

Water Services LTD

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WSB SLA

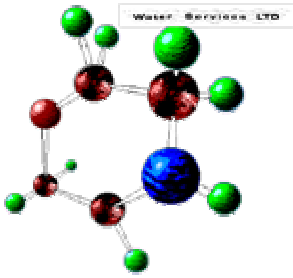
Power-Chemicals





DESCRIPTION

WSB SLA is a group of neutralizing products, based on Morpholine as the main neutralizing amine compound, and containing Diethyl amino ethanol and Cyclohexylamine.



Morpholine

USE

In any steam-condensate mixture, the ratio of neutralizer in the condensate to that in the steam is inversely proportional to the distribution ratio.

Morpholine, therefore, has the greatest potential to condense in the first condensate formed, at which time it will neutralize any carbon dioxide dissolved in this same first condensate. It can, therefore, offer the greatest protection even in relatively small systems, or in areas within a system where steam first condenses.

Combining amines of differing distribution ratios provides an effective method of control

PRODUCTS

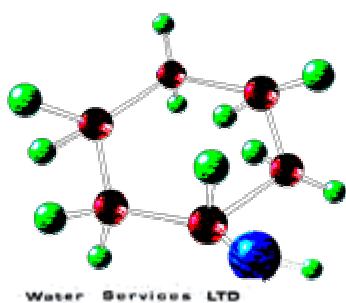
The group contains the products (listed in increase of distribution ratio):

- **WSB SLA 3100**
- **WSB SLA 3110**
- **WSB SLA 3115**
- **WSB SLA 3120**



WSB SLA product line is designed for steam circuits including both steam for power production and heating. Selection of the appropriate product is based to the systems' characteristics. So, in short systems, p.e. in a power plant **WSB SLA 3100** is the product

of choice. As the circuit increases, higher distribution ratios are required, while the turbines protection remains the main objective.



Cyclo hexyl amine

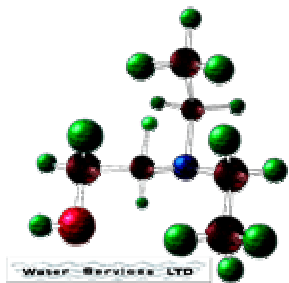


RECYCLING

Because neutralizing inhibitors return to the boiler with the condensate, they can be recycled. This is an important consideration in their use because the only loss is through non-returned condensate, steam released to the atmosphere or consumed in plant processes, or through slight venting losses in the deaerating equipment.

In the deaerating equipment, the stripping action of steam decomposes the amine-carbonate and removes most of the carbon dioxide. Only a small portion of the amine is removed through the vent of the deaerator. The amount varies with the distribution ratio .

Amines with the lowest distribution ratio, like **WSB SLA 3120 and WSB SLA 3115** suffer the lowest loss in the deaerator. The remaining amine returns to the boiler in the feed water, enters the steam, and continues the cycle.



**Di ethyl amino
ethanol**

APPLICATION

The product selection and dosage rate will depend on system design, water characteristics and operational parameters.

- When used to protect a steam system, **WSB SLA** may be added directly to the boiler with other boiler treatment chemicals.

The suggested dosing rate of **WSB SLA**, when used as a steam / condensate corrosion inhibitor, is to obtain pH 8,5-9,3 in the condensate.

When used to protect equipment in a vapor-phase hydrocarbon process, or in a flue gas system, where **WSB SLA** should be injected continuously into the gas stream and/or the wash water (if used).

Under such conditions, the required dosage of **WSB SLA**, can be estimated at 25-50 ppm in the vapor. This initial estimate may have to be adjusted upward or downward by to a considerable extent depending on the nature of the process.

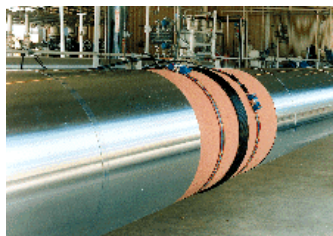
The required dosage of **WSB SLA**, when used as a flue-gas corrosion inhibitor, can be estimated at 1 gallon per 750,000 cu. ft. of natural gas burned

SAFETY

Wear suitable protective gloves and safety goggles. In case of contact immediately flush with plenty of water.

After eye contact seek medical advice. In case of spillage absorb with sand or other absorbent materials and sweep up.

Observe the warning label on product container. Before use please refer to material safety data sheet (MSDS) for additional information on wealth and safety handling features.



LABELING

EU labeling requirements

Symbol(s): **Corrosive (C)**

R Phrase(s):

- R 18: In use, may form flammable/explosive vapour-air mixture
- R 22: Harmful if swallowed
- R 34 : Causes burns.



S Phrase(s):

- S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 37/39 Wear suitable gloves and eye/face protection
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).



FDA / USDA REGULATIONS

WSB SLA can be used under FDA / USDA restricted plants, or when the steam can contact directly food or edible products, when the amine content in the steam is less than 15 ppm.

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