enventives

ORGANO-LIGNTITES AND MODIFIED LIGNITES

2016-2017

EVOLVING SOLUTIONS & INDUSTRY PROVEN DRILLING FLUID PRODUCTS

WE INNOVATE OTHERS DUPLICATE

enventives is the premiere wholesale manufacturer specializing in organo-lignite derivatives based on the reaction of humic acids with various high molecular weight organic compounds and premium modified lignite products for use in both aqueous fluids.



MANUFACTURING • GRINDING • BLENDING • SIZING

enventives

EVOLVING SOLUTIONS & INDUSTRY PROVEN DRILLING FLUID PRODUCTS

enventives

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ABOUT US

enventives offers a complete line of loss circulation material, seepage loss additives, fluid loss additives and other specialty products developed to solve your biggest problems.

enventives products are proven and our prospects are limitless. Whether we're producing a custom label product or working directly with a consumer, you'll be impressed with our technology, quality, price and service.

At enventives, our innovative solutions are based on polymers, fibers, colloids and surfactants derived from naturally-occurring materials. We provide superior performance over other synthetic or traditional products in an environmentally-friendly manner. We are hard-working, blue-collar green.

Our core focus is to be a powerful force in the oil and gas industry, while maintaining a strong presence in other areas, including the agriculture, water cleaning and wax oxidation fields.

Your business needs new ideas and technology to thrive. We understand. enventives will remain focused on the development of unique and innovative technologies to produce products which provide a variety of solutions for our partners. Inventing and manufacturing Specialty Chemicals is our business and our results are industry proven leaders. Let us help your company get ahead of the curve while staying within your budget.

ORGANOPHILIC LIGNITE TECHNOLOGIES

An organophilic lignite, is a lignite that has gone through a chemical process which renders a colloidal oil dispersible lignite.

- VEN-CHEM 222
- VEN-CHEM 208
- VEN-CHEM 215

Our Ven-Chem™ organo-lignites are a useful fluid loss additive for Oil and Synthetic Base Fluids. Due to their colloidal nature and controlled solubility non-aqueous fluids, they are useful in controling the fluid loss properties of oil base fluids.

MODIFIED LIGNITE TECHNOLOGIES

VEN-REZ II™

Ven-Rez II™ is a chrome-free lignite derivative designed to provide improved filtration control and stabilize rheological properties in high temperature water base muds. Ven-Rez II™ is based on a new lignite derived resin.

VEN-ALK™

VEN-ALK™ is a highly efficient, multi-purpose mud conditioner for water base muds. VEN-ALK™ is a pre-reacted salt produced by the reaction of sodium hydroxide with selectively mined "Leonardite".

VEN-REZ I™

Ven-Rez I™ is a chrome-free resinated lignite derivative engineered with a potassium ion to provide improved filtration control and stabilize rheological properties in high temperature water base muds while providing increased levels of shale inhibition and stabilization.

VEN-K™

Ven-K™ is a highly efficient, multipurpose mud conditioner for water base muds. Ven-K™ is a prereacted salt of potassium hydroxide and lignite. Ven-K™ is primarily used as a fluid loss additive and shale control additive in Water-Based Fluids.

Oil Based Fluid Loss

enventives, LLC specializes in organo-lignite (amine lignite) derivatives based on the reaction of humic acids (derived from oxidized lignite) with various high molecular weight organic compounds such as, but not limited to, fatty amines.

These reactions result in a conversion of normally water soluble/ dispersible humates into Organo-Humates that are soluble/dispersible in non-aqueous solvents such as oils.

These organo-humates are black, free flowing powders that produce colloidal dispersions in non-aqueous systems.

Our Ven-Chem™ organo-lignites are a useful specialty fluid loss additive for oil base drilling fluids. Due to their colloidal nature and controlled solubility in diesel and mineral oils, they can be used to control the fluid loss properties of oil base fluids at temperatures up to 500° F and with special application techniques, they have even been effective at temperatures exceeding 500° F.

We are one of the few suppliers in the world with mass production capabilities for organo-lignites and we have a successful 30-year history in developing and producing these products for our global customer base.

What is a Ven-Chem™?

A NonAsphaltic Fluid Loss additive for your Oil Based drilling fluids without the formation damage and expensive cleanups during completion operations.

EXPERIENCE THE VEN-CHEM™ ADVANTAGE

enventives, LLC specializes in the manufacture of organo-lignites (amine treated lignites). We are one of the few suppliers in the world with mass production capabilities and one of even fewer with a history of researching, developing and producing these types of products.

