



SECTION "A"Oil Based Drill System

Drilling troublesome formation with trouble free oil base drill system

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- DRILL FLC (LT)
- DRILL FLC(HT)
- DRILL VIS





DRILL VERT

DRILLING PRIMARY INVERT EMULSIFIER EXTRA QUALITY

Product description:

DRILL VERT is an invert mud primary emulsifier based upon a formulation containing glyceride and fatty acids. It is designed to improve the oil wettability of drilling solids and increase the stability of the oil mud by primary emulsification between the liquid phases. It assists the performance of the invert emulsifiers by encircling each solids particle with an oil layer, and hence preventing emulsion break down due to solids water wetting, thereby keeping stability high.

Typical physical properties:

Appearance: Amber liquid

Specific Gravity @ 30° C: 0.89 to 0.93 Gr/Cm3

Flash Point: Above 150° F.

Viscosity @ 30° C: Below 2000 CP

Solubility: Diesel Pour Point: 0° C

Product application details:

DRILL VERT should be applied as a primary emulsifier to provide mud stability (as measured by fluid loss and ESV reading).

The levels of DRILL VERT used is a function of the required performance in terms of temperature, but as a rule 6 - 8 lbs. per barrel is sufficient to give stable emulsion and provide a good base for the secondary emulsifier to do the fine tuning.

The use of DRILL VERT will provide the stability of the mud, and tighten the control of the fluid loss, as well as imparting high oil wetting ability. When drilling through magnesium formation, the use of an emulsifier for the DRILL MUL range is required to give stable fluid properties under bottom hole conditions.





DRILL VERT - Continue

DRILL VERT is ideally suited for use in 60/40 mud systems because it controls the massive increases in yield and gel structure, which are symptomatic of this type of mud system. In this situation DRILL VERT is used in the range of 6 to 8 lbs./barrel fluids, and supplemented with a secondary emulsifier at the range of 2 to 3 lbs./barrel.

Product handling details:

When handling DRILL VERT always uses protective eyewear and clothing. In the case of eye contact wash with copious amounts of water and seek medical attention.

In the case of skin contact, wash affected area with soap and water, remove any contaminated clothing.

Product packaging details:

DRILL VERT is packaged in 55-gallon drums.





DRILL VERT - N

DRILLING PRIMARY INVERT EMULSIFIER EXTRA QUALITY

Product description:

DRILL VERT – N is an invert mud oil wetting agent based upon a formulation containing glyceride and fatty acids. It is designed to improve the oil wettability of drilling solids, thereby increasing the stability of the oil mud and controlling rheological properties. It assists the performance of the secondary emulsifiers by encircling each solids particle with an oil layer, and hence preventing emulsion break down due to solids water wetting, thereby keeping stability high.

Typical physical properties:

Appearance: Amber liquid

Specific Gravity @ 30° C: 0.86 to 0.92 Gr/Cm3

Flash Point: Above 150° F.

Viscosity @ 30° C: Below 400 CPs

Solubility: Diesel Pour Point: 0° C

Product application details:

DRILL VERT –N should be applied in situations where mud stability (as measured by fluid loss and ESV reading).are lower than required

The levels of DRILL VERT -N used is a function of the serverity of the peoblem, but as a rule 6-10 lbs./ per barrel is sufficient to provide basic emulsion stability.

The use of DRILL VERT –N will provide the stability of the mud, and tighten the control of the fluid loss, as well as imparting high oil wetting ability, When drilling through magnesium formation. High shear tests over an extended period of time, will determine approximate dosage levels, and will demonstrate its ability to oil wet quickly a mud that is exhibiting water wet barite.





DRILL VERT -N - Continue

The function of DRILL VERT - N is to improve basic properties in the invert system. It is used in most cases in conjuction with a secondary emulsifier such as DRILL MUL.

DRILL VERT is ideally suited for use in 60/40 mud systems because it controls the massive increases in yield and gel structure, which are symptomatic of this type of mud system. In this situation DRILL VERT – N is used as a basic invert – emulsifier in the range of 10 to 12 lbs./barrel fluids, and supplemented with a secondary emulsifier at the range of 3 to 4 lbs./barrel.

Product handling details:

When handling DRILL VERT -N always uses protective eyewear and clothing. In the case of eye contact wash with copious amounts of water and seek medical attention.

In the case of skin contact, wash affected area with soap and water, remove any contaminated clothing.

Product packaging details:

DRILL VERT – N is packaged in 55-gallon drums.





DRILL MUL

DRILLING SECONDARY INVERT EMULSIFIER EXTRA QUALITY

Product description:

DRILL MUL is a secondary invert emulsifier based on a chemically modified fatty acid condensate. DRILL MUL is oil soluble, water dispersible and is compatible with most products employed in oil based drilling fluids.

DRILL MUL uses diesel/methanol solvent, but can be formulated in low toxic solvent for more environmental control and is coded as DRILL MULES. DRILL MUL when used in conjunction with DRILL VERT will give stable invert mud that eliminates or reduces the need for additional fluid loss control additives.

Typical physical properties:

Appearance: Redish dark brown

Specific Gravity @ 30° C: 0.87 to 0.91 Gr/Cm3 Viscosity @ 30° C: Less than 50 Cps.

Pour Point: Below 12° C. Flash Point: Less than 180° F.

Solubility: Diesel

Product application details:

DRILL MUL is an excellent emulsifier for water in oil drilling fluids and may be used with a variety of brine emulsions. DRILL MUL is designed to improve the stability of emulsions at 3 – 6 lb/bbl, aid in gel strength control and improve the fluid loss characteristics of drilling fluids.

DRILL MUL exhibits excellent performance with regard to a range of temperatures and contaminants. DRILL MUL can be employed as a single emulsifier, however it is usually recommended that it be used in conjunction with a primary emulsifier such as DRILLVERT N or a wtting agent.





DRILL MUL - Continue

Product handling details:

DRILL MUL contains methanol and, any spillages etc., should be treated as for methanol. If DRILL MUL is swallowed, or there is contact with the eyes, seek medical attention.

Product packaging details:

DRILL MUL is packaged in 55 US gallon drums.





DRILL MUL-N

SECONDARY EMULSIFIER FOR INVERT DRILLING FLUIDS

Product description:

DRILL MUL –N is a secondary invert emulsifier based on a chemically modified fatty acid condensate. DRILL MUL –N is oil soluble, water dispersible and is compatible with most products employed in oil based drilling fluids.

DRILL MUL –N uses diesel/methanol solvent, but can be formulated in low toxic solvent for more environmental control and is coded as DRILL MUL -NES. DRILL MUL -N when used in conjunction with DRILL VERT will give stable invert mud that eliminates or reduces the need for additional fluid loss control additives.

Typical physical properties:

Appearance: Amber liquid

Specific Gravity @30° C: 0.90 to 0.95 Gr/Cm3 Viscosity @ 30° C: Less than 100 Cps.

Pour Point: Below 0° C.

Flash Point: greater than 150° F.

Solubility: Diesel

Product application details:

DRILL MUL - N is an excellent emulsifier for water in oil drilling fluids and may be used with a variety of brine emulsions. DRILL MUL - N is designed to improve the stability of emulsions 4-8 lb/bbl, aid in gel strength control and improve the fluid loss characteristics of drilling fluids.

DRILL MUL - N exhibits excellent performance with regard to a range of temperatures and contaminants. DRILL MUL - N can be employed as a single emulsifier, however it is usually recommended that it be used in conjunction with a primary emulsifier such as DRILLVERT, or a wetting agent.





DRILL MUL - N - Continue

PRODUCT HANDLING DETAILS:

DRILL MUL - N contains methanol and, any spillages etc., should be treated as for methanol. If DRILL MUL - N is swallowed, or there is contact with the eyes, seek medical attention.

Product packaging details:

DRILL MUL – N is packaged in 55 US gallon drums.





DRILL CONDITIONER

DRILLING INVERT RHEOLOGY ADDITIVE

Product description:

DRILL CONDITIONER is a blend of glyceride and phosphilipids, designed to assist in the control of inverted drilling fluid rheology.

