

## **DESCRIPTION**

**ERAY** is a strong alkali boiler water additive for increasing low pH in steam and boiling water boilers which works with pure water (DI water). It increases the pH alkalinity in the boiler water and adjust pH to ideal ranges (10-12). pH under the ideal ranges increases corrosion, pH over the ideal ranges increases the tendency to precipitation and oozing in the boiler.

Chemical Name	: Water conditioning (Chemical Mixture)
Document No	: SP-KS-003
Trade Name	: <b><u>ERAY (ALKALINITY CONTROL)</u></b>
Usage	: Boiler water pH, alkalinity adjuster.

## **A.ORGANIC PROPERTIES**

Appearance

Physical State (20°C)	: Liquid
Color	: Transparent liquid
Odor	: Odorless

## **B. PHYSICAL PROPERTIES**

pH	: 13.0 – 14.0
Molecular weight	: -
Explosion Limit	: None
Flash point	: None
Relative Density	: 1.35 – 1.45 gr/cm <sup>3</sup>
Solubility	: Completely soluble in water.

## **APPLICATION, FEATURES & BENEFITS**

- ✓ In regular use or when kept under control, it will keep pH in ideal ranges which will prevent boiler and pipes from corrosion and perforation.
- ✓ Increases the useful life at the boiler and pipes.
- ✓ Reduces maintenance costs; it prevents abrupt stops explosion, perforation, blockings and provides both time and money savings.
- ✓ Must be kept in mind that 1mm corrosion i.e. rust (iron) debris means 15-18% dissipation namely more money.

## **STORAGE & TRANSPORTATION**

Packed in original plastic jerry cans of 25-30-60-200 L. Storage period is 3 years.

## **DIRECTIONS FOR USE/APPLICATIONS & DOSAGE RATES**

10 ppm of ERAY gives 5 ppm phenol alkalinity (p. Alkalinity) to the water. The most ideal dosing places are feeding water input line, water station of the degasser or condensate (hot well) tank.

## **TEST METHOD**

**pH TEST:** Dosing quantity of ERAY is adjusted by controlling the determined pH in the boiler water. In low pressure boilers (0-20 atm), 11.0-11.5 pH is ideal. In medium pressure boilers (20-40 atm), ideal pH should be around 10.0-11.0. In high pressure (40-100 atm) 9.0-10.0 pH will provide the required protection. Generally there is no need to add ERAY to boilers which are fed with high purity DI water. Also if the boiler water is in the ideal pH values usage of ERAY is needless.

**ALKALINITY TEST:** Alkalinity test helps us to determine the accuracy of pH value in the water. It is directly proportional with pH. Alkalinity ratio determines the ideal phosphate ratio depending on the pH of the water.

In low pressure boilers (0-20 atm), 300 ppm p.Alkalinity must be the maximum limit.

In medium pressure boilers (20-40 atm), 200 ppm p.Alkalinity must be the maximum limit.

In high pressure boilers (40-100 atm), 100 ppm p.Alkalinity must be the maximum limit.

In case that alkalinity is above these ranges the system must be brought to ideal ranges by partial bluffs.