Our organo-lignite was originally designed as a non-asphaltic, oil dispersible fluid loss additive for oil muds and invert oil mud systems. Our Ven-Chem™ products are an economical alternative to gilsonite products, asphalt products and oil soluble polymers.
Enventives produces a family of organo-lignite derivatives based on the reaction of humic acids (derived from oxidized lignite) with various high molecular weight organic compounds such as, but not limited to, fatty amines. These reactions result in a conversion of normally water soluble/ dispersible lignites into ORGANO-LIGNITES that are soluble/dispersible in non-aqueous solvents such as oils. These organo-lignites are black, free flowing powders that produce colloidal dispersions in non-aqueous systems.

Our Ven-Chem™ organo-lignites are a useful specialty fluid loss additive for oil base drilling fluids. Due to their colloidal nature and controlled solubility in diesel and mineral oils, they can be used to control the fluid loss properties of oil base fluids at temperatures up to 500° F and with special application techniques, they have been effective at temperatures above 500° F.

Ven-Chem™ organo-lignites offer a better cost per performance than gilsonite products, asphalt products and oil soluble polymer products. The controlled solubility and no melting/softening point properties of the Ven-Chem™ organo-lignites minimize the amount of formation damage and considerable clean up costs which are normally associated with gilsonite and asphalt products. In most applications our Ven-Chem™ organo-lignites have little to no effect on the rheological properties of the drilling fluid.

Some of the useful secondary properties our Ven-Chem™ organo-lignites provide are as emulsification enhancement, emulsion stabilizer, and dispersant in certain types of oil based drilling fluid systems. Ven-Chem™ organo-lignites can also be used in special slug treating situations in water based drilling fluids. They can be incorporated into an oil pill and added with a special slugging technique whereby the pill is pumped around the hole. This is particularly useful in cases of differential pressure sticking in pressure depleted sands.

enventives proudly offers the premium Ven-Chem™ organophillic lignite line of oil based fluid loss products:

- Ven-Chem 215™
- Ven-Chem 208™
- Ven-Chem 222™

Testing is highly recommended to the pick best cost/performance product for you application. The specific additives, orders of additions, temperature, shear time and other factors can influence solubility and performance of the specific Ven-Chem.

Varying systems in similar conditions might require a different Ven-Chem™ additive or concentration to realize similar results.
The Ven-Chem™ fluid loss additives should be bench tested in the fluid system under expected field conditions to determine the best Ven-Chem product to utilize in the fluid system.

For example, some customers have found they can utilize Ven-Chem 215™ in their fluid systems at temperatures above 300°F. If it is known that sustained temperatures above 350°F will be encountered Ven-Chem 208™ and Ven-Chem 222™ should be evaluated for use in the system. For sustained temperatures below 350°F Ven-Chem 215™ and Ven-Chem 208™ should be evaluated for use in the system.

In the event of any testing issues or problems with the Ven-Chem™ products please let us know so we can share our knowledge, experience and expertise in the usage of our Ven-Chem™ organo-lignite products.
The enventives team will provide technical assistance to our customers and clients with regards to our products and their compatibility within their fluid systems. Technical assistance is available for the design and testing of complete fluid systems as well as the handling of routine or special drilling issues.

THE VEN-CHEM™ ADVANTAGE
3 PRODUCT CHOICES OF
NON-HAZARDOUS, NON-TOXIC, AND NON-FORMATION DAMAGING
ORGANOPHILIC LIGNITES FOR THE REDUCTION OF OIL-BASED MUD FLUID LOSS

THE VEN-CHEM™ DIFFERENCE

enventives is a key supplier of Organo lignites to the drilling fluids market. enventives holds a number of process, application and material composition patents on oil dispersible lignite derivatives. Headquartered in Lafayette, LA, enventives, LLC maintains a small yet aggressive research and development facility that emphasizes progress. Our laboratories concentrate on improving existing products and stress the continual development of new products, new product lines and process improvements.

Our team is dedicated to inventing cutting edge products that are not only unique, but environmentally sound and cost efficient. What is an Organophilic Lignite? An organophilic lignite or amine treated lignite, is a lignite that has gone through through a chemical process which renders a colloidal oil dispersible lignite.

Some of the advantages gained from utilizing an organophilic lignite are: Controls HTHP filtrate Works in all types of Oil Base Muds and Synthetic Base Muds at varying concentrations Increases the thermal stability of of fluids Provides supplemental emulsion stability at high temperatures .

What are the differences between available fluid loss additives? asphalts: some controversy still exists in using asphalts as fluid loss additives because of its status as a toxin in some quarters where it is restricted to use in low-toxicity mineral oil systems.

