



# Lactate

Sodium-Potassium-Calcium-Ethyl

## Sodium Lactate 60%

### Benefits Include

Proven remediation technology since the 1990's

Applicable for in-situ groundwater remediation applications

Economical solution compared to other carbon substrate products

Can combine with other reagents for mixed contaminant plumes

Combine with Dehalococcoides (DHC) bioaugmentation cultures to speed up the reduction process and reduce time of remediation

### Proven Field Applications

Groundwater injections in soils with low or high permeability and fractured rock applications

Permeable reactive zones (PRZs) and Source Areas

Direct Push Injection of nano to submicron scale droplets into groundwater

### Applicable to Treatment of many contaminants including:

**Chlorinated Solvents**  
PCE, TCE, DCE, TECA, TCA,  
And degradation products  
Perchlorate  
Other chlorinated compounds

**Heavy Metals and Inorganics**  
Hexavalent Chromium (CrVI)  
Uranium  
Nitrate  
TNT

**Description:** C.E.R.E.S. sodium lactate is a sodium salt of natural lactic acid made by fermentation from sugar. It is food grade, pH neutral and 100% Made in America!

**Application:** Lactate is commonly used for bioremediation as a carbon donor to enhance the degradation of contaminants in soil and groundwater.

When injected into the groundwater zone of a contaminated site, lactate is metabolized by indigenous bacteria or engineered anaerobic bacteria such as KB1 or SDC-9. During this process, sodium lactate is fermented into simpler compounds like acetate, which further undergoes microbial reduction. The electrons (hydrogen) released during these metabolic processes are used by bacteria to reduce chlorinated compounds into less harmful substances, such as ethene and chloride ions.



Sodium, potassium, calcium, and ethyl lactates are commonly used alone and in combination with other donors such as emulsified vegetable oils or its derivatives as well as ferrous gluconate and calcium acetate. Contact C.E.R.E.S. to see if your site might benefit from a different form of lactate.

### Physical Chemical Properties

Grade:	Food Grade Product
Molecular Formula:	C <sub>3</sub> H <sub>5</sub> O <sub>3</sub> Na
Molecular weight:	112 g/mol
Form:	Liquid
Viscosity:	Consistency of water
pH:	6.5-7.5 (20% solution)
Density:	11.1 lb/gal
Odor:	Almost odorless
Taste:	Mild saline taste

### Purity

Sodium lactate content:	59-61	% w/w
Water:	39-41	% w/w
Sodium Content:	12.1-12.6	% w/w
Chloride:	Max. 50	ppm
Sulphate:	Max. 20	ppm
Iron:	Max. 10	ppm
Lead	Max. 2	ppm
Chromium	Max. 1	ppm
Cyanide	Max. 0.3	ppm

