

Material No.	Category	Short Description	Long Description
1000021552	Chemicals	NONTREATED SODIUM BENTONITE 1000KG Bag	<p>BENTONITE-DRILLING-GRADE NONTREATED ADDITIVE DRILLING FLUID; DRY, FREE FLOWING POWDER FORM,BENTONITE SODIUM MONTMORILLONITE, FOR VISCOSIFIER AND FILTRATE REDUCER FOR WATER-BASED FLUIDS,BENTONITE SODIUM MONTMORILLONITE,RE-USABLE 2500 LBS SUPER SACK, SEALED, MULTI- LINED AND MADE OF WATERPROOF MATERIAL. EACH SUPER SACK SHALL CONTAIN A SPECIFIED NET MASS. SUPPLIERS ARE REQUIRED TO WEIGHT THE TRUCKS BEFORE AND AFTER LOADING AND SUBMIT TO MATERIAL SUPPLY AN OFFICIAL TICKET PRINT DATA STATING: DATE AND TIME, COMPANY AND ADDRESS, TRUCK IDENTITY NUMBER, TRUCK IDENTITY NUMBER, MATERIAL NAME, TRUCK WEIGHT BEFORE AND AFTER LOADING. SHIPMENT OF PRODUCTS MUST CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,API13A 18TH EDITION FEBRUARY 2010 & ISO 13500 AUGUST 2014 & API13I 18TH EDITION MARCH 2009 & ISO 10416 2008) AND API13K, (3RD EDITION MAY 2011),BENTONITE-DRILLING-GRADE NON-TREATED WITHOUT ANY PEPTIZING AGENTS AND COMPOSED PRINCIPALLY OF A NATURALLY OCCURRING SMECTITE CLAY (SODIUM MONTMORILLONITE) USED FOR WATER-BASED DRILLING FLUIDS AS A VISCOSIFIER, SUSPENDING AGENT, AND FILTRATE REDUCER. ASSOCIATED ELEMENTS IN THE COMPOSITION MUST NOT BE HARMFUL TO PERSONNEL AND ENVIRONMENT OR ADVERSELY AFFECT DRILLING FLUID PROPERTIES. BENTONITE DRILLING-GRADE NONTREATED QUALITY IS MONITORED BY EXPEC ARC LABORATORIES. EXPEC CERTIFICATE OF ACCEPTANCE (EXPEC/COA) REFERRING TO THE RESPECTIVE BATCH NUMBER MUST BE ATTACHED TO EACH SHIPMENT DOCUMENTS ACCEPTED FOR FIELD APPLICATIONS. CHEMICAL AND PHYSICAL SPECIFICATIONS: NON-TREATED BENTONITE CONTAINS NO POLYMERS OR ANY OTHER CHEMICALS. MOISTURE: 13%WT. MAXIMUM YIELD POINT/PLASTIC VISCOSITY RATIO: 1.5 MAXIMUM DISPERSED PLASTIC VISCOSITY, CP: 10 MINIMUM DISPERSED FILTRATE VOLUME, MILLILITERS/30 MINUTES: 12.5 MAXIMUM RESIDUE ON 200 MESH (ASTM E11), WET: 2.5% WT. MAXIMUM RESIDUE ON 100 MESH (ASTM E11), DRY: 2% WT. MAXIMUM METHYLENE BLUE CAPACITY, MEQ/100G: 65 MINIMUM YIELD, PER SHORT TON (2000 LBS.), BARRELS OF VISCOSITY 15 CP: 90 MINIMUM CEMENT CONTAMINATION, PH AFTER AGEING: 9 MAXIMUM. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS.</p>
1000021602	Chemicals	POLYVINYL/POLYACRYLIC COMPOUNDS TO 400F	<p>HIGH TEMPERATURE FLUID LOSS CONTROL POLYMER ADDITIVE DRILLING FLUID; POWDER FORM,COPOLYMER, FOR FILTRATION CONTROL AGENT FOR ALL TYPES OF WATER-BASED MUDS FOR TEMPERATURES UP TO 500 °F (260 °C),ANIONIC ACRYLAMIDE METHYLPROPANESULFONIC ACIDS COPOLYMER,50 LBS.(22.7 KG). MULTI-WALLED PAPER BAG. THE CONSTRUCTION OF THE MULTI-WALLED PAPER BAG SHALL BE AS FOLLOWS: 1STPLY 50 LB. MIN. NATURAL KRAFT PAPER (INTERIOR PLY) 2ND PLY 50 LB. MIN. NATURAL KRAFT PAPER 3RD PLY SEPARATE INNER LINER, HIGH DENSITY ORIENTED, CROSS-LAMINATED. POLYETHYLENE RESIN INNER LINER(TUBULAR SHAPE) WITH A MINIMUM WALL THICKNESS OF 0.1 MM. 4TH PLY 50 LB. MIN. NATURAL KRAFT PAPER. 5TH PLY 60 LB. MIN. NATURAL KRAFT PAPER WET STRENGTH (EXTERIOR PLY) THE BAG MUST BE VALVE/SPOUT TYPE, COMPLETELY SEALED, MOISTURE AND WATER PROOF SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,HIGH TEMPERATURE FLUID LOSS CONTROL POLYMER: A WHITE POWDER OF ANIONIC ACRYLAMIDE METHYLPROPANESULFONIC ACIDS (AMPS) COPOLYMER USED AS A FILTRATION CONTROL AGENT FOR ALL TYPES OF WATER BASED FLUIDS WHILE BEING INSENSITIVE TO HIGH CONCENTRATIONS OF SALTS INCLUDING CALCIUM CHLORIDE AND WILL</p>

TOLERATE BOTTOM-HOLE TEMPERATURES UP TO 500 °F (260°C). IT DOES NOT HYDROLYZE AND WILL PERFORM OVER A BROAD PH RANGE (7 - 12) WITHOUT LIBERATION OF AMMONIA GAS AND VERY TOLERANT OF CEMENT CONTAMINATION. OTHER ASSOCIATED ELEMENTS MUST NOT BE HARMFUL TO PERSONNEL AND/OR ADVERSELY AFFECT FLUID PROPERTIES. CHEMICAL AND PHYSICAL SPECIFICATIONS: COLORLESS TO YELLOWISH POWDER COMPLETELY SOLUBLE IN DI WATER. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL:PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, SAP NUMBER EXPIRATION DATE, AND COUNTRY OF ORIGIN,MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS).

