OIL & GAS INDUSTRY
EMULSIFIER

An impressively effective non-reactive colloidal emulsifier.

RAW's Emulsifier is designed to interact with hydrocarbons, polymer fragments and other particulates that cause friction and sedimentation.

RAW Biochem Is

Readily Biodegradable
Non-Reactive
Non-Toxic
Non-Corrosive
Non-Hazardous
Not Flammable
Contain No VOC's

RAW Biochem Products Do NOT Contain

Petroleum Distillates
Glycol Ethers
Caustics
Ozone Depleting Agents
Nonylphenols
Endocrine disruptors

One of the major issues confronting oil and gas/oil operations revolves around the treatment of produced fluids for re-use or disposal, or with efficient transportation of fluids impacted by laminar flow.

In these and other applications, suspended solids represent the most significant issue.

Due to the substantive surface area creating friction in the fluid, suspended particles are uniquely contradictory to the use of friction reducing agents, and can pose significant hurdles to operators of oil and gas wells, production or midstream piping, as well as with disposal wells.

RAW Biochem's emulsifier is designed to encapsulate suspended particles below the threshold where they are able to generate substantial friction. RAW's Emulsifier creates a stable emulsion, which makes pumping easier throughout the processing system while concurrently preventing fluid separation.

RAW Biochem's Emulsifier is designed to interact with all manner and type of hydrocarbons as well as with polymer fragments and other particulates that can cause friction and sedimentation in processing systems, tanks and all piping configurations.

Active ingredients are effective as a result of the creation of electrically charged particles known as micelle. When activated in water, micelles repel each other in a ceaseless random movement. Measuring only 1 – 4 nanometers in size, their extreme surface-area-to-volume ratio enables far greater efficacy than conventional technologies or formulas.

Micelles are non-reactive and will not interact or alter non-native ingredients or hydrocarbons.

TECHNICAL DATA SHEET

Description

Readily biodegradable and formulated with domestically sourced plant-based ingredients, RAW's emulsifiers are built as a novel surfactant package for aiding in the separation of water and oil emulsions. Emulsifier comes with and without a Winterizing Agent and functions in fresh water or brines. Unlike petrochemical emulsifiers, RAW's do not contain nonylphenols or any other endocrine disruptors or xenoestrogens.

Physical State	Liquid
Colour	Light Amber
Odour	Mild
pH	8.4 – 8.9
Base	Plant Extracts
Persistence & Degradability	Readily Biodegradable

Directions for Use

Emulsifiers are used in treating produced hydrocarbons and are used as the first step in oil slop for emulsification - demulsification and separation processes and in emulsifying bitumen or fuels in pipelines.

A bottle shake test will establish proper dosing. Pull several samples into small bottles and dose in intervals starting at 50 ppm, 100 ppm, 250 ppm, etc. Always keep one bottle untreated as a control.

Shake bottle well. Record the time it takes for emulsification to occur in each bottle. Dosing generally starts at lower ppm for lower viscosity oils and increases for heavy crude oil. If higher dosage seems appropriate, confirm this with a second round of bottle shake tests prior to beginning scaled up treatment.

C.H.A.T.

Chemical: Unlike typical petrochemicals, RAW formulations may not perform as well with higher concentrations of product than they would with higher dilution rates. In a new process or application, trials are strongly recommended to achieve the correct chemical concentration.

Heat: The optimum temperature ranges from 43^{0}C – 80^{0}C. Product can be used in steam applications up to 490^{0}C (540^{0}F).

Agitation: Where applicable, agitation aids in dislodging soils from surfaces so they can be rinsed away.

Time: Dwell time is dependant on the application, heat and chemistry but generally speaking, longer dwell times enable more satisfactory results.