

# 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

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



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

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

[Mg] ppm

0 10 20 30 40 50 60 70 80

0 50 100 150 200 250

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

120 106 315

Blauw=Amersfoort

Oranje=Bilthoven

Groen=Dublin Dry Stout

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

34 40 120

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.**