



//

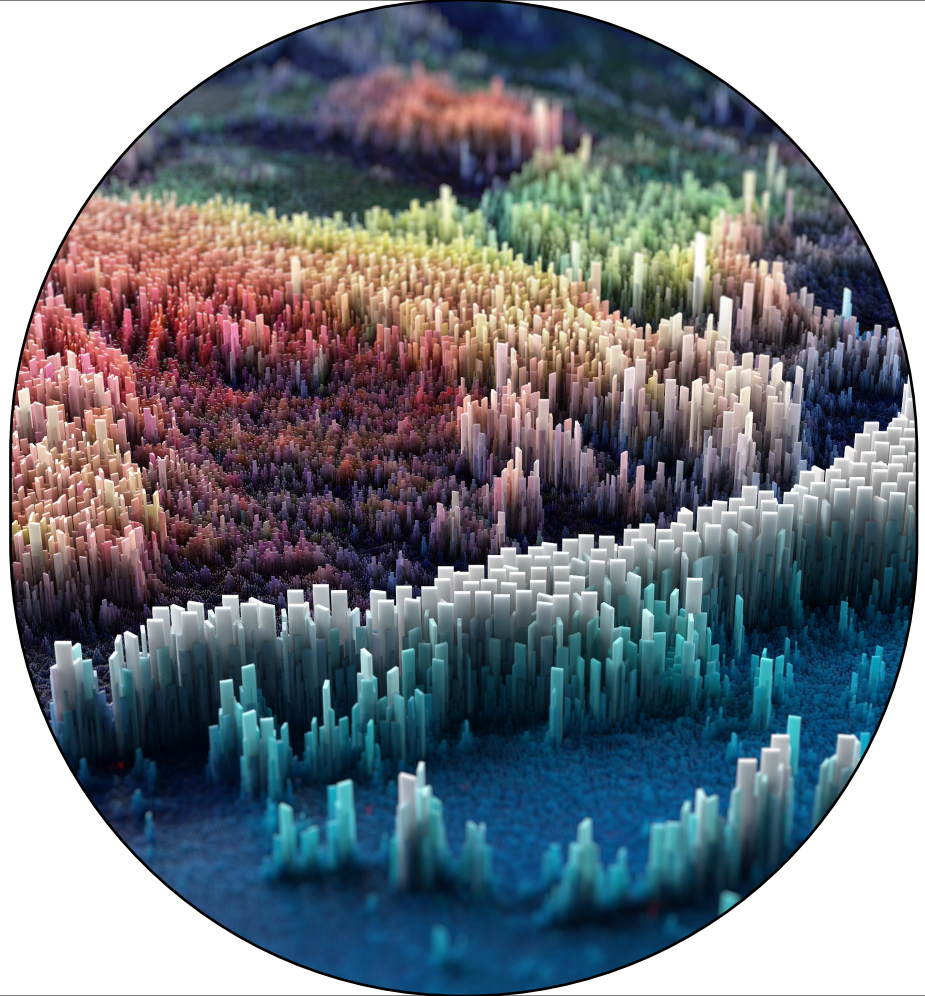
**Oil and gas
natural
degreaser**

INDUSTRIAL STRENGTH GREEN CLEANER



What sets **BIONEAT™** apart from the available market?

- ⦿ All-Natural
- ⦿ Non-Toxic Biodegradable
- ⦿ Non-Fuming
- ⦿ Non-Caustic
- ⦿ Non-Flammable
- ⦿ Non-Hazardous





A product of Biomolecular Nanotechnology



A Unique combination of all-natural ingredients mixed using a proprietary process.

A specialized chemical reaction produces super surface-active amphiphilic molecules (can mix with both oil and water)

They have water-attractive (hydrophilic) head and an oil attractive (hydrophobic) tail.

They appear structurally similar to traditional soap/detergent molecules.

Before use they form micellar nanoparticles with the heads outside and tails inside,

INDUSTRIAL GREEN

Sourced from 100% all natural plant-derived, sustainable raw ingredients.

Energy and resource efficient manufacturing process with low environmental impact.

Resource efficient concentrate form, diluted with water to desired strength.

One formula replaces nearly all other cleaning products.

Decontaminates toxic chemicals, kills germs and repels insects.

Runoff wastewater continues to decontaminate drains, sewers and waterways.