1000021607	Chemicals	SULPHONATE ASPHALT	<p>SULPHONATE ASPHALT ADDITIVE DRILLING FLUID; DARK BROWN TO BLACK, DRY, FREE FLOWING POWDER OR FLAKES, FREE OF LUMPS FORM,BLEND OF ASPHALTS & INORGANIC SALTS,FOR USED TO IMPROVE FILTER CAKE CHARACTERISTICS, REDUCE TORQUE AND DRAG, STABILIZE SHALE FORMATIONS AND COMPATIBLE TO ALL MUD SYSTEMS,BLEND OF HYDROXYLATED SODIUM ASPHALT SULPHONATE WITH MINOR AMOUNTS OF SULFUR- ASPHALT PHENALATES, INORGANIC SALTS & OXIDIZED ASPHALT.,25 KG (55.1 LBS.) BAG, VALVE/SPOUT TYPE,COMPLETELY SEALED, MOISTURE AND WATER PROOF THE CONSTRUCTION OF THE MULTI-WALLED PAPER BAG SHALL BE AS FOLLOWS: 1ST PLY 50 LB. MIN. NATURAL KRAFT PAPER (INTERIOR PLY) 2ND PLY 50 LB. MIN. NATURAL KRAFT PAPER 3 RD PLY SEPARATE INNER BAG LINER, HIGH DENSITY ORIENTED AND CROSS-LAMINATED INNER POLYETHYLENE RESIN LINER (TUBULAR SHAPE) WITH A MINIMUM WALL THICKNESS OF 0.1MM. 4TH PLY 50 LB. MIN. NATURAL KRAFT PAPER. 5 TH PLY 60 LB. MIN. NATURAL KRAFT PAPER WET STRENGTH (EXTERIOR PLY) SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT MANUAL,SULFONATED ASPHALT: IT IS A BLEND OF HYDROXYLATED SODIUM ASPHALT SULPHONATE WITH MINOR AMOUNTS OF SULFUR-CONTAINING PHENALATES, INORGANIC SALTS AND OXIDIZED ASPHALT. THIS PRODUCT IS USED TO IMPROVE FILTER CAKE CHARACTERISTICS, REDUCE TORQUE AND DRAG, STABILIZE SHALE FORMATIONS AND IS COMPATIBLE TO ALL MUD SYSTEMS. IT MUST NOT BE HARMFUL TO PERSONNEL AND/OR ADVERSARY AFFECT DRILLING FLUID PROPERTIES. CHEMICAL AND PHYSICAL SPECIFICATIONS NO ODOR, FREE-FLOWING DARK BROWN TO BLACK POWDER MOISTURE: 8%WT MAXIMUM SPECIFIC GRAVITY: 1.4 - 1.65 BULK DENSITY: 50 LB/FT3. SOLUBILITY: 70 - 80%WT. IN WATER AND 20-30% WT. IN OIL THERMAL GRAVIMETRIC ANALYSIS (TGA) @ 572°F (300°C): PARTIALLY SUBLIMES, WEIGHT LOSS: 15%WT. MAXIMUM TEMPERATURE STABILITY: >400°F SOFTENING POINT: >500°F PH (2% DI WATER SOLUTION): > 7-10. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, EXPIRATION DATE, SAP NUMBER AND COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS)</p>
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1000021608	Chemicals	LIQUID GILSONITE	<p>LIQUID GILSONITE ADDITIVE DRILLING FLUID; LIQUID. SUSPENSION OF GILSONITE ON A SUFACTANT FORM,LIQUID GILSONITE,FOR BOREHOLE STABILIZER AND FLUID LOSS CONTROL AGENT.,SUSPENSION OF HIGH MELTING POINT,55</p>
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GAL (208 LITER) DRUM SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL., LIQUID GILSONITE POURABLE SUSPENSION OF HIGH MELTING POINT (350°F/177°C) GILSONITE IN NON-TOXIC, ENVIRONMENTALLY SAFE SURFACTANT BASED LIQUID, USED AS BOREHOLE STABILIZER AND FLUID LOSS CONTROL AGENT. IT SHOULD BE COMPOSED OF A BLEND OF DISPERSED WIDE SIZES RANGE PARTICLES OF COUPLED GILSONITE AND LIGNITE, TO FORM EFFECTIVE SEALING/PLUGGING AND BONDING MECHANISM THAT HELPS STABILIZE SHALE AND PREVENT SLOUGHING AND STUCK PIPE. CHEMICAL AND PHYSICAL SPECIFICATIONS: STABLE POURABLE HOMOGENOUS BLACK VISCOUS SUSPENSION WITHOUT HAZARDOUS COMPONENTS. NON-SHEENING, NON-TOXIC, ENVIRONMENTALLY SAFE. OPEN CUP FLASH POINT: >200°F (93°C) POUR POINT: -4°F (-20°C) SOLUBILITY IN WATER: PARTIAL / MISCIBLE PH (1% IN DI WATER): 8 - 9 PERFORMANCE REQUIREMENTS: LUBRICITY, COEFFICIENT OF FRICTION REDUCTION: 10% MINIMUM AT 4 LB/BBL AND 20% MINIMUM AT 8 LB/BB LIQUID GILSONITE IN STANDARD SEA WATER/BENTONITE MUD, USING LUBRICITY TESTER. FILTRATION CONTROL: IN STANDARD SEA WATER/ BENTONITE MUD SYSTEM: API: 6.0 ML/30 MINUTES. MAXIMUM AT 4 LB/BBL HTHP (250°F / 500 PSI): 16 ML/30 MIN. MAXIMUM AT 8 LB/BBL ACCRETION TEST, SHALE WITH STICKY CLAYS IN STANDARD SEA WATER/BENTONITE MUD SYSTEM: <5% AT 8 LB/BBL STANDARD SEAWATER/BENTONITE MUD SYSTEM: PREMIX (HYDRATED BENTONITE -16 HOURS) FRESH WATER, BBL: 1 BENTONITE, LB: 32 LIGNOSULFONATE, LB: 4 CAUSTIC SODA, LB: 0.4 (HOT ROLL 16 HOURS AT 25°F/500 PSI N2) SEAWATER/BENTONITE SYSTEM (MIX-30 MIN): SEA WATER, BBL: 0.75 PREMIX, BBL: 0.25 LIQUID GILSONITE LB: 4 & 8 PPB (HOT ROLL 16 HOURS AT 25°F/500 PSI N2) SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT SUPPLIER IS REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS)

1000021744

Chemicals

POTASSIUM CHLORIDE (KCL
97-98 WT MIN)

POTASSIUM CHLORIDE (MURIATE OF POTASH)
ADDITIVE DRILLING FLUID; DRY, WHITE FREE FLOWING GRANULES FORM, POTASSIUM CHLORIDE, FOR USED TO FORMULATE CLEAR, SOLIDS-FREE KCL BRINES AND TO PROVIDE POTASSIUM IONS IN WBM TO INHIBIT SHALE HYDRATION, CLAY SWELLING AND DISPERSION., 50 KG (110 LBS.) MULTI-WALLED PAPER BAG, VALVE/ SPOUT TYPE, COMPLETELY SEALED, MOISTURE AND WATERPROOF. THE CONSTRUCTION OF THE MULTI-WALLED PAPER BAG SHALL BE AS FOLLOWS: 1ST PLY 50 LB. MIN. NATURAL KRAFT PAPER (INTERIOR PLY) 2ND PLY 50 LB. MIN. NATURAL KRAFT PAPER 3RD PLY SEPARAT INNER BAG LINER, HIGH DENSITY ORIENTED AND CROSS-LAMINATED POLYETHYLENE RESI INNER LINER (TUBULAR SHAPE) WITH A MINIMUM 0.1 MM THICKNESS. 4TH PLY 50 LB. MIN. NATURAL KRAFT PAPER. 5TH PLY 60 LB. MIN. NATURAL KRAFT PAPER WET STRENGTH (EXTERIOR PLY) SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT MANUAL, POTASSIUM CHLORIDE (MURIATE OF POTASH): WATER SOLUBLE SALT (KCL), CLEAN DRY, FREE FLOWING COLORLESS / WHITE GRANULES OR CRYSTALS OF PURE KCL, USED TO FORMULATE CLEAR, SOLIDS-FREE KCL BRINE COMPLETION FLUIDS AND TO PROVIDE SOLUBLE POTASSIUM IONS IN WATER-BASED DRILLING FLUIDS TO INHIBIT SHALE HYDRATION, CLAY SWELLING AND DISPERSION. POTASSIUM CHLORIDE QUALITY IS MONITORED BY EXPEC ARC LABORATORIES. EXPEC CERTIFICATE OF ACCEPTANCE (EXPEC/COA) REFERRING TO THE RESPECTIVE BATCH NUMBER MUST BE ATTACHED TO EACH SHIPMENT DOCUMENTS ACCEPTED FOR

FIELD APPLICATIONS.CHEMICAL AND PHYSICAL SPECIFICATIONS:
POTASSIUM CHLORIDE, KCL: 98%WT. MINIMUM COLORLESS / WHITE, CLEAN
GRANULES MOISTURE: 1% WT. MAXIMUM DRY SCREEN: PASSING THROUGH 8
US MESH SCREEN: 100%WT.POTASSIUM OXIDE EQUIVALENT K2O: 62%WT.
MINIMUM SODIUM CHLORIDE, NACL: 1%WT. MAXIMUM CALCIUM, CASO4:
0.1%WT. MAXIMUM MAGNESIUM, MGSO4: 0.1%WT. MAXIMUM OTHER WATER
SOLUBLE IMPURITIES: 0.5%WT.MAXIMUM WATER INSOLUBLE: 0.1%WT.
MAXIMUM PH OF 10% DI WATER: 7.5-9.5 10% SOLUTION IN DI WATER
IRON CONTENT: 5 PPM MAXIMUM SAUDI ARAMCO RESERVES THE RIGHT TO
COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY
TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND
SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE
REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH
(COA) AND CERTIFICATE OF ORIGIN (COO).LABEL: PRODUCT NAME, BATCH
NUMBER, PRODUCTION DATE, EXPIRATION DATE, SAP NUMBER AND COUNTRY
OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM
ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS)

1000021930

Chemicals

XANTHAN GUM (POWDER)

XANTHAN GUM BIO-POLYMER

ADDITIVE DRILLING FLUID; DRY FREE FLOWING POWDER FORM,PURE
XANTHAN GUM BIO-POLYMER,FOR IT IS USED AS A RHEOLOGY CONTROL AND
SUSPENSION AGENT IN FRESH WATER, SEA WATER, AND SATURATED
BRINE-BASED DRILLING, COMPLETION AND WORKOVER FLUIDS.,PURE
XANTHAN GUM BIO-POLYMER,25 KG (55.1 LBS.) MULTI-WALL PAPER BAG,
VALVE/SPOUT TYPE COMPLETELY SEALED, MOISTURE AND WATER PROOF.
THE CONSTRUCTION OF THE MULTI-WALLED PAPER BAG SHALL BE AS
FOLLOWS: 1ST PLY 50 LB. NATURAL KRAFT PAPER (INTERIOR PLY) 2ND
PLY 50 LB. NATURAL KRAFT PAPER 3RD PLY SEPARATE INNER BAG LINER,
HIGH DENSITY ORIENTED AND CROSS-LAMINATED INNER POLY-ETHYLENE
RESIN LINER (TUBULAR SHAPE) WITH A MINIMUM WALL THICKNESS OF 0.1
MM. 4TH PLY 50 LB. NATURAL KRAFT PAPER. 5TH PLY 60 LB. NATURAL
KRAFT PAPER. WET STRENGTH (EXTERIOR PLY) SHIPMENT OF PRODUCT
SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,API
SPECIFICATION 13A 18TH EDITION, AUGUST 2010, ERRATA 1, AUGUST
2014,XANTHAN GUM BIO-POLYMER: DRILLING GRADE PURE, DRY, FREE
FLOWING FINE POWDER OF ANIONIC POLYSACCHARIDE, READILY SOLUBLE
IN WATER OR BRINE. THE BIO-POLYMER IS PRODUCED BY A DISTINCT
FERMENTATION PROCESS OF XANTHOMONAS CAMPESTRIS. THE PRODUCT
SHALL NOT CONTAIN ANY OTHER POLYSACCHARIDE, SUCH AS STARCH, GUAR
GUM OR OTHER NATURALLY OCCURRING POLYMERS OR THEIR DERIVATIVES.
IT IS USED AS A RHEOLOGY CONTROL AND SUSPENSION AGENT IN FRESH
WATER, SEA WATER, AND SATURATED BRINE-BASED DRILLING, COMPLETION
AND WORKOVER FLUIDS. XANTHAN GUM QUALITY IS MONITORED BY EXPEC
ARC LABORATORIES. EXPEC CERTIFICATE OF ACCEPTANCE (EXPEC/COA)
REFERRING TO THE RESPECTIVE BATCH NUMBER MUST BE ATTACHED TO
EACH SHIPMENT DOCUMENTS ACCEPTED FOR FIELD APPLICATIONS.
CHEMICAL AND PHYSICAL SPECIFICATIONS: OFF-WHITE, FREE-FLOWING
GRANULAR POWDER. SCREEN ANALYSIS: LESS THAN 425 MM (PASS THROUGH
40 US MESH SCREEN) - 95% MINIMUM LESS THAN 75 MM (PASS THROUGH
200 US MESH SCREEN) - 50% MAXIMUM QUALITATIVE LAB TESTS WILL BE
PERFORMED TO DETECT THE PRESENCE OF: STARCH, GUAR, OR THEIR
DERIVATIVES: ABSENT CELLULASE ENZYMES: NEGATIVE SULFATE REDUCING
BACTERIA: NEGATIVE CELLULOLYTIC BACTERIA: NEGATIVE MOISTURE
CONTENT: 10% MAXIMUM NO INGREDIENT AT LEVELS GREATER THAN OR
EQUAL TO 0.1%WT. TO BE IDENTIFIED AS PROBABLE, POSSIBLE OR
CONFIRMED HUMAN CARCINOGEN PERFORMANCE REQUIREMENTS: LOW
XANTHAN
GUM CONCENTRATION DEVELOPS PSEUDOPLASTIC FLUID BEHAVIOR (HIGH
VISCOSITY UNDER LOW SHEER AND LOW VISCOSITY UNDER HIGH SHEER)

