skin and eyes. Appropriate chemical-resistant gloves, protective clothing and eye/face protection should be worn. Do not mix ENVIROCIP MSA with alkaline products, hypochlorites, chlorinated products or other incompatible chemicals. **WARNING:** Never mix ENVIROCIP MSA directly with sodium hypochlorite or chlorine-containing chemicals, as hazardous gases may be generated. Always consult the current Safety Data Sheet (SDS) before handling or using this product.

Storage and Handling

Store in the original closed container in a cool, dry, well-ventilated area. Protect from excessive heat and direct sunlight. Keep containers tightly closed when not in use. Do not store together with alkaline chemicals, oxidising agents or incompatible cleaning chemicals. Suitable packaging should be selected based on the chemical resistance requirements of the formulation.

Packaging

Available in 20 L, 220 L and 1,000 L IBC.

Warranty and Disclaimer

The information contained in this Product Information Sheet is provided in good faith and is based on information and testing considered reliable by Castle Chemicals. Because conditions of use, equipment design, water quality, soil type and application methods are outside the control of Castle Chemicals, users should conduct their own trials to establish suitability for the intended application.

Castle Chemicals recommends that CIP cleaning procedures and chemical concentrations be validated for each individual installation. Nothing contained herein constitutes a warranty, expressed or implied, other than that the product will conform to its stated specification at the time of manufacture.

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