ENVIRONMENTALLY CLEAN

BIONEAT™ contains NO: Chlorine; Ammonia; VOCs; SVOCs; POMs; Biocides; Pyrethroids; NPEs; PCBs; PAHs; Organophosphates; Phthalates.

It is as safe as drinking water.

BIONEAT™ ingredients meet criteria for the US EPA Design for the Environment Program (DfE)/Safer Detergents Stewardship Initiative (SDSI).

None of the ingredients appear on the California Proposition 65 or Canadian CEPA-DSL lists.

Certified by the USDA BioPreferred Program.

Absolutely nontoxic and harmless to humans and animals, 10 times safer to aquatic life than conventional detergents.

Clinically Proven and Lab Certified. KILLS 99.9% of Viruses, Germs, Pathogens, Bacteria, Fungus, Mold & Mildew.

INDUSTRIAL STRENGTH GREEN CLEANER



Creating a
class of
its own.

SUPER SURFACE ACTIVITY

Compared to traditional surfactants, BIONEAT™ has significantly higher surface-activity due to its unique natural enzymes.

When BIONEAT™ is applied to grease and oil contaminants, its micellar nanoparticles automatically dissociate.

The tails immediately attract oil/grease molecules and leave the water-attractive heads outside.

The heads bond with and are completely surrounded by water molecules.

When flushed with water, the trapped oil and grease molecules are completely dissolved and removed as a biodegradable residue.

