RNAS REMEDIATION PRODUCTS
6712 West River Road, Brooklyn Center, MN 55430
(763) 585.6191 www.RNASinc.com

www.rnasinc.com

USDA CERTIFIED BIOBASED PRODUCT
PRODUCT 100%

Newman Zone QR75

Soluble Quick Release Electron Donor – Low Cost & High Hydrogen Production

Newman Zone QR75 is a soluble electron donor with essential nutrients and vitamins. QR75 contains over 75% fermentable material and produces 2X the hydrogen as sodium lactate[1]. Rapid fermentation provides molecular hydrogen to quickly reduce competing electron acceptors (DO, sulfate, nitrate) and produce anaerobic conditions to stimulate biological treatment of chlorinated solvents, chrome VI, nitrated explosives (RDX, HMX, TNT), perchlorate and nitrate. Additionally, Newman Zone QR75 contains Nitrogen, Phosphorous, and Vitamin B12 for rapid microbial growth.

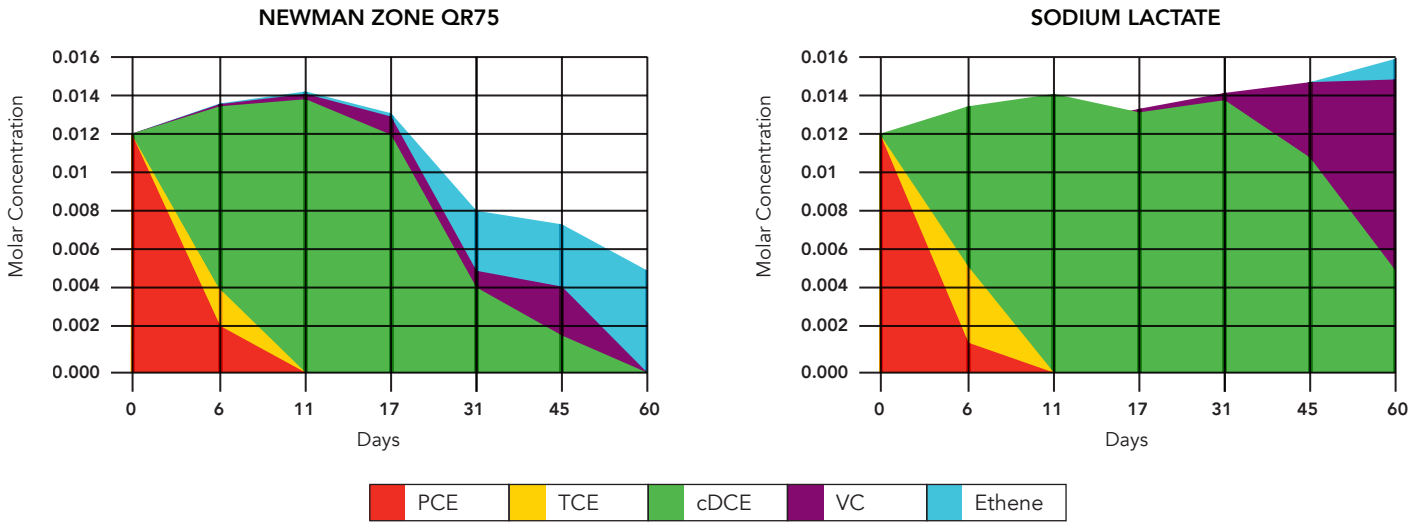
Application

Newman Zone QR75 is diluted in water and injected into groundwater to stimulate bioremediation *in situ*. As a water soluble electron donor Newman Zone QR75 can be injected using direct push methods, injection wells, infiltration trenches, and groundwater circulation systems. This fast acting electron donor creates reducing conditions within days. For projects that need to stimulate anaerobic biodegradation for years with a single injection, QR75 should be combined with a slow release donor such as Newman Zone 55 or Newman Zone HRO.

Benefits

- *Rapid microbial growth with a blend of Electron Donor, Nitrogen, Phosphorus, and Vitamin B12.*
- *No Sodium Salts – Ideal for salt sensitive aquifers where Sodium Lactate is not an option.*
- *Easy to handle in cold weather - unlike molasses or other glycerin-based products, Newman Zone QR75 has a low viscosity when cold (150 Centipoise at 0 degrees C) and a freezing point of less than -30 degrees Celsius.*

Newman Zone QR75 is formulated to stimulate rapid microbial growth. The formulation is optimized for anaerobic dechlorinating bacteria such as Dehalococcoides mccartyi (Dhc) through a blend of electron donor, N&P nutrients, and vitamin B12. A microcosm was prepared to compare Newman Zone QR75 with sodium lactate[1]. Each microcosm was spiked with 10 mg/L of PCE and 1,000 mg/L of the electron donors by wet weight. A Dhc bioaugmentation culture was applied at a low dosage ($2.5x10^7$ Dhc cells/liter) to compare how the electron donors affected Dhc cell growth. As expected, the Newman Zone QR75 stimulated rapid Dhc cell growth and achieved complete conversion of PCE to ethene more quickly than sodium lactate.



1. Food grade sodium lactate is sold as a 60% by weight solution in water – hydrogen calculations based on the 48.2% by weight lactate content.

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Product Content

Chemical Name	CAS Number	Composition
Glycerin	56-81-5	70-80%
Urea	57-13-6	<2%
Phosphoric Acid	7664-38-2	<0.3%
Vitamin B12	68-19-9	2.5 mg/Kg
Water	7732-18	20-25%

Product Characteristics

Parameter	Unit	Specification
Density	grams/mL	1.20
pH		7-7.5
Appearance		clear liquid to light amber color

Packaging

Newman Zone QR75 is available in drums (525 pounds net) and totes (2,600 pounds net).

Storage

Newman Zone QR75 is stable and may be stored for several months on site at ambient temperatures. The product is easy to pump or pour even in sub-zero conditions and will not freeze at temperatures above -30 Celsius.

Safety

No protective equipment is necessary under normal use conditions.