TEMPERATURE STABILITY: STABLE UP TO 250°F (121°C). XANTHAN GUM (1.5 LB/BBL) IN SALT SATURATED SOLUTION WITH PH-10 AND PURGE THE CELL WITH N2 BEFORE HOT ROLLING FOR 24 HOURS AT 250°F. AFTER HOT ROLLING THE YIELD POINT SHOULD BE: 16 LB/100 FT2 MINIMUM XANTHAN GUM 1LB/BBL IN DISTILLED WATER FANN-35 EQUIPPED WITH 0.2 TORSION SPRING, R1/B1 CONFIGURATION 300 RPM: 55 MINIMUM X 0.2 = 11 CP 6 RPM: 18 MINIMUM X 10 = 180 CPM3 RPM: 16 MINIMUM X 20 = 320 CP BROOKFIELD VISCOSITY RPM10: SPINDLE # 34 @ 77°F (25°C)1.5 RPM: 1950 CP MINIMUM TOTAL VIABLE BACTERIA COUNT: LESS THAN 50,000/GRAM THE TEST IS CONDUCTED ON A XANTHAN GUM SUSPENSION PREPARED AS FOLLOWS: A. XANTHAN GUM DRY POWDER: 0.1 GRAM TRANSFERRED ASEPTICALLY FROM THE MANUFACTURER'S PRODUCT CONTAINER DIRECTLY TO 10ML OF STERILE PHOSPHATE-BUFFERED SALINE. B. THE POWDER IS DISPERSED BY PLACING THE SUSPENSION IN AN ULTRASONIC BATH FOR 30 SECONDS, ALLOWING THE SUSPENSION TO REHYDRATE FOR 15 MINUTES AND THEN REPEATING THE SONICATION PROCEDURE. C. 0.1 ML OF THE SONICATED SUSPENSION & 1/10 DILUTION OF THE SONICATED SUSPENSION ARE SPREAD-PLATED ONTO THE SURFACE OF AN R2A AGAR PLATE. THE PLATE IS INCUBATED AT 37°C 48 HOURS. ALL COLONIES APPEARING ON THE PLATE ARE COUNTED, IN ADDITION USED TO CALCULATE A TVC. D. 0.1 ML OF THE SONICATED SUSPENSION IS SPREAD PLATED ONTO THE SURFACE OF CELLULOSE AGAR PLATE. THE PLATE IS INCUBATED AT 37°C FOR 7 DAYS. COLONIES APPEARING ON THE PLATE ARE EXAMINED FOR THE PRESENCE OF A CLEAR HALO INDICATING CELLULOSE DEGRADATION. E. 1.0 ML OF THE SUSPENSION IS INOCULATED INTO A VIAL CONTAINING 10 ML OF POSTGATE'S SRB MEDIUM B. VIAL IS INCUBATED AT 37°C, AND OBSERVED FOR BLACKENING FOR ONE WELL. THE DETECTION LIMITS OBVIOUSLY VARY FOR THE DIFFERENT TECHNIQUES (30,000 TO 300,000 PER GRAM FOR THE TVC, GREATER THAN OR EQUAL 100 PER GRAM FOR SRB). SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, EXPIRATION DATE, SAP NUMBER AND COUNTRY OF ORIGIN, THE ORIGINAL MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS)

1000022172	Chemicals	ORGANOPHILIC LIGNITE	<p>ORGANOPHILIC LIGNITE ADDITIVE DRILLING FLUID; POWDER ORGANOPHILIC LIGNITE FORM, LEONARDITE OR LIGNITE MINERAL, FOR FILTRATION CONTROL ADDITIVE FOR OBM, LEONARDITE OR OXIDIZED LIGNITE, 50 LBS. (22.7 KG). MULTI-WALLED BAG, VALVE/SPOUT TYPE COMPLETELY SEALED: 1ST PLY 75 LB. MIN. NATURAL KRAFT PAPER (INTERIOR PLY) 2ND PLY 75 LB. MIN. NATURAL KRAFT PAPER. 3RD PLY 80 LB. MIN. NATURAL KRAFT PAPER (EXTERIOR PLY) WET SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL., ORGANOPHILIC LIGNITE: LEONARDITE OR OXIDIZED LIGNITE PROCESSED TO BECOME OIL-DISPERSIBLE ORGANO-HUMATES, TO BE USED AS THE PRIMARY FILTRATION CONTROL ADDITIVE IN ANY OIL BASED DRILLING FLUID SYSTEMS, AND STABLE AT STATIC BOTTOM-HOLE TEMPERATURES UP TO 450°F (232°C). THE PRODUCT CONTAINS NO ASPHALT OR ASPHALT DERIVATIVES AND USED WITHOUT DETERMINATELY IMPACTING EMULSION STABILITY, SUSPENSION AND RHEOLOGICAL PROPERTIES. CHEMICAL AND PHYSICAL SPECIFICATIONS: DRY, GRAY TO BLACK POWDER. MOISTURE: 8%WT. MAXIMUM PASSING THROUGH 70 US MESH: 100%WT. INSOLUBLE IN WATER, DISPERSIBLE IN ORGANIC SOLVENTS IMPURITIES (SAND, LIME,</p>
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GYPSUM, CLAY, ETC.): 2%WT. MAXIMUM SPECIFIC GRAVITY@ 68°F (20°C): 1.77 TO 1.80 NON-TOXIC, ENVIRONMENTALLY FRIENDLY MAINTAINS LOW FILTRATION RATES AND STABLE EMULSION. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND/OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS (COA) AND CERTIFICATE OF ORIGIN (COO) FOR EVERY BATCH. LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS).

1000022173

Chemicals

SECONDARY EMULSIFIER

SECONDARY EMULSIFIER FOR INVERTED EMULSION ADDITIVE DRILLING FLUID; LIQUID BLEND OF FATTY ACID , AMIDE AND METHANOL FORM,BLEND OF POLYAMINATED FATTY ACID & PARTIAL AMIDE OF POLYAMINE WITH METHANOL,FOR SECONDARY EMULSIFIER AND WETTING AGENT FOR INVERTED EMULSION DRILLING FLUIDS,FATTY ACID, AMIDE AND METHANOL,55 GAL (208 LITER) DRUM SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL,API RECOMMENDED PRACTICE 13B-2 FIFTH EDITION, APRIL 2014,SECONDARY EMULSIFIER FOR INVERTED EMULSION: A STABLE POURABLE BLEND OF POLYAMINATED FATTY ACID AND PARTIAL AMIDE OF POLYAMINE WITH METHANOL. IT IS USED AS THE SECONDARY EMULSIFIER AND WETTING AGENT TO FORMULATE STABLE WATER-IN-OIL EMULSION (INVERTED EMULSION) DRILLING FLUIDS. THE PRODUCT IS NONTOXIC AND WILL NOT CONTAIN VEGETABLE OIL OR ASPHALTIC – TYPE MATERIAL, CHEMICAL AND PHYSICAL SPECIFICATIONS: NON-TOXIC, ENVIRONMENTALLY FRIENDLY SPECIFIC GRAVITY @ 77°F (25°C): 0.92 - 0.96 FLASH POINT (PMCC): >149°F (65°C) ACTIVE INGREDIENTS: FATTY ACID & AMINE DERIVATIVES: 70WT. % MINIMUM ASPHALTIC-TYPE MATERIAL: NONE ACID NUMBER, MG KOH/G: 45 - 50. TOTAL AMINE, MG KOH/G: 8 – 10 SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, EXPIRATION DATE, SAP NUMBER AND COUNTRY OF ORIGIN, THE ORIGINAL MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS).