Rig Wash



Machine & Engine Wash



Well Bore Cleaner



Soil Reconditioner



Heavy Duty Degreaser

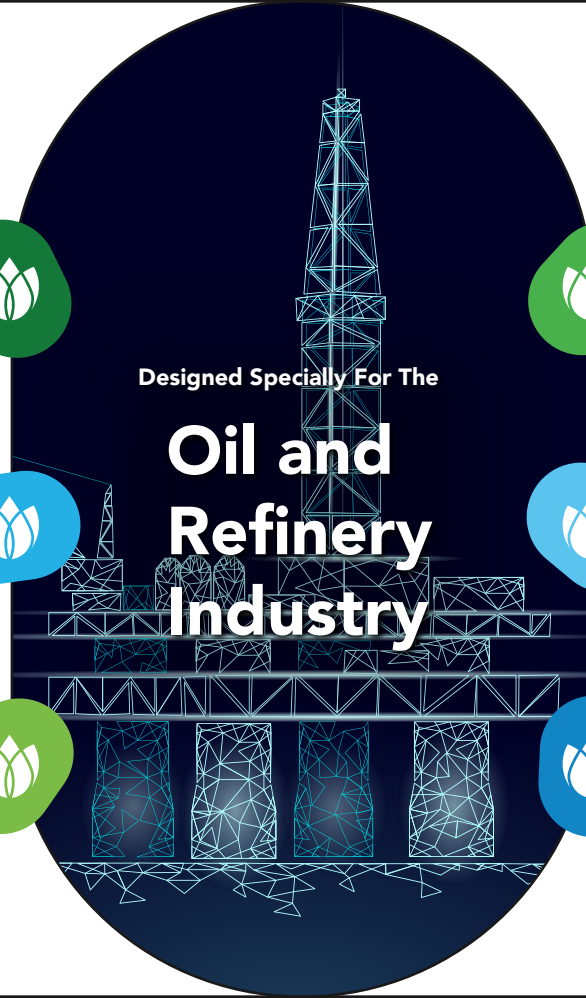


Ship & Tanker Wash

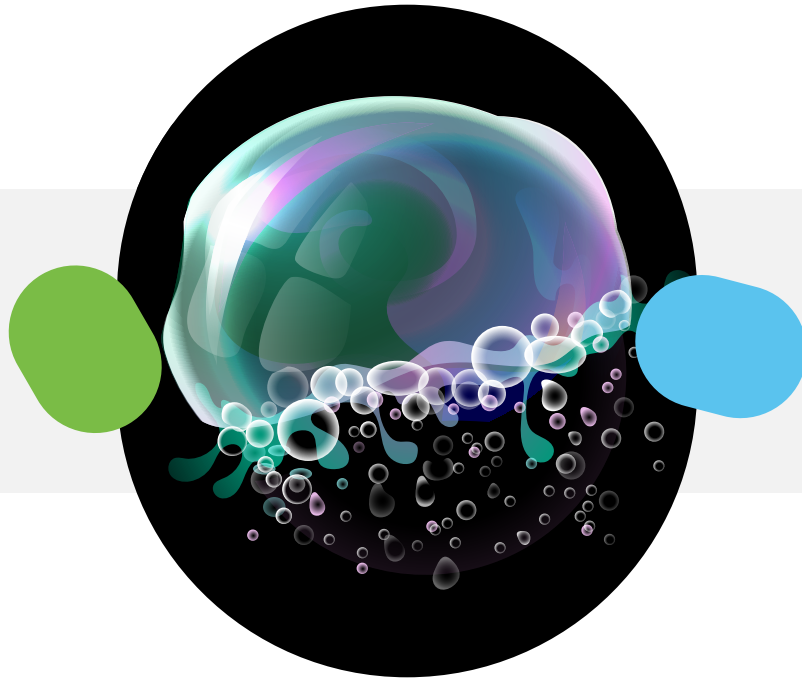


Designed Specially For The

Oil and Refinery Industry



BIOMOLECULAR



NANOMOLECULAR

INDUSTRIAL STRENGTH GREEN CLEANER

Resources

(click to download)



Executive Summary



EPA Partnership

Safety Data Sheet



BioNeat Oil & Gas Overview

Bioneat.com

Thank you for your interest in BioNeat. BioNeat™ is a very unique and diverse surfactant. Applications are unlimited primarily because BioNeat™ is non harmful and biodegradable. It is currently being used in both agriculture and oil and gas treatments. BioNeat™ has an EPA safer choice award and is on the Safer Choice List (EPA.Gov) as well as the USDA Marine Bio-based preferred certificate. BioNeat™ is a state of the art formulation of all inert ingredients that serve a multitude of uses in various commercial industries.

OIL AND GAS INDUSTRY

- BioNeat™ is used as a standard surfactant for stimulation and completion projects. The action for oil and gas is that it micro-solubilizes hydrocarbons into an innocuous suspension. Micro-solubilization of hydrocarbon particles attains environmental advantages in the suppression of volatile organics while increasing bioavailability to the natural biodegradation processes.
- The formula's non-corrosive properties along with the bacterial remediation properties makes BioNeat™ a truly green and environmentally responsible choice for the industry.
- BioNeat™ has been successfully used in multiple hydraulic fracturing jobs, stripper wells and acid matrix jobs. Allowing the oil and gas industry to use a chemical replacement that is perfectly suitable for all down hole activities.
- BioNeat™ is being tested now by one of the largest crude storage companies in the USA as a safer alternative for cleaning and maintaining the tanks.
- BioNeat™ was successful in cleaning a BioFuels facility replacing the standard cleaning practice of scraping off the calcified spillage , which damages the piping, paint and structural integrity of pressurized vessels.
- BioNeat™ was placed into a pressure sprayer and applied to the affected area without fear of contaminants or run off issues. BioNeat™ would like the opportunity to send your group samples in the form of 275 gallon totes, to be tested rigorously against any product that you currently use.
- BioNeat™ is being used to remove pipe dope joint compound from pipe ends for each inspection and reapplication from factory to drill site.
- BioNeat™ can be used in conjunction with pigs to clean sections of pipeline.
- BioNeat™ products are safe and effective cleaning products for workers to clean their clothes and skin after jobs.

Surfactants are found in many products we use on a daily basis; For example, Dish Soap, Laundry detergents, Cleaners, Sanitizers, Mouthwash, Toothpaste, Deodorants, and Skin Care Products. A large portion of these products are made for topical application; absorbing 60-70% of what's topically applied, the skin is the human body's largest organ, a part of our integumentary system. BioNeat™ is non-toxic, environmentally safe and would be a disrupter to the consumer goods market containing standard surfactants on market.

BioNeat for Oil and Gas



Stimulation

BioNeat™ has been used on Hydraulic fracturing operations as a stand alone surfactant. BioNeat was tested in the labs along with the proppant, gelant, and additional slurry fluids to make sure there were no key changes in viscosity limits. BioNeat™ will NOT adversely react with organics. The jobs were pumped as engineered and expected, we hope to see react with organics. The jobs were pumped as engineered and expected, we hope to see BioNeat™ should help in limited corrosion control by inoculating the formation at the fracture.