Performance wise, as temperatures increase, the asphalt-based fluid loss additives became more soluble (melt) in the oil and less effective as a fluid loss additive and cause unnecessary formation damage. gilsonite-based products: generally, more effective as fluid loss additives in mineral oil based systems than in diesel based systems because gilsonite usually has a lower solubility at a given temperature in mineral and some synthetic oils than in diesel oils.

As with the the asphalt-based fluid loss additives at higher temperatures gilsonite becomes more soluble (melt) in the base oil and less effective as a fluid loss additive and cause unnecessary formation damage.

amine- treated lignites: generally, are less soluble in mineral and synthetic oils than in diesel. Select the proper solubility product to obtain optimum performance. No melting point results in no formation damage. oil soluble polymers: Currently not being widely used. The (3) three specific products enventives offers are: VEN-CHEM™ 208, VEN-CHEM™ 215 and VEN-CHEM™ 222. These products are used primarily as fluid loss additives in various types of oil base drilling fluids. These products have been effectively used in situations where there have been concerns over potential formation damage due to asphalt containing oil base muds. VEN-CHEM™ 208 is our utility organolignite. It is generally recommended for temperatures up to 350° F. For temperatures over 350° F, VEN-CHEM™ 222 is recommended. If you're looking for something for temperatures up to 300° F, we've got a novel, low-cost organolignite called VEN-CHEM™ 215.

These ranges are only guidelines. Effectiveness of the various products depend on the particular emulsifier system, the base oil, the electrolyte and the other additives present in the system. VEN-CHEM™ 215 and VEN-CHEM™ 208 have been effective in systems realizing temperatures above 400° F for extended intervals. Why not get your oil mud costs lower while getting optimum performance with no formation damage? Call enventives today and let's get you turning to the right.

VEN-CHEM 222™

RECOMMENDATIONS

Ven-Chem 222™ is recommended as an HTHP fluid loss additive for oil based, synthetic based and invert oil mud systems, particularly where bottom hole temperatures exceed 400°F. If lower temperatures are encountered, better cost/performance might be obtained with Ven-Chem 208™ or Ven-Chem 215™. Typical concentrations vary from 2 lb/bbl to 20 lb/bbl.

Ven-Chem 222™ can be added directly to the mud system through the hopper. Actual concentrations of Ven-Chem 222™required will depend on the type of system used, type and concentration of emulsifiers, type of oil, mud weight, type of gelling agent, temperature conditions, etc.

Ven-Chem 222™ can be used in 100% oil systems where low fluid loss properties are required. Such fluids include base frac fluids, special coring fluids, and low density, completion and workover systems.

GENERAL INFORMATION

Ven-Chem 222™ is a non-asphaltic, oil dispersible fluid loss additive designed specifically for oil muds and invert oil mud systems. Ven-Chem 222™ is a high performance fluid loss additive based on chemically modified, organophilic lignite.

Ven-Chem 222™ is specifically designed for high temperature, oil base mud systems. It provides rapid and effective reduction of excessive fluid loss in diesel oil, mineral oil and synthetic-based systems. Ven-Chem 222™ treatments generally provide some secondary benefits such as improved emulsion stability, increased tolerance to contamination, and more stable rheological properties.

PACKAGING

Ven-Chem 222™ is packaged in fifty (50) lb multi-wall paper bags with an internal polyethylene liner. Prices for special packaging will be quoted on request.

TYPICAL PERFORMANCE

An example of fluid loss control in No. 2 diesel oil is shown below: Conditions: each concentration dispersed in No. 2 diesel oil for 5 minutes on high speed blender.

VEN-CHEM 222, lb/bbl Concentration	API FLUID LOSS ml/30 min.
1	15
5	8
10	4

NOTE: These properties are typical and some variation in properties will be noticed from lot to lot. Similar results can be obtained in various mineral oils and synthetics.

TYPICAL PROPERTIES

Form	:	Free Flowing Powder
Color	:	Black
pH, in water (3% solution)	:	4.0-10.0
Solubility, in oil	:	slightly soluble and highly dispersible down to colloidal size
Solubility, in water	:	insoluble
Bulk Density, lb/ft compacted	:	49-57
uncompacted	:	44-52

PRECAUTIONS

See the Safety Data Sheet for more detailed information concerning storage, handling, transportation, disposal and safety requirements.

VEN-CHEM 208™

RECOMMENDATIONS

Ven-Chem 208™ is for use in synthetics, oil bases and invert emulsion muds and can be added directly to the system through the hopper. Typical treatment levels are 2-10 lb/bbl depending on the desired level of control, the type of system used, and the bottom hole temperature.

Ven-Chem 208™ can be used in many types of systems, such as synthetics, mineral oil muds, diesel muds, 100% oil phase muds, coring fluids and oil base workover and completion fluids. It is compatible with most types of emulsifiers, oil wetting agents and mud viscosifiers in current use.

