



ALTRET PRODUCTS FOR : **SUGAR** INDUSTRIES

## We match with your specifications

ALTRET is organization committed towards developing wide range of products for the water treatment and process chemicals for Sugar Industries. ALTRET continues to persue the most competent technologies through it's R&D and has a unique position in the market due to its focus in many areas of water treatment including environmental management and sustainability.



# ALTRET offers a complete range of Excellent products for the Sugar Manufacturing and refining processes :

- Antiscalants
- Mill Sanitation Products
- Viscosity Reducers
- Colour Removal
- Defoamers / Antifoams
- Mud Settler
- Products for RO Membrane
- Boiler Water Treatment Program
- Cooling Water Treatment Program
- Combustion Monitoring Chemicals for Bagasse

## Antiscalants

In any evaporator set, the calcium phosphate and hydroxyapatite (a phosphate compound) content in scale decreases from the first to the last vessel. Amorphous silica, calcium oxalate, calcium sulfate and aconitate content increase from the first to the last vessel. Solubility of amorphous silica and calcium oxalate are known to decrease with increasing sucrose. Concentration and reducing temperature leading to prevalence of these scales in the latter effects. Organic matter is present in all scales, but in decreasing proportions to wards the end of the evaporator set.

### Scaling in Mills

- Amorphous silica
- Hydroxyapatite
- Calcium carbonate
- Calcium oxalate  
(mono- & di-hydrate)
- Calcium sulphate
- Organic matter

ALTRET Antiscalants is a polyacrylate, that unlike polyphosphates, has an excellent hydrolytic stability. When used at threshold levels ALTRET Antiscalants effectively inhibits the precipitation of many scale-forming minerals and also modify the crystal morphology. Both of these properties play key roles in keeping heat exchanger or evaporator surfaces scale-free. ALTRET Antiscalants series polyacrylate exhibit a threshold inhibition property whereby a few parts per million can stabilize hundreds or thousands of times as many scale-forming ions. Surface absorption of polymers on the growth sites of scale-forming crystalline is the most plausible explanation of the mechanism for crystal growth inhibition and distortion.

### Advantages

- Reduced maintenance shut downs
- Improved heat transfer
- Saving due to reduced fuel requirements
- Enhanced equipment life

# Mill Sanitation Products

Sugar cane and mill house products are most nutritive for many microbes to grow rapidly and consume sugar to produce various metabolites which hinders in sugar production by causing process difficulties and adversely affects sugar quality. Many of them are not eliminated by boiling juice for clarification and in fact some grow at clarifier and continue to

grow during further process. Microbes gain entry via cut ends of harvested cane and continue their growth till they are eliminated. Depending on environmental conditions, PJ contains about  $10^6$  to  $10^9$  cfu per ml. They vary qualitatively from place to place and season to season, cold climate favors yeast while Lactobacillus predominates in summer.

These microbes grow and consume sugar at rapid rate and it is believed that more than 1% on cane sugar is lost during cut - to - mill delay. Further, microbes produce various metabolites that interferes in the process and affects sugar recovery and sugar quality adversely.

Treatment	Rise in RS. %	Rise in acidity %
Local BKC	42.5	27.30
Local DTC	28.6	18.50
AL-OT 50	13.6	6.37
AL-DTC	12.90	5.28

\* Test carried-for reducing sugars by Lane & Eynon method, acidity by titration with 0.1 N NaOH (pH 8.3 as end point using digital pH meter) and brix by hydrometer / hand refractometer. RS = Reducing Sugar

## Key Features of Mill Sanitation Products

- Capable of killing 90% microbes is used for mill sanitation
- Minimal rise in RS during every stage (no destruction)
- Minimal rise in acidity from PJ to MJ and from clear juice to molasses
- Reduction in dextran content of sugar and molasses

## Advantages

- ALTRET AL-DTC is formulation of various DTC acting synergistically with permitted activators to achieve 90% kill in 10 minutes at low dose in sugarcane juice. Thus is ideal biocide for mill sanitation.
- ALTRET AL-OT 50 has powerful activators and enhancers to kill 90% microbes at low dose in juice in just ONE minute. Thus is ideal for sanitation of fiberizer, cane carrier and 1<sup>st</sup> mill.