Completions

BioNeat™ is natural degreaser and as such will be a top choice for keeping completions equipment clean and grease free. Injector heads and BOP's for Coiled Tubing operations act as secondary surface containments while operations are ongoing, all chemicals, packing oils for packer lubrication and well bore fluids mix together to make a very difficult cleaning task. BioNeat™ can be used to safely and responsibly clean these units at the well site or the way bays. BioNeat™ has an EPA Safer Choice award and a USDA Marine bio-preferred certificate, which means there are no environmental risks associated with using this product. It can be used in wash bays without fear of toxins running into the drainage systems and no special equipment or containment will need to be used. BioNeat™ can be packaged into several sizes and premixed for ease of smaller jobs, or can be sent in 275 gallon totes and attached to pressurized sprayers for large equipment degreasing.



Production

BioNeat™ can be used to treat production wells as cleaner for production equipment down hole on older stripper wells. BioNeat™ has been proven to increase production by stripping the trapped oil off of the rock and equipment and allowing it to move to surface. As an emulsifier and a wetting agent this product works for various needs in production wells. BioNeat™ is being tested to determine its ability to control or neutralize existing paraffin and asphaltene issues in existing production wells and to what degree of control or remediation is possible.



Safety

BioNeat™ can be affectively used as a laundry product to remove oil and grease from fire resistant uniforms mandated in the oil and gas industry. This alone will negate the need for expensive dry cleaning as well as keeping the uniforms accessible to the operators. There are no chemicals, toxins or residues in BioNeat™ which allows them to be safely and affectively cleaned. The absence of harsh chemicals make BioNeat™ a top choice product to keep uniforms clean without breaking down the material the way chemical and dry cleaning processes leave them.



Soil Remediation

BioNeat™ is being tested for soil remediation. Once crude has entered the soil the entire area must be excavated and sent to specific landfills earmarked to handle this waste. BioNeat™ can be used directly on the affected soil in order to strip the crude away from the clay and soil base. The cost savings will allow the oil and gas companies to clean the operations area in a safe and environmentally responsible way.

Additional applications with BioNeat™ in oil and gas.

- Drilling projects
- Water recycling
- Midstream operations
- Refineries
- Drilling and completions tool maintenance
- Additive to other chemical protocols
- Acid Matrix operations



A QUALITATIVE EVALUATION

Tank Bottom Sludge Treatments Of Crude Oil Storage Tanks In



Condition:

Two 271,000 bbl (200 ft diameter) crude oil storage tanks were treated with Bioneat prior to cleaning the tanks for inspection. Bioneat is an EPA certified green, non-toxic, biodegradable product. It is safe for humans and the environment. The Bioneat was used to aid in the removal of the sludge build up in the tanks that could not be pumped because actual volumes of sludge before and after the treatment was not able to be physically measured, visual inspection and customer estimates were used to evaluate the results.

Customer Comments:

The Tank Supervisor expressed that he believed the product significantly reduce the amount of sludge present and adequately softened the remaining sludge enabling it to be removed with a hydraulic gear pump. He also stated that not having to remove any of the product with shovels and buckets made the job more efficient reducing the cleaning crew billable hours.

Procedure:

Both tanks were pumped as low as possible, and the inspection man-way opened for visual inspection. After the visual inspection, the man-way was bolted back on, and the tank filled to approximately 10 feet with a light crude oil. Bioneat concentrate was added to a tank truck containing local well water resulting in a 20 percent Bioneat solution. The Bioneat solution was added to the tank and the two propellers were then engaged to agitate the tank.



RESULTS

Tank 1:

Visually estimated to have an average of 6 to 8 inches of sludge accumulation prior to the treatment. The 6 to 8 inches is 2,800 to 4,200 bbls of accumulation. The customer decided to use one tote of the Bioneat concentrate. The treatment fluid was blended in a tank truck and added to the tank. The resulting fluid was a 20% solution of Bioneat totaling 1,375 gallons. The propellers were engaged for approximately eight days and the tank re-opened for visual inspection. The customer's impression was that 1/3 to 1/2 of the sludge was dissolved and removed. The remaining sludge was softened sufficiently to be pushed to a hydraulic gear pump and transferred from the tank. It was also estimated to have reduced the cleaning time by 2 or 3 days.

