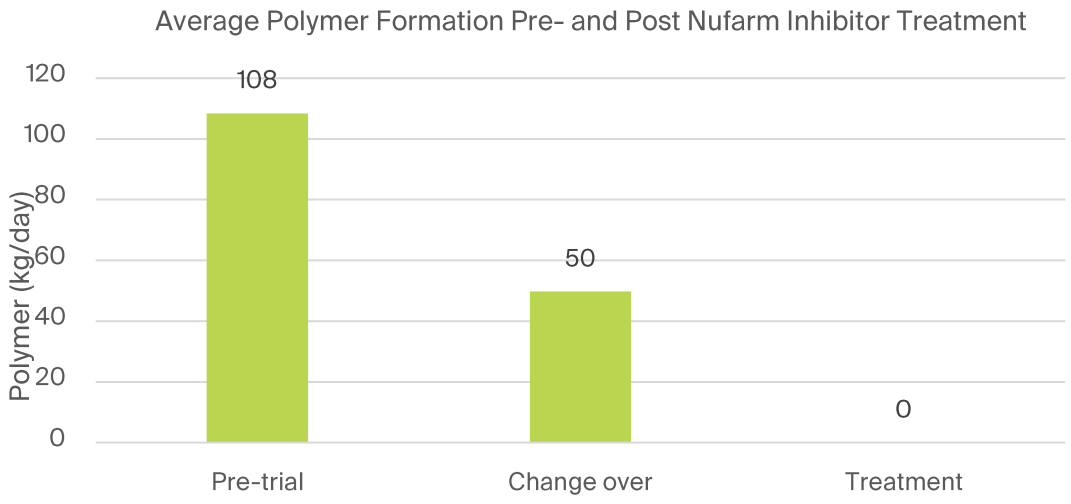
Nufarm Polymerization Inhibitors for Acrylic Acid / Esters

Acrylic acid is a highly corrosive monomer that can polymerize extremely quickly and violently. The prevention of polymerization is not only critical to improving plant efficiencies but also to the safety of the process. Polymerization is affected by many competing influences including the metallurgy of the plant, the amount of water present in different areas, temperature and the amount of air (oxygen) present, all of which influence the tendency and rate of acrylic acid to polymerize.

Nufarm stable free radical inhibitors have been used in acrylic acid distillation and through our own research, and working closely with our customers, Nufarm has gained a high level of expertise in the prevention of acrylic acid polymerization in all areas of the plant. Our Technical Service Team is available to give advice on the best products for each area of the plant.

Acrylic esters are produced from the esterification of acrylic acid with a range of different alcohols. Nufarm has products that will prevent polymer fouling in both the esterification reactors and in the purification section.

The **case history** shown below illustrates what can be achieved.



Previous Treatment: Pump screens cleared multiple times per shift, in full chemical suit

Nufarm Treatment: Pump screens only checked during plant turnarounds

Acid Stability of Inhibitors: Not all inhibitors are equal when it comes to acid resistance, some are much more stable than others in the presence of acrylic acid or the acid catalysts used in the manufacture of acrylic esters. The inhibitor will not provide the desired performance if it decomposes in acid conditions. Nufarm has data on the acid resistance of different inhibitors and can advise you on the best products for your process.