



Reg. No: L 9664 Act No. 36 of 1947

A WATER-SOLUBLE BUFFERING AGENT THAT SEQUESTERS CATIONS EG. CALCIUM & MAGNESIUM FOR USE WITH GLYPHOSATE AND SULFOSATE HERBICIDES

ACTIVE INGREDIENT: Diethylene Triamine Penta (Methylene Phosphonic Acid) & Amino Tris (Methylene Phosphonic Acid)

THE SOLUTION TO WATER HARDNESS AND AN ALKALINE PH.

Agricultural water is obtained from various sources such as boreholes, dams and rivers and is used to irrigate crops as well as apply crop remedies. The quality of water can differ from source to source. Some of the water properties that are important to us are properties such as water hardness (a measure of the amount of natural salts in the water) and pH.

Alkaline water can break down some active ingredients through a process called alkaline hydrolysis. Numerous insecticides such as Organophosphates and Carbamates are very susceptible to alkaline hydrolysis. Thus it is important to buffer the water's pH. Max 357 effectively buffers water to a pH of 5 to ensure that the active ingredient is at its optimal stability in a tank mix. The correct pH can also assist tank mix compatibility and stabilization of actives. See Table 1 for active ingredient stability pH.

Active	Optimal pH	Active	Optimal pH	Active	Optimal pH	Active	Optimal pH
2, 4-D Amine	pH = 4.5 - 7	Disulfacton	pH < 7	Chloropyrifos	pH = 5	Simazine	pH = 5
Malathion	pH = 5-6	Azadirachtin	pH = 5	Diazinon	pH < 7	Dimethoate	pH = 4
Diquat	pH < 7	Paraquat	pH < 7	Malathion	pH = 6	Methomyl	pH < 7
Deltamethrin	pH < 7	Dithane (Mancozeb)	pH = 5	Dicamba	pH = 5 - 6	Dicofal	pH = 5

A buffer is a solution consisting of a weak acid and its conjugate base. A weak acid has a stronger attraction to protons that counteracts rapid changes in the solution's pH. It can be seen from Figure 1-3 that Max 357 effectively buffers various water conditions.

It is seen from comparisons that Max 357 competes well with other competitor benchmarks in the market. Max 357 rapidly brings the pH of highly buffered water down to 5. The water that was selected was obtained from water sources used in agriculture. It should be noted that even though the water appears to be neutral (pH close to 7) a high Electrical Conductivity (EC) indicates a high natural salt concentration. Salts in water resist the change in pH and thus create a natural buffering effect that can sometimes be detrimental to active ingredient stability.

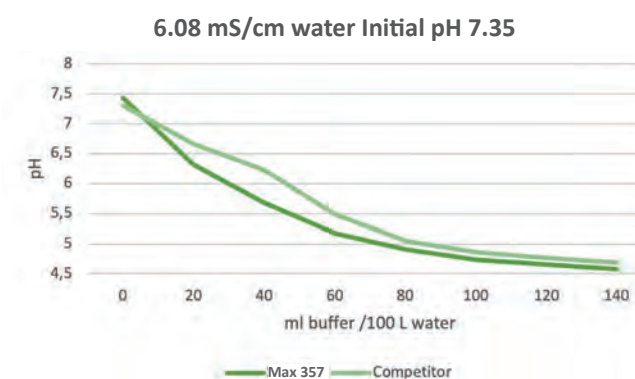


Figure 1: High EC water buffering test

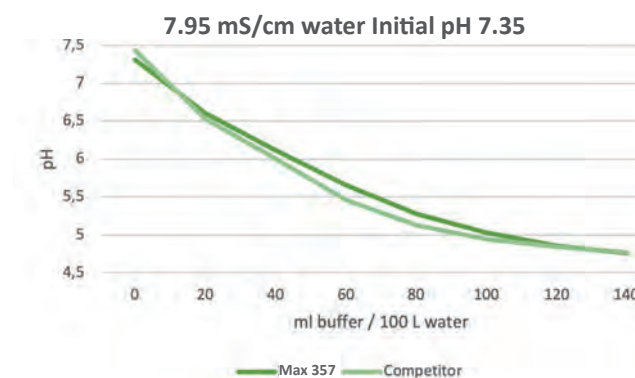


Figure 2: High EC water buffering test

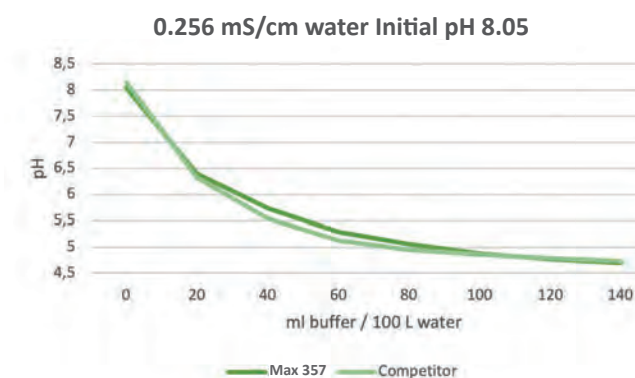


Figure 3: High EC water buffering test