Ven-Chem 208™ can be used effectively at bottom hole temperatures up to 400° F and applications at even hight temperatures are possible through use of a special "slug treatment" technique. Contact enventives, LLC. for further information.

Technical assistance is available in designing a complete system or handling routine and special drilling problems.

GENERAL INFORMATION

Ven-Chem 208™ is an oil-dispersible, powdered organophilic lignite engineered for superior filtration control in oil base and invert emulsion mud systems. Ven-Chem 208™ is a chemically modified, organophillic lignite and contains no asphalt or asphalt derivatives. Ven-Chem 208™ provides rapid and effective reduction of excessive fluid loss in diesel oil, mineral oils, and high bottom-hole temperatures. Secondary benefits of Ven-Chem 208™ treatments are improved emulsion stability, improved suspension, and more stable rheological properties.

PACKAGING

Ven-Chem 208™ is packaged in fifty (50) lb multi-wall paper bags with an internal polyethylene liner. Prices for special packaging will be quoted on request.

TYPICAL PERFORMANCE

80:20 Oil:Water Ratio Invert Mud SystemMuds hot-rolled 16 hrs. @ 350 °F

	Base Mud, No Fluid Loss Additive	Base Mud @ 10 lb/bbl Ven-Chem 208™
Apparent Viscosity, cp Plastic	**75**	**68**
Viscosity, cp Yield	**64**	**61**
Point, lb /100 sq.ft. Gel	**24**	**14**
Strength ,lb/100 sq.ft. API	**2/8**	**2/6**
HT-HP filtration test @ 300 °F 500 psi, ml	**40**	**10**

* Base Mud Formula: Exxon Mentor 28, 0.67 bbl; Calcium chloride, brine, 0.17 bbl; Primary emulsifier, 1 gal/bbl; Secondary emulslfier, 0 .7 gal /bbl; Lime hydrate, 3.6 lb /bbl; Organophilic clay, 5.5 lb /bbl; Barite, 229 lb/bbl.

TYPICAL PROPERTIES

Form	:	Free Flowing Powder
Color	:	Black
pH, in water (3% solution)	:	6.0-10.0
Solubility, in oil	:	slightly soluble and highly dispersible down to colloidal size
Solubility, in water	:	insoluble
Bulk Density, lb/ft compacted	:	47-55
uncompacted	:	42-50

PRECAUTIONS

See the Safety Data Sheet for more detailed information concerning storage, handling, transportation, disposal and safety requirements.

VEN-CHEM 215™

RECOMMENDATIONS

Ven-Chem 215™ is used in oil based, synthetic based, and invert emulsion muds and can be added directly to the system through the hopper. Typical treatment levels are 2-10 lb/bbl depending on the desired level of control, the type of system in use, and the bottom-hole temperature.

Ven-Chem 215™ is recommended for use at static bottom-hole temperatures of up to 300°F, although use at temperatures of up to 350°F is feasible in certain instances. The performance is highly dependent on the type oil, the emulsifiers and the wetting agents. For prolonged drilling at bottom-hole temperatures over 300°F, use of either Ven-Chem 208™ or Ven-Chem 222™ is recommended.

Ven-Chem 215™ can be used in many types of systems, such as mineral oil muds, diesel muds, 100% oil-phase muds, synthetic based muds, coring fluids and oil base workover and completion fluids. It is compatible with other drilling fluid additives.

Ven-Chem 215™ can be expected to exhibit a very low level of toxicity, based on composition.

GENERAL INFORMATION

Ven-Chem 215™ is an oil-dispersible, powdered organophilic lignite engineered for filtration control in oil base and invert emulsion mud systems. Ven-Chem 215™ is a chemically modified, organophillic lignite and contains no asphalt or asphalt derivatives. Ven-Chem 215™ provides rapid and effective reduction of excessive fluid loss in diesel oil, mineral oils, and high bottom-hole temperatures. Secondary benefits of Ven-Chem 215™ treatments are improved emulsion stability, improved suspension, and more stable rheological properties.

PACKAGING

Ven-Chem 215™ is packaged in fifty (50) lb multi-wall paper bags with an internal polyethylene liner. Prices for special packaging will be quoted on request.

TYPICAL PROPERTIES

Form	:	Free Flowing Powder
Color	:	Black
pH	:	4.0-9.0
Solubility, in oil	:	slightly soluble and highly dispersible down to colloidal size
Solubility, in water	:	insoluble
Bulk Density, lb/ft compacted	:	47-55
uncompacted	:	42-50

PRECAUTIONS

See the Safety Data Sheet for more detailed information concerning storage, handling, transportation, disposal and safety requirements.

