

Itaconix® TSI® 422

Advanced multi-functional mineral chelation, dispersion, and scale inhibition

Itaconix® TSI® 422 extends the performance of plant-based Itaconix® TSI® polymers to new levels of scale inhibition and dispersion. Improves performance, reduces costs, and increases sustainability in more compact dishwasher detergent tablets and pods. Manage the detrimental effects of hard water with concentrated multi-functional efficacy for excellent shine on glasses and dishes. It is easy to use, does not corrode metals or glasses, and is excellent for tableting without additives. Itaconix® TSI® 422 is the plant-based alternative to phosphates, phosphonates, and fossil-based synthetic polymers.

Applications:	Advantages:	Physical & Chemical Properties	
<ul style="list-style-type: none"> Automatic dishwashing detergents Laundry detergents Laundry additives Bathroom cleaners Hard surface cleaners Industrial cleaners Water treatment 	<ul style="list-style-type: none"> Superior calcium and magnesium chelation and scale inhibition No trade-off in sustainability and performance Multi-functional chelation, dispersion, scale inhibition More compact dosing Approved for Safer Choice Less metal and glass corrosion Biodegradable Stable from pH 2 - 14 	CAS#	1052620-22-0
		pH at 10% active	5.2
		Odor	none
		Average molecular weight (Mn)	4300 g/mole
		% Active	85
		Chemical class	Poly(itaconic acid-co-AMPS, sodium salt)
		Appearance	Off-white granules
		Density	800 g/L

Excellent replacement for phosphates

Itaconix® TSI® 422's multi-functionality makes it the leading replacement for phosphates in detergents.

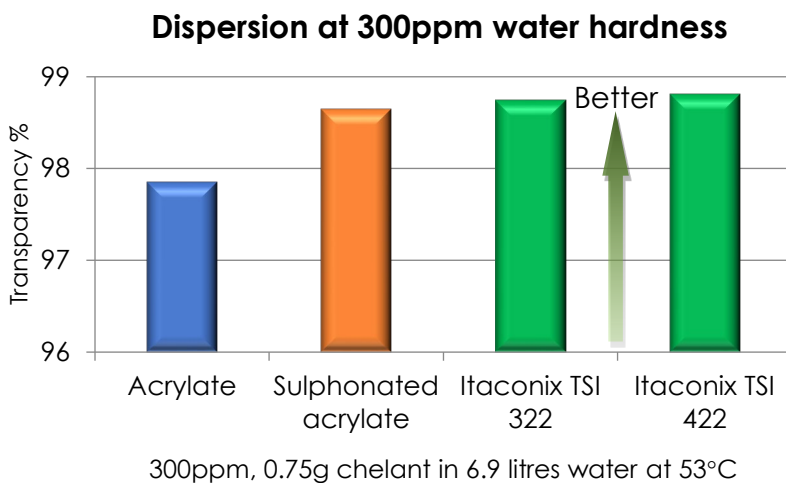
Itaconix® TSI® 422 delivers excellent shine performance, has low corrosion on glass and metals and offers great tableting features.

Functional Performance	STPP	Itaconix® TSI® 422	Itaconix® TSI® 322	Acrylates	MGDA	Citrate
Shine from binding Ca & Mg ions	√	√+	√		√	√
Shine from dispersing insoluble precipitates	√	√+	√	√		
Low corrosion of metals	√	√	√	√		
Low corrosion of glass	√	√	√	√		√
Ease of processing, stability in powder	√	√	√	√		√
Tableting	√	√	√	√	√	
pH buffer	√					

Advanced calcium carbonate dispersion

Itaconix® TSI® 422 is plant-based and offers improved scale inhibition in comparison to the leading acrylate based dispersant polymers.

Itaconix® TSI® 422 enables the complete removal of phosphonates, phosphates and amino polycarboxylates from detergent formulations.



Market leading spotting & filming

Achieve top performance and sustainability using Itaconix® TSI® 422 in combination with sodium citrate in automatic dishwasher detergent formulations.

Shine Performance on Glasses

1 = perfect score

Product	Pod Size	Spotting	Filming
ADW detergent using Itaconix TSI 422	10.0 g	1.1	1.0
Leading Brand A	16.0 g	1.1	1.2
Leading Brand B	11.5 g	1.3	1.0

Source: Independent lab testing using ASTM 3556 protocol at 300 ppm water hardness

Samples upon request

Please email request to: samples@itaconix.com

To request information on ordering quantities and pricing

Please call: +1 (603) 775-4400 or email: sales@itaconix.com



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