Typical physical properties:

Appearance: Brown liquid

Specific Gravity @ 30° C: 0.85 to 0.91 Gr/Cm3

Viscosity @ 30° C: Below 50 Cps

Pour Point: 0° C. Flash Point: 150° F

Solubility: Hydrocarbons

Product application details:

DRILL CONDITIONER is designed to control the effect of high gel strengths in inverted drilling muds. This is of most use when clean oil or non-toxic systems are used. A frequent problem in these systems is when excess organophilic clay is used in the mud plant to give a desired rheology in the unweighted mud. When the mud is weighted and passed through the drill bit, the gel strength often shows large increase and needs to be reduced.

DRILL CONDITIONER will reduce this gel strength without excessively affecting the yield point. If the yield and gel strengths need to be effected simultaneously, DRILL SOLID CONDITIONER should be used.

Addition rates will depend on the severity of the problem and the rheology required but an addition of 5 to 6 lbs./bbl is average. The oil wetting/thinning effect will be noticed after the fluid has tripped once, with only a marginal effect noticed immediately on addition.





DRILL CONDITIONER - Continue

Product handling details:

Gloves and goggles should be when then handling DRILL CONDITIONER.

In case of eye contact, hold the eyelids open and flush with water for 15 minutes. Seek medical aid.

In case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all contaminated clothing before re-use.

Product packaging details:

DRILL CONDITIONER is supplied in 55 US gallon drums.





DRILL SOLID CONDITIONER

DRILLING OIL MUD CONDITIONER

Product description:

DRILL SOLID CONDITIONER is a blend of high molecular weight organic acids and sulphonates especially formulated to condition the mud by oil wetting and dispersing solids.

Typical physical properties:

Appearance: Brown liquid

Specific Gravity @ 30° C: 1.90 to 1.93 Gr/Cm3 Viscosity @ 30° C: Below 3000 Cps

Flash Point: Above 150° F

Product application details:

DRILL SOLID CONDITIONER is used infrequently as the attributes of this type of product should be adequately covered by the properties of its secondary invert emulsifier.

The secondary invert emulsifier should impart additional voltage stability over the primary emulsifier, fluid loss assistance and oil wetting characteristics of the barite particles. Occasionally the system requires additional oil wetting ability other than provided by the primary and secondary emulsifiers. At this time the use of DRILL SOLID CONDITIONER oil mud conditioner is recommended.

A comparison should be made between additional extra secondary emulsifier, or DRILL SOLID CONDITIONER, as the needs of each system will be different. The overall effect will be the same, a hold on the rapid drop in voltage stability and an apparent thinning of the fluid due to the barite being of oily appearance as opposed to a granular appearance of partially water wet barite.





DRILL SOLID CONDITIONER – Continue

Product handling details:

Safety gloves and goggles should be worn when handling DRILL SOLID CONDITIONER. Avoid repeated or prolonged skin contact.

In case of eye contact, hold the eye lid open and flush with water for at least 15 minutes. Seek medical aid.

In case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all clothing before reuse.

Product packaging details:

DRILL SOLID CONDITIONER is supplied in 55-Gallon drums.





DRILL GEL

OIL BASED MUD VISCOSIFIER

Product description:

DRILL GEL is an enhanced organophilic clay designed for use as a viscosifying and antisettling agent in diesel oil and low toxicity oil base drilling fluid . DRILL GEL is used to increase the yield viscosity.

DRILL GEL is also used to impart a° ree of filtration control and emulsion stability in relaxed filtrate systems.

DRILL GEL is a high grade montmerilonite clay which has been reacted with a quaternary ammonium compound.

Typical physical properties:

Appearance: light tan powder

Particle size: Above 85 % passing 200 mesh

Specific Gravity @ 30°C: 1.8 Gr/Cm3

Moisture content: 3% max

Product application details:

The level of DRILL GEL required in drilling fluids can vary dramatically depending on the application. In general diesel based fluids use 2 to 6 ppb depending on the rheology desired mud weight and oil / water rates. Low toxicity oil based fluids, however require levels of 4 to 14 ppb depending on the ree of napthanics or aromatics present in the oil being used, and the nature of the emulsifiers and wetting agents being used.





DRILL GEL - Continue.

Product handling details:

DRILL GEL is not considered harmful, but care must be taken to avoid excessive dust when using. Use goggles and gloves. Wash with soap and water if contaminated.

Product packaging details:

DRILL GEL is packed in 25 kg multi ply paper sacks.





DRILL FLC

AMINE LIGNITE

Product description:

DRILL FLC is a formulated product of amine treated lignite which is soluble at high temperature providing filter loss control in invert oil mud systems.

DRILL FLC is an active temperature stable chemical which easily disperses in oil base mud as a colloid material to reduce filtrate and helps emulsification.

RECOMMENDED TREATMENT:

200° F or below: 2-5 200° F - 300 F: 5-7 ppb 300° F - or more: 7-10 ppb

PRODCUT APPLICATION DETAILS:

DRILL FLC controls fluid loss in invert emulsion system at the rate of 4-8 Lb/Bbl of mud. DRILL FLC exhibits its maximum performance at higher temperature where also it extends the stability of emulsion.

Uses of DRILL FLC in the system that shows water in the filtrate should be avoided as this could cause gelling and rheology problem.

In this case, DRILL MUL should be employed to cure the problem at the first stage prior to adding DRILL FLC.





DRILL FLC - Continue

Product handling details:

A dust musk should be placed over the mouth during use of DRILL FLC to prevent inhalation. In case of inhalation, seek for medical attention.

Product packaging details:

25 kg per bag Three ply paper bag, 60 bags per pallet, wrapped with metallic bond.





DRILL FLC - LT

OIL MUD FLUID LOSS CONTROLER

Product description:

DRILL FLC – LT is a natural ashphaltic material. It has been selected to give a specific softening and melting point. When used in oil base drilling fluid.

Typical physical properties:

Appearance: Black powder

Specific Gravity @ 30°C: 1.15 to 1.20 Gr/Cm3

Pour Point: Not applicable Flash Point: Not applicable

Solubility: Oil

Recommended treatment:

DRILL FLC – LT is suitable to be used at temperature not more that 180 F as it becomes completely dissolved in diesel at such temperature. In this case the viscosity of diesel will be increased that causes problems on rheology control particularly on surface pits.

DRILL FLC –LT should be used through the mud hopper at the rate of 10-15 minutes per bag. The normal treatment is depends on the amount of O/W ratio and mud weight. However higher O/W ratio requires more DRILL FLC – LT (approximately 8-12 LB/BBL) than lower O/W ratio.





DRILL FLC – LT – Continue.

Product handling details:

FLC is considered harmful to men, and handling precautions should be taken as follows

Eyes that have been exposed to FLC should be washed thoroughly with clean water and a doctor consulted.

Skin that has been exposed to FLC should be washed with soap and water and cream applied.

If DRILL FLC - LT dist is inhaled, move to fresh air and consult a doctor.

If DRILL FLC – LT is swallowed, do not induce vomiting, but have patient drink large volumes of water.

Product packaging details:

FLC is supplied in 25-kg sacks.





DRILL FLC - HT

OIL BASED MUD FLUID LOSS CONTROLER

Product description:

DRILL FLC - HT is a natural as phaltic material that has been specially treated to perform fluid loss control at high temperature.

The softening point of gilsonites is usually low and therefore the material becomes completely dissolves in diesel oil or crude at temperature above 120 F.

DRILL FLC – HT is a modified gilsonite that has been made particularly to control oil mud fluid loss at temperature above 160 F. The product becomes more effective at temperature above 200 F while it remains stable upto 300 F.

Recommended treatment at 200 F:

O/W RATIO 80/20 85/15 90/10 MUD WT. PCF 75-105 75-120 90-135 DRILL FLC – TH (LB/BBL) 8-10 10-14 10-16

The consumption of DRILL FLC –HT should be increased gradually to approximately 20% more 250 F upto 300° ree.

DRILL FLC –HT can be used in sodiume chloride water phale of an oil mud with out any changes in to the concentration of product. However care should be taken to recognize the weakness of emulsifiers against sodium chloride that could cause increasing the amount of filtrate.

Product application details:

DRILL FLC –HT is used when the temperature is above 160 F it should be avoid to use this product at below this level of temperature as it would requires longer time to dissolve in oilphase.





DRILL FLC HT - Continue.

