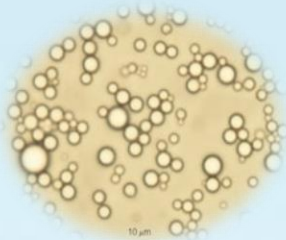


# MicroEvo™ Self-Emulsifier



- Emulsify locally procured vegetable oil
- Prepare a high-quality, stable, and small droplet size EVO
- Instant emulsification, standard mixing equipment suffices
- Easy to distribute in the subsurface, long-lasting electron donor
- Sustainable Approach

Mixing MicroEVO with vegetable oil and water instantly prepares EVO



Vegetable Oils



MicroEVO



Emulsified Vegetable Oil (EVO)

## Principle

MicroEVO™ allows you to reduce costs for emulsified vegetable oil injection. Tersus will supply the emulsifying package, allowing our clients to source the soybean oil locally. Tersus can help you identify suitable soybean oil suppliers. You simply add the products together on site with equipment your injection contractors already own. The cost savings should be significant, as you will not be paying for shipping costs of the oil from a remote location.

Field-prepared EVO using *MicroEVO™* has a median droplet size of approximately one micron. At room temperature, 68 °F (20 °C), *MicroEVO™ Self-Emulsifier* is a yellow-amber liquid material with a viscosity of approximately 1,000 centipoise (cP). By comparison, at room temperature soybean oil has a viscosity of 80 cP and pancake syrup has a viscosity of 2,500 cP.

Tersus will ship the self-emulsifying agents to your site and assist you in identifying local suppliers of soybean oil. By purchasing the oil directly, you will dramatically reduce shipping costs and third party mark-up, you will easily comply with local regulations and offer a sustainable EVO alternative, Add emulsifier to the oil in the field (8 parts emulsifier to 92 parts oil), followed with water at a suitable ratio, using a centrifugal pump. The mixture will spontaneously form a Microscale emulsion, ready for injection. Your field crew can inject the micro-emulsion suspension directly or further dilute it according to a predetermined ratio.

## Advantages

- Reduced shipping and third-party costs
- Buy Local!
- Simplify regulatory approval process

## Field Application Design

Uniform distribution of an electron donor is the key to successfully enhancing anaerobic bioremediation. The correct placement of the product minimizes hot spots around injection points. Unfortunately, excessive amounts of an amendment can create adverse conditions for bacterial growth or for groundwater flow. Effective distribution also ensures that there is sufficient electron donor at the periphery of the radius of influence around injection points, in order to enhance effective bioremediation.

The diluted emulsion has a viscosity essentially equal to that of water. Therefore, Tersus suggests injecting a relatively dilute emulsion in a single step, as the oil droplets move with the injected water. The dilution allows the oil in *MicroEVO™* to

be distributed over a much larger area around an injection well than would be the case with an injection of undiluted product. The oil droplets may remain suspended in the injection water between a few days and a few weeks after injection. They will then adsorb onto soil surfaces to act as a long-term source of electron donor. Injection points may be temporary or permanent wells or direct-push points.

### Product Content

Chemical Name	CAS Number	Composition (% wt)
Food-contact/Food grade Emulsifiers	Proprietary	100

### Product Characteristics

Parameter	Specification
Specific Gravity	1.01
Solubility in water	Dispersible
Flash Point	280 °C
Appearance	Liquid amber, mild odor.

### Packaging Options

- 55-gallon poly drums
- 275-gallon IBC containers

### Safety

No protective equipment is necessary under normal use conditions. All ingredients consist of food or food grade additives.