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2024 MATERIAL SOURCING LIST ; Updated January 2024				
Sr.no	COMMODITY	9COM	SHORT DESCRIPTION	LONG DESCRIPTION
1	Cathodic Protection	6000000940	ANODE; GALVANIC; ALUMINUM, WITH LEAD; CP	ANODE GALVANIC; ALUMINUM, WITH LEAD,17-SAMSS-006,CATHODIC PROTECTION
2	Cathodic Protection	6000001011	POWER SUPPLY;ELECTRICAL;SOLAR,CP	POWER SUPPLY ELECTRICAL; HODIC PROTECTION POWER PLY ELECTRICAL SOLAR POWER TYPE,ANY POWER,ANY,17-SAMSS-012
3	Cathodic Protection	6000015510	ANODE;GALVANIC,HIGH TEMPERATURE ZINC,CP	ANODE GALVANIC; HIGH TEMPERATURE ZINC, 17-SAMSS-006, CATHODIC PROTECTION
4	Drilling & Chemicals	6000016111	DRAG REDUCING AGENT (DRA)	CHEMICAL; ANY,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
5	Drilling & Chemicals	6000015782	GAS LIFT EQUIPMENT	MANDREL; ANY TYPE,GAS LIFT EQUIPMENT
6	Drilling & Chemicals	6000015751	CASING HANGER: FLUTED TYPE; 10-15M	ANGER CASING WELLHEAD; LOW ALLOY STEEL,FOR H2S, CO2 AND AMINE NHIBITOR, PR 10-15M, ANY BOWL, MANDREL AND FLUTED DESIGN, ANY ASING OD, 45-SAMSS-005, MONOGRAMMED TO API 6A (LATEST DITION),PSL 3 OR 4, MR DD-NL, PR 2 (QUALIFIED TO APPENDIX F TO 00F), TR U (275F), API 6A MONOGRAMMED
7	Drilling & Chemicals	6000007307	PUP JOINT: CASING OCSG; HIGH NICKEL	PUP JOINT OCTG; DUPLEX STAINLESS STEEL AND NICKLE BASE ALLOYS, SEAMLESS,API-5CRA, ISO-13680 AND 45-SAMSS-006,GR API-5CRA GROUP-2 TO GROUP-4 GRADES,SIZE 4-1/2 IN AND LARGER SIZES,CAL-IV QUALIFIED THREAD END CONN
8	Drilling & Chemicals	6000007305	CROSSOVER: OCTG; HIGH NICKEL	ADAPTER OCTG NIPPLE/CROSSOVER/SWAGE; DUPLEX STAINLESS STEEL AND NICKLE BASE ALLOYS, SEAMLESS, API-5CRA, ISO-13680 AND 45-SAMSS-006, GR API-5CRA GROUP-2 TO GROUP-4 GRADES, CAL-IV QUALIFIED THREAD
9	Drilling & Chemicals	6000007303	CASING: OCTG; HIGH NICKEL; SEAMLESS	CASING OCTG; DUPLEX STAINLESS STEEL AND NICKLE BASE ALLOYS,SEAMLESS,API-5CRA, ISO-13680 AND 45-SAMSS-006, GR API-5CRA GROUP-2 TO GROUP-4 GRADES, SIZE 4-1/2 IN AND LARGER SIZES,CAL-IV QUALIFIED THREAD END CONN
10	Drilling & Chemicals	6000007293	COUPLING: OCTG; HIGH NICKEL	COUPLING OCTG; DUPLEX STAINLESS STEEL AND NICKLE BASE ALLOYS,SEAMLESS,API-5CRA,ISO-13680 AND 45-SAMSS-006,GR API-5CRA GROUP-2 TO GROUP-4 GRADES,SIZE ANY,CAL-IV QUALIFIED THREAD END CONN,ANY LG
11	Drilling & Chemicals	6000004087	VALVE: SUB-SURFACE SAFETY	ALVE; SUB-SURFACE SAFETY TYPE,SIZE ANY,API-14A,NACE MR-01-75/ SO 1515,API MONOGRAMMED,API MONOGRAMMED
12	Drilling & Chemicals	6000004071	PLUG SET FOR DV TOOLS	PLUG CEMENTING; ANY TYPE,PLUG SET FOR DV TOOLS
13	Drilling & Chemicals	6000004065	PACKER: PRODUCTION; KHF	PACKER PRODUCTION; PERMANENT TYPE,FOR H2S,WIRELINE SET AND HYDRAULIC SET ACTIVATI,ANY OD, ANY CONNECTN, KHUFF
14	Drilling & Chemicals	6000004055	COLLAR: PACKER; MECH; CEMENT	COLLAR PACKER; WITH MECHANICAL NON INFLATABLE PACKER TYPE,FOR CEMENTING TOOLS (DV),MULTI STAGE
