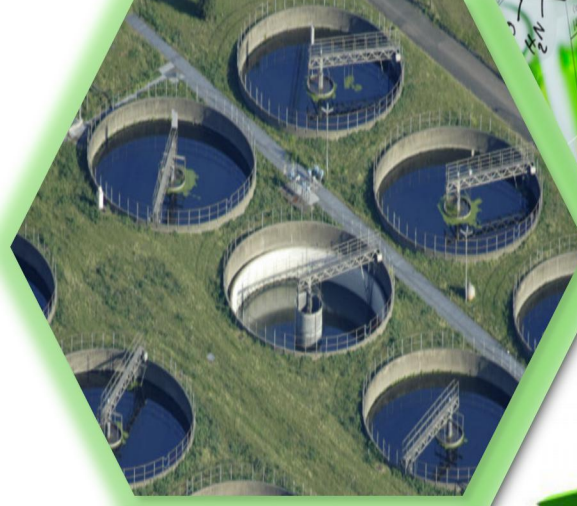
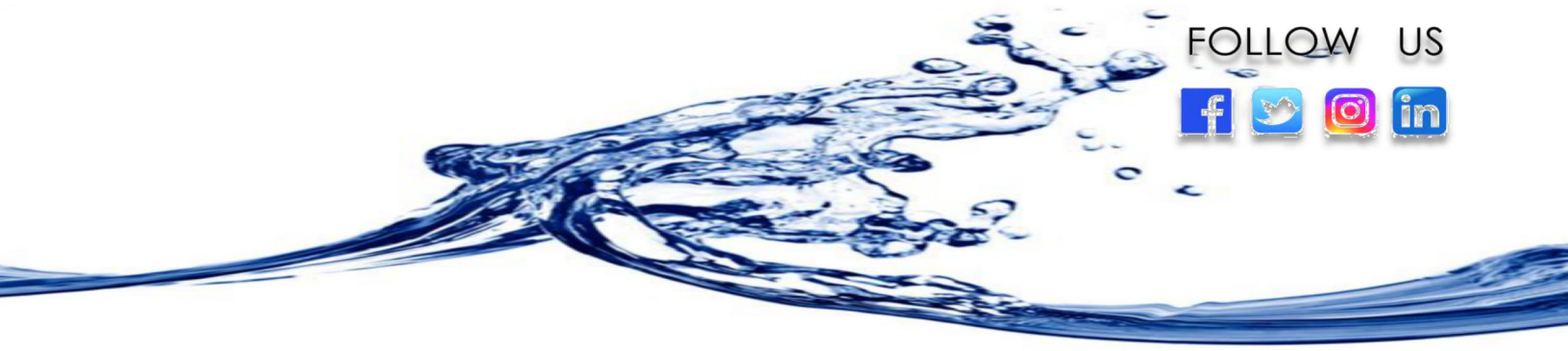
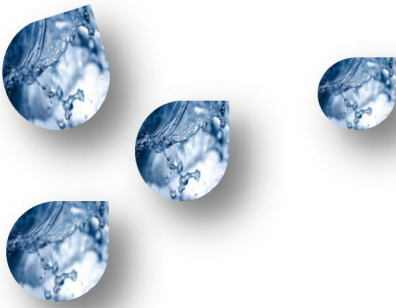


MAXWELL
ADDITIVES PVT. LTD.
Since 1988



FOLLOW US





About Us

Maxwell Additives Pvt. Ltd. is a leading manufacturer of Water treatment chemicals(WTC) since 1988. **SUJAL, OLKLIN & KLINMAN** are our registered brands for WTC.

Our uniqueness in the manufacturing of speciality chemicals like for Organophosphates, Polymers & Benzalkonium Chloride makes us a gem in this market. **PHOSPHOMAN, POLYMAN & DEBAC** are our registered brands in Speciality Chemicals.

We are also growing in cleaners & sanitizers range. **KLINMAN, OLKLIN & DEBAC** are our registered brands in I & I Cleaner.

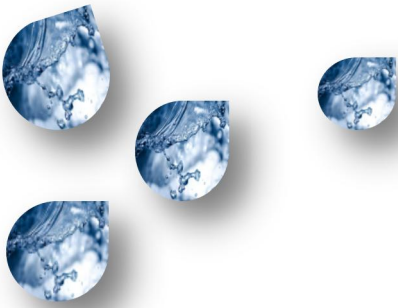
Recently launched Hygiene & Disinfectant products range. **KLINMAN, OLKLIN & DEBAC** are our registered brands in Hospital Cleaning Industry.

