

## ProPure All<sup>EK-5</sup> (BOILER WATER TREATMENT)

Additive against scab and corrosion in steam boiler, steam lines and boiling water systems. It is the only substance which protects both the boiler and the condensate line.

### Description

ProPure All steam boiler is an additive for boiler water and the condensate line. It consists of organic compounds, which prevent corrosion, scab, furring, ooze in the form of precipitation and foaming in the steam boiler, steam lines, boiling water boiler and condensate line. This product both controls the furring, corrosion and alkalinity of the boiler and protects the condensate lines. It is a sufficient product for boiler applications alone, and there's no need to use another product.

### Directions For Use/Applications & Dosage Rates General Cleaning

If there are no additives in the ProPure All boiler water, or if the water has been changed, you can shock the system with 300 grams of the substance for every ton of water. After this initial treatment, you should use 80-100 grams of the substance for each ton of water.

The most effective place to dose the substance is at the feed water inlet line, the water station of the degasser, or the condensate (hot well) tank. We recommend using a dosage pump for the dosing process to ensure consistency.

### Test Method

**PHOSPHATE TEST:** It is performed in order to test the presence of the substance in the boiler i.e. sufficiency of ProPure All presence. It controls the hardness, ooze i.e. furring. Presence of 20-40 ppm phosphate is sufficient. In the presence of high phosphate the system has to be partially bluffed until the ideal phosphate amount, and the dosage should be increased in the presence of low phosphate. Dosing of 100 g ProPure All to 1 ton of water gives 3 ppm phosphate. If the boiler concentration is 10, this is reflected in the boiler as 30 ppm.

For the boiler pressure of 0-40 atm 20-40 ppm phosphate is sufficient.

40-60 atm 20-30 ppm phosphate is sufficient

>60 atm 5-10 ppm phosphate is sufficient and provides efficient protection.

**HYDRAZINE TEST:** It is used in the boiler as oxygen catcher, prevents corrosion. It is performed in order to test the sufficiency of ProPure All presence.

In low pressure boilers, 0.1-0.3 ppm hydrazine for 0-20 atm is sufficient.

In medium pressure boilers, 0.1-0.2 ppm hydrazine for 20-40 atm is sufficient.

In high pressure boilers, 0.05-0.1 ppm hydrazine for 40-100 atm is sufficient.

When values below or over these values are observed, dosing can be stopped and partial bluffing can be made or the dosage can be increased respectively.

### Boiler Water Treatment

#### Summary

- With regular use, it provides significant energy saving by preventing furring, corrosion which may occur within the generator. It maximises the life of the pipes.
- Prevents corrosion, perforation in condensate lines (steam lines) so prolonging the life of both lines and condensate stops and therefore provides energy saving with regular use.
- With regular use, it provides the most efficient output by keeping the steam quality at maximum.
- In regular use, it prevents abrupt stops, explosions, perforation, blockages and provides both time and money saving without the requirement of an extra cleaning process in periodical maintenance.
- Decreases energy cost and while increasing steam quality by shortening the regime period of the boiler (the period of steam production starting from the working time).

#### A) Organic Properties

##### Appearance

Physical State (20°C): Liquid

Color : Transparent liquid

Odor : Amine odor

#### B) Physical Properties

pH : 10.0 – 13.0

Molecular weight : -

Explosion Limit : None

Flash Point : None

Relative Density : 1.10 – 1.20 g/cm<sup>3</sup>

Solubility : Completely soluble in water.

#### Storage Conditions

Packed in original plastic jerry cans of 25L. Storage period is 3 years.

#### Approvals & Certificates



Product No

: SP-KS-006

**NOTE:** As phosphate and hydrazine is present in ProPure All substance it is sufficient to perform one of these tests. Any of the values is the ideal value the other value will be within the ideal range.

**CHLORIDE TEST:** It is performed to determine whether there is sea water leakage or the salinity content.

In low pressure boilers, 300 ppm for 0-20 atm. p.A alkalinity, must be the maximum limit.

In medium pressure boilers, 100 ppm for 20-40 atm. p.A alkalinity, must be the maximum limit.

In high pressure boilers, 50 ppm for 40-100 atm. p.A alkalinity, must be the maximum limit.

In presence of chloride above of these values, the system should be brought to ideal ranges by partial bluffs.

**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, for 0-20 atm 300 ppm p.A alkalinity must be the maximum limit.

In medium pressure boilers, for 20-40 atm 200 ppm p.A alkalinity must be the maximum limit.

In high pressure boilers, for 40-100 atm 100 ppm p.A alkalinity must be the maximum limit.

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

**NOTE:** If the alkalinity value in boilers fed with high quality (demineralize) water does not fit into the required ranges you may benefit from our product namely ProPure pH (Alkalinity Control Substance). Adding 10 g (10 ppm) of ProPure pH product to 1 ton of water will give 5 ppm p.A alkalinity to the water.

**HARDNESS TEST:** It is performed to measure whether there's any hardness leakage in water. It is measured as CaCO<sub>3</sub>. As the system water's hardness value does not exceed 5 F = 50 ppm it is recommended to feed the system with demineralised water or discharging water. If feeding is performed with hard water phosphate in the range of 30-40 ppm must be present in the boiler.

**pH BOILER:** It is the indicator of the acidity and alkalinity of the water. The ideal pH range in the boiler water is 9.0-11.5. As the boiler pressure decreases (0-20 atm), the ideal pH range is approximately 11.5. Conversely, as the boiler pressure increases (40-100 atm), the ideal pH range is about 9.0.

**pH CONDENSATE LINE (Steam Line):** In the tests performed it is required that the ideal pH is within 8.0-9.0. This pH range is the range in which the system (steam lines) works in ideal and good conditions.

**CONDUCTIVITY:** As the conductivity value decreases, the quality and purity of the steam and the life of lines and condensate stops increase, ensuring the system's longevity and steam quality. This value needs to remain below 50 µS/cm. Conductivity can be monitored using any conductivity meter.