

Newman Zone QR

A Complex Blend of Soluble Electron Donors

Newman Zone QR™ is a complex blend of food grade electron donors, nutrients, cofactors and vitamins. It is used as a rapidly utilized electron donor for enhancing the in situ bioremediation of chlorinated solvents, nitrated explosives (RDX, HMX, TNT), selected toxic metals (chrome VI), perchlorate and nitrate. Newman Zone QR™ provides microbes with a variety of soluble electron donors, vitamins, minerals and cofactors that stimulate microbial growth in ways that simple electron donors cannot.

Application

Newman Zone QR™ is diluted with water and injected below the water table to stimulate in situ bioremediation. Active within days the carbohydrates and lactate donors promote rapid biodegradation. The complex sugars, phospholipids and soluble protein can extend fermentation longer than simple substrates like lactate or sugars. For projects that need to stimulate biodegradation for years, rather than months, Newman Zone QR™ should be combined with a slow release donor such as Newman Zone® or Newman Zone HRO™.

Benefits – No Added Sodium

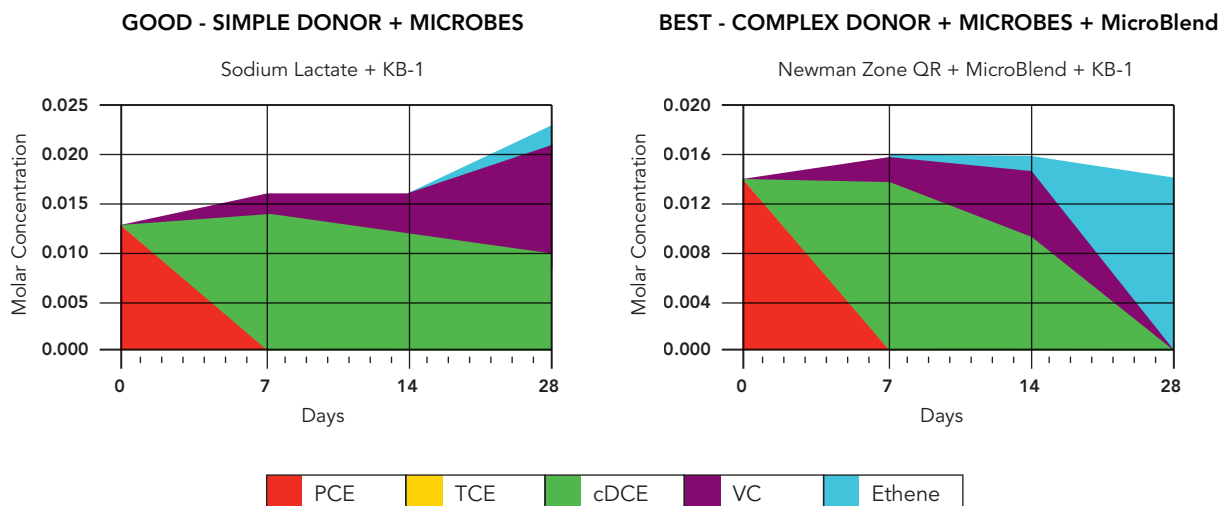
Unlike 60% sodium lactate, Newman Zone QR™ contains no sodium salts. The lactate content is provided by potassium salts providing potassium as a microbial nutrient as well as avoiding regulatory concerns over sodium content.

Benefits – Easily Used in the Field

Newman Zone QR™ diluted with water has a low viscosity similar to water. The Newman Zone QR™ blend provides everything needed for optimal microbial growth in one easy to use, cost-effective package, and eliminates the need to blend donors, vitamins, yeast extract or other additives in the field.

Benefits – Better Performance Than Simple Electron Donors

Newman Zone QR™ is designed to stimulate rapid microbial growth. The formulation is optimized for anaerobic dechlorinating bacteria such as Dehalococcoides through a blend of electron donor, nutrients, cofactors and vitamins. In laboratory microcosms with the KB-1 culture and 10 mg/L of PCE, a simple 60% sodium lactate donor had converted only a small portion of PCE to ethene during the first 28 days of incubation. In contrast the Newman Zone QR™ amended microcosm exceeded the performance of the 60% sodium lactate in half the time. After 28 days Newman Zone QR™ had produced complete conversion of 10 mg/L of PCE to ethene.



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Product Content

Chemical Name	CAS Number	Composition
Potassium Lactate	996-31-6	28-32%
Simple and Complex Carbohydrates	NA	15-19%
Phospholipids	NA	5-7%
Soluble Vegetable Protein	NA	2-4%
MicroBlend™	NA	3%
Diammonium Phosphate	7783-28-0	1%

Product Characteristics

Parameter	Unit	Specification
Density	g/cm ³	1.24
pH		7-7.5
Appearance		Opaque Brown Liquid

Packaging

Newman Zone QR™ is available in 5-gallon pails (50 pounds net) and 55 gallon drums (500 pounds net.)

Storage

Newman Zone QR™ does not support combustion and is chemically non-reactive. Newman Zone QR™ can be stored on-site for 2-4 months without refrigeration. Avoid freezing conditions.

Safety

All components are food grade. No protective equipment is necessary under normal use conditions.