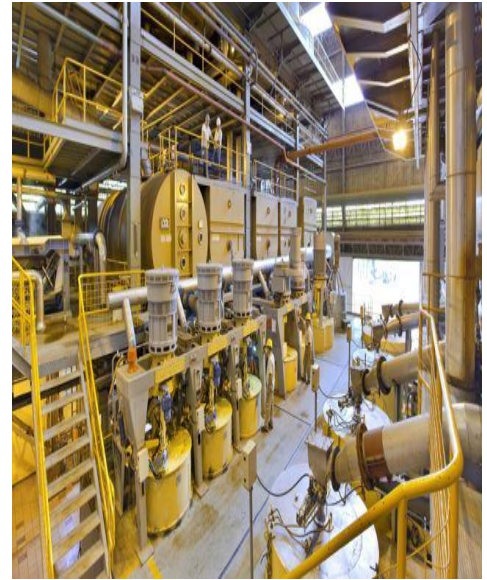


# Viscosity Reducer

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In order to obtain better sugar crystals and improved Sugar recovery, It is vital to reduce the viscosity of massecuites in the pan. The reduction of viscosity lead to improved boiling efficiency , crystallization, centrifugation and exhaustion of molasses. Massecuite viscosity is the limiting factor for molasses exhaustion in the sugar cane. Reduction of viscosity by

the addition of water or diluted molasses in the massecuite receiver before the crystallizers is not recommended because of the dilution of the crystals, facilitate d by the high temperature of the massecuite; instead. Addition of final molasses at saturation temperature is a better option.



## Key Features of Viscosity Reducer ALTRET-824

A product specially designed to lower viscosity of massecuites, reduce surface tension and improve boiling efficiency, crystallization, centrifugation and exhaustion of molasses.

## Advantages of Viscosity Reducer ALTRET-824

- Lower viscosity of massecuites reduces boiling time
- Increases yield of Sugar
- Better sugar quality
- Provide greater fluidity and preventing foam formation and slime deposit on the tank walls

# Colour Removal

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Cane juice is a solution of complex matters such as sucrose, reducing sugars, organic acids and coloring matters. During the process of sugar, products such as melanoidins, melanins, cerammals get formed and impart color to the juice. Even after passing juice through syrup sulphitation process, there is a vide possibility of carryover of coloring matters and also there is possibility of carryover of Sulphur compounds.

## ADVANTAGES

- Improves colour of syrup in Sugar mills and Sugar remelt in refineries
- Better value preposition for final product even in non-refined sugar



## Defoamers / Antifoams

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Foaming is highly complicated problem. Foam generates at an natural level because of gaseous presence during fermentation. During fermentation of molasses in sugar factories and distilleries, a large amount of foam is generated in the fermentation vats owing to the type of fermentation being followed. Its minimizes high productivity. Traditional method such as, T.R.O. has become out dated because of its oily nature and it further stands injurious to the end product causing foul odour and color.

Altret Defoamers / Antifoams are used in the sugar process and provide excellent and continuous performance. The variety of Silicon and Non Silicon based Defoamers are environmentally safe having superb defoaming action provide better quality of Sugar and juice recoveries.

- Eliminate foam generation and minimize excess foam which would influence process problems
- Leaves no residues in sugar / liquor
- Cost effective, easy to apply
- Biodegradable and environment friendly

Benefit

## Mud Settler

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The Sugar cane juice obtained contains soluble, insoluble, organics and inorganic impurities. These impurities should be removed in the clarification of the Sugar manufacturing process. Addition of lime before the clarification process results in the lime reacting with inorganic phosphate to form Amorphous Calcium Phosphate. ALTRET offers a range of flocculants that are used to reorganize these small particles of Amorphous Calcium phosphate into complex flocs which also trap other fine particles such as fibers and clay, thus enhancing the settling process.

- Provide improvement in Settling rate
- Reduce Mud volume
- Increases clarity
- Reduction in operating temperature
- Maximize sugar yield
- Fast acting, cost effective

Benefit

## Products for RO Membrane

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ALTRET three-part solution of service, products and equipment includes great products to enhance RO membrane performance. Whether you're exploring our chemical membrane product offerings for the first time or you're already familiar with them, ALTRET will work with you to find the right solutions.

**Antiscalants** : Our ROA ( Antiscalants) product line helps resolve these problems-and in almost every instance, at a lower cost than it would be to use ion exchange to remove hardness. When you combine our highly effective antiscalants with our RO dosing dosing system always is right, not too much (which can lead to polymer fouling), not too little (which will lead to mineral scaling), but just the right amount.