1000022175

Chemicals

PRIMARY EMULSIFIER

PRIMARY EMULSIFIER FOR INVERTED EMULSION ADDITIVE DRILLING FLUID; CLEAR FORM,BLEND OF OXIDIZED TALL OIL AND POLYAMINATED FATTY ACID,FOR PRIMARY EMULSIFIER FOR INVERTED EMULSION DRILLING FLUIDS,TALL OIL AND POLYAMINATED FATTY ACID,55 GAL (208 L) DRUM SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL,API RECOMMENDED PRACTICE 13B-2 FIFTH EDITION, APRIL 2014,PRIMARY EMULSIFIER FOR INVERTED EMULSION: IS A STABLE POURABLE BLEND OF OXIDIZED TALL OIL AND POLYAMINATED FATTY ACID. IT IS USED AS THE PRIMARY EMULSIFIER AND WETTING AGENT TO FORMULATE STABLE WATER OR BRINE-IN-OIL EMULSION (INVERTED EMULSION) DRILLING FLUIDS. THE PRODUCT IS NONTOXIC AND WILL NOT CONTAIN VEGETABLE OIL, OR ASPHALTIC-TYPE MATERIAL. CHEMICAL AND PHYSICAL SPECIFICATIONS NON-TOXIC, ENVIRONMENTALLY FRIENDLY SPECIFIC GRAVITY @ 77°F (25°C): 0.92 - 0.96 FLASH POINT (PMCC): >149°F (65°C) ACTIVE INGREDIENTS: OXIDIZED TALL OIL & FATTY ACID 70% WT. MINIMUM ASPHALTIC-TYPE MATERIAL: NONE ACID NUMBER, MG KOH/G: 80 – 85 SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND

1000029881	Chemicals	BIG BAG BARITE TRANS 0.99 M3 ORANGE	<p>CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, EXPIRATION DATE, SAP NUMBER AND COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS).</p> <p>BIG BAG FOR BARITE CONTAINER; BARITE TRANSPORT TYPE,0.99 M3 (35 FT3),BODY AND CONE SECTION: M049 LID SECTION: M426 INLET AND OUTLET SPOUT: M326 HEAVY DUTY WIRE RING: INSERTED IN THE TOP WELDED LID MADE FROM WIO2 MATERIAL,ORANGE,BS-EN 1898-2001 AND EFBCA 003 1985 FOR HEAVY-DUTY HERMOPLASTIC,BIG BAG FOR BARITE: CONTAINER: 35 FT3. CAPACITY (FOR BARITE).CONTAINER BARITE TRANSPORT TYPE, 0.99 M3 (35 FT3), BODY AND CONE SECTION: M049 LID SECTION: M426 INLET AND OUTLET SPOUT: M326 HEAVY DUTY WIRE RING: INSERTED IN THE TOP WELDED LID MADE FROM WIO2 MATERIAL, ORANGE, BIG BAG SYSTEM COMPONENT, IBC TRANSPORT CONTAINERS LTD THERE ARE TWO (2) CERTIFICATE NUMBERS FOR THE BAGS, AND THE FOLLOWING MANDATORY TEST REQUIREMENTS MUST BE MET: A) STANDARD: BS-EN 1898-2001, CLASS: HEAVY-DUTY HERMOPLASTIC, CERTIFICATE NUMBER: 101043, APPROVED RATING: SWL: 2500KG/8:1 SF. B) STANDARD: EFIBCA 003: 1985, CLASS: HEAVY DUTY THERMOPLASTIC, CERTIFICATE NUMBER: 101161E APPROVED RATING: SWL: 2500KG/8:1 SF. CHEMICAL AND PHYSICAL SPECIFICATIONS A.DIMENSION: 1. BAG CYLINDER: 117CM DIAMETER X 105CM HIGH AND BAG CONE: 48CM HIGH 2. INLET SPOUT: 35 CM DIAMETER X 62CM LONG WELDED LID THICKNESS (ATTACHED AT TOP OF THE BAG WITH A HEAVY DUTY WIRE RING INSERTED IN IT) 6 CM 3. HEAVY DUTY ZIP TIE PATCH: FITTED ON INLET SPOUT 26.5CM UP FROM LID AND HEAVY DUTY ZIP TIE PATCH: FITTED ON THE INNER OUTLET SLEEVE 30CM UP FROM THE BOTTOM OF THE OUTER OUTLET 4. HEAVY-DUTY ZIP TIE PATCH: PATCH: FITTED ON THE OUTER OUTLET SLEEVE 13CM AND 30 CM DOWN FROM THE TOP OF THE OUTLET RESPECTIVELY. 5. CONE BASE ANGLE: 30 DEGREES (120 DEGREES INCLUSIVE) 6. DOUBLE OUTLET SPOUT: A) OUTER OUTLET SPOUT: 35 CM DIAMETER X 66 CM LONG B) INNER OUTLET SPOUT: 35 CM DIAMETER X 84 CM LONG B. FABRIC SPECIFICATION: 1. POLYESTER FABRIC: COATED WITH PVC INTERNALLY AND EXTERNALLY. 2. CONSTRUCTION (WEAVE OF POLYESTER): 10.5 X 10.5 (APPLIES FOR THE CYLINDER & THE CONE OF THE BAG ONLY). WEIGHT OF POLYESTER: 370 GRAMS PER SQUARE METER (APPLIES FOR THE CYLINDER AND THE CONE OF THE BAG ONLY). 3. TOTAL WEIGHT OF POLYESTER AND PVC: 1250 GRAMS PER SQUARE METER. 4. TENSILE STRENGTH (WEFT): 5500 N/5CM OF WIDTH (1236 LBS/5CM OF WIDTH). 5. TENSILE STRENGTH (WARP): 6000 N/5CM OF WIDTH (1349 LBS/5CM OF WIDTH). 6. TEAR STRENGTH (WEFT):1000 N (224 LBS) & TEAR STRENGTH (WARP):1000 N (224 LBS). 7. ADHESION (COATING): 125 N/5CM OF WIDTH. 8. ADHESION (WELDING): 15 KG/5CM OF WIDTH (33 LBS/5CM OF WIDTH). C. PHYSICAL PROPERTIES: 1. WATERPROOF BAG. 2) CONFORM TO SPECIFICATION FOR TEMPERATURE RESISTANCE AND ULTRA VIOLET STABILITY. 3) COLOR: ORANGE LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE,EXPIRATION DATE, SAP NUMBER AND COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION.</p>
1000757581	Chemicals	H2S SCAVENGER, POWDER	<p>H2S SCAVENGER-ZINC-FREE IRON GLUCONATE ADMIXTURE DRILLING MUD; POWDER FORM,IRON GLUCONATE,FOR SCAVENGES</p> <p>HYDROGEN SULFIDE FROM DRILLING FLUIDS,IRON GLUCONATE,25 KG (55.1 LBS.) PAIL OR SEALED BAG, VALVE/SPOUT TYPE, COMPLETELY SEALED,</p>

			<p>MOISTURE AND WATERPROOF. THE CONSTRUCTION OF THE MULTI-WALLED PAPER BAG (CONTAINER) SHALL BE AS FOLLOWS: 1ST PLY 75 LB. MIN. NATURAL KRAFT PAPER (INTERIOR PLY) 2ND PLY 75 LB. MIN. NATURAL KRAFT PAPER 3RD PLY SEPARATE INNER BAG LINER, HIGH DENSITY ORIENTED AND CROSS-LAMINATED INNER POLYETHYLENE RESIN LINER (TUBULAR SHAPE) WITH A MINIMUM WALL THICKNESS OF 0.1 MM. 4TH PLY 80 LB. MIN. NATURAL KRAFT PAPER (EXTERIOR PLY). SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,H2S SCAVENGER-ZINC-FREE IRON GLUCONATE: A HIGHLY WATER SOLUBLE GRANULAR POWDER OF IRON GLUCONATE WITH NO HAZARDOUS SUBSTANCES AND USED TO SCAVENGE HYDROGEN SULFIDE FROM WATER-BASED AND OIL-BASED DRILLING FLUIDS. CHEMICAL AND PHYSICAL SPECIFICATIONS: PURITY (IRON GLUCONATE): >90%WT. APPEARANCE: LIGHT YELLOW-GREEN GRANULAR POWDER PH (1% DI WATER SOLUTION):4-5.5 SOLUBILITY: 100% SOLUBLE IN WATER ONE LB./BBL. OF PRODUCT REMOVES APPROXIMATELY 150-220 MG/LITER SULFIDES BULK DENSITY: 650-850 KG/M3 @ 68°F (20°C). SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND/OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS (COA) AND CERTIFICATE OF ORIGIN (COO) FOR EVERY BATCH. LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS).</p>
1000845182	Chemicals	H2S SCAVENGER, LIQUID	<p>ADDITIVE DRILLING FLUID; LIQUID FORM,NITROGEN,FOR ADMIXTURE HYDROGEN SULFIDE SCAVENGER FOR USE IN WATER-BASE MUD AND INVERT EMULSION OIL-BASE MUD. NITROGEN-BASED ORGANIC LIQUID COMPOUND. READILY AVAILABLE FOR APPLICATION AND CAN BE USED IN COLD AND WARM TEMPERATURES.,A NITROGEN-BASED, NON-ZINC COMPOUND,DRUM,APPEARANCE: AMBER LIQUID. S PH: 9 - 11.5 SOLUBILITY IN WATER: SOLUBL FLASH POINT (METHOD): >212F POUR POINT: < - 4 F,CONTAINER MUST BE PROPERLY LABELED WITH, VENDOR'S NAME, MANUFACTURER'S NAME, LOCATION, PRODUCTION DATE AND BATCH NUMBER. SAUDI ARAMCO WILL CARRY OUT PROPER SAMPLING AND TESTING AS NEEDED. PRODUCT MANUFACTURER AND OR SUPPLIER REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS (COA) AND CERTIFICATE OF ORIGIN (COO). THE ORIGINAL MANUFACTURER, PRODUCT NAME, BATCH NUMBER, DATE OF PRODUCTION OF MATERIAL, EXPIRATION DATE AND COUNTRY OF ORIGIN BE PRINTED ON THE CONTAINER OR DRUM, WHETHER IT IS IBC TOTE, BIG BAGS AND/OR PAPER BAGS.#</p>
1000845427	Chemicals	THINNER MODIFIED TANNIN - DRILL THIN	<p>ADDITIVE DRILLING FLUID; BROWN COLORED POWDER FORM,MODIFIED TANNIN COMPOUND,FOR USED AS MUD CONDITIONER PROVIDING RHEOLOGY CONTROL IN WATER BASE FLUIDS WITH MAXIMUM DEFLOCCULATING AND SHEAR STRENGTH REDUCTION AT LOW CONCENTRATIONS.,25 LB MULTIWALL PAPER BAGS,APPEARANCE: BROWN COLORED POWD,CONTAINER MUST BE PROPERLY LABELED WITH, VENDOR'S NAME, MANUFACTURER'S NAME, LOCATION, PRODUCTION DATE AND BATCH NUMBER. SAUDI ARAMCO WILL CARRY OUT PROPER SAMPLING AND TESTING AS NEEDED. PRODUCT MANUFACTURER AND OR SUPPLIER REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS (COA) AND CERTIFICATE OF ORIGIN (COO). THE ORIGINAL MANUFACTURER, PRODUCT NAME, BATCH NUMBER, DATE OF PRODUCTION OF MATERIAL, EXPIRATION DATE AND COUNTRY OF ORIGIN BE PRINTED ON THE CONTAINER OR DRUM, WHETHER IT IS IBC TOTE, BIG BAGS AND/OR PAPER BAGS.#</p>
1000847072	Chemicals	HTHP FLUID LOSS SYNTHETIC POLYMER	<p>HTHP FILTRATION CONTROL AGENT ADDITIVE DRILLING FLUID; WHITE POWDER FORM,SYNTHETIC POLYMER,FOR</p>