DRILL FLC –HT exhibits its maximum performance at temp. Rature about 275 F where also it extend the emulsion ability. DRILL FLC –HT should be used directly in diesel oil during preparation of oil mud system to obtain better dispertion.

Also it can be mixed directly into the finished oil base mud for further fluid loss control. In preparation of new batch, relay on to use this chemical before adding the salt water.

Product handling details:

A dust musk should be placed over the mouth during use of DRILL FLC - HT to prevent inhalation.

In case of inhalation, seek for medical attention.

Product packaging details:

25 kg per bag Three ply paper bag, 60 bxs per pallet, wrapped with metallic bond.





DRILL VIS

DRILLING INVERT YIELD AID

Product description:

DRILL VIS is a blend of polymeric fatty acids in a hydrocarbon solvent. DRILL VIS is an effective viscosifier additive for oil based muds, to increase the yield and gel factors.

Typical physical properties:

Appearance: Amber liquid

Specific Gravity @30° C: 0.90 to 1.00 Gr/Cm3 Viscosity @ 30° C: Below 500 Cps Pour Point: 0° C

Flash Point: Above 150° F Solubility: Hydrocarbons

Product application details:

DRILL VIS should be added, as required, to the circulating mud system, to provide the additional rheology yield and gel structure.

Splashes to the skin should be removed by washing with soap and warm water. If eyes are affected, irrigation for at least 10 minutes with water or eye bath solution is advised, then seek medical help.





DRILL VIS - Continue

PRODUCT STORAGE AND HANDLING:

DRILL VIS should be stored away from heat sources and in a ventilated area. Drums should be sealed when not in use.

Gloves, goggles and overalls should be worn when handling DRILL VIS. Spillages should be absorbed using sand or earth which can then be incinerated.

Product packaging details:

DRILL VIS is packaged in 55 US gallon drums.





SECTION "B" SNG DRILLING FLUIDS ADDITIVES

SUPPLEMENTARY DRILLING FLUID ADDITIVES ARE VITAL TO MINIMIZE YOUR TOTAL DRILLING COST

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FOAMER

HARD WATER

Product description:

FOAMER is a water soluble blend of amphoteric surfactants and foam boosters specifically designed to provide a broad spectrum foamer. Unlike many other products, FOAMER performs well in the presence of oil and metal cations such as calcium.

Typical physical properties:

Appearance: Yellow liquid

Specific Gravity @ 30° C: 0.98 to 1.06 Gr/Cm3 Viscosity @ 30° C3: less than 100 Cps Pour Point: 0° C

Product application details:

FOAMER is a wide spectrum foamer that can be used in both fresh water and brines. Required dose levels will depend upon the hardness of the water, the chloride level, and the amount of hydrocarbon contaminates encountered eg oil. The optimum levels for each application should be determined in the lab but the following will serve as a guide.

For fresh water, the treatment rate should be approximately of 0.25% of FOAMER based on the total water

For Sea water, the treatment rate should be approximately 0.5% to 1.0% of FOAMER based on the total sea water.

For wells that are prone to flooding, the foam quality should be maintained by injecting FOAMER into the air or gas line.





FOAMER - Continue

Product handling details:

Although FOAMER is not classed, as hazardous, prolonged or repeated skin contact will cause de-fatting. Goggles and gloves should therefore be worn when handling FOAMER.

In case of eye contact, hold the eyelid open and flush with water for at least 15 minutes. Seek medical aid.

In case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all clothing before reuse.

In the case of ingestion drink large amounts of milk or water and seek immediate medical aid.

Product packaging details:

FOAMER is supplied in 55 US gallon lined drums or plastic drums.





FOAM QUICK

HARD WATER

Product description:

FOAM QUICK is a blens of amphoteric surfactants and foam boosters specifically designed to provide a broad spectrum foamer. Unlike many other products, FOAM QUICK performs well in the presence of oil and metal cations such as calcium.

Typical physical properties:

Appearance: Pale Yellow liquid

Specific Gravity @ 30° C: 0.98 to 1.10 Gr/Cm3

Pour Point : Below 0° C

Viscosity @ 30° C: Less than 250 Cps

Flash Point Greater than 150° F Solubility: Water and brine

Product application details:

FOAM QUICK is a wide spectrum foamer that can be used in both fresh water and brines. Required dose levels will depend upon the hardness of the water, the chloride level, and the amount of contaminates encountered (e.g oil). The optimum levels for each application should be determined in the lab but the following will serve as a guide.

For fresh water drilling, the treatment rate should be about 0.25% of FOAM QUICK in water. For Sea water drilling, the treatment rate should be about 0.5% to 1.0% of FOAM quick in water. For wells that are prone to flooding, the foam quality should be maintained by injecting FOAM QUICK into the air or gas line.





FOAM QUICK - Continue

Product handling details:

Although FOAM QUICK is not classed, as hazardous, prolonged or repeated skin contact will cause de-fatting. Goggles and gloves should therefore be wArn when handling FOAMER QUICK

In the case of eye contact, hold the eyelid open and flush with water for at least 15 minutes. Seek medical aid.

In the case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all clothing contaminated before reuse.

In the case of ingestion drink large amounts of milk or water and seek immediate medical aid.

Product packaging details:

FOAM QUICK is normally supplied in 55 US gallon lined drums.





FOAMER-ST

SOFT WATER

Product description:

FOAMER -ST is a surfactants specialy designed to provide a broad spectrum foamer, that products a foam suitable for drilling activities. FOAMER – ST performs well in fresh water, but it can be impaired in brackish water or in the presence of oil.

Typical physical properties:

Appearance: Pale Yellow liquid

Specific Gravity @ 30° C: 0.95 to 1.05 Gr/Cm3

Pour Point: Below 0° C

Viscosity @ 30° C: Less than 250 Cps

Flash point: Greater than 150° F

Solubility: Water.

Product application details:

FOAMER – ST is a narrow spectrum foamer for providing stiff foam or standard foam in fresh water. For standard drilling applications, where the water fresh or low chloride, the requirement would be 0.25% based up on the volume of water used. As the chloride content increases, the doseage will increase to 0.5% although excessive chloride values will prevent FOAMER – ST form working. A maximum in the water is one percent chloride. For foaming of influx water that are prone to flooding, it is recommended that FOAMER – ST is injecyed in to tha air line, in diluted form, and at the doseage level proportionate to the chloride level.





FOAMER -ST - Continue

Product handling details:

Although FOAMER –ST is not classed, as hazardous, prolonged or repeated skin contact will cause de-fatting. Goggles and gloves should therefore be worn when handling FOAMER – ST.

In case of eye contact, hold the eyelid open and flush with water for at least 15 minutes. Seek medical aid.

In case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all clothing before reuse.

In the case of ingestion drink large amounts of milk or water and seek immediate medical aid.

Product packaging details:

FOAMER - ST is supplied in 55 US gallon lined drums or plastic drums.





DEFOAMER 4535

DRILLING DEFOAMER

Product description:

D-FOAM 4535 is a blended formula of high molecular weight silicones suspended in a proprietary water based medium and is used as general purpose drilling defoamer.

Typical physical properties:

Appearance: White opaque liquid
Specific Gravity@ 30° C: 0.98 to 1.05 Gr/Cm3
Flash Point: Greater than 150° F
Viscosity @ 30°: Less than 30 cps
Pour point: Less than 0° C
Solubility: Water dispersible

PH: 6.5 to 7.5

Product application details:

D-FOAM 4535 is effective in all water based drilling fluids, including Zinc Bromide fluids and is formulated to have no inherent side effects on the drilling fluid rheology.

D- FOAM 4535 is effective in both solids free and solids laden drilling fluids.

The usage rate is a function of the severity of the problem, but is expected to be the range of 0.2 to 0.5 pounds per barrel of drilling fluids.

D-FOAM 4535 can be diluted on site with water for more effective from control and requires no special equipment for dilution.





D FOAM 4535 Continue

Handling detaild:

Avoid contact with eyes, skin and clothing. In case of contact with eyes, immediately flush with for 15 minutes and seek medical aid, was skin immediately of contacted and remove any contaminated clothing.

Product packing details:

Packaged in lined 55 US gallon steel drums or plastic drums.





DEFOAMER 4531

DRILLING DEFOAMER

Product description:

DEFOAMER 4531 is a blended formula of high molecular weight polymer material in a high molecular weight alcohol solvent.

