

# P & M Alkalinity Test Procedure

## Procedure:

### P alkalinity:

1. Take a 25 ml. sample.
2. Add 3 drops of phenolphthalein indicator **EC-R0638**
3. Pink color should develop. If no pink color develops, there is no P alkalinity.
4. Add, 1 drop at a time of sulfuric acid **EC-R0687** until pink color disappears.
5. Number of drops X 10 = ppm P alkalinity.
6. Do not discard the sample, use the same sample to continue the M alkalinity test.

### M alkalinity:

1. Add 3 drops of total alkalinity indicator **EC-R0645**; green color will appear.
2. Add, 1 drop at a time, sulfuric acid **EC-R0687** until pink color appears.
3. Add the number of drops of sulfuric acid of both the P and M alkalinity tests.
4. Total number of drops X 10 = M alkalinity.

## Precautions:

1. Always filter the sample.

## Recommended Parameters:

Due to changes in feed water and boiler operating conditions, these recommendations must be considered as best approximations.

Steam boilers: ..... P alkalinity 350 to 500 ppm. (under ideal feed water conditions)

M alkalinity 500 to 700 ppm. (under ideal feed water conditions)

## Interpretation of Analytical Results:

### Low alkalinity levels indicate:

Not enough chemical treatment in system.  
Hardness break-through from the softener.

### High alkalinity levels indicate:

Unfavorable feed water conditions.  
Insufficient blow-downs.  
Overfeed of chemical treatment.

Consult your **ENERCON** Technical Field Representative.

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