

## Water Report Input

Hover cursor over cells w/ red triangles to display helpful comments

Cations	Enter Ion Concentrations from Water Report (mg/L or ppm)		Anions
Calcium (Ca)	13.0	34.0	Bicarbonate (HCO <sub>3</sub> )
Magnesium (Mg)	5.0	0.5	Carbonate (CO <sub>3</sub> )
Sodium (Na)	19.0	21.0	Sulfate (SO <sub>4</sub> )
Potassium (K)	3.0	30.0	Chloride (Cl)
Iron (Fe)	0.0	1.3	Nitrate (NO <sub>3</sub> )
		0.0	Nitrite (NO <sub>2</sub> )
		0.0	Fluoride (F)

If water report provides only Total Alkalinity (as CaCO<sub>3</sub>), use the calculator below to estimate the Bicarbonate and Carbonate concentrations. Insert the estimated results in the table above.

Reported Total Alkalinity (as CaCO <sub>3</sub> ) (mg/L or ppm)	Reported or Measured Water pH	Estimated Bicarbonate Concentration (ppm)	Estimated Carbonate Concentration (ppm)
28.0	7.7	34.0	0.1

Ion Balance Results			
Total Cations (meq/L)	1.96	0.08	Cation/Anion Difference
Total Anions (meq/L)	1.88		

Hardness and Alkalinity Results			
Total Hardness, as CaCO <sub>3</sub> , (ppm)	53	29	Alkalinity (ppm as CaCO <sub>3</sub> )
Permanent Hardness, as CaCO <sub>3</sub> , (ppm)	24	43	RA Effective Hardness, (ppm as CaCO <sub>3</sub> )
Temporary Hardness, as CaCO <sub>3</sub> , (ppm)	29	17	Residual Alkalinity (RA), (ppm as CaCO <sub>3</sub> )

## Ion Concentration Conversion Calculator

Input Reporting Unit	Input	Output	Output Reporting Unit
Calcium (ppm as CaCO <sub>3</sub> )	28.0	11.2	Calcium (ppm)
Magnesium (ppm as CaCO <sub>3</sub> )	28.0	6.8	Magnesium (ppm)
Bicarbonate (ppm as CaCO <sub>3</sub> )	28.0	34.2	Bicarbonate (ppm)
Carbonate (ppm as CaCO <sub>3</sub> )	28.0	16.8	Carbonate (ppm)
Sulfate (ppm as SO <sub>4</sub> -S)	7.0	21.0	Sulfate (ppm)
Nitrate (ppm as NO <sub>3</sub> -N)	0.3	1.3	Nitrate (ppm)
German Hardness (GH) (degrees)	0.0	0.0	Calcium (ppm)
Karbonate Hardness (KH) (degrees)	0.0	0.0	Bicarbonate (ppm)
Hardness (meq/L) or (mval)	0.0	0.0	Calcium (ppm)
Alkalinity (meq/L) or (mval)	0.0	0.0	Bicarbonate (ppm)

# Bru'n Water

[Link to Bru'n Water website for updates and to donate](#)

## Water Profile Adjustment Calculator

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Desired Water Profile	Calcium (ppm)	Magnesium (ppm)	Sodium (ppm)	Sulfate (ppm)	Chloride (ppm)	Bicarbonate (ppm)	Cations (meq/L)	Anions (meq/L)	Total Hardness	Alkalinity (ppm)	RA (ppm)	SO <sub>4</sub> /Cl Ratio
Rowayton - Ideal ▼	100.0	25.0	70.0	50.0	30.0	50.0	10.1	2.7	353	41	-45	1.7
Existing Water Profile	13.0	5.0	19.0	21.0	30.0	34.9	1.9	1.9	53	29	17	0.7
Dilution Water Profile												
Distilled Water ▼	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	
Dilution Percentage	0	oz/gal	0.0	pt/gal	< These conversions are provided for your convenience							
Diluted Water Profile	13.0	5.0	19.0	21.0	30.0	34.9	1.9	1.9	53	29	17	0.7
Target Water Adjustment (ppm)	87.0	20.0	51.0	29.0	0.0	15.1	8.2	0.9	300			
Actual Water Adjustment (ppm)	76.8	0.0	85.8	141.6	104.2	-82.3	7.6	4.5	192			
Finished Water Profile	89.8	5.0	104.8	162.6	134.2	-47.5	9.4	6.4	245	-39	-106	1.2

### Total Water Additions

								Mash		Sparge	
								Water Volume (gal)	4.8	Water Volume (gal)	4.4
Mineral	Addition (gram/gal)	Calcium (ppm)	Magnesium (ppm)	Sodium (ppm)	Sulfate (ppm)	Chloride (ppm)	Bicarbonate (ppm)	Total Mineral Additions (grams)	Total Mineral Additions (grams)		
Gypsum (CaSO <sub>4</sub> )	0.96	59.0			141.6			4.6	4.3		
Epsom Salt (MgSO <sub>4</sub> )	0.00		0.0		0.0			0.0	0.0		
Canning Salt (NaCl)	0.65			67.6		104.2		3.1	2.9		
Baking Soda (NaHCO <sub>3</sub> )	0.25			18.2			48.4	1.2	Not Recommended		
Calcium Chloride (CaCl <sub>2</sub> )	0.00	0.0				0.0		0.0	0.0		
Chalk (CaCO <sub>3</sub> )	0.17	17.8					54.4	0.8	Not Recommended		
Pickling Lime (Ca(OH) <sub>2</sub> )	0.00	0.0					0.0	0.0	Not Recommended		
Magnesium Chloride (MgCl <sub>2</sub> )	0.00		0.0			0.0		0.0	0.0		
Acid	Addition (mL/gal)				Sulfate (ppm)	Chloride (ppm)	Bicarbonate (ppm)	Total Acid Addition (mL)	Total Acid Addition (mL)		
Lactic ▼	1.00	Strength	88.0	% ▼	0.0	0.0	-185.1	4.8	See Sparge Sheet		

Add CaSO<sub>4</sub> & CaCl to repl: Lime in Sparge Water?

Most mineral additions should be added to both the mash water and sparge water. DO NOT add alkalinity producing minerals such as chalk, baking soda, or pickling lime to sparge water since that counteracts the desired sparge water acidification. Either reserve those minerals from the sparge water and add directly to the kettle, or delete them and substitute other calcium or sodium containing minerals to make up for their contributions. Do not use the acid amount calculated for Mash Adjustment from this sheet for the Sparge Water adjustment. Use the acid amount calculated on the Sparge Acidification sheet for Sparge Water. **Add acid prior to heating the water.**

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