Water Based Fluid Loss

enventives, LLC provides a line of water based drilling fluid systems and components to meet our customers growing needs for high performance aqueous based fluids. The newest MMS technology was developed in the enventives, LLC laboratories and is utilized in our Ven-BHC™ product line providing enhanced bentonite rheology for our customers around the world.

The enventives, LLC laboratories are responsible for the reaserch, development and success of the APHRONICS™ (Invasion Control System), an engineered drilling-fluid system that controls losses in depleted, high-porosity sands while stabilizing pressured shales. The Aphron Invasion Control System™ increases shale stability, thereby greatly reducing drilling problems commonly associated with laminated sand/shale sequences. The APHRONICS™ design significantly decreases the potential for differential sticking and other fluid related problems. The outstanding performance of this system makes it a sound economic option for areas where lost-circulation material has proven ineffective in controlling drilling-fluid losses, high-angle/horizontal wells and depleted formations to name a few.

AN OVERVIEW OF THE USES OF LIGNITE-BASED FLUID LOSS ADDITIVES IN WATER-BASED DRILLING FLUIDS

enventives offers a number of uses of lignite and its derivatives as fluid loss additives in drilling fluids. Our laboratories have been at the forefront of Research and Development of these technologies.

Oxidized lignites contain a number of organic polyphenolic acids. These are usually referred to as humic acids and their salts are referred to as humates. In its natural state, Leonardite or oxidized lignite, occurs very near the surface with minor amounts of overburden. Exposure to air and water causes the mineral to become oxidized.

Naturally occurring oxidized lignite normally exhibits a pH of approximately 3.0-3.5. This material is only slightly soluble in water. Even when ground to drilling fluid grade specifications and mixed in water, the product forms only a slurry that will readily settle. It exhibits no filtration control properties in this condition. Filtrates are extremely high and the color of the filtrate is light yellow, indicating almost no solubility.

As the pH of a lignite/water slurry is increased with alkaline compounds of sodium, potassium, lithium or ammonia; salts of the organic acids are formed and the lignite becomes partially soluble. As the solubility increases, the lignite is partially peptized and broken into colloidal fractions.

As this solubilization occurs, the oxidized lignite begins to exhibit fluid loss control properties. As the pH is increased to 9-10 (alkaline lignite in water), an optimum reduction in fluid loss will occur. The filtrate is extremely black in color at this point, and this indicates increased solubility.

If an increase in pH continues above this range, the oxidized lignite becomes more soluble and peptized even further. Filtrate volume will begin to increase at this point because of the increased solubility. Figure 1 (on Page 2) illustrates this point. The industry generally considers a "good" drilling fluid grade lignite as having a minimum of 75% alkaline solubility. However, a standard test to determine this solubility has not been agreed upon.

Because of its carboxylic acid functionality, oxidized lignites are either not soluble or will be precipitated in the presence of multi-valent ions such as calcium, magnesium, iron, etc. Generally, oxidized lignites are not used in the presence of high concentrations of these ions. The one exception is the limited use of "pre-solubilized" lignite in lime muds.

Also because of its structure, oxidized lignites are generally limited in solubility in high electrolyte systems such as saturated salts, seawater, etc. This limitation on solubility generally reduces the effectiveness of lignite as a fluid loss additive in these systems.

Oxidized lignites have proven extremely cost effective as the primary fluid loss additive in high-temperature (450'F) water base mud systems. These systems are specially designed to minimize multi-valent ions. They generally require high concentrations of lignite for good filtration control.

These systems sometime require rheological control additives to minimize viscosity/gel problems. In order to overcome some of the solubility limitations in water base muds, many different derivatives of lignite have been offered. Only a few of these special derivatives have survived the test of time in the market place. Most of these are considerably more expensive than the standard oxidized lignite product.

Although water soluble lignites or humates have some dispersing qualities, they are relatively poor dispersants as compared to lignosulfonates or the newer low-mol weight synthetic polymers. Because of this they are used to a limited extent as fluid loss additives in certain types of non-dispersed mud systems.

enventives has specialized in the development, manufacture and marketing of lignite derivatives used as fluid loss additives in both water and oil base systems. The company holds a number of patents in this product area. When you have need for innovative solutions, why not call on us?
Ven-Rez II™ is our most popular water based mud conditioner and fluid loss additive.

Ven-Rez II™ is a chemically and mechanically modified resin and lignite complex and is compatible with most water based drilling fluid systems. It is not effected by contaminants in the mud and does not increase the viscosity of the mud.

