



KH in a Koi Pond: Carbonate Hardness, and Why pH Follows It

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In short

- KH is not GH. KH — carbonate hardness, or alkalinity — buffers pH. GH, the calcium and magnesium, does not buffer anything.
- Hold roughly 105-180 ppm CaCO_3 , which is 6-10 dKH. Below 90 ppm (5 dKH) pH can go unstable inside a day. Below 55 ppm (3 dKH) is critical.
- To raise it, use plain sodium bicarbonate — baking soda, never baking powder — dissolved in pond water first, and no more than 1-2 dKH per day with a re-test between steps.
- KH falls silently. pH stays flat right up until the buffer runs out, then drops all at once, usually overnight.

COMPARISON	KH — CARBONATE HARDNESS (ALKALINITY)	GH — GENERAL HARDNESS
What it measures	Bicarbonate and carbonate ions dissolved in the water	Dissolved calcium and magnesium
Its job	Neutralizes acid as fast as the pond produces it — the water's buffering capacity	Supplies minerals the fish use for osmoregulation and skeletal health
Does it affect pH	Yes. It is the thing holding pH where it is	No. GH provides no pH buffering at all
What happens when it is too low	pH loses its anchor, becomes unstable, then collapses suddenly	A slow mineral shortfall — a husbandry issue, not an overnight emergency

Raise by no more than 1-2 dKH per day, and re-measure before the next step. Fish that have been living in thin, low-buffer water are acclimated to it, and a correction applied all at once becomes its own shock. Getting there slowly and confirming each step is not caution for its own sake — it is the method.

How H2Koi reports KH. H2Koi does not run a titration, and we would rather say so plainly than let the number imply something it is not. KH is a continuously derived value — computed from the sonde's measurements and reported across a 0-20 dKH range. Its value is direction and rate: whether the buffer is holding, drifting or falling, and how fast, which is precisely what a weekly snapshot cannot show. Treat it as continuous early warning on the parameter that moves first. H2Koi does not report GH — general hardness is not in its parameter list, and no reading on the page should be read as one. It does not detect disease or parasites.