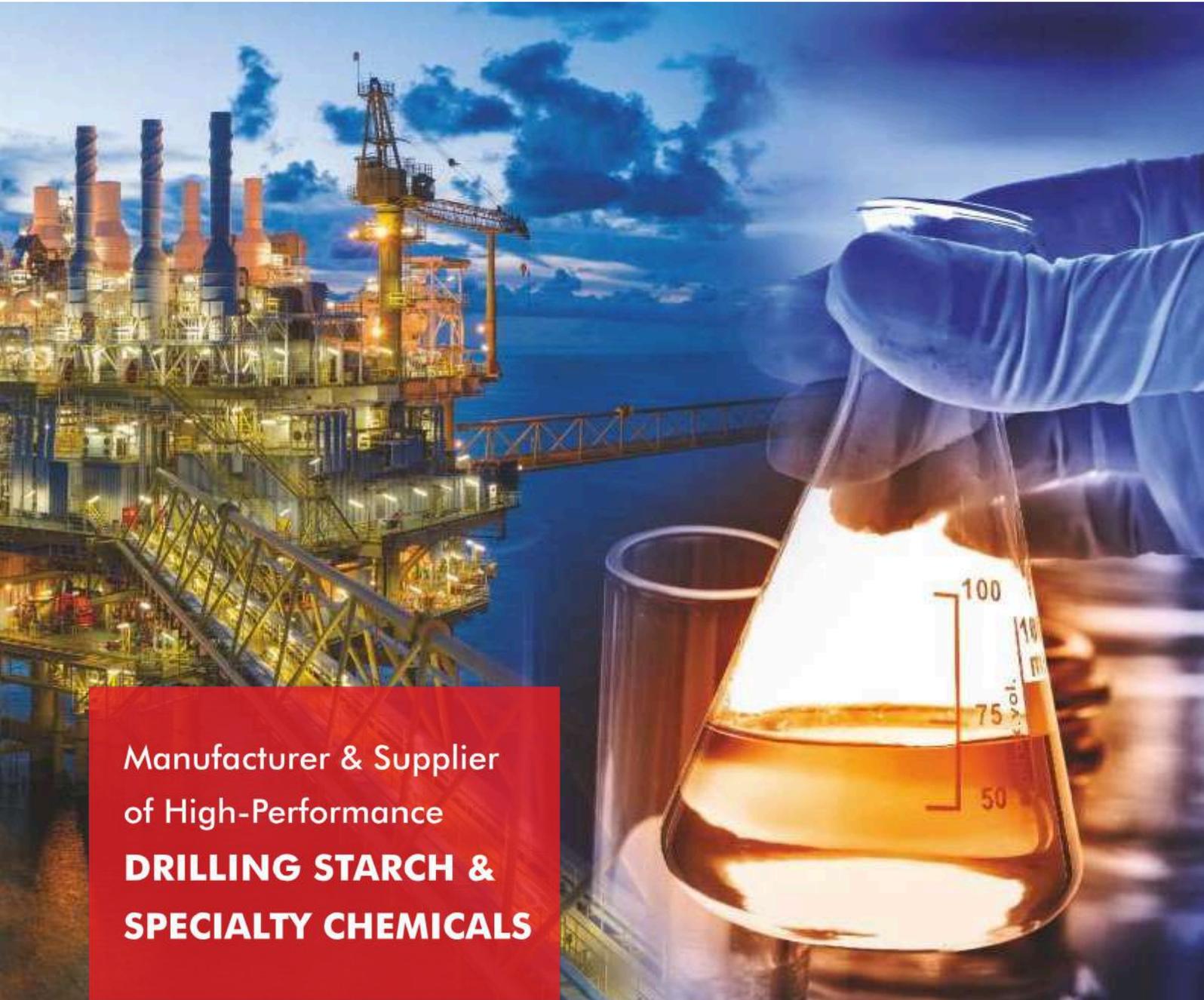




# H&K DRILLING

AN ISO CERTIFIED COMPANY 9001:2015



Manufacturer & Supplier  
of High-Performance  
**DRILLING STARCH &  
SPECIALTY CHEMICALS**

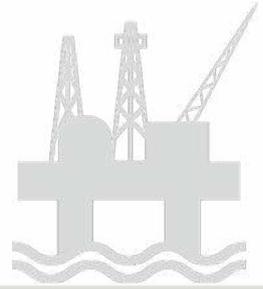
We manufacture a wide range of Modified Starch,  
Oil Field Specialty Chemicals and Additives.