Tank 2:

Visually estimated to have an average of 8 to 12 inches of sludge accumulation prior to the treatment. The 8 to 12 inches is 4,200 to 5,600 bbls of accumulation. The customer decided to use two totes of the Bioneat concentrate. The treatment fluid was blended in the tank truck and added to the tank. The resulting fluid was a 20% solution of Bioneat totaling 2,750 gallons. The propellers were engaged for approximately 11 days and the tank re-opened for visual inspection. The customer's impression this time was approximately the same as with tank 1. An estimated 1/3 to 1/2 of the sludge was dissolved and removed. The remaining sludge was softened sufficiently to be pushed to a hydraulic gear pump and transferred from the tank. It was also estimated to have reduced the cleaning time by 3 or 4 days.

Conclusions:

Given the small treatment volumes and the use of well water to mix the treatment fluid, the customer viewed these treatments as a success. The treatment volumes used on these two tanks ranged from approximately 0.8% to 1.0% of the sludge volume in tank 1 and approximately 1.1% to 1.5% of the sludge volume in tank 2. The treatments are believed to have paid for themselves by just the cleaning time being reduced. What is more, the sludge dissolved and returned to a sellable/usable product is a big win. Using the 1/3 estimate, 900 to 1400 bbls in Tank 1 and 1400 to 1850 bbls in Tank 2 were reclaimed. We are confident that a treatment of 3.0% of the sludge volume and possibly some procedure modifications will be a highly effective treatment to reclaim the sludge and dramatically reduce cleaning time.

Recommendations:

Bioneat recommends using 3.0% of the sludge volume for the treatment volume. In addition, it is preferred the fluid be mixed with distilled or RO water for best results. The Bioneat mixture will react with the hardness in the water consuming some of its effectiveness. If possible, we believe that adding the treatment fluid to the tank with just enough oil to cover the sludge and allowing a day or two soak time prior to floating the roof and engaging the propellers, the results would be improved.



BioNeat™ is a 100% plant based bio-surfactant that is used as a replacement for toxic and harmful solvents and chemicals. BioNeat™ is a natural anti-bacterial and anti-corrosive nano particle measuring 1.2 nm in size, which allows it to penetrate deep into surfaces better than most other fluids. Acting as both an emulsifier and a wetting agent, BioNeat™ has proven its capability to enhance production by effectively stripping trapped oil off rock and equipment.

Environmental Synergy Group has committed its time and resources proving the effectiveness of BioNeat to increase oil cut and oil production in downhole applications. The following are results of testing done by ESG and its customers. BioNeat concentrate was mixed with standard water and pumped downhole. The downhole dilution varied due to formation depth, tubular volume, perforation locations to maximize fluid absorption. The wells were then shut-in for 48 hours, and after the 48 hour shut-in, operators were to continue their normal activity. The below summarizes volumes and concentrations pumped downhole

Region	Treatment	Concentration	Water Volume (BBL)	BioNeat (BBL)	Total Volume (BBL)
West Texas	10/12/2023	20%	26.00	6.55	32.55
Oklahoma	12/18/2023	2%	48.96	1.24	50.20

Treatment for West Texas was pumped down the tubulars while Oklahoma was pumped down the backside. Both applications were simple and required little machinery and oversight. Customers were able to continue normal operations without additional costs incurred. Production increases and oil cut were reported back to ESG. Customers reported increases in production consistent with expectations but the below summarizes the highest realized and sustained production increase.

Region	Concentration	Beginning Prod. (BBL)	Highest Prod. (BBL)	% Increase	Days Held	Total Increase (BBL)
West Texas	20%	11.76	16.8	43%	28	141.12
Oklahoma	2%	0.5	1.75	250%	29	36.25

BioNeat's ability to breakup asphaltenes and paraffins down hole can allow customers to expect to see an increase in oil production, similar to those above. BioNeat has an EPA Safer Choice Award and a USDA Marine Bio-Preferred Certificate meaning there are no increased environmental risks associated with using this product. BioNeat treatments can be custom tailored to any customer needs with volumes ranging from 275 gallon totes down to 32oz spray bottles. Let us help you find the right size and treatment plan for you.



BIONEAT AWARDED SDSI CHAMPION 2022

For additional information please contact:

Behzad Farahani
Senior Executive Advisor
Global Head of Strategy
bf@artscienceinc.com
+1 203 964 7777

[Website 1](#)
[Website 2](#)