Typical physical properties:

Appearance: Pink liquid:

Specific Gravity @ 30°C: 0.83 to 0.89 Gr/Cm3

Viscosity @30°: Less than 50 cps
Flash Point: Greater than 150° F
Pour point: Less than 0° C

Product application details:

The specific usage of DEFOAMER 4531 can only be accurately determined by laboratory tess on the drilling fluid in question.

If the dosage level is to be decide under drilling conditions, a recommended addition to the drilling fluid, as a starting point is 100 ppm based upon total quality of fluid.

Increase or decreases in this level can be judged by exaning the system for foam control. DEFOAMDER 4531 can either be added on the surface to combat existing foam problems, or introduced into the foamation of foam problems. It is more effective in preventing the problem than it is in defoaming an exisiting foam problem.

DEFOAMER 4531 is a wide range defoamer which works effectively as aluminium stearate or silicones, but does not interfere with the normal properties of the drilling fluid.





DEFOAMER 4531 – Continue

Product handling detailes:

Gloves, protective clothing and eye wear to be worn when handling. Eye contact – flash with copious amounts of water and seek medical aid. Skin contact – wash affected area with soap and water.

Product packing details:

DEFOAMER 4531 is packaged in 55 US gallon mild steel drums.





DEFOAMER 164 - D

DRILLING DEFOAMER

Product description:

D FOAM 164-D is a general purpose drilling defoamer designed to prevent foam build up in all water based drilling fluids D FOAM 164-D is a blend of high and medium chain length polyols in a carrier solvent.

Typical physical properties:

Appearance: Pale yellow liquid

Specific Gravity @ 30° C: 0.84 to 0.87 Gr/Cm3

Pour point: Below 0° C

Flash Point: 68° C

Viscosity @ 30°: Less than 100 Cps

Prodict application details:

The° ree of foaming in drilling fluids is a function of the type and volume of drilling additives used. The optimum dose level must be determined on site but will usually be in the region of 0.2 to 0.5 pound per barrel of drilling fluid. This product is an alternative D foam 4535, which is a silicon based product.





D FOAM 164 - D Continue

Product Handling detailes:

Steps should be taken to avoid skin and eye contact.

In the case of skin contact, removes all contaminated clothing and wash the affected area with soap and water. Launder all contaminated clothing before reuse.

In the case of eye contact, hold the eyelids open and flush the eyes with water for at least 15 minutes. Seek medical advice.

In the case of ingestion, drink large amounts of milk or water and seek immediate medical aid.

Prodict packing details:

D FOAM 164- D is packaged in 55 US gallon drums.





D FOAM 8000

DRILLING DEFOAMER

Product description:

D-FOAM 8000 is a blended formula of high molecular weight polyols suspended in a proprietary non toxic solvent which does not interfere with the cement properties, and is used as general purpose drilling defoamer.

Typical physical properties:

Appearance: White liquid:

Specific Gravity @ 30° C: 0.98 to 1.03 Gr/Cm3

Flash Point: Greater than 150° F Viscosity @ 30°: Less than 300 cps Pour point: About 5° C

Solubility: Water dispersible

PH: Neutral

Product application details:

D-FOAM 8000 will eliminate entrained air, which causes problems in pumping troweilling, and complete cavity filling, it also prevents excessive shrinking, porosity and weakness of the set cement or concrete.

D- FOAM 8000 is added in the quantity of 0.1 % by weight of the water and will eliminate air in systems. The minimum amount required is usually determined by observation and will depend upon the organic, which are present.





D FOAM 8000 Continue

Prodict handling details:

Care should be taken in handling around open flames or sparks avoid contact with eyes and skin and clothing.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. For eyes, obtain medical advice.

Product packing details:

D-FOAM 8000s is available in 5 US gallon pails or 55 US gallon drums.





DRILL DET 20

DRILLING DETERGENT

Product description:

DRILL DETERGENT is a specially formulated blend of surfactants and wetting agents designed to lower surface tension and reduce problems with shale in water based drilling fluids. An additional benefit is its ability to reduce corrosion in the drilling string.

Typical physical properties:

Appearance: Yellow liquid

Specific Gravity @ 30° C: 1.00 to 1.10 Gr/Cm3 Viscosity @ 30° C: Less than 100 Cps Pour Point: 0° C.

Flash Point: Greater than 150° F

pH (neat): 8.3 to 8.8

Product application details:

The required dosage of DRILL DETERGENT will depend on the severity of the problem. Start by adding the chemical at a rate of 0.3 gallons per barrel and increase the dose if necessary.





DRILL DETERGENT - Continue

Product handling details:

Avoid contact with eyes, skin and clothing. Although DRILL DETERGENT is not classed as hazardous, prolonged or repeated skin contact will cause de-fatting.

In the case of eye contact. Hold the eye lids open and flush the eyes for 15 minutes with cold water. Seek medical aid.

In the event of skin contact. Remove all contaminated clothing and wash the affected area with soap and water. Launder all clothing before re-use.





DRILLING DET 8

DRILLING DETERGENT

Product description:

DRILL DET 8 is a specially formulated blend of surfactants and wetting agents designed to lower surface tension and provide medium lubricity to the drill string.

Typical physical properties:

Appearance: Yellow liquid

Specific Gravity @ 30° C: 0.98 to 1.06 Gr/Cm3 Viscosity @ 30° C: Less than 200 Cps

Pour Point: Less than 0° C Flash Point: Greater than 150° F

pH (neat): 6.5 to 7.5

Product application details:

The required dosage of DRILL DET 8 will depend on the severity of the problem. Start by adding the chemical at a rate of 0.3 gallons per barrel and increase the dose if necessary.





DRILL DET 8 - Continue

Product handling details:

Avoid contact with eyes, skin and clothing. Although DRILL DETERGENT is not classed as hazardous, prolonged or repeated skin contact will cause de-fatting.

In the case of eye contact. Hold the eye lids open and flush the eyes for 15 minutes with cold water. Seek medical aid.

In the event of skin contact. Remove all contaminated clothing and wash the affected area with soap and water. Launder all clothing before re-use.

Product packing details:

DRILL DET 8 is usually supplied in 55 US gallon lined drums.





COR 55 (DPE)

DRILLING CORROSION INHIBITOR

Product description:

COR-DPE is a formulated protuct containing a mixture of amines and fatty acids, in a solvent carrier solvent, and used as a general drilling inhibitor, for prevention of corrosion to drill string.

Typical physical properties:

Appearance: Black liquid

Specific Gravity @ 30° C: 0.84 to 0.92 Gr/Cm3 Viscosity @ 30° C: Less than 50 Cps

Flash Point: $\sim 100^{\circ}$ F Solubility: Oil soluble Pour Point: Less than 3° C

Product application details:

COR DPE is formulated to be used as a general purpose drilling inhibitor. The normal treatment rate of COR DPE is 0.5 to 1.0% of inhibitor based up on the volume of fluid to be inhibited.

COR DPE can be added to the drilling fluid in the mud pit, or spayed or dipped on to the drill string, when it is being run.

Dilution with equal parts of diesel are recommended, in order to make the inhibitor manageable. COR DPE will protect against carbon dioxide and hydrogen sulphide. In general the doseage rate of COR DPE, should be increased as the mud weight increases, or the drill solids in the mud increase.





COR-D.P.E. - Continue

Product handling details:

Avoid eye contact and prolonged or repeated skin contact.

In case of eye contact, hold the eye lid open and flush with water for at least 15 minutes. Seek medical aid.

In case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all clothing before reuse.

Product packaging details:

COR-D.P.E. is supplied in 55 US gallon drums.





COR DPE (BATCH)

DRILLING CORROSION INHIBITOR

Product description:

COR-DPE (BATCH) is an oil soluble corrosion inhibitor formulated to product drill pipe, tubing and other equipment. COR – DPE (BATCH) is effective in the presence of hydrogen sulphide and carbon dioxide and has good hig temperature stability.

Typical physical properties:

Appearance: Amber liquid

Specific Gravity @ 30° C: 0.83 to 0.86 Gr/Cm3 Viscosity @ 30° C: Below than 100 Cps

Flash Point: Below than 80° F.