<i>Certificate</i>	<i>Details</i>
ISO 9001 : 2015	Quality Management Certificate
ISO 14001 : 2015	Environment Safety Management Certificate
ISO 15883	Instrument Disinfection Certificate
ISO 22000 : 2005	Food Safety Management Certificate
BS OHSAS 18001 : 2007	Occupational Health & Safety Management Certificate

Our Core Competences

It is our prime focus to go the extra mile to provide complete customer satisfaction. We offer solution rather than just products, which have helped us, nurture strong and everlasting bond with our customers across the world. The quality management system is frequently upgraded based on customers feedback and expectations, in order to glorify their level of satisfaction.





Our Quality, Innovation & commitment

Our success and growth is built upon a sound base of technical excellence, an innovative approach and a commitment to quality. In-house research and development has produced a unique range of products which offer significant benefits to industrial and commercial users of wide range of industries.

We believe innovation through partnership with our customers and suppliers which ensures we can meet whatever technical, environmental or regulatory challenges lie ahead.

Committed to mark our global existence by larger base of satisfied customers. developed by supplying quality products & services, we strive for higher level of satisfaction by continuous improvement in the related business process.

Mission

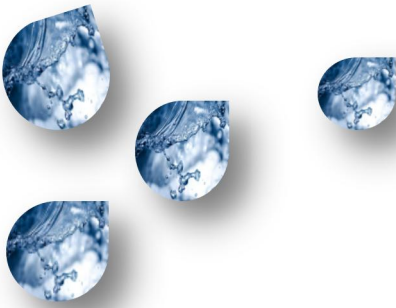
We continuously serves in the field of cleanliness drive which is very much inevitable for healthy and hazel free life with unique class of best quality.

Goal

Our Goal is to give the best quality products, at an affordable price, to keep our human folks as well as environment clean, safe and healthy.

By virtue of this, the company has been able to source the products at very competitive prices and can supply the same with guaranteed specifications and delivery commitments.





❖ **What is Boiler And its Classification?**

A boiler is an energy conversion or transfer system where chemical energy from fuel is converted into either heat or electrical energy. It consists of a tank or a closed vessel in which liquid is stored and heated using hot gases generated from the combustion of fuels such as coal, fuel oil or natural gas that burn in a furnace, or from electrical coils.

Types of Boiler:-

Fire-tube boiler - Hot gas in several tubes is used to heat the surrounding water.

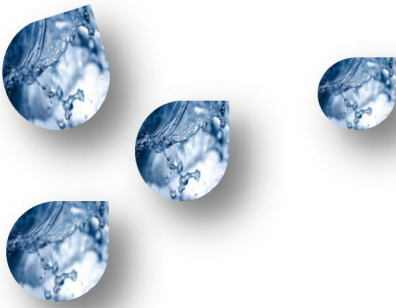
Water-tube boiler - Water in the tubes is heated by the surrounding hot gas.

❖ **Problems in Boiler**

Corrosion is one of the major contributors to boiler failures. Factors that influence corrosion in boilers include:

- *High oxygen concentration*
- *High temperatures*
- *High or low pH levels*
- *Impurities in the water*
- *Hydrogen embrittlement*
- *Acidic corrosion*
- *Steam side burning (a chemical reaction between the tube metal and steam)*
- *Fatigue cracking caused by repeated cyclic stress*
- *Mechanical and operational factors such as:*
 - *Excessive velocities*
 - *Severity of service*
 - *Metal stresses*
 - *Other design and operational issues*





❖ Solutions

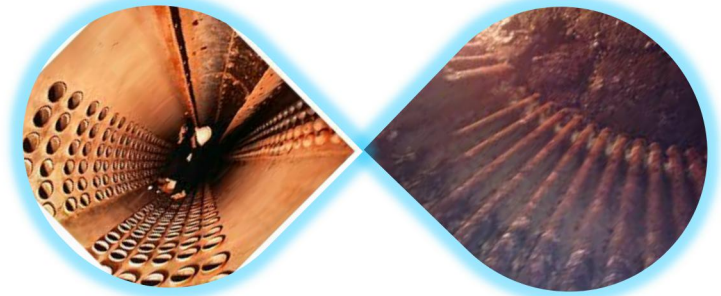
➤ Oxygen Scavengers

Oxygen scavenger are used to remove residual oxygen from the boiler feed water in order to protect the boiler from corrosion in hot well and condensate return lines.