[www.hkdrilling.in](http://www.hkdrilling.in)

[www.unifabengg.com](http://www.unifabengg.com)



# H&K DRILLING



## OUR DNA :

H&K provides a variety of products to industries including Oil Well Drilling and Textile industries. We strive hard to impart high quality products at most economical prices.

At H&K DRILLING we strive hard to impart high quality products at most economical prices and make product deliveries within stipulated time-frame. We offer both standardized as well as customized solutions to our clients which make us one of the preferred business partners of our clients.

H&K DRILLING's First unit facilities spread across 62,000 sq ft has a installed capacity of 7200 MT per year with capability to increasing our production capacity to 10000 MT per year.

H&K DRILLING's second unit features 24,000 Sq Ft of storage capacity and 4000 sq ft of plant area for optimized production, with an initial Monthly production capacity of 450 KL and plans to scale up to 1,200 KL.

**At H&K DRILLING we manufacture a Wide Rang of Modified Starch, Oil field Specialty Chemicals and Additives.**

## SILVASSA PLANT



## ISO 9001: 2015 CERTIFICATION FOR QUALITY MANAGEMENT

UNIT I : Area : 62,000 Sq Ft  
Plant Capacity : 7200 MT/Year

UNIT II : Area : 24,000 Sq Ft  
Plant Capacity : 3600 KL/Year

H&K DRILLING Units are located in the Union Territory of Dadra & Nagar Haveli and Daman & Diu (India) which is 160 kms away from Mumbai and is very well connected to other parts of India through NH48. The Unit has proximity advantage to raw material, railway network and global ports like Hazira, JNPT & Mundra Port, which facilitates easy exports of finished goods.

H&K Drilling has a dedicated 4000 Sq. Ft. Unit for R&D Division with latest equipments.

# PRODUCT RANGE

H&K Drilling offers a diverse range of products, including high-quality powder chemicals, liquid chemical solutions, and lost circulation materials (LCM). Our extensive product line is designed to meet the specific needs of the drilling industry, ensuring efficiency and reliability in every operation.

## H&K - POWDER PRODUCTS

HK-STARCH

HK-DRILLING STARCH-HT

HK-CMS

HK-FLTR (MODIFIED STARCH HT)

HK-CMC (CARBOXY METHYL CELLULOSE)

HK-PAC LV TECHNICAL

HK-SULPHONATED ASPHALT

## H&K - LCM PRODUCTS

HK-WALNUT -ALL GRADES

HK MICA- ALL GRADES

HK QUICK SEAL- ALL GRADES

## H&K - TRADING PRODUCTS

BARITE POWDER  
(With specific gravity - 4.00,  
4.10, 4.20)

BENTONITE API GRADE

CAUSTIC LYE

SODIUM HYDROXIDE

SODIUM CARBONATE

SODIUM SILICATE (NEUTRAL)

SODIUM SILICATE (ALKLINE)

## H&K - LIQUID SPECIALTY CHEMICALS

HK-DRILLING DETERGENT

HK-COR (CORROSION INHIBITOR)

HK- CLOUD POINT GLYCOL

HK-SF (SPOTTING FLUID)

HK-OXYGEN SCAVENGER

HK-HK-DFS (SILICON DEFORMER)

HK-PSI (POLYAMINE SHALE INHIBITOR)

HK-BIOCIDE

HK-PRIMARY EMULSIFIER

HK-SECONDARY EMULSIFIER

HK- N- SURFACTANT

HK-POI (SYNTHETIC POLYMER)

**All H&K products can be customized as per client requirements & preferences. Contact us for more details.**





Modified Starch Powder confirm to the API Specifications used to provide fluid loss control properties in all types of water-based mud system, its applied as fluid loss reducer in fresh water, sea water and salt saturated water base muds.

