

# Residual Alkalinity Nomograph

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Change in base malt mash pH due to RA.

(measured at room temperature)

(pH ligt .35 lager bij Mash temp 65C)

Approximate

Mash pH change

due to RA

**Residual Alkalinity  
in Brewing Water  
as CaCO<sub>3</sub> ppm**

Total Alkalinity  
as CaCO<sub>3</sub> ppm

[Mg] ppm

0 50 100 150 200 250

0 50 100 150 200 250 300 [HCO<sub>3</sub>] ppm

0 10 20 30 40 50 60 70 80

0 50 100 150 200

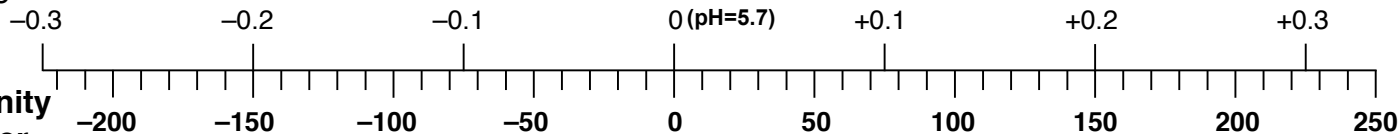
**Effective Hardness**

Note: This is not the same as  
Total Hardness as CaCO<sub>3</sub>.

[Ca] ppm

0 10 20 30 40 50 100 150 200 250

**Suggested Beer Color Guide due to Amount  
of Residual Alkalinity in Brewing Water (+/-10EBC per 0.1pH)**



To Use:

1. Draw a line between the Calcium and Magnesium concentrations to determine the Effective Hardness of your water.
2. Draw a line from the Effective Hardness value through the Total Alkalinity of your water to determine the Residual Alkalinity. The approximate effect of the residual alkalinity on the mash pH is shown above.
3. The beer color scale is a suggestion to help you choose a beer style with enough specialty malt acidity to balance the indicated amount of residual alkalinity in the brewing water in order to achieve a mash pH in the preferred range.
4. **The preferred range of mash pH, for all styles, regardless of color, is 5.2 to 5.6 as measured at room temperature.**