Solubility: Oil soluble, water disperside

Product application details:

COR DPE (BATCH) usage rate will vary depending on the temperature and the severity of the corrosion problem and should be determined experimentally but the following should serve as a guide. During drilling, batch treatment is recommended using a 15% COR – DPE(BATCH) solution made up in diesel oil.

Drilling pipe should be initially filmed by adding 1 to 2 bbl of inhibitor solution. For film maintenance, batch treatment should be carried out every 3 to 5 hours with 5 to 15 gallon of the inhibitor solution.





COR-(BATCH). - Continue

Product handling details:

Avoid eye contact and prolonged or repeated skin contact.

In case of eye contact, hold the eye lid open and flush with water for at least 15 minutes. Seek medical aid.

In case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all clothing before reuse.

Product packaging details:

COR-(BATCH). is supplied in 55 US gallon drums.





COR-111-STATIC

DRILLING CORROSION INHIBITOR.

Product description:

COR-111-STATIC is a water soluble corrosion inhibitor for general use in hydrostatic testing, completion and packer fluids. It is a combination of quaternary products and amines and has the ability to control the effect of oxygen corrosion by scavenging.

Typical physical properties:

Appearance: Amber liquid

Specific Gravity @ 30° C: 0.99 to 1.10 Gr/Cm3 Viscosity @ 30° C: less than 100 Cps

Pour Point : Less than 0° C. Flash Point : Greater than 150° F

PH: 9.5 to 10.5

Product application details:

COR-111-STATIC contains a filming amine, a biocide and an oxygen scavenger and will give good corrosion protection in the presence of carbon dioxide and hydrogen sulphide.

COR-111-STATIC was formulated for use in hydrostatic testing, completion and packer fluids. The filming amine forms a protective film on the metal surface, while the biocide suppresses corrosion due to biological activity.

Optimum dose levels will vary depending on the type of fluid, the level of solids in the system, the temperature and the length of time in use, but will usually be in the region of 500 to 1000 PPM.

COR-111-STATIC should be added to the fluid and thoroughly mixed before use.





COR-111-STATIC - Continue

Product handling details:

COR-111-STATIC is alkaline and contains organic nitrogen. Wear goggles and gloves when handling. Avoid contact with skin, clothing and eyes.

In the case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all contaminated clothing before re use.

In the case of eye contact, hold the eyelids open and flush the eyes with water for 15 minutes. Seek medical aid.

In case of ingestion, drink large amounts of milk or water and seek immediate medical aid. Do not induce vomiting.

Product packaging details:

COR-111-STATIC is normally supplied in 55 USG lined drums, or plastic drums.





COR-121-BRINE

DRILLING CORROSION INHIBITOR

Product description:

COR-121-BRINE is a water soluble product containing a mixture of amines and alcohol, in a water carrier solvent.

Typical physical properties:

Appearance: Brown liquid

Specific Gravity @ 30° C: 1.00 to 1.10 Gr/Cm3 Viscosity @ 30° C: Less than 50 Cps.

Flash Point: Greater than 150° F.

Soluble in fresh water and brine

PH: 11.5 TO 12.5

Product application details:

COR-121-BRINE is formulated to be used as a packer fluid inhibitor or completion fluid inhibitor. The normal treatment rate of COR-121-BRINE is 0.5 to 1.0% of inhibitor based upon the volume of fluid to be inhibited.

COR-121-BRINE is designed to have a high solubility in a sodium chloride and calcium chloride brines at the levels associated with normal drilling additives.

Higher concentration brines, or brines using bromides require the use of COR-131-PACKER, which is designed to inhibit the bromide solution, without the normal precipitation problems associated with conventional amine based inhibitors in this application.





COR-121-BRINE - Continue

Product handling details:

Gloves and goggles should be worn when handling COR-121-BRINE in a well ventilated area. Spillages may prove to be slippery and should be immediately contained with absorbent material.

For skin contact: Remove all contaminated clothing and wash the affected area with soap

And water.

For eye contact: Irrigate with copious amounts of water and seek prompt medical aid.

Product packaging details:

COR-121-BRINE is packaged in 55 US Gallon lined drums or plastic drums.





SNG

COR-131- COMPLETION

DRILLING CORROSION INHIBITOR HEAVY BRINE COMPLETION FLUIDS

Product description:

COR-131-COMPLETION is a water soluble blend of amines and surfactants in an alcohol and water carrier solvent. It is used to control corrosion and metal loss during the use of heavy brines such as calcium bromide and calcium chloride and mixtures of both.

Typical physical properties:

Appearance: Amber liquid

Specific Gravity @ 30° C: 1.01 to 1.08 Gr/Cm3 Viscosity @ 30° C: Less than 50 Cps Pour Point: 0° C

Flash Point: Greater than 150° F

Solubility: Water PH: 8.0 to 9.0

Product application details:

COR-131- COMPLETION is specifically designed for use in this kind of heavy brine completion fluid, because it combines the necessary properties of high solubility and corrosion control. Most standard inhibitor formulations used in the oil-field for metal protection are inadequate for use in heavy brines solution, because they have a limited solubility, and cannot maintain a stable solution in the brine.

Except for unique circumstances, if the inhibitor ceases to be soluble in the fluid it is protecting then the inhibitive properties are lost.

COR-131-COMPLETION solubility and corrosion control properties are suitable and effective in mixtures of calcium chloride and calcium bromide solution up to weights of 12.5 pounds per gallon.





COR-131-CPMPLETION – Continue

The solubility characteristics of COR-131-PACKER can be examined against other material or against specific corrosion conditions, by the use of standard laboratory equipment designed for this application, but it should be borne in mind that the first priority is to evaluate solubility at the usage concentration of 1% by volume over a period of 24 hours.

Solubility characteristic change with time, and products that look suitable within the first several hours of addition, often become slowly more insoluble as time passes.

COR-131-COMPLETION should be added directly to the brine solution immediately before a pump to give adequate mixing, or to a tank of the brine, using circulation to give adequate mixing.

Product handling details:

In case of eye contact, flush eyes with plenty of water for 10 minutes and then consult o doctor. In case of swallowing drink plenty of water and salt and try to induce vomiting. Call a physician to advise informing him if vomiting took place.

Product packaging details:

COR-131-PACKER is packaged in 55 US Gallon lined drums or plastic drums.





COR-141-DRILLING

DRILLING CORROSION INHIBITOR

Product description:

COR-141-DRILLING is a blend of quaternary pr oducts and amines in water and alcohol cosolvent, for use against oxygen and salt-water corrosion, and used as a specialist drilling corrosion inhibotr

Typical physical properties:

Appearance: Dark Amber liquid

Specific Gravity @ 30° C: 1.03 to 1.08 Gr/Cm3 Viscosity @ 30° C: Less than 50 Cps

Flash Point: Greater than 150° F Freezing point: Less than 0° C. PH: 9.0 to 10.0 Solubility: Water and brine

Product application details:

COR-141-DRILLING is used at 0.1% to 0.5% based upon the amount of drilling fluid to be treated. It should be injected directly into the mud pit, in order to get maximum inhibition throughout the drilling fluid. Most amine based corrosion inhibitors are non-effective against oxygen corrosion, except COR-141-DRILLING, which has a film build up that is very comprehensive and prevents the oxygen penetrating onto the metal surface.

The combination of quaternary and amine compounds exhibit a synergistic poperty that is extremely effective in drilling applications and can be used when foam drilling is being carried out, without affecting the performance of the foam. COR - 141 - DRILLING also has a modest effect on the prevention of bacteria growth.





COR-141-DRILLING- Continue

Product handling details:

COR-141-DRILLING contains no co-solvents, and is not considered hazardous. Contact with skin and eyes should be avoided. Ingestion should be avoided as its bactericidal properties affect the digestive system.

Avoid contact with skin and eyes. In case of contact flush with water for 15 minutes and contact medical personnel. Remove contaminated clothing.

Product packaging details:

COR-141-DRILLING is packaged in 55 US gollon drums.





COR 712 DRILL

DRILLING CORROSION INHIBITOR

Product description:

COR 712 DRILL is formulated product containing a mixture of amines and fatty acids, in a solvent carrier, and used as a general drilling inhibitor, for prevent of corrosion to drill string.