PARAMETERS	SPECIFICATIONS
Physical State	White to cream coloured free flowing powder free from visible impurities
Moisture Content	10% Maximum
PH	8-11
API Fluid Loss CC in 4% Salt Water	10ml Maximum
Fann Dial Reading at 600 RPM in 4% Salt Water	18% Maximum
API Fluid Loss CC in Saturated Salt Water	10ml Maximum
Fann Dial Reading at 600RPM in Saturated Salt Water	20 Maximum
Residue Greater than 2000 Microns	No Residue

- ▶ ADVANTAGES**
- It provides Economical Method of filtration Control.
  - Can be used in the full range of water types as KCl, NaCl, MgCl<sub>2</sub>, CaCl<sub>2</sub>.
  - Stabilizes Rheology.
  - Provides well bore stability and filtration control.
  - Non damaging to the formations.
  - Contains Preservatives.

# HK-DRILLING STARCH-HT



A high-quality grade of pre-gelatin starch that is used in water-based mud systems to minimize fluid loss and forming thin filter-cake in well bore surface in high temperatures (up to 300 Fahrenheit degrees). High Temperature Drilling starch is a non-ionic natural polymer which may be used in low-saline to high-saline waters. High temperature starch is environment-friendly and easily removeable by acids or oxidizers.

PARAMETERS	SPECIFICATIONS
Physical State	White to cream coloured free flowing powder free from visible impurities
Moisture content	12% Maximum
PH (1% Solution in deionized Water)	6-11
API Fluid CC in 4% Salt Water, Aging for 24hr @Room Temp	10ml
Fann Dial Reading at 600RP Min 4% Salt Water	18 Max
API Fluid loss CC in saturated Salt Aging - 24hr @ Room Temp	10
Fann Dial Reading at 600RP Min saturated Salt Water	20 Max
API Fluid Loss CC in 4% Salt Water After 16hr. Hot Rolling@275°F	10ml Max
Residue greater than 2000 microns	No Residue

- ▶ ADVANTAGES**
- Cost-effective comparing other filtration agents forming high quality filter cake on well bore walls provides excellent filtration characteristics.
  - Compatible with most types of regular water-based muds Compatible with sea water and brackish water
  - Stable up to 300°F
  - Compatible with sodium chloride, potassium chloride and other common salts in industry
  - Environment-friendly
  - Applicable in wide range of pH
  - Minimize filtration damage in reservoir formations

All H&K products can be customized as per client requirements & preferences.



## HK - CMS (CARBOXYMETHYL STARCH)



HK-CMS Carboxy methyl starch-based filtration control agent meeting Drilling specification. It used as additive to control fluid loss in most water-based fluid system. HK-CMS is functional in Simulated well site water as well as saturated salt environment and does not increase fluid viscosity. HK-CMS is non-damaging and can be used in both Drilling Fluid and reservoir Drill-in Fluid application.

### ADVANTAGES

Lower filtration rate in most water-based drilling fluid system

Improve bore-hole stability  
Flocculate dispersed drill cuttings in clear water drilling

Maintain filtration control without detrimental viscosity increase

Effective with fast drilling non-dispersed system

### PARAMETERS

Appearance

PH

Moisture

8% Viscosity  
(Brookfield Viscometer)

### SPECIFICATIONS

Free Flow, Pale Yellow Powder

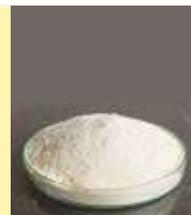
Min 10.5

Max 12%

MIN 27500 cps

## HK-FLTR (FLOTROL)

H&K - POWDER PRODUCTS



HK-FLTR (Flotrol) filtration-control additive is a special starch derivative used in Flo Pro systems. When used in conjunction with a bridging agent such as sized calcium carbonate or sized salt, it provides a thin, pliable, easily removed filter cake. HK-FLTR (Flotrol) additive is a non-ionic material especially suited for fluids containing salts or ion-sensitive additives. It material acts synergistically with HK-FLTR (Flotrol) additive to enhance the Low-Shear-Rate Viscosity (LSRV) of Flo Pro system.