Oxygen scavenger product range includes sulphite, hydrazine, carbohydrazide, etc. based chemicals which react with the residual oxygen in the feed water.

Our Products:

- ✓ **OLKLIN-OSPS**
- ✓ **OLKLIN-OSLS**
- ✓ **OLKLIN-OSLH**
- ✓ **OLKLIN-OSLH+** etc. are our regular products and other oxygen scavengers can also be manufactured as per customers' requirement.



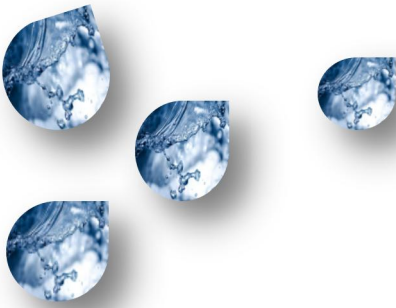
➤ Alkalinity Builders

In boiler systems the pH of water needs to be maintained at around 9.0 - 11.0. Sometimes due to scales and other factors the pH of water goes down. To maintain pH we have to add alkalinity builders, known as pH boosters.

Our Products:

- ✓ **OLKLIN-PHBC**
- ✓ **OLKLIN-PHBA**
- ✓ **OLKLIN-PHBA-1**





➤ **Boiler Antiscalant / Boiler Phosphate Treatment Chemicals**

The major problem in heat exchangers is formation of scales which can be delayed or inhibited by using Antiscalant.

If proper treatment is not given the scales formed can cause corrosion or puncture in the system. Also, when the scale deposits on the pipelines the efficiency of boiler heat transfer decreases

Our Products(For low, moderate and high pressure boilers):

- ✓ **OLKLIN-AS(BW)-1**
- ✓ **OLKLIN-AS(BW)-2**
- ✓ **OLKLIN-AS(BW)-3**



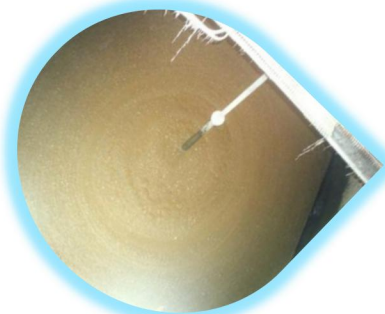
➤ **Sludge Conditioners**

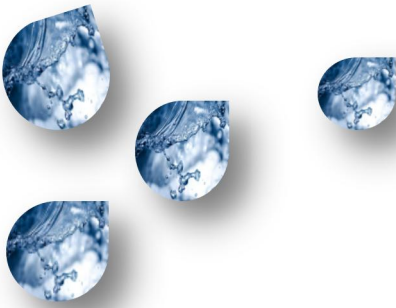
Sludge builds up in boiler system over time and gathers at the bottom of your system. The sludge stops hot water flowing through your system properly

Sludge conditioner keeps the sludge into flowable form so that it can be easily removed during blowdown

Our Product:

- ✓ **OLKLIN-SCL**
- ✓ **OLKLIN-SCL-1**





❖ Fuel Additives

Fuel additive improves combustion efficiency, reduce emissions & carbon footprint and reduce the need to shutdowns for equipment maintenance. They also reduce corrosion and deposit related problems in the equipment.

Thus providing a single solution to address multiple concerns of efficiency, sustainability and environmental responsibility.

Our Products:

- ✓ **OLKLIN-FA**
- ✓ **OLKLIN-FACOAL**



➤ Descaling Chemicals

Descaling chemicals are used when the line is choked up due to scaling or when the energy consumption increases.

Different descaling chemicals: online descalants or offline descalants.

Our descalants are blended with state of the art corrosion.

Our Products:

- ✓ **OLKLIN-DS**
- ✓ **OLKLIN-DSOL**
- ✓ **OLKLIN-DS(RAD) (For radiator/AHU/ descaling)**



- **Inhibitors protecting most metals.**





❖ COOLING TOWER AND ITS CLASSIFICATIONS

- A cooling tower is a heat rejection device, which extracts waste heat through the cooling of a water stream to a lower temperature.
- Cooling Towers are classified as : Open circulating system, Closed circulating systems and Once through systems.

