

# Hydrofacts – Technical Bulletin - SC012

## Scale Control, Understanding Water Hardness Measurements

- In the UK water hardness is usually reported as ppm CaCO<sub>3</sub>, this means parts per million expressed as if it were present as calcium carbonate
- 1 mg/l is exactly equal to 1 ppm and therefore these units can be interchanged without problem
- There are many other ways of expressing hardness values that you may come across, common ones are, ppm as Ca, grains/gallon (imperial and US) and hardness degrees in English (also known as Clark), French and German varieties, the following conversions may be useful
- 100ppm hardness as CaCO<sub>3</sub> = 40ppm hardness as Ca
- 1 grain per British imperial gallon = 14.3 mg/L = 0.836 grains per U.S. gallon (gpg) = 14.3 ppm
- 1 English degree of hardness = 1 Clark = 14.3 mg/L = 0.836 gpg = 14.3 ppm
- 1 French degree of hardness = 10.0 mg/L = 0.585 gpg = 10.0 ppm
- 1 German degree of hardness = 17.9 mg/L = 1.05 gpg = 17.9 ppm
- Water hardness definitions vary slightly between reference sources, however the most common definitions are seen in the table below

Description	ppm as CaCO <sub>3</sub>	ppm as Ca	°Clarke
Soft	0 to 50	0 to 20	0 to 3.5
Moderately Soft	51 to 100	21 to 40	3.6 to 7
Medium / Slightly Hard	101 to 150	41 to 60	7.1 to 10
Moderately Hard	151 to 200	61 to 80	10.1 to 14
Hard	201 to 300	81 to 120	14.1 to 21
Very Hard	300 to 350	121 to 140	21 to 24.5
Aggressively Hard	Over 351	Over 141	Over 24.6



# HYDRO *facts*



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