### ADVANTAGES

Provides a thin, pliable, easily removed filter cake which minimizes formation damage and facilitates cleanup during completion

Additive to enhance LSRV

Not adversely affected by salinity and functions over a wide range of water chemistry

### PARAMETERS

Appearance

Moisture

Particle Size Fraction on +40 Mesh

LSRV @0.3 RPM & 77 @F

HTHP Fluid loss @280 F

### SPECIFICATIONS

White to cream free flowing powder

Max 12%

3.0 % Max

MIN 27500 cps

Max 20 ml

## HK - CMC (CARBOXYMETHYL CELLULOSE)



Carboxymethyl cellulose is a high quality cellulose Polymer which acts as a fluid loss additive designed to reduce API filtration rate with minimum increase in viscosity in dispersed and no dispersed drilling fluids having various advantages.

### ADVANTAGES

- Controls fluid loss Increases viscosity.
- Provides excellent thermal stability.
- Widely available and low-cost polymer for fluid Loss control.
- Effective at providing filtration control in most water-based drilling fluids.
- Effective in low concentrations.
- Non-Toxic and is not subjected to bacterial fermentation and calcium contamination.
- Used in most water-based Fluid systems.

### PARAMETERS

### SPECIFICATIONS

Physical appearance	Off White to Creamish free flowing Powder
Nature of polymer	Sodium Carboxy Methyl Cellulose CMC LVG
Moisture content (%)	Max. 10%
Filtrate Volume	Max .10
Viscometer Dial Reading At 600 r/min.	Max. 90

## HK - PAC LV

### H&K - POWDER PRODUCTS



Polyanionic Cellulose Polymers based Viscosities and filtration control products in India used in the oilfield industry. PAC is a high quality Polyanionic Cellulose Polymer which acts is a water based filtration control agent which also provides viscosity and controls fluid loss.

### ADVANTAGES

- High yield viscosifier.
- Controls fluid loss and increases viscosity.
- Resistant to ions and is effective over a wide ph range.
- Provides excellent thermal stability.
- Improves quality of filter cake.
- Unsusceptible to bacterial degradation.

### PARAMETERS

### SPECIFICATIONS

Appearance	Freely Flowable powder
Starch or its derivatives	absent
Purity	≥60%
Moisture Contant	≤10 %
Apparent Viscosity (mpa.s)	≤40
Filtrate Volume (ml)	≤16

## HK - SULPHONATED ASPHALT

### H&K - POWDER PRODUCTS



Commonly used as an additive in drilling muds for oil and gas wells. In drilling operations, the mud serves several important functions, including lubricating the drill bit, carrying cuttings to the surface, and maintaining pressure in the well to prevent blowouts.

### ADVANTAGES

- Increases drilling fluid lubricity, lowers torque and drag.
- Inhibits the hydration & swelling of shales and hence promotes borehole stability.
- It plugs the micro fractures in shales. This plugging due to sulphonated asphalt prevents the seepage of mud & mud filtrate into the micro fractures. This improved the stability of shale sections.
- Reduces high temperature, high pressure (HPHT) fluid loss.

### PARAMETERS

### SPECIFICATIONS

Appearance	Dark Brown to Black, Free flowing powder.
Moisture	8% Max
pH (2%solution)	7.0-10.0
Water Solubility	65% Minimum

All H&K products can be customized as per client requirements & preferences.

## HK - WALLNUT - ALL GRADES

H&K - LCM PRODUCTS

Hard fibrous material, chemically inert, nontoxic & biodegradable material used as a LCM for Drilling applications. Essentially manufactured by grinding specialized walnut to specific Sizes and can be used in all types of Fluid Systems of Various Densities. WALLNUT is at times used as a Nut Lubricant to increase lubricity and Reduce Torque and Drag.