Typical physical properties:

Appearance: Golden Brown liquid

Specific Gravity @ 30° C: 0.85 to 0.95 Gr/Cm3

Flash Point: above 100° F Pour Point: Less than 0° C

Solubility: Oil soluble, water disperside

PH: 10.0 to 11.0 Viscosity @ 30° C: Less than 30 cps

Product application details:

COR 712 DRILL is formulated to be used as a general purpose drilling inhibitor. The normal treatment rate of COR 712 DRILL is 0.5 to 1.0 % of inhibitor based upon the volume of fluid to be inhibited.

COR 712 DRILL can be added to the drilling fluid in the mud pit or sprayed on to the drill string, when it is being run.

Dilutioned with equal parts of diesel are recommended, in order to make the inhibitor manageable, COR 712 DRILL will protect against carbon dioxide and hydrogen sulphide. In general the doasage rate of COR 712 DRILL, should be increased as the mud weight increases, or the drill solid in the mud increase.





COR 712 DRILL - Continue

Product handling details:

Gloves and goggles should be worn when handling COR 712 DRILL in a well ventilated area. Spillages may prove to be slippery and should be immediately contained with absorbant material.

Skin contact should be treated by removing all contaminated clothing and washing the affected area with soap and water.

Eye contact should be treated by washing the eyes with copious amounths of water and seeking prompt medical aid.

Product packaging details:

COR 712 DRILL is packaged in 55 US Gallon drums.





COR STOP-4800P

DRILLING OXCUGEN SCAVENGER

Description:

COR STOP-4800P powered sodium sulfite, effectively scavenges soluble oxygen from water-hased drilling fluid systems. COR STOP-4800P extends the life of organic polymers by eliminating conditions that promote their thermal° radation.

Typical Properties:

Appearance white to off-white powder pH (1% aqueous solution) 9.4 / 9.8 Specific gravity 1.35 Gr/Cm3

Applications / Functions:

Remove soluble oxygen from water-based drilling fluids and monovalent brines. Extended the life of organic polymers, especially at elevated temperatures. Minimize oxygen corrosion cell formation

Advantage:

Lowers mud maintenance costs Effectives in small concentrations

Recommended Treatment

For initial treatment, add 0.1-0.5 lb/bbl (0.29-1.43 kg/m3) of COR STOP-4800P. *Note: Regulate treatment by maintaining sulfite water and up to 300 mg/l in fresh water system. Warning: COR STOP-4800P is incompatible with ALDACIDE G, DEXTRID, and* formaldehyde/paraformaldehyde.





COR STOP-4800P continue:

Treatment

Treatment recommendation should be based on a careful analysis of dissolved oxygen levels within the system. A stock solution is prepared by dissolving 55 lb/Bbl (25 Kg/Bbl) in fresh water. Dissolve material with minimal agitation. But ensure that all material is in solution. Treatment will very from 0.5 to 3.5 liters per ton of the prepared solution. Maintain sulfite residual of 20 to 100 mg/liter in salt water and up to 300 mg/liter in freshwater systems.

Packaging

COR STOP-4800P is packaged in 25Kg sacks.





COR 4851

DRILLING CORROSION INHIBITOR

Product description:

COR 4851 is formulated product containing a mixture of amines and solubilisers, in a water carrier solvent and used as a general drilling inhibitor, for applications involving packer fluids and completion fluids.

Typical physical properties:

Appearance: Brown liquid PH: 10.5 to 11.5

Specific Gravity@ 30° C: 1.02 to 1.06 Gr/Cm3

Viscosity at 30° C:

Flash Point:

Solubility:

Pour Point:

Less than 30 CPS

Geater than 140°F°

Water and brine

Less than 0° C

Product application details:

COR 4851 is formulated to be used as a packer fluid inhibitor or completion inhibitor. The normal treatment rate of COR 4851 is 0.5 to 1.0% of inhibitor based upon the volume of fluid to be inhibited.

COR 4851 is designed to have a high solubility in a sodium chloride and calcium chloride brines at the levels associated with normal drilling additives. Higher concentration brines, or brines using bromides require the use of COR 4860, which is designed to inhibit the bromide solvent, without the normal precipitation problems associated with convetional amine based inhibitors in this application.





COR 4851 - Continue

Product handling details:

Gloves and goggles should be worn when handling COR 4851 in a well ventilated area. Spillages may prove to be slippery and should be immediately contained with absorbent material.

Skin contact should be treated by removing all contaminated clothing and washing the affected area with soap and water.

Eye contact should be treated by washing the eyes with copious amounts of water and seeking prompt medical aid.

Product packaging details:

COR 4851 is packing in 55 US Gallon drums.





DME SW

DRILLING MUD EMULSIFIER

Product description:

DME SW is a water soluble ethoxylated product for use as a general purpose emulsifier in water based drilling fluids when small amounts of diesel oil are emulsified in the aqueous phase.

Typical physical properties:

Appearance: Colourless liquid

Specific Gravity @ 30° C: 1.00 to 1.10 Gr/Cm3 Viscosity @30° C: Less than 100 Cps Pour Point: 0° C

Flash Point: Greater than 150° F Solubility: Water Soluble PH: 6.5 to 7.5

Product application details:

DME SW is used as a general purpose emulsifier and finds wide application when it is required to add diesel oil to the water based drilling fluid, for defoaming or lubrication.

DME SW will give a stable emulsion between oil and drilling fluid.





DME SW- Continue

Product handling details:

This material is not considered to be a harmful chemical, and is easily washed off skin and out of eyes with fresh water. An eye wash solution should be used to soothe inflammation.

Product packaging details:

DME SW is packaged in 55 USG lined drums or plastic drums.





DME SPECIAL

DRILLING MUD EMULSIFIER

Product description:

DME SPECIAL is an ethoxylated product in a water carrier for use as a general purpose emulsifier in water based drilling fluids when small of diesel oil are emulsified in the aqueous phase.

DME SPECIAL contains an effective defoamer to counteract any foam which shows in the mud pit, and is effective in both fresh and see water.

Typical physical properties:

Appearance: Colourless liquid

Specific Gravity @ 30° C: 0.99 to 1.07 Gr/Cm3 Viscosity @ 30° C: Less than 100 Cps.

Pour Point: Below 0°C. Flash Point: $\sim 140^{\circ}$ F.

Solubility: Water and brine

pH: 6.5 to 8.5

Product application details:

Used as a general purpose emulsifier and finds wide application when it is required to add diesel oil to the water based drilling fluid, for defoaming or lubrication.

DME SPECIAL will give a stable emulsion of oil and drilling fluid in all levels of calcium or sodium salts.





DME Spe. - Continue

Product handling details:

This material is not considered to be a harmful chemical, and is easily washed off skin and out of eyes with fresh water. An eye wash solution should be used to soothe inflammation.

Product packaging details:

DME SPECIAL is packaged in 55 USG lined drums or plastic drums.





DMS

DRILLING MUD SURFACTANT

Product description:

DMS is a water-soluble blend of ethoxylated phenol and an anti foaming agent in water. DMS is used as a drilling surfactant to control rheological properties of water based drilling muds.

Typical physical properties:

Appearance: Yellow liquid

Specific Gravity @ 30° C: 1.02 to 1.07 Gr/Cm3 Pour Point: 0° C

Flash Point: Above 150° C

Viscosity at 30° C: Less than 200 Cps

Product application details:

DMS is a standard drilling mud surfactant used for many years throughout the industry in water based drilling fluids. DMS has a wide range of effects on rheological properties but its main use is in controlling viscosity at increased temperatures.





DMS - Continue

Product handling details:

Avoid eye contact and prolonged or repeated skin contact.

In case of eye contact, hold the eyelid open and flush with water for at least 15 minutes. Seek medical aid.

In case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all clothing before reuse.

Product packaging details:

DMS is supplied in 55 US gallon drums or plastic drums.





EP-LUBE

DRILLING EXTREME PRESSURE LUBRICANT

Product description:

EP-LUBE is a blend of sulphurised fatty acids and soaps designed to provide extreme pressure lubrication and prevent stuck pipe in water based mud systems.

Typical physical properties:

Appearance: Dark brown viscous liquid

Specific Gravity @ 30° C: 0.890 to 0.900 Gr/Cm3 Viscosity @ 30° C: Less than 500 Cps

Flash Point: Above 150° F

Solubility: Soluble in aromatic solvent

Product application details:

EP-LUBE is designed to alleviate the problems of stuck collars and pipe when drilling with water based fluids. EP-LUBE works by imparting reactive extreme lubricity to the system and thereby reducing torque.

