

INITIA® 899C

Corrosion Inhibitor

overview

INITIA® 899C is a new maleic-based phosphonate that is highly effective for mild steel corrosion control and calcium carbonate scale inhibition. The all organic, metal free composition of INITIA® 899C provides hydrolytic stability and continued efficacy in applications where continuous residual oxidizing biocides are maintained. The functional characteristics and chemical properties of INITIA® 899C make the technology a highly effective and valuable tool for formulation of all-organic water treatment products.

typical properties

appearance	clear, brown liquid
total solid content	33.0 - 36.0 %
pH (as is)	7.5 – 8.5
Brookfield viscosity at 25° C	< 500 cPs
density at 20° C	1.28 +/- 0.05 g/ml
solubility in water	complete

INITIA® 899C DELIVERS

highly effective corrosion control
for mild steel

stability in the presence of
continuous residual oxidizing
biocides

efficacy for calcium carbonate
mineral scale inhibition

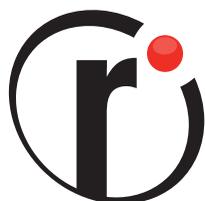
all organic and metals free
composition

compatibility with typical water
additives

performance across a wide range
of conditions

SUGGESTED APPLICATIONS

cooling towers
closed loop systems



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evaluation versus competitive material

INITIA® 899C was evaluated for mild steel corrosion control versus commercial phosphonate corrosion inhibitors using best-in-class Gamry electrochemical research grade equipment. The laboratory experiments were conducted for a minimum of 24 hours in a 1-liter glass jacketed cells that were heated to 40° C (104° F) using a recirculating hot water bath. Corrosion rates were measured using a C1010 mild steel working electrode in a synthetic water (Table 1) that was heated to temperature, continuously stirred and aerated with a glass air stone. A continuous feed of fresh synthetic water was supplied to the 1-liter glass jacketed cells at a feed rate of 0.69 ml/min using peristaltic pump. The continuous feed allows for a full turn over of fresh synthetic water and treatment every 24 hours. An illustration of the testing equipment and configuration is shown in Figure 1.