It maintains its conditioning and fluid loss properties over the range of drilling fluid densities. Ven-Rez II™ aids in shale sabilization, improves filter cake quality and reduces sticking by providing some lubricity to the wall cake. Ven-Rez II aides in stabilizing the rheological properties of you waterbased drilling fluid.
Ven-Rez II™ provides higher temperature stability than starches or polymers and does not soften or melt like asphalt and gilsonite products.

Ven-Rez I™ is a chemically and mechanically modified resin and lignite complex with the addition of potassium ions for increased shale stabilization properties and the conditioning and HTHP fluid loss benefits of Ven-Rez II™.

Ven- Alk™ is our causticized lignite mud conditioner for rheology and filtration control in water-based drilling fluids. Ven-Alk™ aides in maintaining a constant pH and is designed to stabilize water based drilling fluids exposed to high temperature and contaminants. Ven-Alk™ will act as a mud thinner. It is especially effective in high temperature systems and in dispersed systems and a companion additive to lignosulfonate.

Ven-K™ is our potassium lignite offering for rheology and filtration control in water-based drilling fluids. It was designed for use in potassium drilling fluids. Ven-K™ contributes the potassium ion to a mud system for the stabilization of water sensitive shales. Ven-K™ aids in controlling temperature stability of muds by reducing flocculation and gelation and improves therheology of the fluid system.

Ven-K™ acts as both a dispersant and fluid loss control agent in HTHP drilling. It will maintain its effectiveness over a wide pH range in either fresh or salt water mud systems

VEN-REZ II™

RECOMMENDATIONS

Ven-Rez II™ can be used to thin almost all types and densities of water based drilling fluids.

In addition, it will function as an effective emulsifier in oil-in-water muds and will provide some emulsification and dispersing properties for liquid lubricants.

Ven-Rez II™ can be used to stabilize salt-contaminated muds.

Ven-Rez II™ is particularly effective as a high temperature filter loss additive in water based systems. Approximately 0.5-2.0 lb/bbl Ven-Rez II™ is usually required to produce optimum thinning of water based muds. If sufficient alkalinity is not present in the mud, it may be necessary to add up to 0.5 lb/bbl or more of caustic soda.

When Ven-Rez II™ is being used to emulsify oil or liquid lubricants or to disperse hydrocarbon based lubricants in water muds, concentrations of 2-6 lb/bbl are common.

High temperature (above 350°F) filtration control can require 6-10 lb/bbl or more of Ven-Rez II™. The actual concentration required depends on the mud system, bottom hole temperature, and other factors. Generally, the higher the temperature, the more Ven-Rez II™ required. If extremely high concentrations of Ven-Rez II™ are required, it can be added directly through the mud hoppers as a solid.

Ven-Rez II™ is water soluble and is not designed for use in oil based mud systems.

GENERAL INFORMATION

Ven-Rez II™ is a chrome-free lignite derivative designed to provide improved filtration control and stabilize rheological properties in high temperature water base muds. Ven-Rez II™ is based on a new lignite derived resin. It is compatible with most water based drilling mud additives.

PACKAGING

Ven-Rez II™ is packaged in fifty (50) lb multi-wall paper bags with an internal polyethylene liner.

TYPICAL PROPERTIES

Composition	:	Resinated humate
Form	:	Free Flowing Powder
Color	:	Black
pH, in 2lb/ bbl solution	:	8.5
Solubility In water	:	Soluble
Solubility In oil	:	Insoluble

PRECAUTIONS

See the Safety Data Sheet for more detailed information concerning storage, handling, transportation, disposal and safety requirements.

VEN-ALK™

RECOMMENDATIONS

Ven-ALK™ can be used to thin almost all types and densities of water based drilling fluids. In addition, it will function as an effective emulsifier in oil-in-water muds and will provide some emulsification and dispersing properties for liquid lubricants. Ven-ALK™ can be used to stabilize salt contaminated muds.Ven-ALK™ is effective as a high temperature filter loss additive in water based mud systems.

Approximately 1-3 lb/bbl of Ven-ALK™ is usually required to produce optimum thinning of water based muds. When Ven-ALK™ is being used to emulsify oil or liquid lubricants in water muds, concentrations of 2-6 lb/bbl are common.

High temperature (above 350°F) filtration control can require 6-10 lb/bbl or more of Ven-ALK™. The actual concentration required depends on the mud system, bottom-hole temperature and other factors. Generally, the higher the temperature the more Ven-ALK™ required.

Ven-ALK™ can be added to the mudthrough the hopper or a chemicalbarrel.