❖ Cooling Tower Problems

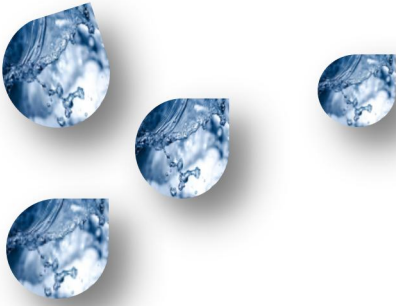
- The evaporation process cools down the remaining tower water but leaves mineral impurities behind.
- These minerals lead to problems in tower water, for which we need water treatment. Following problems are generally observed in cooling tower water:

- ✓ Scale
- ✓ Corrosion
- ✓ Fouling
- ✓ Microbiological Fouling



- Tower makeup water has impurities like calcium, magnesium and silica which can cause scale deposits to form on condenser tubes
- Scale in tubes will increase energy costs by 10% to 30% depending on the scale thickness
- Scale, if not prevented, may require expensive shut down time clean outs
- Scale can be prevented by:
 - The proper amount of bleed off / blow down
 - Addition of chemical scale inhibitors to the tower water which prevent scale formation
 - Bleed off alone can not prevent scale
 - Scale inhibitors must be added to the tower water and maintained within desired ranges at all times.
- **Scale inhibitors have two main properties:**
 - ✓ Crystal Distortion
 - ✓ Dispersancy





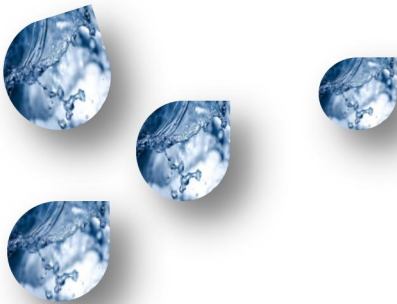
❖ **CORROSION AND SCALE CONTROL IN COOLING TOWER**

Our Scale and Corrosion Inhibitors, for different hardness of water.

<i>Antiscalent + Corrosion inhibitor</i>	1. <i>OLKLIN-AS(CW)-1</i>	<i>For Soft Water</i>
	2. <i>OLKLIN-AS(CW)-2</i>	<i>For Hard water</i>
	3. <i>OLKLIN-AS(CW)-3</i>	<i>For Very hard water</i>

- *Moving on to corrosion problem, corrosion can be caused by many factors:-*
- *If acid is added to tower water to maintain carbonate alkalinity, an overfeed of acid can cause sever corrosion in the condenser*
- *To avoid this corrosion, we recommend not to use an acid feed to control scale forming impurities*





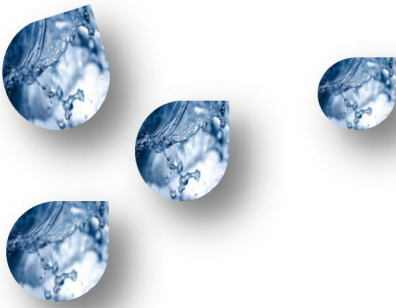
❖ MICRO BIOLOGICAL GROWTH CONTROL IN COOLING TOWER

Microbiological fouling refers to fouling that occurs when heavy growth (out of control) of algae, bacteria and fungus is observed in cooling tower systems, which can plug strainers and reduces water flow to chillers.

- *To prevent microbiological fouling of the tower and chiller tubes a good dual biocide feed program must be used at all times*
- *Biocides are the chemicals that kill and control the growth of algae, bacteria and fungus in open cooling tower water systems*
- *There are different classes of biocides. Some are oxidizers, like chlorine and are corrosive when used. While others are non-oxidizers and are non-corrosive*

BIOCIDES	
Carbamate base	OLKLIN-AC-1
Silver Peroxide base	OLKLIN-AC-2
Quaternary Ammonium compound base	OLKLIN-AC-3
Sodium Hypo chloride based	OLKLIN-AC-4
Chlorophenol base	OLKLIN-AC-4P
Aldehyde	OLKLIN-AC-5
Isothiaziline (Acidic)	OLKLIN-AC-6
DBNPA	OLKLIN-AC-71
Bromide	OLKLIN-AC-105
Thioziline (Higher grade)	OLKLIN-AC-8





Our bio-dispersant is effective in removing dead algal and slime mass from cooling system.

Our product : **OLKLIN-BD** penetrates inside the thick algae mats on the cooling tower deck or fills and help the biocide to penetrate the biomass.

Generally **OLKLIN-BD** is dosed prior or along with biocide to enhance its efficacy.