The optimum treatment level will depend on the individual system, but will usually be in the range of 1 to 1.5 lb./bbl of chemical on the total volume of drilling fluid.

EP-LUBE can be added to the system neat or first diluted in diesel to give faster dispersion.





EP-LUBE - Continue

Product handling details:

Although EP-LUBE is classed as non-hazardous, repeated or prolonged skin contact should be avoided. Rubber gloves and goggles should be worn when handling.

In case of eye contact, hold the eyelids open and flush with water for 15 minutes. Seek medical aid.

In the case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all contaminated clothing before re-use.

In case of ingestion, drink large amounts of milk or water and seek immediate medical aid. Do not induce vomiting.

Product packaging details:

EP-LUBE is supplied in 55 US Gallon drums or plastic drums.





LUBRICANT

DRILLING LUBRICANT

Product description:

LUBRICANT is a blend of natural oils and phosphilipids designed to provide lubrication and prevent stuck pipe in water based mud systems.

Typical physical properties:

Appearance: Brown liquid

Specific Gravity @ 30° C: 0.87 To 0.95 Gr/Cm3

Viscosity@ 30° C: Less than 50

Pour point: 0° C.

Flash Point: Above 150° F Solubility: Diesel and crude

Product application details:

LUBRICANT is designed to alleviate the problems of stuck pipe when drilling with water based fluids. LUBRICANT works by imparting lubricity to the system, thereby reducing torque.

The optimum treatment level will depend on the individual system, but will usually be in the range of 1 to 1.5 lb./bbl of chemical on the total volume of drilling fluid.

LUBRICANT can be added to the system neat or first diluted in diesel to give faster dispersion.





LUBRICANT - Continue

Product handling details:

Although LUBRICANT is classed as non-hazardous, repeated or prolonged skin contact should be avoided. Rubber gloves and goggles should be worn when handling.

In case of eye contact, hold the eyelids open and flush with water for 15 minutes. Seek medical aid.

In case of skin contact, remove all contaminated clothing and wash the affected area with soap and water. Launder all contaminated clothing before re-use.

In case of ingestion, drink large amounts of milk or water and seek medical aid. Do not induce vomiting.

Product packaging details:

LUBRICANT are supplied in 55 US. Gallon steel drums.





LUBRICANT-EX

DRILLING LUBRICANT

Product description:

LUBRICANT-EX is an oil soluble blend of natural oils and modified oils, formulated in a non-toxic base.

Typical physical properties:

Appearance: Brown liquid

Specific Gravity @ 30° C: 0.87 To 0.95 Gr/Cm3

Viscosity@ 30° C: Less than 50

Pour point: 0° C

Flash Point: Above 150° F Solubility: Diesel and crude

Product application details:

LUBRICANT-EX is a dispersible, biodegradable product that can be used as a general drilling lubricant or as an extreme pressure lubricant. It is applied in any water-based application where a reduction in torque or drag is needed.

LUBRICANT-EX exhibits extreme pressure lubricity properties as well as other surface-active properties such as emulsification and wetting.

LUBRICANT-EX will not affect the characteristics of the drilling fluid in use, and will not give sheen on water because it is aromatic free.

LUBRICANT-EX should be applied at a dosage of approximately 1 lb./bbl of the total fluids however this would vary greatly depending upon the severity of the problem encountered.





LUBRICANT-EX – Continue

Product handling details:

LUBRICANT-EX may cause irritation to tissue. Wash affected areas with soap and water. Irrigate eye spillages with copious quantities of water and seek medical advice.

Product packaging details:

LUBRICANT-EX is supplied in 55 US gallon drums.





SNG

BIO - LUBRICANT

DRILLING EP. DRILLING LUBRICANT BIODEGRADABLE

Product description:

BIO - LUBRICANT is a blend of natural oils and modified oils, formulated in a low toxic carrier solvent

Typical physical properties:

Appearance: Yellow liquid

Specific Gravity @ 30° C: 0.95 to 0.99 Gr/Cm3 Viscosity @ 30° C: Less than 500 Cps

Pour Point: Less than 0° C Flash Point: Less than 100° F PH: 8.0 to 10.0

Product application details:

BIO - LUBRICANT is a dispersible, biodegradable product that can be used as either a general drilling lubricant or as an extreme pressure lubricant. It is applied in any water-based application where a reduction in torque or drag is needed. The use of a drilling defoamer to control side effect foaming is not required.

BIO - LUBRICANT exhibits extreme pressure lubricity properties as well as other surface-active properties such as emulsification and wetting.

BIO - LUBRICANT will not affect the characteristics of the drilling fluid in use, and will not give sheen on water because it is aromatic free.

BIO - LUBRICANT should be applied at a dosage of approximately 1 lb./bbl of the total fluids however this would vary greatly depending upon the severity of the problem encountered.





BIO - LUBRICANT - Continue

Product handling details:

BIO - LUBRICANT may cause irritation to tissue. Wash affected areas with soap and water. Irrigate eye spillages with copious quantities of water and seek medical advice.

Product packaging details:

BIO - LUBRICANT is packaged in 55 USG drums.





STUCK FREE

DRILLING PIPE STUCK ADDITIVE

Product description:

STUCKFREE is a specially formulated blend of high molecular weight fatty acids and surfactants designed to break down filter cake, and alleviate stuck pipe problems.

Typical physical properties:

Appearance: Black liquid

Specific Gravity @ 30° C: 0.90 to 0.94 Gr/Cm3 Viscosity @ 30° C: Less than 100 Cps

Flash Point: Greater than 150° F

Solubility: Oil

Pour point: Less than 0° C

Product application details:

STUCKFREE should be diluted at a rate of three to four gallons to 1 barrel of gas oil, and spotted around the area of the stuck pipe.

After allowing a soak time of approximately one hour.

The specially formulated blend of lubricants and detergents STUCKFREE will soften any excess filter cake enabling the pipe to be freed.





STUCK FREE – Continue

Product handling details:

Avoid contact with eyes, skin and clothing.

In the case of eye contact. Hold the eye lids open and flush with cold water for 15 minutes. Seek medical aid.

In the event of skin contact . Remove all contaminated clothing and wash the affected area with soap and water . Launder all clothing before reuse.

Product packaging details:

STUCKFREE is normally supplied in 55 US gallon lined drums or plastic drums.





BACTERICIDE

DRILLING BACT3ERICIDE

Product description:

BACTERICIDE is a water soluble blend of aldehyde and quaternary compounds which has been shown to exhibit effectiveness in high soluble water based drilling fluids.

BACTERICIDE is an effective biocide for the control of aerobic and anaerobic bacteria including sulphate reducing bacteria, in water based drilling fluids, due to its high tolerance of drill solids.

Typical physical properties:

Appearance: Colourless Liquid

Specific Gravity @ 30° C: 1.05 to 1.10 Gr/Cm3 Viscosity@ 30° C : Less than 50 Cps. Pour Point: 0° C.

Flash Point: Greater than 150° F Solubility: Water and brine soluble

PH: 5.0 TO 5.5

The product does not contain heavy metals or Organo chlorine compounds.

Product application details:

For drilling fluids slug doses of 0.2 to 1.0 litres per cubic metre of water based drilling fluids should be used.

Injection into a flowing system is by means of a continuous feeding arrangement using a positive displacement pump or drip feed. For static systems BACTERICIDE should be added as a slug dose and well mixed with drilling fluid in the mud pit.





BACTERICIDE - Continue

Product handling details:

Avoid contact with eyes, skin and clothing. Do not take internally. In case of contact with eyes and skin, wash with clean water for at least 15 minutes then seek medical attention. Remove contaminated clothing and wash before re-use. Wear goggles and gloves.

Product packaging details:

BACTERICIDE is supplied in 55 US gallon lined drums or plastic drums.





H2S GUARD

HYDROGEN SULPHIDE SCAVENGER

Product description:

H2S GUARD is a product which is used to remove Hydrogen sulphide dissolved in water. Normally the reaction rate of scavenging very slow with Hydrogen sulphide, but H2S GUARD is organically catalysed to speed up the reaction rate by a factor of one hundred times.