CONTROLS HTHP FLUID LOSS IN FRESH, SALTY, OR HARD BRINE FLUIDS. IT INHIBITS SHALE AND STABILIZING FLUID RHEOLOGY. IT CONTROLS WATER LOSS IN ALL ENVIRONMENTS AND REDUCES DIFFERENTIAL STICKING TENDENCIES.,50 LB MULITIWALL PAPER BAG,APPEARANCE : WHITE COLOURED PO,CONTAINER MUST BE PROPERLY LABELED WITH, VENDOR'S NAME, MANUFACTURER'S NAME, LOCATION, PRODUCTION DATE AND BATCH NUMBER. SAUDI ARAMCO WILL CARRY OUT PROPER SAMPLING AND TESTING AS NEEDED. PRODUCT MANUFACTURER AND OR SUPPLIER REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS (COA) AND CERTIFICATE OF ORIGIN (COO). THE ORIGINAL MANUFACTURER, PRODUCT NAME, BATCH NUMBER, DATE OF PRODUCTION OF MATERIAL, EXPIRATION DATE AND COUNTRY OF ORIGIN BE PRINTED ON THE CONTAINER OR DRUM, WHETHER IT IS IBC TOTE, BIG BAGS AND/OR PAPER BAGS.

1000892842	Chemicals	DI-BALANCE	ADDITIVE DRILLING FLUID; SOLID FORM,FOR IT IS USED TO CONTROL THE PH OF DI-PRO SYSTEM.,FINE PARTICLES OF HIGHLY REACTIVE MAGNESIUM OXIDE,25 KG (55.1 LBS.) BAG SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL,DI-BALANCE PH CONTROL MI-SWACO: FINE PARTICLES OF HIGHLY REACTIVE MAGNESIUM OXIDE FOR CONTROLLING PH. IT IS USED IN DI-PRO SYSTEM WHICH CONSIST OF: BRINE (ZINC BROMIDE / CALCIUM CHLORIDE / CALCIUM BROMIDE), DI-BALANCE SAP#1000892842, DI-BOOST SAP#1000892844, DI-TROL SAP#1000892845,). CHEMICAL AND PHYSICAL SPECIFICATIONS: APPEARANCE: WHITE ODORLESS POWDER PURITY: MGO 98%WT. MINIMUM SPECIFIC GRAVITY @ 68°F (20°C): 3.56 SLIGHTLY SOLUBLE IN WATER <1% PH (10%WT. IN DI WATER): 10.0 - 11.0. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, EXPIRATION DATE, SAP NUMBER AND COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET
1000892844	Chemicals	DI-BOOST	ADDITIVE DRILLING FLUID; LIQUID FORM,FOR IT IS USED AS VISCOSITY ENHANCER AND STABILIZER IN DRI-PRO SYSTEM.,DIETHYLENE GLYCOL,PAIL 2 GAL (6.7 LITER) SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL,DI-BOOST VISCOSITY ENHANCER MI-SWACO: DI-PRO SYSTEM WHICH CONSIST OF: BRINE (ZINC BROMIDE / CALCIUM CHLORIDE/CALCIUM BROMIDE), DI-BALANCE SAP#1000892842, DI-BOOST SAP#1000892844, DI-TROL SAP#1000892845,). THE PRODUCT REDUCES DI-PRO SYSTEM VISCOSITY IF CONCENTRATION EXCEEDS 1.0% BY VOLUME. CHEMICAL AND PHYSICAL SPECIFICATIONS: APPEARANCE: TRANSPARENT COLORLESS LIQUID PURITY: DIETHYLENE GLYCOL: 100% MINIMUM SPECIFIC GRAVITY @ 68°F (20°C): 1.118 SOLUBILITY IN WATER @ 68°F (20°C): 100%. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, EXPIRATION DATE, SAP NUMBER AND COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS).
1000892845	Chemicals	DI-TROL	ADDITIVE DRILLING FLUID; POWDER FORM,FOR IT IS USED TO PROVIDE VISCOSITY AND FLUID LOSS CONTROL IN DRI-PRO SYSTEM.,HIGH MOLECULAR WEIGHT BRANCHED CHAIN MODIFIED STARCH DERIVATIVE,25 KGS (55.1 LBS) BAG SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI

			<p>ARAMCO EXPORT PACKING MANUAL,DI-TROL MODIFIED STARCH MI SWACO: HIGH MOLECULAR WEIGHT BRANCHED CHAIN. IT PROVIDES BOTH VISCOSITY AND FLUID LOSS CONTROL IN DRI-PRO SYSTEM, WHICH CONSIST OF: BRINE (ZINC BROMIDE / CALCIUM CHLORIDE/CALCIUM BROMIDE), DI-BALANCE SAP#1000892842, DI-BOOST SAP#1000892844, DI-TROL SAP#1000892845. CHEMICAL AND PHYSICAL SPECIFICATIONS: APPEARANCE: WHITE ODORLESS POWDER SPECIFIC GRAVITY @ 68°F (20°C): 1.5 SOLUBILITY IN WATER @ 68°F (20°C): 100% PH (4% IN DI WATER): 5.0 - 8.0. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, EXPIRATION DATE, SAP NUMBER AND COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS).</p>
1000908459	Chemicals	Oxygen	<p>ADDITIVE DRILLING FLUID; POWDER FORM,ORGANIC ACID SALT,FOR USED AS CORROSION INHIBITOR AND OXYGEN SCAVENGER FOR WATER BASED DRILLING, COMPLETION AND PACKER FLUID,POWDER ORGANIC ACID SALT ERYTHORBATE,25 KG (55.1 LBS.) PAIL SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL,,RDF-615 OXYGEN SCAVENGER OXYGON - HALLIBURTON: POWDER ORGANIC ACID SALT ERYTHORBATE USED AS A CORROSION INHIBITOR AND OXYGEN SCAVENGER FOR WATER BASED DRILLING, COMPLETION AND PACKER FLUIDS. IT IS COMPATIBLE WITH FRESH WATER, MONO- AND DIVALENT BRINES. IT IS A COMPONENT OF THE NON-DAMAGING RDF-615 SYSTEM. THIS SYSTEM CAN BE FORMULATED WITH MONOVALENT BRINES SUCH AS NACL, KCL, KBR, NABR, AND. IT IS STABLE AT 250°F (121°C). RDF-615 CONTAINS: BARABRINE DEFOAM (SAP#1000908534), BARACARB 150 (SAP#1000908535), OXYGON (SAP#1000908459), BARABUF (SAP#1000184370), N DRILL HT PLUS (SAP#1000788390), BARACARB 5 (SAP#1000775558), BARACARB 25 (SAP#1000775559), BARACARB 50 (SAP#1000775560) AND BAROLUBE GOLD SEAL (SAP#1000757580). CHEMICAL AND PHYSICAL SPECIFICATIONS: APPEARANCE: WHITE GRANULAR POWDER WATER SOLUBLE PH, (5% IN DI WATER):5.5 – 8 SPECIFIC GRAVITY @ 68°F (20°C): 1.2 SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, EXPIRATION DATE, SAP NUMBER AND COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET (MSDS).</p>
1000993263	Chemicals	CHEMICAL, BARITE (4.1 SG), INCREASE THE	<p>CHEMICAL; BARITE (4.1 SG),FOR INCREASE THE DENSITY OF DRILLING FLUIDS UP TO 157 PCF (21 LB/GAL),SOLID FORM,BASE UNIT OF MEASURE: BIG BAGS, ORDER UNIT OF MEASURE: 5000 LB PER BIG BAG, UNIT OF ISSUE: 5000 LB PER BIG BAG,BARIUM SULFATE (BASO4),CLASS: WEIGHTED AGENT, CHEMICAL AND PHYSICAL SPECIFICATIONS: BARITE (4.1 SG) DRILLING-GRADE BARIUM SULFATE (BASO4): DRY FREE FLOWING POWDER. THE PRODUCT IS CHEMICALLY INERT AND ANY ACCESSORY MINERALS IN THE BARIUM SULFATE STRAIGHT-MINED ORES TO BE SPECIFIED IN THE MANUFACTURER LABORATORY CERTIFICATES OF ANALYSIS FOR EVERY BATCH (COA) SUBMITTED WITH THE CERTIFICATE OF ORIGIN (COO). ANY OTHER ASSOCIATED ELEMENTS IN THE COMPOSITION MUST NOT BE HARMFUL TO PERSONNEL OR THE ENVIRONMENT AND WILL NOT ADVERSELY AFFECT DRILLING FLUID PROPERTIES. SAUDI ARAMCO</p>

RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS, STANDARDS: BARIUM SULFATE (BASO4) 86% WT. MINIMUM. SPECIFIC GRAVITY: 4.1 MINIMUM. WATER-SOLUBLE ALKALINE EARTH METALS: -SOLUBLE CALCIUM: 250 MG/KG, MAXIMUM -SOLUBLE CARBONATES: 3000 MG/L MAXIMUM -SOLUBLE SULFIDES: 100MG/L MAXIMUM -CLAY CONTAMINATION, CEC (MBT): 0.50 MEG/100G MAXIMUM -CEMENT CONTAMINATION: PH AFTER AGEING: 10 MAXIMUM. RESIDUE GREATER THAN 75µM, MASS FRACTION: 3.0% WT. MAXIMUM. PARTICLES LESS THAN 6µM: MASS FRACTION: 25% WT. MAXIMUM .ABRASIVENESS RELATIVE INDEX: SMALLER THAN OR EQUAL THE API TEST CALIBRATION BARITE. HEAVY METALS (API 13I SECTION 8, 9, 10 OR EPA COMPLIANCE STANDARDS TESTS). MERCURY: 1.0 MG/KG (DRY WEIGHT) MAXIMUM # (API 13I SECTION 8). CADMIUM: 3.0 MG/KG (DRY WEIGHT) MAXIMUM # (API 13I SECTION9). LEAD: 10 MG/KG (DRY WEIGHT) MAXIMUM. TEST METHODS: ANALYSIS FOR MERCURY SHALL BE CONDUCTED USING EPA METHOD 245.5 AND 7471 A, OR RECENTLY APPROVED METHODS AND RESULTS EXPRESSED IN MG/KG (DRY WEIGHT). ANALYSIS FOR CADMIUM SHALL BE CONDUCTED USING METHODS 200.7, 200.8, OR EPA METHOD 3050 B FOLLOWED BY 6010 B OR 6020 OR MORE RECENTLY APPROVED METHODS AND THE RESULTS EXPRESSED IN MG/KG (DRY WEIGHT) OF BARITE. RE-USABLE SUPER PACK, SEALED, MULTI-LINED, MADE OF WATERPROOF MATERIAL. EACH SACK SHALL CONTAIN A SPECIFIED NET MASS. THE AVERAGE WEIGHT OF 5% OF THE SACKS IN A SHIPMENT, TAKEN AT RANDOM, SHALL NOT BE LESS THAN THE SPECIFIED WEIGHT. SHIPMENTS OF PRODUCTS MUST CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL. LABEL: HAZCOM, THE ORIGINAL MANUFACTURER, PRODUCT NAME, BATCH NUMBER, SAP NUMBER, PRODUCTION DATE, EXPIRATION DATE, COUNTRY OF ORIGIN, MANUFACTURER NAME AND CONTACT INFORMATION.

6000016483	Chemicals	MUD SYSTEM	SUSPENSION SUB-SEA MUDLINE; HANGERS, RUNNING AND RETRIEVING, AND TIEBACK TOOLS TYPE,API 6A AND 17D,FOR OIL AND EXPLORATION WELLS API MONOGRAMMED OR NON-MONOGRAMMED NACE MR0175 LOW ALLOY STEEL OR INCONEL MATERIAL
6000010721	Drilling Equipment	Expandable Pipe System	UNIT; EXPANDABLE CASING & ACCESSORIES
6000000774	Electrical	TRAY; CABLE, FIBERGLASS	TRAY; CABLE TYPE,FIBERGLASS,NEMA FG-1,S-P-104 SEC. 9
6000000841	Electrical	CIRCUIT BREAKER; AIR; 480 V; LOW VOLTAGE	CIRCUIT BREAKER AIR; 480 V,LOW VOLTAGE POWER TYPE,40 DEG C AMBIENT,FOR INDOOR,16-SAMSS-502
6000000957	Electrical	CABLE;ELECTRICAL, CP, OFFSHORE ANODE	CABLE ELECTRICAL; ORED HODIC PROTECTION OFFSHORE TYPE,17-SAMSS-017,ARMORED
6000000964	Electrical	GENERATOR: DIESEL, 35-10000 KW	GENERATOR SYNCHRONOUS; 35 KW-10000 KW POWER,3 PHASE,60 HZ,INSUL CL F OR H,PF 0.8,17-SAMSS-518
6000001011	Electrical	POWER SUPPLY;ELECTRICAL;SOLAR,CP	POWER SUPPLY ELECTRICAL; HODIC PROTECTION POWER PLY ELECTRICAL SUPPLY;ELECTRICAL;SOLAR,CP
6000015322	Electrical	UNIT; RMU,FOR CATHODIC PROTECTION	UNIT; HODIC PROTECTION OTE MONITORING (RMU) TYPE,17-SAMSS-018
6000015510	Electrical	ANODE;GALVANIC,HIGH TEMPERATURE ZINC,CP	ANODE GALVANIC; HIGH TEMPERATURE ZINC,17-SAMSS-006,CATHODIC PROTECTION
6000015902	Electrical	UNIT; MOBILE SUBSTATION	UNIT; MOBILE SUBSTATION TYPE,TMSS-01,35-TMSS-1 TMSS-10,46-TMSS-6 TMSS-1,31-TMSS-2 TMSS-2,32-TMSS-3 51-TMSS-1,37-TMSS-1 TMSS-03,11-SDMS-03 54-TMSS-1,MOBILE SUBSTATION AS PER ATTACHED TECHNICAL SPECIFICATION, BASED ON SEC STANDARDS.#SCOPE INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING: ENGINEERING, DESIGN, MANUFACTURING, ASSEMBLING, FACTORY TESTING, DELIVERY TO KSA, MINISTRY OF TRANSPORT APPROVAL, DOCUMENTATION,#SPARE PARTS CATALOGUE, SUPPLY OF CRITICAL SPARE PARTS FOR COMMISSIONING,

