

Technical Data Sheet: **Arctic Blend Liquid Boiler Compound**

Description:

The most serious problem in the generation of steam is the formation of scale and sludge on the heating surfaces. The object of water softeners and boiler water treatments is to remove from the water Calcium and Magnesium Carbonates, Calcium and Magnesium Sulfates and other substances found in scale deposits. Boiler water treatments have the advantage over softeners because water treatments can dissolve past scale accumulations and make adjustments in the condition of the water already in the boiler.

The solubility of scale-forming salts decreases with an increase in temperature. As the temperature and pressure of the boiler rises, the solubility of the salts lowers to the point that the salts begin to crystallize and drop out of solution and form scale on the boiler heating surfaces. Major difficulties may develop from scale in a boiler. Scale acts as an insulator and retards the flow of heat from the fireside to the waterside of the boiler. The rate of heat transmission may be reduced as much as 10 to 12% by the presence of scale. Scale may cause overheating of boiler metal and tube failures resulting in costly repairs.

An equally important problem is the prevention and control of rusting and pitting on the metal surface. Metal corrosion in boilers occurs in water having a pH under 10.5. Pitting in a boiler permanently damages the metal surface, causes leaks and stimulates metal fatigue.

Boiler water treatments are designed to soften water by either sequestering or coagulating the hardness salts. The method used in softening is dependent on the condition of the water, type of boiler, operating pressure, and the function of the boiler. To these treatments may be added anti-foam to reduce potential priming, organics to help in breaking down scale, and metal treatments to act as inhibitors in the prevention of metal corrosion.

The most important factor in using this compound is to feed it directly into the boiler with feed water through injector or steam pump, leaving it to remain in your boiler for 12 to 16 hours before blowing out. If your boiler is not clean, repeat. This product should be used in conjunction with regular blow downs; at least one blow down per shift.

Although they do not give an accurate interpretation of boiler water alkalinity, pH test papers provide a good means of controlling boiler chemical feed rates. A pH 10.5-11 indicates sufficient alkalinity is present to precipitate out all scaling salts present.

The alkalinity of boiler water should be sufficiently high enough to protect boiler components against acidic corrosion, but not high enough to produce carry over. A minimum value for alkalinity for adequate protection is 200ppm. Do not exceed 700ppm, high boiler alkalinity levels can lead to embrittlement of the steel.

Always use protective clothing and equipment when handling chemicals.

Initial Cleaning:

For Boilers Rated 30 to 90 H.P. Use 4 L.

For Boilers Rated 100 to 140 H.P. Use 6 L.

When the boilers are in bad condition (heavy or dense scale) double the dose to enable the treatment to get through the scale and down to the metal.

After the boiler is clean use the following amounts for a 12-hour run.

Boilers 40 H.P. and below:

500 mL (2 cups) every 12 hours operation

Boilers 40 to 100 H.P.:

1 L (4 cups) every 12 hours operation

Boilers 100 H.P. and above:

Use in ratio of 1 L. (4 cups) per 100 H.P. or fraction thereof every 12 hours operation.

If testing water hardness:

A minimum value for alkalinity for adequate protection is 200ppm.

To increase alkalinity, add 500 mL of compound until desired level reached.

Do not exceed 700ppm, high boiler alkalinity levels can lead to embrittlement of the steel.

The above amounts are guidelines only and it is recommended, for more accurate boiler water treatment, to test boiler water daily and add compound accordingly. Boiler water should be maintained at a pH of 10.5.

Safety and Additional Information: Please refer to SDS for further technical information.



Boiler Chemical Test Instructions

Take a sample of boiler feed water.

Perform desired water analysis (pH test, water hardness test, TDS test)

Record results in logbook.

Use protective clothing and equipment when handling chemicals.

Boiler water should be maintained at a pH between 10.5-11. To raise pH, add more compound.

Suggested amount of Arctic Blend Boiler Compound concentration:

Initial Cleaning: For Boilers Rated 30 to 90 H.P. Use 4 L.

For Boilers Rated 100 to 140 H.P. Use 6 L.

When the boilers are in bad condition (heavy or dense scale) double the dose to enable the treatment to get through the scale and down to the metal.

After the boiler is clean use the following amounts for a 12-hour run.

Boilers 40 H.P. and below:

500 mL (2 cups) every 12 hours operation

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1 L (4 cups) every 12 hours operation

Boilers 100 H.P. and above:

Use in ratio of 1 L. (4 cups) per 100 H.P. or fraction thereof every 12 hours operation.

If testing water hardness:

A minimum value for alkalinity for adequate protection is 200ppm.

To increase alkalinity, add 500 mL of compound until desired level reached.

Do not exceed 700ppm, high boiler alkalinity levels can lead to embrittlement of the steel.

Record results of blow down water by testing pH - Boiler water should maintain a pH 10.5-11. This product should be used along with regular blow downs; at least one blow down per shift.

The above amounts are guidelines only and it is recommended, for more accurate boiler water treatment, test boiler water daily and add compound accordingly.

Please refer to SDS and TDS for further technical information.