Typical physical properties:

Appearance: Pale yellow liquid

Specific Gravity @ 30° C: 1.250 to 1.350 Gr/Cm3 Viscosity @ 30° C: Less than 50 Cps

Pour Point: Less than 0° C
Flash Point: Greater than 150° F

PH: 6.5 to 7.5

Product application details:

H2S GUARD should be injected into the water line to be treated at a rate of 20 PPM to every 1 PPM of Hydrogen Sulphide. The injection point should be selected to give the maximum amount of agitation and temperature, as both these parameters affect the performance.

H2S GUARD will only scavenge Hydrogen Sulphide fr om an aqueous phase not from a gaseous phase.





H2S GUARD - Continue.

H2S GUARD is harmful to the skin and eyes and has an obnoxious smell. Spillages should be washed away immediately with fresh water. Skin cream should be applied to the cleansed skin and eye wash used on the eyes to soothe inflammation.

Product packaging details:

Packaged in 55 USG lined drums to customer specification or colours.





COR 151

DRILLING CORROSION INHIBITOR

Product description:

COR 151 is a quaternary ammonium product, which acts as a filming amine, blended with inorganic salts, for use against corrosion in drilling activities.

Typical physical properties:

Appearance: Amber Liquid

Specific Gravity @ 30° C: 0.98 to 1.10 Viscosity @ 30° C: Less than 50 Cps Pour Point: 0° C

Flash Point: Greater than 150° F Solubility: Water and brine

Product application details:

The required doseage will vary depending upon the severity of the conditions, but will usually be in the range of 0.1% to 0.5% based on the volume of drilling fluid.

COR 151 should be added directly to the mud pit in order to get maximum mixing, and hence maximun protection throughout the system. Most amine based corrosion inhibitors, are ineffective against oxygen attact, and require the use of an oxygen scavenger. COR 151 is designed to work effectively under these conditions.





COR 151 - Continue

Product handling details:

Gloves and goggles should be worn when handling COR 151 in a well ventilated area. Spillages may prove to be slippery and should be immadiately contained with absorbent material. Skin contact should be treated by removing all contaminated clothing and washing the affevted area with soap and water.

Eye contact should be treated by washing the eyes with copious amounts of water and seeking prompt medical aid.

Product packaging details:

COR 151 are supplied in 55 US gallon lined drums, or plastic drums.





DEFOAM 4531

DRILLING DEFOAMER

Product description:

DEFOAM 4531 is a blended formula of high molecular weight polymer material in a high molecular weight alcohol solvent.

Typical physical properties:

Appearance: Pink liquid

Specific Gravity @30° C: 0.83 to 0.89 Gr/Cm3

Viscosity @ 30°: Less than 50 cps

Flash Point: Greater than 150° F

Pour point: Less than 0° C

Product application details:

The specific usage of DEFOAM 4531 can only be accurately determined by laboratory tess on the drilling fluid in question.

If th dosage level is to be decide under drilling conditions, a recommended addition to the drilling fluid, as a starting point is 100 ppm based upon total quality of fluid.

Increase or decreases in this level can be judged by exaning the system for foam control. DEFOAM 4531 can either be added on the surface to combat existing foam problems, or introduced into the foamation of foam problems. It is more effective in preventing the problem than ti is in defoaming an exisiting foam problem.

DEFOAM 4531 is a wide range defoamer which works effectively as aluminium stearate or silicones, but does not interfere with the normal properties of the drilling fluid.





BREAK 6071 – Continue

Product handling details:

Care should be taken in handling around open flames or sparks avoid contact with eyes and skin and clothing.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. For eyes, obtain medical advice.

Product packaging details:

D-FOAM 800 is packaged in 5 US gallon mild steel drums.





D-FOAM 8000

DRILLING & CEMENT DEFOAMER

Product description:

D-FOAM 8000 is a blended formula of high molecular weight polyols suspended in a proprietary non toxic solvent which does not interfere with the cement properties, and is used as general purpose drilling defoamer.

Typical physical properties:

Appearance: White liquid

Specific Gravity @30° C: 0.98 to 1.03

Flash Point: Greater than 150° F

Viscosity @ 30°: Less than 300 cps

Pour point: About 5° C

Solubility: Water dispersible

PH: Neutral

Product application details:

D-FOAM 8000 will eliminate entrained air, which causes problems in pumping troweilling, and complete cavity filling, it also prevents excessive shrioking, porosity and weakness of the set cement or concrete.

D- FOAM 8000 is added in the quantity of 0.1 % by weight of the water and will eliminate air in systems. The minimum amount required is usually determined by observation and will depend upon the organic, which are present.









COR 715 - Continue

Product handling details:

Care should be taken in handling around open flames or sparks avoid contact with eyes and skin and clothing.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. For eyes, obtain medical advice.

Product packaging details:

D-FOAM 8000 is available in 5 US gallon pails or 55 US gallon drums.





SNG

D-FOAM 164-D

DRILLING DEFOAMER

Product description:

D FOAM 164-D is a general purpose drilling defoamer designed to prevent foam build up in all water drilling fluids D FOAM 164-D is a blend of medium chain length polyols in a carrier solvent.

Product application details:

The ree of foaming in drilling fluids is a function of the type and volume of drilling additives used. The optimum dose level must be determined on site but will usually be in the region of 0.2 to 0.5 pounds per barrel of drilling fluid. This product is an alternative D foam 4535, which is a silicon based product.

Typical physical properties:

Appearance: Pale yellow liquid SG @ 30° C: 0.84 to 0.87 Pour point: Below 0° C

Flash Point: 68° C

Viscosity @ 30°: Less than 100 Cps

Product packaging details:

D FOAM 164- D is packaged in 55 US gallon drums.





D FOAM 164- D countinue:

Product handling details:

Steps should be taken to avoid skin and eye contact.

In the case of skin contact, removes all contaminated clothing and wash the affected area with soap and water. Launder all contaminated clothing before reuse.

In the case of eye contact, hold the eyelids open and flush the eyes with water for at least 15 minutes. Seek medical advice.

In the case of ingestion, drink large amounts of milk or water and seek immediate medical aid.





LUBRICANT- M

DRILLING LUBRICANT

Product description:

LUBRICANT-M is an oil soluble blend of natural oils and modified oils, formulated in a non-toxic base.

Typical physical properties:

Appearance: Dark Brown Liquid

Specific Gravity @ 30°C: 0.910 to 0.94 gm/cc

Viscosity @ 30° C: Less than 200 Cps

Flash Point: Greater than 150° F up to 300 F Solubility: Oil soluble, water dispersible

Freezing Point: Less than 0° C

Product application details:

LUBRICANT-M is a dispersible, biodegradable product that can be used as a general drilling lubricant or as an extreme pressure lubricant. It is applied in any water-based application where a reduction in torque or drag is needed.

LUBRICANT-M exhibits extreme pressure lubricity properties as well as other surface-active properties such as emulsification and wetting.

LUBRICANT-M will not affect the characteristics of the drilling fluid in use, and will not give sheen on water because it is aromatic free.

LUBRICANT- should be applied at a dosage of approximately 1 lb./bbl of the total fluids however this would vary greatly depending upon the severity of the problem encountered.





LUBRICANT-M – Continue

Product handling details:

LUBRICANT- may cause irritation to tissue. Wash affected areas with soap and water. Irrigate eye spillages with copious quantities of water and seek medical advice.

Product packaging details:

LUBRICANT-M is supplied in 55 US gallon drums.





DRILL SCAV

DRILLING OXYGEN REMOVER

Product description:

DRILL SCAV is a reactive liquid oxygen scavenger, designed to remove

Typical physical properties:

Appearance: Yellow liquid

Specific Gravity @ 30° C: 1.30 to 1.40

Flash Point: Greater than 150° F

Solphite content: 65% by weight approximately

Viscosity @ 30° C.: Less than 25 cps PH: 5 to 6

Product application details:

To remove oxygen from one millions of water, add 150 gallons of DRILL SCAN.





DRILL SCAV - Continue

Product handling details:

When handling DRILL VERT always uses protective eyewear and clothing. In the case of eye contact wash with copious amounts of water and seek medical attention.

In the case of skin contact, wash affected area with soap and water, remove any contaminated clothing.

Product packaging details:

DRILL SCAV is normally supplied in 250 Kg in 55-gallon plastic drums.