Hydroponic PPM and EC Chart

Target nutrient strength by crop and growth stage, on both meter scales. Readings are taken from the reservoir with your tap water already in it.

The Hydroponist
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Targets by crop

EC IN MS/CM

CROP	STAGE	EC	PPM 500	PPM 700
Lettuce, leafy greens	Seedling	0.5 to 1.2	250 to 600	350 to 840
	Growing	1.4 to 1.8	700 to 900	980 to 1260
Basil, soft herbs	Growing	1.0 to 1.6	500 to 800	700 to 1120
Parsley	Growing	1.8 to 2.2	900 to 1100	1260 to 1540
Spinach	Growing	1.8 to 2.3	900 to 1150	1260 to 1610
Kale	Growing	1.8 to 2.1	900 to 1050	1260 to 1470
Tomatoes	Seedling	1.0 to 2.0	500 to 1000	700 to 1400
	Vegetative	1.5 to 2.0	750 to 1000	1050 to 1400
	Fruiting	2.0 to 2.4	1000 to 1200	1400 to 1680
Peppers	Growing	1.5 to 2.2	750 to 1100	1050 to 1540
	Fruiting	2.5	1250	1750
Strawberries	All stages	1.0 to 1.2	500 to 600	700 to 840
Microgreens	Whole crop	1.0 minimum	500	700

Converting scales

EC	PPM 500	PPM 640	PPM 700
0.5	250	320	350
1.0	500	640	700
1.2	600	768	840
1.5	750	960	1050
1.8	900	1152	1260
2.0	1000	1280	1400
2.4	1200	1536	1680

THE MATHS

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PPM = EC × 500, 640 or 700
EC = PPM ÷ the same number
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Before you mix

Know your scale first

No meter measures PPM. It measures conductivity then multiplies. US meters usually multiply by 500, European and Australian meters by 700. The same bucket reads 700 or 980. A PPM number without its scale means nothing.

Read your tap water before you mix

Typical US tap water sits near 0.3, so a lettuce target of 1.5 is only 1.2 of fertiliser. Above 1.0 you have no headroom left. Switch to filtered or reverse osmosis water.

TDS and PPM are the same reading

TDS is the thing being estimated, PPM is the unit it gets reported in. Growers and meter makers use both words for the same number. Neither is a true measurement.

Two numbers to distrust

Strawberries quoted at 1.8 to 2.2 in general tables. The specialists say 1.0 to 1.2 and flush above that. Tomato seedlings are genuinely unsettled between 1.0 and 2.0, so run half strength of your mature recipe instead.

Ranges from Cornell CEA, University of Arizona, Ohio State, Oklahoma State, Virginia Tech, Hort Americas and published trials. PPM calculated from source EC.