GENERAL INFORMATION

Ven-ALK™ is a highly efficient, multi-purpose mud conditioner for water base muds. Ven-ALK™ is a pre-reacted salt produced by the reaction of sodium hydroxide with selectively mined "Leonardite" (a highly oxidized North Dakota Lignite). Ven-ALK™ is used in water based muds to (1) reduce viscosity and gels in order to maintain desirable flow properties; (2) improve aging characteristics in high temperature fluids by controlling fluidity; (3) reduce high pressure, high temperature filtrates and provide tough, thin filter cakes; (4) thin and emulsify oil-in-water or liquid lubricant containing fluids; (5) reduce e□ffects of contaminants; and (6) control the equivalent circulation density by maintaining suitable flow properties. Pre-reactions or pre-solubilization of the lignite with caustic soda eliminates the need to add free caustic at the rig site where native muds or low pH muds are being used. Ven-ALK™ is convenient and economical to use. It is compatible with most chemicals used in water based drilling fluids.

PACKAGING

Ven-ALK™ is packaged in fifty (50) lb multi-wall paper bags with an internal polyethylene liner.

TYPICAL PROPERTIES

Composition	:	Sodium Salt of Oxidized Lignite
Form	:	Free Flowing Powder
Color	:	Black
Solubility, in water	:	Ready Soluble

PRECAUTIONS

Ven-ALK™ is a slightly alkaline product and precautions should be taken to minimize eye and skin exposure.Ven-ALK™ should be stored in a dry place and normal weather protection should be provided. Ven-ALK™ is slightly hygroscopic and should be protected from exposure.See the Safety Data Sheet for more detailed information concerning storage, handling, transportation, disposal and safety requirements.

VEN-REZ I™

RECOMMENDATIONS

Ven-Rez I™ can be used to thin almost all types and densities of water based drilling fluids.

In addition, it will function as an effective emulsifier in oil-in-water muds and will provide some emulsification and dispersing properties for liquid lubricants.

Ven-Rez I™ can be used to stabilize salt-contaminated muds.

Ven-Rez I™ is particularly effective as a high temperature filter loss additive in water based systems. Approximately 0.5-2.0 lb/bbl Ven-Rez I™ is usually required to produce optimum thinning of water based muds. If sufficient alkalinity is not present in the mud, it may be necessary to add up to 0.5 lb/bbl or more of caustic soda.

When Ven-Rez I™ is being used to emulsify oil or liquid lubricants or to disperse hydrocarbon based lubricants in water muds, concentrations of 2-6 lb/bbl are common.

High temperature (above 350°F) filtration control can require 6-10 lb/bbl or more of Ven-Rez I™. The actual concentration required depends on the mud system, bottom hole temperature, and other factors. Generally, the higher the temperature, the more Ven-Rez I™ required. If extremely high concentrations of Ven-Rez I™ are required, it can be added directly through the mud hoppers as a solid.

Ven-Rez I™ is water soluble and is not designed for use in oil based mud systems.

GENERAL INFORMATION

Ven-Rez I™ is a chrome-free resinated lignite derivative engineered with a potassium ion to provide improved filtration control and stabilize rheological properties in high temperature water base muds while providing increased levels of shale inhibition and stabilization. Ven-Rez I™ is based on a new lignite derived resin. It is compatible with most water based drilling mud additives.

PACKAGING

Ven-Rez I™ is packaged in fifty (50) lb multi-wall paper bags with an internal polyethylene liner.

TYPICAL PROPERTIES

Composition	:	Resinated humate
Form	:	Free Flowing Powder
Color	:	Black
pH, in 2lb/ bbl solution	:	8.5
Solubility In water	:	Soluble
Solubility In oil	:	Insoluble

PRECAUTIONS

See the Safety Data Sheet for more detailed information concerning storage, handling, transportation, disposal and safety requirements.

VEN-K™

RECOMMENDATIONS

Ven-K™ can be used to thin almost all types and densities of water base drilling fluids. It is particularly designed for use in potassium base shale control systems.

In addition, it will function as an effective emulsifier in oil-in-water muds and will provide some emulsification and dispersing properties for liquid lubricants. Ven-K™ is effective as a hightemperature filter loss additive in water base mud systems.

Approximately 1-3 lb/bbl of Ven-K™ is usually required to produce optimum thinning of water base muds. When Ven-K™ is being used to emulsify oil or liquid lubricants in water muds,concentrations of 2-6 lb/ bbl are common.

High temperature (above 350°F) filtration control can require 6-10 lb/ bbl or more of Ven-K™. The actual concentration required depends on the mud system, bottom-hole temperature, and other factors.

Generally, the higher the temperature, the more Ven-K™ required. Ven-K™ can be added to the mudthrough a hopper or a chemical barrel.