### PARAMETERS

### SPECIFICATIONS

Appearance	Ground Pecan or Walnut Hulls
Moisture Content	12% maximum
Dry Sieve Analysis, % Retained on US 1/4Inch	0 Maximum
Dry Sieve Analysis, % Passing on US #5	100 %
Dry Sieve Analysis, % Retained on US #18	40 to 90%

### ADVANTAGES

- Widely used Loss Circulation Material for Seepage Control.
- Compatible with both water and Oil based Drilling Fluids.
- Non toxic and Completely Biodegradable.
- Good Lubricating Properties reduces Torque and Drag and Bit Baling.
- Compatible with other Fibrous and Flaky LCM Materials.
- Non-Fermenting and Chemically Inert.

## HK - QUICK SEAL ALL GRADES

H&K - LCM PRODUCTS

Quick-Seal F/M/C is a common mixture of LCM which is applicable in both water-based and oil-based Drilling Fluid systems. Composed of Mica flakes, saw dust, sized wood particles and etc. It can alleviate down hole loss circulation with severity of up to 150 BBL/Hr. Available in fine, medium and coarse sizes, it functions more efficiently when it is used with other type of LCM's such as NUT-PLUG, MICA and Sized Calcium Carbonate.



### PARAMETERS

### SPECIFICATIONS

Physical Appearance	Mixture of flakes, granual & fibrous material
Dry sieve analysis, % through US#100 (149 Microns)	5-10%Range
Dry Sieve analysis, % through US#16 Mesh	100%

### ADVANTAGES

- Easy to mix through hopper.
- Compatible with most types of regular water-based and oil-based muds.
- Stable up to 300°F.
- Provide sufficient sealing in fracture zones, vugular formations and thief areas.

## HK - MICA ALL GRADES

H&K - LCM PRODUCTS

MICA is essentially naturally Occurring Muscovite Mica flakes seized in Fine Medium and Coarse grades essentially used in the Loss Circulation applications during Drilling Operations.



### PARAMETERS

### SPECIFICATIONS

Physical Appearance	Flakes & Powder
%Particle size Fraction, +20 Mesh ASTM	40-60%
%Particle size Fraction, +100 Mesh ASTM	90%minimum

### ADVANTAGES

- Effective Low-cost LCM.
- Does not adversely affect the properties of OBM or WBM.
- Generally Inert Material with no reactions to Hydrocarbons, acids, Brines.

## HK - DRILLING DETERGENT

H&K - LIQUID PRODUCTS



It is designed to reduce the surface tension of all water-base mud systems and reduce the sticking tendency of water-sensitive shale cuttings.

### PARAMETERS

Physical State

### SPECIFICATIONS

Clear Green Liquid with no separation or settling

Volatile Content (@110C)

85 -95 Weight %

pH

9 -10 pH

Flash Point

100°C

Apparent Viscosity @80F

50-100 cPs

### ADVANTAGES

Minimizes bit and BHA balling.

Reduces surface tension of the liquid phase, helping to drop sand & remove drill solids.

Improves water-wetting action on all solids and reduces the sticking tendency of reactive shale cuttings.

Functions as an emulsifier, reducing the viscosity of oil-contaminated fluids.

Effective in all water-base mud.

## HK - COR (CORROSION INHIBITOR)

H&K - LIQUID PRODUCTS



HK-COR is a modified, amine type additive designed to protect all oilfield tubular goods. HK-COR helps prevent general corrosion attack on casing, tubing and down hole tools in contact with clear completion brines.

### PARAMETERS

Appearance

### SPECIFICATIONS

Brown Amber Liquid

Specific gravity at 20C

1.02-1.05

pH

Min 10.2

Amine Value

Min 90.5 MGKOH

### ADVANTAGES

Protects metal surfaces in both the shallow, upper part of the well and in the deeper, hotter areas. At recommended concentration, it provides protection at bottom hole temperatures up to 350°F(177°C).

Protects both tubular goods and completion tools exposed to work over or clear completion brines.

Compatible with sodium chloride, potassium chloride, calcium chloride, sodium bromide, calcium bromide and moderate density zinc bromide brine fluids.