**Cleaning products (Acidic & Alkaline)** : When a membrane does need cleaning, our ROD (Descalents) chemical product line removes most foulants and restores performance in all types of membrane systems. We can provide you cleaners specifically formulated to remove mineral scale, insoluble scale, organic fouling or microbial residue.

**Biocides** : Biofouling is inevitable in every membrane system, however, using ALTRET biocides you can minimize the impact of biogrowth on the operation of your RO system. The right biocide program can reduce your need for membrane cleaning, reducing your overall cost of operation. Our ALTRET biocides are membrane safe and can be used online or offline.

## Boiler Water Treatment Program

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ALTRET offer wide range of Boiler Water Treatment Chemicals consist readymade solutions, tailor made programs, matching with your specification which ensure, cost-effective, result oriented. The objective of your boiler for your critical processes, turbine operation and specific heat requirement will be fulfil without any interruption. ALTRET serve you consistence performance by maintain critical parameters throughout the boiler operation in all aspects of boiler feed water treatment. We are not only supplying you chemicals but fix our self with contracting with you such as extensive service contracts, comprehensive maintaining water quality and trouble shooting and monitoring agreements. ALTRET superior quality boiler products and specialist additives focus on improving the operational efficiency of process steam boilers, power plants boilers and boiler for distilleries by offering ready-made solutions to the problems associated with such installations; namely scale formation, corrosion, boiler water carryover and sludge deposition.

### ALTRET offer following products :

- Alkalinity Builder-pH Booster
- Phosphate conditioning
- Hardness Control
- Sludge Conditioner
- Oxygen Scavenger
- All volatile Amine Treatment
- Acidic De-Scaling Chemicals
- Alkaline De-Scaling Chemicals
- Corrosion Inhibitors
- Boiler lay up treatment
- Boiler Deformer
- Boiler Startup Treatment

# Cooling Water Treatment Program

ALTRET Cooling Water Treatments are intended to meet all the needs of cooling water systems. They are designed to face all kinds of challenges, which may occur. Generally, these main problems have to be solved: Corrosion, Scaling and deposits, Microbiological growth and Fouling. ALTRET has exceptional diagnostic skill in solving complex technical problems along with water chemistry. We have expert engineers of different field such as chemical, mechanical, environment and energy conservation. Altret Offers Frequent treatment evolution/ proactive approach. Altret provide complete monitor and focusing trouble shooting with immediate response. Altret will monitoring critical equipment parameters such approach temperature, condenser vacuum, energy efficiency, temperatures difference, pressure drop etc. and correlating with treatment performance.



## ALTRET offer following products :

- Scale & Corrosion Inhibitors
- Polymeric Dispersants
- Special Corrosion Inhibitors
- Oxidizing Biocides
- Non Oxidizing Biocides
- Cleaning Chemicals
- Bio Dispersants
- Passivation Treatment
- Wet lay up treatment
- Defoamers
- Startup Treatment
- Online Cleaning Program

# Combustion Monitoring Chemicals for Bagasse

Highly advanced combustion monitoring Chemical (Fuel Additive) have desirable characteristics such as CATALYTIC EFFECT for improved combustion, ANTI-FOULING & ANTI CLINKERING property for better heat exchange and dual effect, oxidation & reduction catalyst for lowering the EMISSION LEVELS.

CMC 95 SB1 is a triple effect Combustion Monitoring Chemical (CMC) in powder form, combining slag modifying and heat transfer surface cleaning agent along with combustion catalyst to control combustion & escape of volatile matters, specially developed for Sugar Industries boiler, where bagasse is being used as a fuel.





ALTRET

ALTRET PRODUCTS FOR : SUGAR

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#### CMC 95 SB1 Product Advantages

- Reduces the slugging tendency thus abate problem of the clinker formation.
- Reduces the problem of choking specially in the super heater region of bagasse, agro waste biomass fired boiler, hence maintains the designed super heater steam temp.
- Improves the combustion due to catalytic effect.
- Acts as an anti fouling agent

and thus keeps heat transfer surface clean which ultimately improves the efficiency.

- Reduces the emission in stack by combusting volatile gases, thus it is eco- friendly.
- Increases the boiler availability by reducing jamming / clinker formation in combustion zones & slugging in the Super Heater region.

ENERGY

&

ENVIRONMENT

SAVER