			SITE PRE-COMMISSIONING.#
6000016141	Electrical	ANODE;IMPR. CURRENT, W/O CABLE, HSCI	ANODE IMPRESSED CURRENT; WITHOUT CABLE TERMINAL,HIGH SILICON CAST IRON (HSCI),TUBULAR,FOR CATHODIC PROTECTION,17-SAMSS-007
6000016594	Electrical	CAPACITOR BANK	UNIT; SHUNT CAPACITOR TYPE,43-TMSS-01,SAES-P-116,POWER FACTOR CORRECTION CAPACITOR BANK 4.16KV THROUGH 380KV
6000016730	Electrical	Converter Station/HVDC System	CONVERTER; HVDC TYPE,SAES-P-127,17-SAMSS-503
6000016800	Electrical	ANODE; GALVANIC; ALUMINUM, WITHOUT LEAD	ANODE GALVANIC; ALUMINUM, WITHOUT LEAD,17-SAMSS-006,CATHODIC PROTECTION
6000016801	Electrical	ANODE; GALVANIC; ZINC, WITHOUT LEAD; CP	ANODE GALVANIC; ZINC, WITHOUT LEAD,17-SAMSS-006,CATHODIC PROTECTION
6000016802	Electrical	ANODE; MMO GRID, WITHOUT LEAD; CP	UNIT; SHUNT CAPACITOR TYPE,43-TMSS-01,SAES-P-116,POWER FACTOR CORRECTION CAPACITOR BANK 4.16KV THROUGH 380KV
6000017041	Electrical	SWITCHGEAR; GAS INSULATED, 33 & 34.5 KV	SWITCHGEAR; SF6 GAS INSULATED TYPE,13.8 AND 34.5KV,SDMS-09,S-P-116,SF6 GAS INSULATED METAL CLAD 13.8 AND 34.5KV SWITCHGEARS, MAXIMUM RATING IS 2500A
6000017060	Electrical	UNIT; MAIN RING, 13.8 KV	UNIT; RING MAIN TYPE,32-SDMS-01,NON-EXTENSIBLE SF6 INSULATED RING MAIN UNIT, 13.8 KV.
6000001582	Instrumentation and IT	CONTROLLER; ELECTRONIC;COMPRESSOR	CONTROLLER; COMPRESSOR INCLUDING SURGE CONTROL TYPE,SPECIALIZED CONTROL SYSTEMS
6000002689	Instrumentation and IT	CALIBRATION GAS CYLINDER FOR GAS MONITOR	CYLINDER; CALIBRATION GAS TYPE,SIZE ANY,ANY,FOR COMBUSTIBLE & TOXIC GAS MONITORS ONLY
6000002725	Instrumentation and IT	ESD; ELECTRONIC; SOLID STATE	RELAY PROTECTION SOLID STATE; EMERGENCY SHUTDOWN SYSTEM ACTION,34-SAMSS-621,SOLID STATE ELECTRONICS BASED USED TO SAFELY SHUTDOWN A PROCESS IN CASE OF PROCESS DEVIATING TO HAZARDOUS OPERATING CONDITIONS.#
6000002732	Instrumentation and IT	MONITOR; FLAME MONITORING SYSTEM	MONITOR; IGNITERS AND BURNERS USED E MONITORING SYSTEM D IN FIRED EQUIPMENT. TYPE,34-SAMSS-617
6000002786	Instrumentation and IT	MONITOR; GAS; HYDROGEN SULFIDE;	MONITOR GAS; HYDROGEN SULFIDE,34-SAMSS-514
6000002822	Instrumentation and IT	GAUGE; RADAR; TANK GAUGING;	GAUGE; RADAR TYPE,34-SAMSS-319,TANK GAUGING EQUIPMENT FOR INVENTORY TANK USE ONLY.
6000002856	Instrumentation and IT	VALVE; AUTOMATIC RECIRCULATION;	VALVE; AUTOMATIC RECIRCULATION TYPE,34-SAMSS-711
6000002898	Instrumentation and IT	BUILDING; ANALYZER; INCLUDES INTEGRATION	BUILDING; ANALYZER TYPE,SAES-J-510,INCLUDES ANALYZER INTEGRATION.
6000002914	Instrumentation and IT	ANALYZER; GAS CHROMATOGRAPH; Sheltered	ANALYZER; GAS CHROMATOGRAPH TYPE,34-SAMSS-510,PROCESS GAS OR
6000007390	Instrumentation and IT	GUIDED WAVE RADAR LEVEL TRANSMITTERS	TRANSMITTER LIQUID LEVEL; GUIDED WAVE RADAR (GWR) TYPE,GUIDED WAVE RADAR (GWR) LEVEL TRANSMITTERS
6000009890	Instrumentation and IT	CUSTODY PROVER, SMALL VOLUME, UNI PISTON	METER; UND PISTON(SMALL VOLUM) PROVER TYPE,34-SAMSS-119,FOR LIQUID CUSTODY TRANSFER
6000009917	Instrumentation and IT	CUSTODY SYSTEM, TRUCK LOADING, POS DISP	SYSTEM:METERING; CUSTODY TRANSFER METERING TYPE,34-SAMSS-167,TRUCK LOADING, POS DISP, TRUCK LOADING, PD METER, TRUCK LOADING, CORIOLIS METER
6000009918	Instrumentation and IT	CUSTODY SYS TRUCK UNLOADING, POS DISP	SYSTEM:METERING; CUSTODY TRANSFER METERING TYPE,34-SAMSS-168,TRUCK UNLOADING, POS DISP
6000010782	Instrumentation and IT	CONTROLLER; SMART VALVE POSITION TYPE	CONTROLLER; SMART VALVE POSITION TYPE,34-SAMSS-634,FOR USE WITH EMERGENCY SHUTDOWN VALVES.
6000010821	Instrumentation and IT	ACTUATOR: VALVE; ELECTRIC FAILSAFE	ACTUATOR VALVE ELECTRIC; 34-SAMSS-716,ELECTRIC ACTUATOR FOR OPERATING VALVE, FAILSAFE DESIGN
6000012803	Instrumentation and IT	VALVE, RELIEF; SURGE PILOT OPERATED	VALVE RELIEF; SIZE ANY,ANY END CONN,ANY SUPPLY,ANY,SAES-J-605,SURGE, PILOT OPERATED TYPE , FACTORY TESTING IS REQUIRED FOR COMPLEX RATE-OF-RISE OR MODULATING VALVES.

6000013921	Instrumentation and IT	ANALYZER, Proc Photometer/Spectrometer	ANALYZER; 34-SAMSS-515,PROCESS PHOTOMETERS AND SPECTROMETERS INCLUDING TUNABLE DIODE (EXTRACTIVE)
6000014614	Instrumentation and IT	CUSTODY TANK GAUGING SYSTEM, RADAR	GAUGE TANK LEVEL; RADAR CUSTODY TRANSFER TYPE,34-SAMSS-321,SAES-Y-301,RADAR TANK GAUGING SYSTEMS FOR CUSTODY TRANSFER
6000016111	Instrumentation and IT	DRAG REDUCING AGENT (DRA)	CHEMICAL; SAEP-501,DRA IT IS A CHEMICAL THAT IS COMPOSED OF LONG CHAINS OF VERY HIGH MOLECULAR WEIGHT POLYMERS SUSPENDED IN A CARRIER FLUID USED IN FLUID-TRANSPORTING-PIPELINE TO REDUCE PIPELINE FRICTIONAL LOSSES/PRESSURE DROP FOR THE PURPOSE OF INCREASING PIPELINE FLOW RATE AND/OR DECREASING PIPELINE OPERATING PRESSURE
6000000943	Others	ANODE;BACKFILL CARBON MATERIAL,ICCP,CP	ANODE; S CINED CARBON BACKFILL HODIC PROTECTION TYPE,FOR IMPRESSED CURRENT
6000014710	Others	FLANGE; PIPE: CONNECTOR, MECHANICAL END	FLANGE PIPE; CONNECTOR TYPE,MECHANICAL END CONNECTORS
6000009160	Pipe & OCTG	PIPE: METALLIC, CLAD PIPE	PIPE METALLIC; CARBON STEEL,CLAD WITH CORROSION RESISTANT ALLOY,01-SAMSS-048,API 5LD
6000013160	Pipe & OCTG	PIPE&FITTINGS;NON-METAL;RTR	PIPE NON-METALLIC; MAXIMUM 14 IN NPS,REINFORCED THERMOSETTING RESIN,REINFORCED THERMOSETTING RESIN (RTR),FOR WATER (NON-UTILITY) AND HYDROCARBON APPLICATIONS MAX TEMP 200 F,01-SAMSS-042,API 15HR API 15LR
6000014017	Pipe & OCTG	PIPE: METALLIC, WELD OVERLAYED PIPE	PIPE METALLIC; CARBON STEEL,OVERLAYED WITH CORROSION RESISTANT ALLOY,01-SAMSS-048, API 5LD
6000000097	Static Equipment	JOINT; PIPE; EXPANSION; ANY METAL	JOINT EXPANSION; ASME B16.5
6000000134	Static Equipment	SLEEVE; PIPE; TWO HALVES; BOLTED FLANGED	SLEEVE PIPE BOLTED; STEEL,FOR PIPE REPAIR,FOR PIPE REPAIR
6000000150	Static Equipment	TEE; PIPE, SPLIT TEE; HOT TAPPING; CS	TEE PIPE; STEEL,EXTRUDED OR WELDED BRANCH,02-SAMSS-006,SPLIT TEE, FLANGE WELDED TO BRANCH, FOR HOT TAPPING
6000000196	Static Equipment	TRAP: STEAM; MECHANICAL	TRAP STEAM; FLOAT, BALL TYPE,FLANGED, THREADED, SOCKET INLET,FLANGED, THREADED, SOCKET OUTLET,PR PISG,PISG INLET,LB/HR CONDENSEA,DEG F (DEG CO) OPERATIN,ASTM BODY,ASTM TRIM,ASTM STRAINER,ASTM ELEMENT,FLOAT,BALL,OTHER STANDARD EQUIVALENT MAY BE SHOWN
6000000254	Static Equipment	VALVE; BALL; SCRAPER LAUNCHING; STEEL	VALVE BALL; ANSI CL 150 AND UP SUPPLY,FLANGED OR BUTTWELD END CONN,STEEL BODY,STYLE SCRAPER LAUNCHING,SOFT SEATED SEAT,04-SAMSS-051,04-SAMSS-035 04-SAMSS-048,WITH OR WITHOUT ACTUATOR
6000000265	Static Equipment	VALVE;CHECK;NPS 14 AND ABOVE;NON-FERROUS	VALVE CHECK; SIZE NPS 14 AND ABOVE,ANY RATING SUPPLY,NON-FERROUS(BRASS/BRONZE) BODY,DUAL PLATE,WAFER END CONN,04-SAMSS-035,04-SAMSS-048
6000000280	Static Equipment	VALVE; CHOKE; NEEDLE; 2 INCH AND UP; API	VALVE CHOKE; NEEDLE AND SEAT TYPE,UPTO 3 INCH MAXIMUM ORIFICE BODY,PR 2000 THRU 5000 PSI SUPPLY,FLANGED HUBBED OR BUTTWELD END CONN,MR API 6A,STEEL BODY,04-SAMSS-055,ISO 10423, WITH OR WITHOUT ACTUATOR
6000000290	Static Equipment	VALVE; GATE; THRU CONDUIT;EXPANDING GATE	VALVE GATE THRU CONDUIT; SIZE NPS 2 AND UP,ASME CL 150 AND UP SUPPLY,FLANGED OR BUTTWELD END CONN,STYLE EXPANDING GATE,STEEL BODY,04-SAMSS-050,WITH OR WITHOUT ACTUATOR
6000000308	Static Equipment	VALVE; PLUG; LUBRICATED	VALVE PLUG; LUBRICATED TYPE,SIZE ANY SIZE,ANY PRESSURE RATING SUPPLY,STEEL BODY,04-SAMSS-035,04-SAMSS-048 04-SAMSS-053,04-SAMSS-055 ASME B16.34,API 599 ISO 10423,WITH OR WITHOUT ACTUATOR,ASME CLASS 150 AND UP, API 2000 TRHU 5000.
6000000313	Static Equipment	VALVE: CHOKE; API 6A, 10000 PSI	VALVE CHOKE; NEEDLE AND SEAT TYPE,UPTO 2 INCH MAXIMUM ORIFICE BODY,PR 10000 PSI SUPPLY,HUBBED, FLANGED OR BUTTWELD END CONN,MR API 6A,STEEL BODY,04-SAMSS-055,ISO 10423,WITH OR WITHOUT ACTUATOR
6000000315	Static Equipment	VALVE; CHOKE; AUTOMATIC	VALVE CHOKE; PLUG-AND-CAGE SINGLE STAGE TRIM TYPE,UPTO 6 INCH