## HK - SF (SPOTTING FLUID)

H&K - LIQUID PRODUCTS



HK-SF (Spotting Fluid) additive is used in stuck breaker pills to release differentially stuck pipe. Prepared in diesel or mineral oils, its stuck breaker pill penetrates into the filter cake and cracks it, thereby minimizing the bond between the stuck drill string and the filter cake. The differentially stuck string is thus freed after a spotting job.

### PARAMETERS

Appearance

### SPECIFICATIONS

Dark brown liquid

Specific gravity

0.85-095

Flash Point

65. °C Min (PMCC)

### ADVANTAGES

Allows quick and effective operation in stuck pipe problem.

Use with Diesel oil, Mineral Oil, Crude and Oil Base mud's.

It is compatible with fresh and salt water Drilling Fluids and can be added in active mud system without adversely affecting other properties.

# HK - CLOUD POINT GLYCOL

H&K - LIQUID PRODUCTS



It is cloud point additive designed for high-salinity glycol systems. It can provide improved wellbore stability, lubricity, and high temperature filtration control, plus reduced dilution rates and bit balling. The additive is recommended for freshwater to high-saline glycol systems. While glycols are most effective when used in conjunction with an inhibitive-salt, non-dispersed polymer system, they can be used as additives in most water-base systems.

## ADVANTAGES

This additive has application in glycol systems in fresh-to-high salinity make-up water and can be used in wells with high formation temperatures.

When used properly, this high-cloud- point additive helps to stabilize troublesome shales by plugging shale pores, preventing the equalization of hydrostatic pressure away from the wellbore.

Glycol systems are generally low-to-medium density, non-dispersed polymer systems utilizing an electrolyte to activate the cloud point glycol. They have application where troublesome water-sensitive shales are to be drilled and can be used in lieu of oil-base systems for certain applications.

## PARAMETERS

Physical Appearance

## SPECIFICATIONS

The material shall be in the form of liquid from visible impurities

Specific Gravity

1.10-1.20

Solubility in Water

Soluble

Cloud Point @3% in 10% in KCl 75-87°C

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# HK - OXYGEN SCAVENGER

H&K - LIQUID PRODUCTS



An ammonium bisulfite solution used to remove entrained oxygen from drilling and completion fluids. The product is injected at the pump suction on a continuous basis to Minimize atmospheric contact. It functions as a corrosion inhibitor by removing Oxygen from the drilling or completion fluid while circulating.

## PARAMETERS

## SPECIFICATIONS

Physical State

Pale Yellow clear liquid.

% Acidity (As NH<sub>4</sub>HSO<sub>3</sub>)

60-65%

pH

4.5-6.0

Specific Gravity

1.30– 1.33 at 20° C

## ADVANTAGES

Removes oxygen from water to prevent corrosion in drill strings.

Injected continuously at the pump suction with minimal atmospheric contact.

Monitored using an excess sulfite test at the flowline. Initial injection rate: 1-2.5 gal (3.8-9.5 L) per hour.

Injection rate adjusted based on sulfite test results.

Target excess sulfite content: 100-300 mg/L at the flowline.

Corrosion inhibitor often used with it.

Corrosion rings may be used to monitor corrosion rates over time.

## HK - DFS (SILICONE DEFORMER)

H&K - LIQUID PRODUCTS



HK-DFS (Silicone Defoamer) is a Silicone based Defoamer. It is 10% & 20 % active silicone based defoamer and antifoam for use in water-based coating and ink applications as well as in various water-based industrial formulations.

### ADVANTAGES

Effective at low concentrations, requiring minimal use for foam control.

Resists various pH levels and temperatures, ensuring consistent performance.

Suitable for both aqueous and non-aqueous environments across multiple industries.

Works well with a range of additives and chemicals commonly used in industrial processes.

### PARAMETERS

### SPECIFICATIONS

Composition	Mixture of polydimethylsiloxanes and silica
Appearance	Milky white liquid
pH at 25°C	6-8
Specific Gravity	0.99 - 1.1
Solubility	Dispersible in water

## HK - PSI (POLYAMINE SHALE INHIBITOR)



HK-PSI are liquid polyamine shale additive is used in polymer-based drilling and drill-in fluids and Water base Mud Systems. It can be added directly to the mud system with no effect on viscosity or filtration properties. It effectively inhibits shale or clays or Cuttings from hydrating in reactive shale and clays and minimizes the potential for bit balling. It functions as a Shale Stabilizer by strengthening the Well bore and provides Lubricity and increases ROP.

