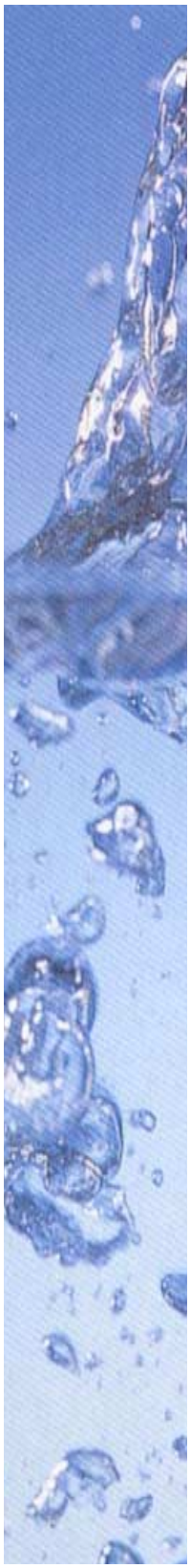
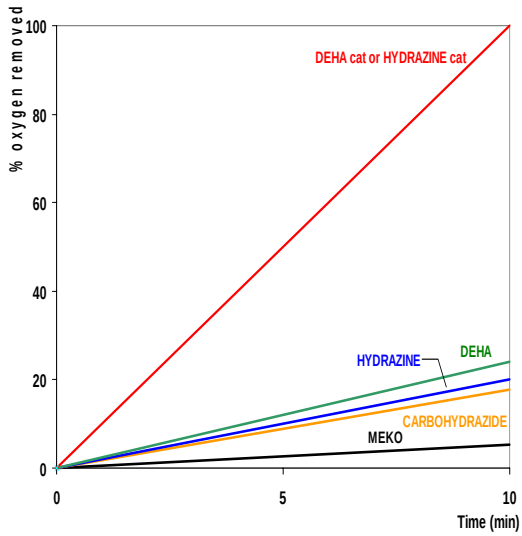


DEHA for boiler water treatment

Oxygen Scavenger

DEHA (N,N-diethylhydroxylamine) is an efficient oxygen scavenger when used in boiler systems at operating conditions. The rate of scavenging is slow at low temperature but the reaction can be catalysed by hydroquinone. This formulation is particularly suitable for wet-conservation during shutdowns.

De-oxygenation rates at 55°C and pH 9
(700 ppb oxygen scavenger for 125 ppb O_2)



At boiler's operating conditions, DEHA performs optimally.
In theory, 1.24 ppm DEHA are required for the removal of 1 ppm O_2. However, 3 ppm DEHA are recommended in practice.

Passivation

As a strong reducing agent, DEHA can convert porous and permeable hematite (rust) to magnetite, a protective coating that reduce further corrosion. Passivation tests performed at pH 8 and 5000 ppm oxygen scavenger on precorroded coupons have shown that DEHA is performing optimally compared to other alternatives.

Steam-condensate line protection

With a volatility comparable to neutralising amines DEHA has the added advantage of being distributed all along the steam-condensate circuit ensuring therefore a total control of the corrosion by elevating the pH and neutralising carbonic acid.

Volatility is defined by the vapour-liquid distribution ratio, or the ratio of the product concentration in steam relative to its concentration in the condensate.

Distribution ratio comparison

Sodium sulphite	0.0
Hydrazine	0.1
DEHA	1.3
Carbohydrazide	0.0
Morpholine	0.5
Cyclohexylamine	2.6

Health and Safety

DEHA is one of the safest oxygen scavengers (LD_{50} oral, rat = 2190 mg/kg). It is a low toxicity material and upon decomposition do not release toxic or solid by-products.

However, DEHA 85% is flammable and harmful by inhalation or skin contact. So appropriate handling measures should be followed. The material's MSDS has to be consult before any use.

Application

DEHA is particularly recommended for low and medium pressure boilers.

DTF 4-8 cours Michelet - La Défense 10
92800 Puteaux - France
www.arkemagroup.com
Tel. : (33) 1 49 00 76 57
Fax : (33) 1 49 00 50 39