		PLUG-AND-CAGE; H	MAXIMUM ORIFICE BODY,PR 10,000 PSI,FLANGED HUBBED OR BUTTWELD END CONN,STEEL BODY,04-SAMSS-055,ISO 10423,WITH OR WITHOUT ACTUATOR
6000001821	Static Equipment	AIR HANDLING UNIT; AHU; CHILLED WATER OR	AIR HANDLING UNIT; AHU TYPE,CHILLED WATER OR DIRECT EXPANSION,ONSHORE ALL SIZES AND OFFSHORE LESS THAN 10 TONS COOLING,MANUFACTURER STANDARD
6000001822	Static Equipment	AIR CONDITIONING UNIT; SELF CONTAINED; O	AIR CONDITIONING UNIT; SELF CONTAINED TYPE,(PACKAGED UNIT) CERTIFIED TO AHRI 340 AND UL 1995 STD
6000001823	Static Equipment	AIR CONDITIONING UNIT; PACKAGED UNIT TRA	AIR CONDITIONING UNIT; PACKAGED UNIT TRAILERIZED TYPE,AIR COOLED,R-22 OR R-134A,MANUFACTURER STANDARD
6000001826	Static Equipment	A/C Unit,mini-split,DE below 5.5 Tons	AIR CONDITIONING UNIT; AIR CONDITIONING UNIT SPLIT TYPE, LESS THAN 5.5 TON COOLING TONNAGE, DIRECT EXPANSION TYPE,AHRI 210/240,UL-1995
6000001838	Static Equipment	CONTROLLER; PROGRAMMABLE LOGIC; ENERGY M	CONTROLLER PROGRAMMABLE LOGIC; SAES-K-011,UL-916 ASHRAE 135,ENERGY MANAGEMENT SYSTEM: BUILDING
6000001862	Static Equipment	A/C UNIT;SPLIT;DIRECT EXP,5.5 TO 63 TONS	AIR CONDITIONING UNIT; AIR CONDITIONING UNIT SPLIT UNIT DIRECT EXPANSION TYPE,SIZES 5.5 TO 63 COOLING TONNAGE COOLING,AHRI 340/360,UL1995,EER VALUE SHALL BE IN ACCORDANCE WITH THE EER TABLE IN SAES-K-001.
6000001884	Static Equipment	CHILLER: HVAC/REFRIG, PACKGD RECIPROCTG,	CHILLER; HVAC/REFRIGERATION TYPE,PACKAGED RECIPROCATING, AIR COOLED, FOR NON-PROCESS APPLICATIONS. PLEASE USE 9COM 6000014429 OR 6000014872 INSTEAD AS APPLICABLE.
6000002397	Static Equipment	BRICK; REFRACTORY	BRICK REFRACTORY; BRICK REFRACTORY
6000002399	Static Equipment	CEMENT; REFRACTORY; SAES-N-100; INSULATI	CEMENT; REFRACTORY TYPE,SAES-N-100,INSULATING
6000002404	Static Equipment	TOWER; COOLING; WATER;	TOWER COOLING; WATER TYPE,27-SAMSS-003,ASHRAE 90.1
6000002436	Static Equipment	HEAT EXCHANGER; ELECTRIC; 32-SAMSS-027;	HEAT EXCHANGER; ELECTRIC TYPE,32-SAMSS-027
6000002475	Static Equipment	BLOWER; SOOT; 32-SAMSS-029	BLOWER; SOOT TYPE,32-SAMSS-029
6000002508	Static Equipment	FLARE; PROCESSED PLANT; INCLUDING TEMPER	FLARE; PROCESSED PLANT TYPE,32-SAMSS-022,31-SAMSS-003 32-SAMSS-004,32-SAMSS-011 32-SAMSS-013,34-SAMSS-830 34-SAMSS-711,INCLUDING TEMPERATURE CONTROLS,IGNITERS AND STACK AND BURNPIT WITH ACCESSORIES, FOR FGRS INCLUDES: COMPRESSORS. PRESSURE VESSELS(WATER SEAL DRUMS) OR CONTROL VALVES WITH BUCKING PIN VALVES, BLOWERS AND AIR COOLED HEAT EXCHANGERS. FOR IN-HOUSE HPAAS (HIGH PRESSURE AIR ASSIST SYSTEM) FLARE SMOKELESS APPLICATION INCLUDE: HPAAS FLARE TIP, COMPRESSORS, PRESSURE VESSELS(AIR DRYER AND RECEIVER DRUM), CONTROL VALVES AND HEAT EXCHANGERS.
6000002748	Static Equipment	IGNITER	IGNITER; FLARE TYPE,FLARE
6000002879	Static Equipment	SKID; DRYER, INSTRUMENT AIR & COMPRESSED	SKID; DRYER TYPE,32-SAMSS-038,INSTURMENT AIR & COMPRESSED GAS, PRESSURE VESSELS AND MAIN COMPONENTS TO BE SOURCED FROM APPROVED VENDORS PER THE APPLICABLE 9COMS AND SAMSS.
6000009264	Static Equipment	JOINT, METAL TO METAL SEAL	COUPLING PIPE; METAL TO METAL (POSITIVE OR NEGATIVE) SEAL MECHANICAL TERMINAL,IN NPS,OY STEEL,MM (IN),PSI SUPPLY, M,GED MLESS UGHT,E URAL FINISH,ASME,ASME,(IN) (IN),ITIVE OR NEGATIVE ITIVE OR NEGATIVE JOINT; METAL TO METAL SEAL MECHANICAL TYPE,CS/ SS/ALLOY STEEL,(IN) (IN),ITIVE OR NEGATIVE ITIVE OR NEGATIVE
6000011206	Static Equipment	SKID; FILTRATION SYSTEM	SKID; 32-SAMSS-038,FILTRATION SYSTEM
6000011955	Static Equipment	SKID; THERMAL OXIDIZER	SKID; THERMAL OXIDIZER TYPE,WITH RE-BOILER
6000014429	Static Equipment	CHILLER: SCREW COMPRESSOR: WATER COOLED	CHILLER; HVAC TYPE,AHRI 550/590,UL-1995 ASHRAE 90.1

6000014491	Static Equipment	VALVE; NPS 2 TO 20, COMPOSITE MATERIAL	VALVE; BUTTERFLY, BALL OR CHECK TYPE,SIZE NPS 2 THRU 20,ASME CLASS 150 & 300 SUPPLY,FLANGED END CONN,COMPOSITE (NON-METALLIC) BODY
6000014872	Static Equipment	PACKAGED; WATER COOLED; CHILLER; PACKAGED, WATER COOLED SCROLL COMPRESSOR TYPE,AHRI SCROL COMP	
6000014971	Static Equipment	COUPLER:LPG LOADING,INCLUDE VAPOR	COUPLER; LPG LOADING TYPE,SIZE ALL SIZES,HARD PIPE TERMINAL,INCLUDE VAPOR AND BREAKAWAY COUPLERS,CONTACT CSD FOR DETAILS
6000015600	Static Equipment	VAPOR RECOVERY UNIT (VRU)	UNIT; VAPOR RECOVERY UNIT TYPE,32-SAMSS-004,32-SAMSS-019 API-672,API-681 ASME B73.1 OR ISO 2858,ISO SAES-G-005,SAES-K-101 ASHRAE 90.1 EER,VAPOR RECOVERY UNITS (VRU) IS A PROCESS UNIT/MODULE THAT RECOVERS VOLATILE ORGANIC COMPOUNDS, VOCS, OR VENT GASES SUCH AS METHANE, ETHANE, PROPANE AND CARBON DIOXIDE TO AVOID VENTING TO ATMOSPHERE OR FLARE. IT IS USED TO RECOVER VAPORS THAT RESULT FROM LOADING OF PETROLEUM AND PETROCHEMICAL PRODUCTS AND TRANSFER OF EVAPORATIVE HYDROCARBONS SUCH AS GASOLINE, NAPHTHA, AROMATICS, FUEL AND ALCOHOL
6000016518	Static Equipment	Spool; Pipe	SPOOL PIPE; ENGINEERING & DESIGN PIPE SPOOL TYPE,ALL SIZES NPS,FLANGED TERMINAL,METALLIC, CARBON STEEL, LTCS, S.S., 01-SAMSS-010 & NACE MR 0175/ISO 15156 COMPLIANT,ALL,HYDROCARBON,WATER AND STEAM SERVICE, USING GAS OR LIQUID AS MOTIVE FORCE.,ANSI B31.3,NACE MR 0175