

Provect ERD-CH4™ Liquid, Antimethanogenic ERD Amendment

Technology Description

A high fermentable carbon content ($\geq 85\%$ carbon) liquid bioremediation amendment of self-emulsifiable vegetable oil uniquely combined with Provect-CH4® methane control technology (**Photograph 1**). The product readily disperses in water and the antimethanogenic agent remains suspended in a stable dispersion. This product is ideal for injection through screened groundwater remediation wells.



Photograph 1. Provect-ERD CH4™ 15: 1 Water:Oil (Left), 85% Carbon + 4% AMR Self-Emulsifiable Oil Concentrate (Middle), and 85% Carbon Self-Emulsifiable Oil Concentrate, no AMR (Right).

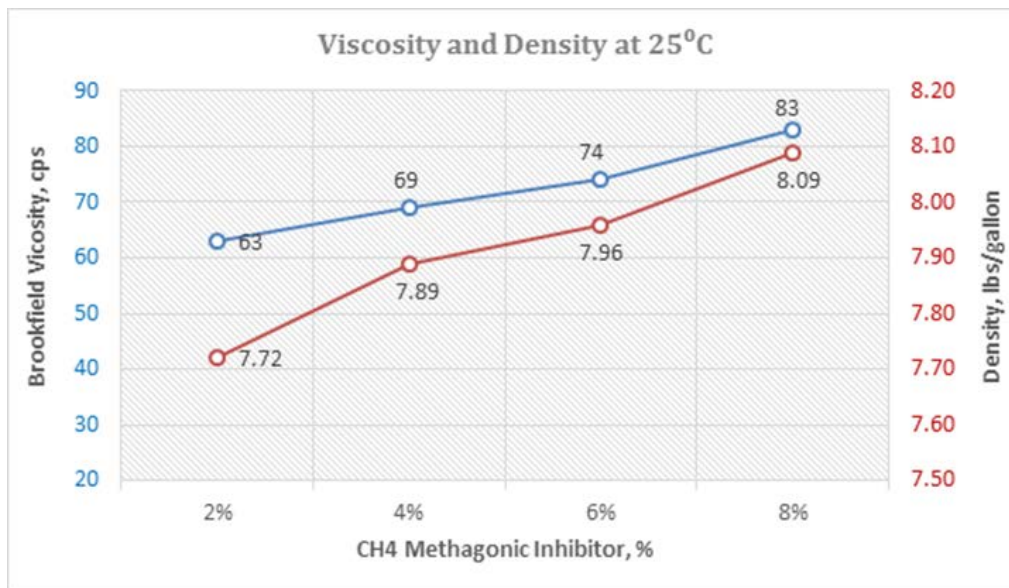
Product Data

The materials are all combined at our own manufacturing facilities in the USA (and Europe) at proportions and formulations optimized for a given site. ERD-CH4™ is manufactured using 100% food grade ingredients that provide fast- and slow-release characteristics. Provect-CH4® antimethanogenic reagent (AMR) is typically added at three to five weight percent of the mass of the fermentable carbon. The common dosage of ERD-CH4 provides groundwater concentrations of 1,000 to 3,000 ppm TOC plus a minimum 150 ppm of AMR within the targeted treatment area.

Color	Translucent Yellow
Density (lbs. / gal)	7.75 to 8.46 (varies based on AMR)
Physical State	Liquid
Odor	Earthy
Viscosity (Brookfield, 30 rpm @25°C)	50-100 cps
pH – 1% w/v in water	7.3

Oil Sample	Al	P	S	Zn	Fe	Mg	Ca	Na	K
Self-Emulsifiable Vegetable Oil	1.2	1,265	17.2	19.6	1.4	138	135	15.4	507
	to	to	to	to	to	to	to	to	to
	1.3	1,751	28.2	39.7	2.3	143	187	15.9	954

- All units mg/kg oil



Applications

ERD-CH4™ is an electron donor (carbon substrate) used to create ERD (Enhanced Reductive Dechlorination) biogeochemical conditions in groundwater, in combination with controlled methanogenesis and a high percentage of soluble carbon for environmental bioremediation. The product is manufactured and shipped as a liquid system that is easily and safely handled in the field.

Storage

Store product in the original sealed container at a temperature of 40 to 95° F. Do not allow to Freeze. Reseal tightly after each use.

Shelf life

Minimum shelf life under proper storage is one year from date of production.

Packaging

Available in steel drums, non-returnable 275 USG totes, and bulk

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US patents 9,221,699; patents pending 14/854,640 and others

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