BIO DISPERSANT	OLKLIN-BD
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❖ pH CONTROL IN COOLING TOWER

- ✓ Rather than removing calcium and magnesium ions, de-alkalization removes carbonate ions, exchanging them for chloride/sulphate ions
- ✓ It reduces pH of water upto required level, to prevent biological fouling

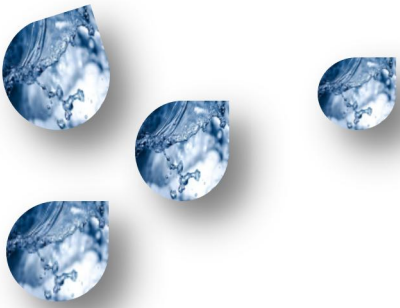
Our Product: **OLKLIN-DA**

- ✓ Improper Water Treatment and / or lack of control will result in fouled chiller tubes and dirty towers costing high in excess energy and clean out expenses.

- ✓ A good, well controlled, water treatment program will prevent these problems from occurring.

DE-ALKALIZER	OLKLIN-DA
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❖ WHAT IS RO AND ITS CLASSIFICATIONS?

Reverse osmosis (RO) is a water purification process that uses a partially permeable membrane to remove ions, unwanted molecules and larger particles from water.

❖ Problems in RO plant

- ✓ *Scaling*
- ✓ *Bio fouling*

Scaling

Scaling means the deposition of particles on a membrane, causing it to plug. It is an unwanted effect that can occur during nano filtration and Reverse Osmosis processes.

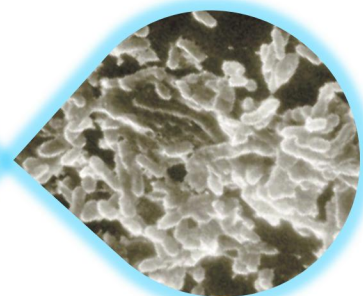
During the process, the membrane concentrate absorbs salts.

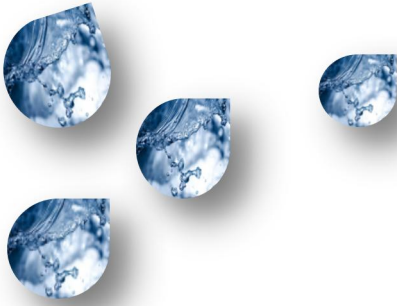
Inorganic salts, such as calcium carbonate and barium sulphate, which are water-insoluble, can become over-

saturated. This causes them to precipitate. The precipitation of water-insoluble salts on the membrane is more likely to occur when conversion is high.

Bio fouling

Biological contamination, known as biofouling, occurs most often during nano filtration and Reverse Osmosis processes. This is because the membranes cannot be disinfected with chlorine, in order to kill bacteria.





❖ **Solutions**

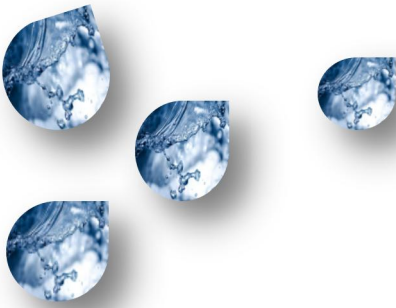
❖ **Antiscalant:** Adding antiscalants to the system can prevent the precipitation of salts.

Antiscalant	Acidic (pH<2)	OLKLIN-ASP-9A
		OLKLIN-EVN-W
		OLKLIN-ASP-70
		OLKLIN-ASR
		OLKLIN-ASR-200
	Partially neutral (pH 2-4)	OLKLIN-ASR-3
		OLKLIN-RO Antiscalant
	Neutral (pH 6-8)	OLKLIN-S7
		OLKLIN-WS-1
	Alkaline (pH 9-11)	OLKLIN-AS-3+

❖ **Membrane Cleaners:-**

Cleaner	Acidic	OLKLIN-DRO-2
	Alkaline	OLKLIN-DRO-13A
Biocide & Cleaner		OLKLIN-DRO-1





❖ What is water chilling plant?

A water chiller is a mechanical device used to facilitate heat exchange from water to a refrigerant in a closed loop system. ... For ideal plant health, a chiller can be used to lower the water temperature below ambient level; 68°F (20°C) is a good temperature for most plants.

❖ The Problems With Closed Loop System

In closed loops, corrosion is a greater concern since the corrosion products continually build up since there is no blowdown. Particulates generated by corrosion can lead to deposition. The deposition can further exacerbate corrosion by providing locations for the under deposit corrosion mechanism.

Dissolved oxygen corrosion is also a contributor to corrosion in a closed system. Make up water, open tanks and system vents can transport oxygen into the closed loop.



