

## ProPure BWT<sup>EK-1</sup> (BOILER WATER TREATMENT)

Anti corrosive and anti-scab in boiler and steam lines.

### Description

ProPure BWT is an additive for steam boilers and hot water boilers. It prevents furring, sludge and corrosion, which may occur in the boiler by dosing the certain amounts to the boiler water. It is a complete product. While controlling oxygen corrosion and furring in the boiler, it balances alkalinity as well.

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

If there is no treatment chemical in the boiler water system, the first dosage for ProPure BWT is 250 g/ 1 ton of water. The following dosages will be calibrated to 30-100 grams/ton (water).

Ideal place to dose ProPure BWT is the make-up water inlet line, the water tank of the degasser or the condensate (hotwell) tank.

It is our recommendation to do the dosing process with a dosing pump for the continuity of the application.

### Test Method

**PHOSPHATE TEST:** It is performed in order to test the presence of ProPure BWT in the boiler. 20-40 ppm phosphate is sufficient in boiler water. If phosphate is higher than 40 ppm, The system should maintain a phosphate level between 20 and 40 ppm. If the phosphate concentration drops below 20 ppm, you will need to increase the dosage of ProPure BWT. A dosage of 50 grams of ProPure BWT will raise the phosphate level by 2 ppm for every ton of water treated. Therefore, if the concentration in the boiler water is 10 ppm, this corresponds to a phosphate level of 20 ppm in the boiler itself.

For the boiler pressures,     0-40 atm, 20-40 ppm phosphate is sufficient  
   40-60 atm 20-30 ppm phosphate is sufficient.  
   >60 atm boilers 5-10 ppm of phosphate is sufficient and provides efficient protection.

**HYDRAZINE TEST:** Hydrazine is used in the boiler as oxygen scavenger and corrosion inhibitor.

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

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

In high pressure boilers (40-100 atm), 0.05-0.1 ppm hydrazine 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.

**NOTE:** Since both phosphate and hydrazine are present in ProPure BWT, it is enough to perform one of these (Phosphate Test, Hydrazine Test) tests. If one of the test results is in the ideal range, the other will also be in the ideal range.

### Boiler Water Treatment

#### Summary

- In regular use, it provides significant energy saving by preventing furring, corrosion which may occur within the boiler.
- In regular use, it ensures maximum physical life for steam lines.
- In regular use, it prevents abrupt stops, explosions, perforation, and blocking and provides both time and money saving without the requirement of an extra cleaning process in periodical maintenance.
- In regular use, it decreases energy cost and increases 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  
 Odor : Amine odor

#### B) Physical Properties

pH(%lcons.) : 8.5 – 10.5  
 Molecular weight : -  
 Explosion Limit : None  
 Flash point : None  
 Relative Density : 1.05 – 1.15 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-001

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

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

In medium pressure boilers (20-30 atm), 100 ppm chloride must be the maximum limit.

In high-pressure boilers (40-100 atm), 50 ppm p.Alkalinity must be the maximum limit.

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

**ALKALINITY TEST:** The Alkalinity test helps us to determine the accuracy of pH value in the water. It is directly proportional to pH. The 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.

**NOTE:** In boilers fed with high-quality (demineralize) water, If the alkalinity value 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.Alkalinity to the water.

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

**pH:** 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 range for the pH is approximately 11.5, and as the boiler pressure increases (40-100 atm), the ideal range for the pH is approximately 9.0.