

## Itaconix® TSI™ 710

### New, uncompromising choice for scale inhibition

Use Itaconix® TSI™ 710 to eliminate trade-offs between inhibition performance, environmental safety, and sustainability. This product has excellent mineral and other inorganic scale inhibition for home, institutional and industrial applications. Stable across wide temperature and pH ranges, Itaconix® TSI™ 710 is a modified homopolymer of itaconic acid and is 100% bio-based.

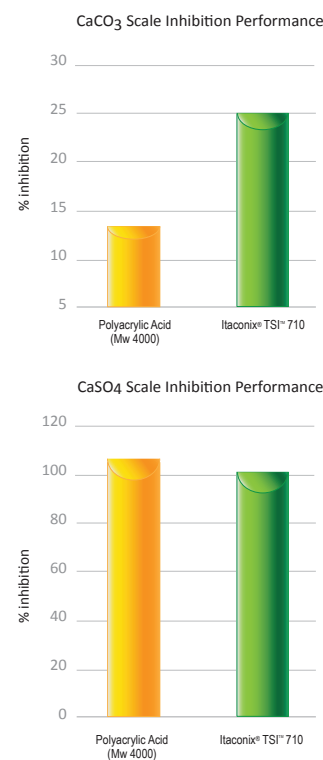
Applications	Advantages	Physical & Chemical Properties																				
<ul style="list-style-type: none"> <li>Laundry care</li> <li>Home care</li> <li>Water cooling systems</li> <li>Boilers</li> <li>Mining</li> <li>Oil &amp; gas production and stimulation</li> <li>Desalinization</li> <li>Membrane anti-fouling</li> <li>Water and waste treatment</li> <li>Agriculture waste containment sites</li> </ul>	<ul style="list-style-type: none"> <li>Reduces mineral encrustation</li> <li>Superior calcium carbonate inhibitor</li> <li>Excellent calcium sulfate inhibitor</li> <li>Effective scale inhibitor at low concentration</li> <li>High alkalinity and hardness tolerance</li> <li>Stable at all pH levels</li> <li>High thermal stability</li> <li>100% bio-based</li> <li>Favorable environmental profile</li> </ul>	<table border="1"> <tr> <td>CAS#</td> <td>1663489-58-4</td> </tr> <tr> <td>pH at 10% solid</td> <td>5.6</td> </tr> <tr> <td>Odor</td> <td>none</td> </tr> <tr> <td>Avg. molecular weight (Mn)</td> <td>2000 g/mole</td> </tr> <tr> <td>% Active</td> <td>40</td> </tr> <tr> <td>Chemical class</td> <td>sodium polyitaconate</td> </tr> <tr> <td>Appearance</td> <td>dark orange liquid</td> </tr> <tr> <td>Viscosity</td> <td>45 cP</td> </tr> <tr> <td>Specific gravity</td> <td>1.22</td> </tr> <tr> <td><b>Recommended use</b></td> <td><b>5 to 50 ppm</b></td> </tr> </table>	CAS#	1663489-58-4	pH at 10% solid	5.6	Odor	none	Avg. molecular weight (Mn)	2000 g/mole	% Active	40	Chemical class	sodium polyitaconate	Appearance	dark orange liquid	Viscosity	45 cP	Specific gravity	1.22	<b>Recommended use</b>	<b>5 to 50 ppm</b>
CAS#	1663489-58-4																					
pH at 10% solid	5.6																					
Odor	none																					
Avg. molecular weight (Mn)	2000 g/mole																					
% Active	40																					
Chemical class	sodium polyitaconate																					
Appearance	dark orange liquid																					
Viscosity	45 cP																					
Specific gravity	1.22																					
<b>Recommended use</b>	<b>5 to 50 ppm</b>																					

### A new class of chemistry for scale prevention

Itaconix® TSI™ 710 is a modified homopolymer of itaconic acid that represents a new class of chemistry for inhibiting crystal growth in challenging environments under dynamic pH and temperature conditions.

From detergents to industrial water systems to oilfield production, growth of inorganic crystals leads to scale deposits that are major causes of damage and efficiency loss.

Itaconix® TSI™ 710 offers a breakthrough alternative to common inhibitors such as acrylic acid and aspartic acid polymers for preventing scale formation from inorganic salts.



Data on file, available upon request

## Excellent stability

Itaconix® TSI™ 710 has excellent stability across broad pH and temperature ranges. It is thermally stable, showing little or no chain scission at 200°C in the pH range of 2 to 14. Due to the absence of labile or hydrolysable groups within its novel chemical structure, it has excellent alkali resistance and is particularly hydrolytically stable over long periods of use.

Itaconix® TSI™ 710 is effective in caustic formulations and environments, including concentrated caustic, and in combination with other inhibitors to achieve mineral scale prevention.

Stability with bleach depends on the concentrations of Itaconix® TSI™ 710 and bleach, with stability less likely at higher concentrations of either material. Test specific formulations.

### Stability table

<b>Thermal</b>	stable up to 200° C
<b>pH</b>	stable pH 2 to 14
<b>Hydrolytic</b>	excellent
<b>Bleach</b>	<ul style="list-style-type: none"> <li>• unlikely above low concentrations</li> <li>• recommended to test specific formulations</li> </ul>

## 100% bio-based, environmentally friendly

Itaconix® TSI™ 710 is a unique scale inhibitor option that is both 100% bio-based and poses low environmental burden concern.

Current leading scale inhibitors often require formulators to make compromising trade-offs between environmental impact and inhibition performance. Itaconix® TSI™ 710 is effective, sustainable and environmentally friendly.

Scale Inhibitor	100% Bio-based	Environmental Concern
<b>Itaconix® TSI™ 710</b>	<b>yes</b>	<b>low</b>
Polyacrylate	no	low
Carboxy methyl inulin	no	low
Polyaspartic acid	no	low
Phosphorous based	yes	high

### Samples available on request

Please e-mail request to: [samples@itaconix.com](mailto:samples@itaconix.com)

### To request information on ordering quantities and pricing

Please call: +1 (603) 775-4400 or e-mail: [sales@itaconix.com](mailto:sales@itaconix.com)



2 Marin Way, Stratham, New Hampshire 03885, USA • +1 (603) 775-4400

[www.itaconix.com](http://www.itaconix.com)

Nothing contained herein grants or extends a license, express or implied, in connection with patents, issued or pending, of the manufacturer or others. The information contained herein is based on the manufacturer's own study and the works of others. The manufacturer makes no warranties, expressed or implied, as to the accuracy, completeness, or adequacy of the information contained herein. The manufacturer shall not be liable (regardless of fault) to the vendee's employees, or anyone for the direct, special or consequential damages arising out of or in connection with the accuracy, completeness, adequacy or furnishing of such information.