figure 1. illustration of the testing equipment and configuration with key

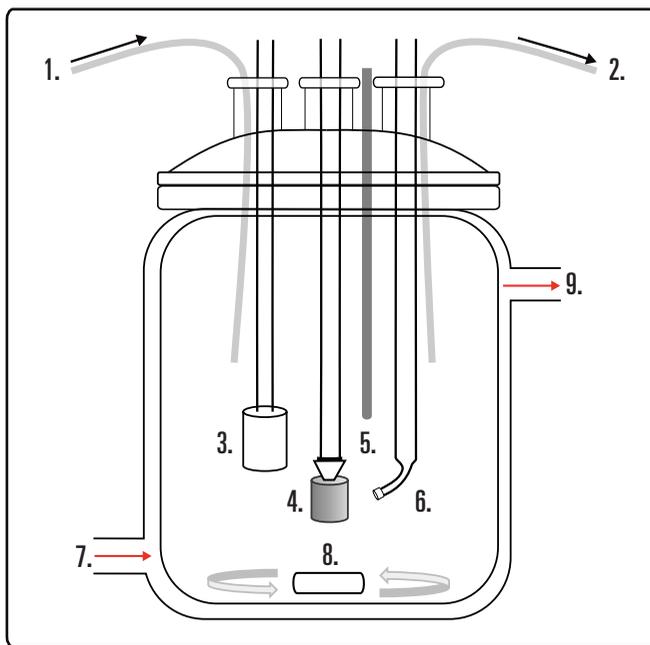


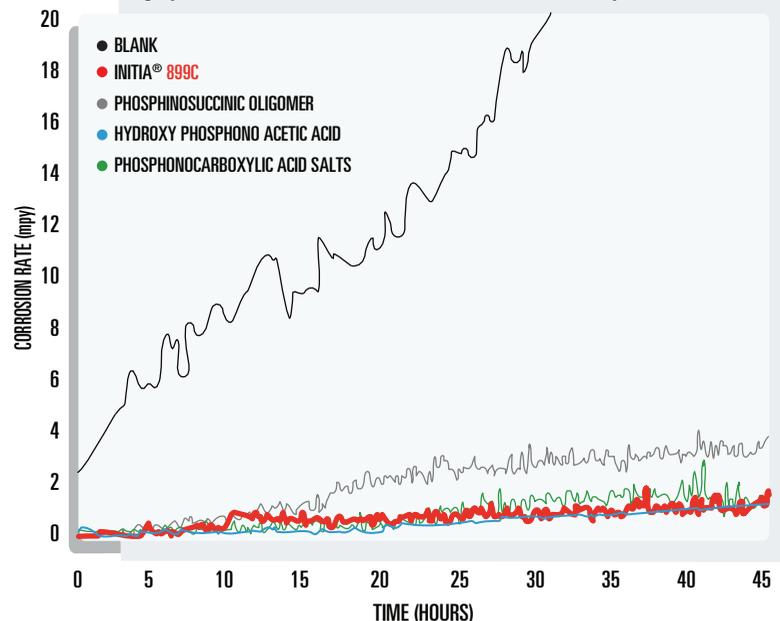
table 1. evaluation conditions

water conditions	value
pH	8.50 - 8.75
chlorides (Cl ⁻)	250 ppm
sulfate (SO ₄ ²⁻)	25 ppm
sodium (Na ¹⁺)	57.9 ppm
calcium (Ca ²⁺)	300 ppm (as CaCO ₃)
magnesium (Mg ²⁺)	13.2 ppm
carbonate (HCO ₃ ²⁻)	100 ppm (as CaCO ₃)
total dissolved solids (TDS)	589 ppm
langelier saturation index (LSI)	1.50

1. synthetic water continuous feed in
2. synthetic water continuous feed out
3. glass air stone
4. mild steel working electrode
5. graphite counter electrode
6. glass reference electrode
7. recirculating hot water in
8. magnetic stir bar
9. recirculating hot water out

INITIA® 899C was tested for its efficacy for mild steel corrosion control against three commercial phosphate corrosion inhibitors. The comparative data for INITIA® 899C versus an untreated blank and competitive materials is shown in Graph 1. The untreated blank data show that the synthetic water in these experiments results in a mild steel corrosion rate greater than 20 mpy (mils per year) during the duration of the experiment. The data for the treated waters show that 10 ppm of INITIA® 899C (red) maintains acceptable corrosion control of mild steel below 2 mpy over the duration of the test compared to 10 ppm of phosphinosuccinic oligomer (grey), 10 ppm of hydroxy phosphono acetic acid (blue) and 10 ppm of phosphonocarboxylic acid salts (green). The data show that the properties make INITIA® 899C a highly effective tool for an all-organic water treatment products.

graph 1. INITIA® 899C corrosion inhibition versus competitive materials



safety use and handling

Consult the Safety Data Sheet (SDS) for further information regarding the safe handling and use of INITIA® 899C. This product should be stored in a cool/dry place and must be protected from freezing. Avoid storage at high temperatures (>90°F), direct sunlight, and exposure to surface, airborne or other common environmental contaminants such as debris, bacteria, yeast, and mold.

IT IS THE RESPONSIBILITY OF THE BUYER TO INDEPENDENTLY DETERMINE SUITABILITY OF THE SELLER'S PRODUCTS FOR BUYER'S USE. Buyer agrees that Seller will not have control over the design, testing or labeling of any product produced using Seller's Products, and that Buyer is not relying on any representation or statement made by, or on behalf of, Seller with respect to the suitability of any Product for any purpose, or on any advice, recommendation or information obtained from Seller's product literature or web sites, including any design aid or other service made available by Seller. Buyer has tested and investigated the Products enough to form an independent judgment concerning their suitability for the use, conversion or processing intended by Buyer and will not make, and hereby waives, any claim against Seller based on Seller's advice, statements, information, services or recommendations.