



AQUA MAG[®]

Blended Phosphate

AQUA MAG[®] blended phosphate is an effective corrosion inhibitor and sequestrant for use in potable and industrial water systems. The product is a liquid concentrate of exceptional purity, clarity, and stability, utilizing a broad spectrum of phosphates for better sequestration and corrosion control.

BENEFITS OF AQUA MAG[®] BLENDED PHOSPHATE

- Inhibits corrosion of steel distribution system water lines, iron and galvanized piping, and lead and copper plumbing.
- Decreases iron tuberculation, which can extend the life of the distribution system.
- Inhibits lead and copper leaching, which results in lower lead and copper in the delivered potable water.
- Lessens the occurrence of microbial-influenced corrosion, providing longer system life.
- Controls iron and manganese, minimizing rusty and dirty water in the system.
- Reduces discoloration, staining, and mineral build-up, resulting in fewer customer complaints.
- Diminishes calcium scale deposits typically seen in hot water lines and heaters.
- Lowers chlorine demand and improves disinfection.
- Saves money by reducing corrosion and scale, lowering chlorine demand, and decreasing hydrant flushing, leaks, and failures.



PROPERTIES AND CERTIFICATIONS



- Clear homogenous liquid
- Viscosity < 2 cps at 70° F
- Totally soluble and freeze/thaw stable
- NSF maximum feed rate 23 mg/L
- Freezing Point < 38° F
- Shelf Life (neat) 2 years
- Specific Gravity 1.37 ± 0.03
- Total Phosphate 34.5% ± 1.0%
- pH (1% solution) >6.0
- Ratio ortho/complex polyphosphate 30/70
- Bulk Density 11.4 ± 0.25 lbs. per gallon
- UL, ANSI/NSF Standard 60, Kosher approved
- Conforms to 21CFR, Section 182 and 184 (USDA)

CASE STUDY

PROBLEM: Heavy tuberculation build-up in distribution system reducing flows drastically and causing a high chlorine demand. Periodic dirty (red) water complaints from consumers and calcification of rapid sand filter beds.

PLANT OPERATION: Lime softening, pumping average 1.3 MGD, maximum 2.2 MGD. AQUA MAG[®] was fed, without dilution, with a metering pump at a dosage of 1.3 mg/L as PO₄ at a feed rate of 75 lbs (6.85 gal) of AQUA MAG[®] per MGD of water.

WATER QUALITY: Finished water.

Iron (Fe).....	.01 ppm	Magnesium (Mg).....	17 ppm
Silica (SiO ₂).....	14 ppm	Manganese (Mn).....	.01 ppm
pH.....	8.35 ppm	Sulfates (SO ₄).....	92 ppm
Alkalinity (M).....	27 ppm	Total Hardness (TH).....	125 ppm
Calcium (Ca).....	22 ppm		

RESULTS: Lowered complaints, less discolored water. Chlorine demand decreased 37%; electric pumping cost decreased 12%. Filter backwash frequency decreased 5 (X)⁺. Calcium deposits removed.

HYDRANT FLOW TESTS:

LOCATION	BEFORE (GPM)	AFTER ONE YEAR (GPM)	PIPE SIZE	% IMPROVED
430 East Fourth Street	291	412	4"	42%
912 East Fourth Street	168	412	4"	145%
225 East Eleventh Street	444	605	6"	36%
207 East Park Street	629	672	6"	7%
503 East Park Street	168	412	4"	145%
101 East Third Street	1062	1210	12"	14%
			AVERAGE IMPROVEMENT	64.8%

COST SAVINGS AT A 7 MGD SYSTEM

Reduced hydrant flushing at dead-ends, reduced rusty water complaints and resulted in a yearly savings of **\$40,000**.

	<u>Savings</u>
• Reduced customer complaints	\$3,400
• Three fewer valves replaced per year	\$2,000
• Fifty hours saved in maintenance	\$1,300
• Water meter accuracy improved	\$16,000
• Pumping efficiency increased	\$1,300
• Main cleaning postponed	\$16,000
Initial Yearly Savings	\$40,000



CARUS VALUE ADDED

Like fingerprints, no two drinking water supplies are the same. Let Carus Chemical Company solve your water quality headaches by using computer modeling to select the most cost effective product, determine dosing requirements, and predict performance. AQUA MAG[®] blended phosphate is packaged in 1, 5, 15, 30 & 55 gallon containers and is available in bulk quantities from the manufacturing facility, local warehouses, and bulk terminals. The product is shipped in safety-sealed, food-grade containers or certified tankers and a lot number identifies every container. For dosage rates or answers to your technical questions, please call Carus Chemical Company (800) 435-6856.