



INTRODUCING OUR SECURITY-STEAM TREATMENTS FOR CONDENSATE RETURN LINE PROTECTION.

Boiler condensate water contains carbon dioxide (from the feed water alkalinity) which is corrosive to steel. If left untreated, condensate water can have pH's of 5.0 to 6.5 which is corrosive to the steel piping in the condensate return lines and adds iron deposits to boilers.



Neutralising amines are a common steam line treatment that can be fed in a water treatment solution along with other treatment chemicals or it can be fed direct to the steam header. When feeding the amine to the feed water system, it should be fed downstream of the deaerating equipment. The neutralising amine is volatilised and carried out with the steam in the condensate to react with carbon dioxide. Different amines will stay with the steam (liquid – vapor distribution ratio) until it drops out of the steam and it is based on this ratio that we say whether an amine has a short run, medium run, or long run distribution. Many times amines are blended to provide a complete protection package **(and we have many blends such as S-2015, S-2030, or S-2040 to name a few).**

The four most common neutralising amines (or amine blends) are ammonia, cyclohexylamine, diethylaminoethanol, and morpholine. Neutralising amines are fed to maintain a pH of 8.2 to 8.6; however, in difficult to control systems a wider pH value of 7.6 to 8.6 may have to be used.

Ammonia (**our S-2000**) is used in steam lines where the steam contains a large amount of carbon dioxide or where there is an appreciable amount of steam loss from the condensate system. The advantage of ammonia is that the relative cost is less than other amines. The disadvantage is that it cannot be used in systems containing copper or nickel.

Cyclohexylamine (our Security-Steam series of products) has been used primarily for low pressure systems (50 down to 5 psi) and also for systems with long condensate runs.

Diethylaminoethanol (**our S-2015 and s-2030**) also called DEAE is versatile in that the distribution ratio is between that of cyclohexylamine and morpholine making it a very good medium run amine, effective in many industrial condensate systems. The disadvantage is that DEAE is not very effective in low pressure systems.

Morpholine (**used in several blends such as S-2040 series and S-2050**) has a low distribution ratio and is commonly blended with other amines. The short distribution ratio makes morpholine effective on short run systems and also for the protection of steam turbines.

Amines are a major component of a complete water treatment program for boilers and are typically used in conjunction with oxygen scavengers and dispersants sometimes in one shot products specifically blended to suite your operation.



A variety of chemical dosing pumps are available to suite your specific needs, we believe in quality pumps which are relied upon 24/7.

LOCAL SERVICE & CHEMICAL SUPPLIES CALL AGUA-SEGURIDAD

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