❖ SOLUTIONS

Maxwell Additives Pvt Ltd, manufacturing Closed Loop Corrosion Inhibitor - OLKLIN CIC Series, offered products are used in removing dissolved oxygen that may react with metal and cause oxidation. Our manufactured product helps in preventing scaling of the plant and protects metal from corrosion. OLKLIN CIC series is widely used in hot water circuit, glycol brine system, engine jacket and chiller water circuit.

❖ Application

Engine Jacket, Chiller Water Circuit, Glycol Brine System, Hot Water Circuit, Engine Coolant, Process chilling and heating etc.

CORROSION INHIBITORS

*Closed circulating system
corrosion inhibitor*

OLKLIN-CIC-1

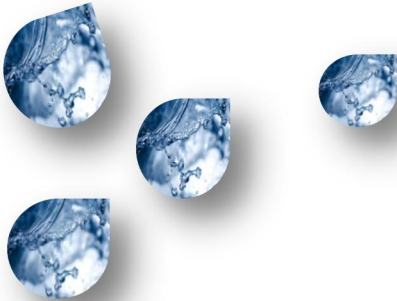
OLKLIN-CIC-2

OLKLIN-CIC-3

OLKLIN-CIC-4

OLKLIN-CIC-2000





❖ Effluent Treatment Plant

We all know that water supply costs are going to carry on rising – so are water disposal costs. The more contaminated your effluent, the more your ‘effluent handling company’ will charge you. Increasingly stringent discharge consent conditions are also being applied.

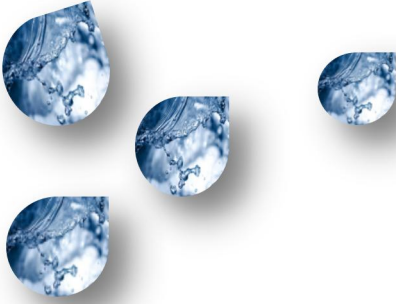
With the right treatment, a very significant proportion of waste process water may be perfectly suitable for reuse in other processes elsewhere on site, please take some time to study our effluent treatment chemical solutions.

POLY ELECTROLYTES	
Anionic	HMA-279
Non Ionic	HMN-100
Cationic	HMC-233
	POLYMAN-254
ANTIFOAMING AGENT	OLKLIN-DF

Maxwell Additives Pvt Ltd. has an extensive range of products including:

- **Anionic, emulsion grade polymers:** A range of high molecular weight anionic water-in-oil emulsions. These chemical products are suitable for in-line dilution before being added to the application.
- **Cationic emulsion grade polymers:** A range of linear and structured cationic water in oil emulsions. These chemical products are suitable for in-line dilution before being added to the application.
- **Anionic, powder-grade polymers:** Anionic powder-grade polymers available in low, medium and high molecular weights.
- **Cationic, powder-grade polymers:** Cationic chemical powders available in a range of molecular weights.
- **Non-ionic, powder-grade polymers:** Non-ionic powder-grade polymers available in low, medium and high molecular weights.
- **Organic primary coagulants including polyamines and PolyDADMACS:** High cationic charge products needed to destabilise negatively-charged colloidal particles and promote rapid floc formation. Low molecular weight and viscosity ensuring complete distribution and mixing of the polymer in the water.
- **Anti-foams: Wide range of very effective anti-foam products**





ANTISCALANT / ANTIFOULANT For

**MULTI-STAGE FLASH DISTILLATION (MSF),
MULTIPLE-EFFECT DISTILLATION (MED),
MULTIPLE-EFFECT EVAPORATOR (MEE) plants**

ANTISCALENT OLKLIN-EVN-W

"To control scale deposition and particulate fouling within multi-stage flash distillation (**MSF**), multiple effect distillation (**MED**), & multiple-effect evaporator (**MEE**) plants and other supposed to be affected areas" is the main feature of **OLKLIN-EVN-W**.

Application:

The product effectively disperses the scale forming mineral salts even at high temperature. This product is specially designed to work in severe conditions like hard water, high TDS, chloride etc. It can be used alone or in conjunction with a sponge ball cleaning system and its effectiveness has been demonstrated in distillation / evaporation plants operating with top brine temperatures up to 1200°C

Properties:-

- ✓ Effectively controls alkaline scale of calcium carbonate, calcium sulfate and magnesium hydroxide etc in all types of distillation plants. Effectively controls silica scale
- ✓ Ideally suited for multiple effect evaporator
- ✓ Effective over a wide pH range
- ✓ Decreases frequent shutdowns, periodical cleaning and servicing of the system
- ✓ Reduces extra energy, manpower, expenses and forcefully untimely-allotted time





Since 1988



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