### ADVANTAGES

Enhance Provides excellent shale inhibition and limits cuttings dispersion and swelling.

Reduces accretion potential and consequently bit and BHA balling.

Environmentally acceptable and Non-Toxic for both offshore and onshore applications.

Can be added to the system directly without adverse effects on viscosity and filtration properties.

Tolerates common contaminants such as cement, hard water, CO<sub>2</sub>, drill solids, and crude oil.

### PARAMETERS

### SPECIFICATIONS

Form	Yellow Liquid
Appearance	Clear liquid with mild to no odour
pH	6.0-8.0
Specific Gravity	1.05-1.15
Solid Content	Min 30%
Solubility	Soluble in water.

## HK - BIOCID

H&K - LIQUID PRODUCTS



Biocide a mixture of non-oxidizing biocides has the function of spectrum sterilization, can inhibit microbes, algae, and fungi.

### ADVANTAGES

Controls Bacterial Growth

Inhibits Microbial Corrosion

Prevents Pipeline Clogging

Removes Entrapped Oxygen

Environmentally safe, easy to use & mix

### PARAMETERS

### SPECIFICATIONS

Physical State	Clear Liquid to pale Yellow
Specific Gravity	1.05-1.10
pH	9.0-12.0
Flash Point	>100°C
Solubility in Water	Soluble
Assay	25(Minimum)

## HK - PRIMARY EMULSIFIER

H&K - LIQUID PRODUCTS



Primary Emulsifier is a highly effective and wetting agent based on fatty acids derivatives specifically suited for invert emulsifier non aqueous drilling fluid.

### PARAMETERS

### SPECIFICATIONS

Appearance	Dark Brown Viscous Liquid
Specific Gravity@25° C	0.91-0.96
Solubility	Soluble in oil, Insoluble in water
Pour Point	< 0 °C
Acid Value, mg KOH/gm	75-85

### ADVANTAGES

Imparts oil wettability to the solids in the invert emulsion mud.

Produces a stable invert emulsion fluid with good rheological profile.

Is effective in all types of brines as internal phase.

Is extremely effective over a wide range of oil/water ratios and mud weights helps to maintain high temperature, high pressure filtrate as all oil - free of water.

Can be used over a wide temperature range as well as in the presence of most contaminants.

## HK - SECONDARY EMULSIFIER

H&K - LIQUID PRODUCTS



Secondary Emulsifiers an extremely efficient Emulsifier based on Imidazoline chemistry, suited for invert emulsion non aqueous drilling fluid.

### PARAMETERS

### SPECIFICATIONS

Appearance	Dark Brown / Black liquid
Specific Gravity@25° C	0.92-0.96
Acid Value, mg KOH/gm	40-50
Pour Point	< 0 °C

### ADVANTAGES

A highly stable emulsifier for invert emulsions.

Can be used in all type of brines and oils.

Designed to promote high level of emulsion stability, giving water free HTHP filtrates.

Effective over a wide temperature range, oil/water ratios and mud weights.

Provides stable invert emulsion in the presence of contaminants such cement, water, drill.

## HK - N - SURFACTANT

H&K - LIQUID PRODUCTS



HK - N - Surfactants are a type of drilling mud surfactant that are used to clean up and lay off oil and synthetic base mud solids. They are non-toxic aqueous solutions that reduce surface tension and provide watering action.

### ADVANTAGES

The non-ionic solution is not affected by normal levels of calcium, magnesium, or barium ions found in most solution make-up waters.

It does not contain alkyl phenol ethoxylates.

### PARAMETERS

### SPECIFICATIONS

Appearance	Pale yellow color liquid
pH	8.0 min
Specific Gravity	1.0±0.1

## H&K Drilling : Office & Manufacturing Plants

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