GENERAL INFORMATION

Ven-K™ is a highly efficient, multipurpose mud conditioner for water base muds. Ven-K™ is a prereacted salt of potassium hydroxide and lignite. Ven-K™ is primarily used as a fluid loss additive and shale control additive in potassium base shale control systems. Ven-K™ is also used in water base muds to (1) reduce viscosity and gels in order to maintain desirable flow properties; (2) improve aging characteristics in high temperature fluids by controlling fluidity; (3) reduce high pressure, high temperature filtrates and provide tough, thin filter cakes; (4) thin and emulsify oil-in-water or liquid lubricant containing fluids; (5) reduce effects of contaminants; and (6) control the equivalent circulating density by maintaining suitable flow properties. Prereactions or presolubilization of the lignite with potassium hydroxide eliminates the need to add free caustic at the rig site where native muds or low pH muds are being used. Ven-K™ is convenient and economical to use. It is compatible with most chemicals used in water base drilling fluids.

PACKAGING

Ven-K™ is packaged in fifty (50) lb multi-wall paper bags with an internal polyethylene liner.

TYPICAL PROPERTIES

Composition	:	Potassium Salt of Oxidized Lignite
Form	:	Free Flowing Powder
Color	:	Black
Solubility in water	:	Readily Soluble

PRECAUTIONS

See the Safety Data Sheet for more detailed information concerning storage, handling, transportation, disposal and safety requirements.

Specialty Products

At enventives, LLC our dedication to continual improvement and our desire to provide our customers with unique solutions and the highest performance products available have enabled us to develop and offer many specialty products. Some of these products are a natural evolution from the research and development of our other products. Some have been special product solutions requested by customers or the industry. Some are the result of creative minds at work in the enventives, LLC laboratories. All are a result of our passion for the technologies we have developed, studied and strive to continually enhance through technological advancements.

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enventives has additional specialty products available and offers our expertise and experience in customizing products to suit our customers specialty chemical and drilling fluid system needs.

We are available to discuss custom blends, custom formulations, toll processing and new, old or current product research and development projects.
Our team of dedicated professionals have provided produts and solutions to our world wide customer base.

Call enventives today to find out how we can help you improve your drilling fluid program with solutions customized to your problems, not everyones.

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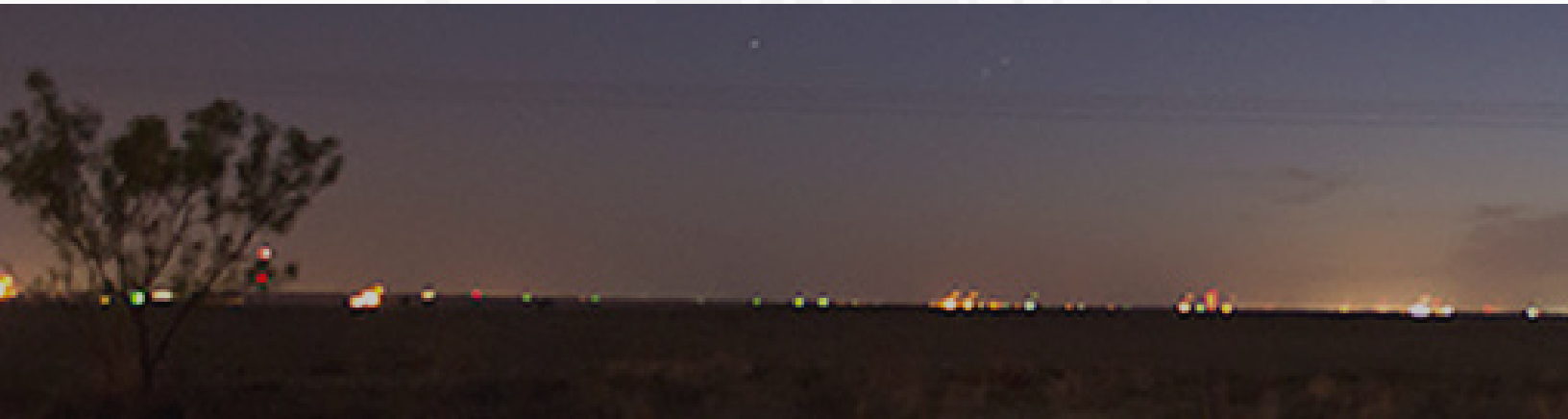
Delta 'P' • Ven-Rez II • Ven-Sweep
Ven-Fyber 201 • Ven-Chem 222 • Ven-Squeeze



PRICE QUOTES

Please contact enventives, LLC or your local enventives distributor for current availability and to obtain current price quotes.

PRODUCT DATA INFORMATION

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