15	Drilling & Chemicals	6000004043	DV TOOLS	EMENTER; ANY TOOL OD, ANY DRILL OD, MULTI STAGE INFLATABLE AND ECHANICAL PACKER FOR CEMENTING (DV)
16	Drilling & Chemicals	6000004039	HANGER; LINER; FOR OIL WELLS	HANGER LINER; ANY END 1,ANY END 2,LINER HANGER AND ACCESSORIES FOR OIL WELLS
17	Drilling & Chemicals	6000003993	Viscosifier	CHEMICAL; ANY, ORGANIC AND INORGANIC MATERIALS USED TO INCREASE THE VISCOSITY OF WATER BASED MUD AND BRINES
18	Drilling & Chemicals	6000003877	TUBING: OCTG; API GR; SEAMLESS	TUBING OCTG; STEEL,SEAMLESS,API-5C2, API-5B 45-SAMSS-006,SIZE ANY
19	Drilling & Chemicals	6000003789	VALVE: BPV AND TWCV; WLHD	VALVE BACKPRESSURE WELLHEAD; FOR HS2, CO2, AMINE,UNS-N07718 BODY,HH TRIM,ALL SIZES HANGER,ANY NPS,API 6A,45-SAMSS-005 AND NACE MR0175,FOR BOTH PBV AND TWCV PRESSURE RATING 3M-15M PR-2 (QUALIFIED TO APPENDIX F TO 300F) TR-U (275F) MONOGRAMMED TO API 6A LATEST EDITION
20	Drilling & Chemicals	6000003763	MULTIBOWL ASSY:CASING AND TUBING; 10-15M	SPOOL CASING; LOW ALLOY STEEL,FOR H2S, CO2, AMINE,ANY TOP,API RING JOINT (FLANGED OR STUDDED) TOP CONN,ANY BTM,API RING JOINT (FLANGED OR STUDDED) BTM,API RING JOINT STUDDED OUTLET,45-SAMSS-005,API 6A AND NACE MR0175,PSL 3 OR 4,MR DD (WITH OR WITHOUT PARTIAL CLAD),PR 2 (QUALIFIED TO APPENDIX F TO 300F),TR U (275F), API MONOGRAMMED TO HANG ONE OR TWO CASING STRINGS IN ADDITION TO THE TUBING STRING WITH METAL TO METAL HANGERS SEALS WITH OR WITHOUT SIDE OUTLET GATE VALVES.
21	Drilling & Chemicals	6000003721	MUDLINE SUSPENSION:RUNNING & TIEBACK	SUSPENSION SUB-SEA MUDLINE; HANGERS, RUNNING AND RETRIEVING, AND TIEBACK TOOLS TYPE,45-SAMSS-005,API 6A AND 17D,FOR OIL AND EXPLORATION WELLS API MONOGRAMMED OR NON-MONOGRAMMED NACE MR0175 LOW ALLOY STEEL OR INCONEL MATERIAL
22	Drilling & Chemicals	1001133608	ADDITIVE DRILLING FLUID, HOMOGENEOUS MIL	SILICONE BASED DEFOAMER ADDITIVE DRILLING FLUID; HOMOGENEOUS MILKY WHITE LIQUID FORM,SILICONE BASED,FOR LIQUID SILICONE-BASED DEFOAMER FOR MITIGATION AND PREVENTION OF FOAMING. COMPATIBLE WITH MOST WATER BASE AND CLEAR BRINE FLUIDS. IT HELPS TO CONTROL OR PREVENT FOAMING. IT HAS NO SIGNIFICANT EFFECT ON FLUID RHEOLOGY OR MUD DENSITY.,SILICONE BASED,5 GAL PAIL (NET VOLUME), PHYSICAL AND CHEMICALS SPECS: APPEARANCE: HOMOGENEOUS MILKY WHITE LIQUID, SPECIFIC GRAVITY 0.95-1.1, SILICONE CONTE (PERCENT): 20 MINIMUM, ODOR: MILD, SOLUBILITY I WATER: DISPERSIBLE, FLAS POINT: GREATER THAN 100 DEG.C (212 DEG.F), VISCOSITY AT 25 DEG.C (CPS): 1000-3500, PH: 7-10. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICAT OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT. LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE MSDS. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY)
23	Drilling & Chemicals	1001130337	ADDITIVE DRILLING FLUID, YELLOW TO DARK	EXTREME LUBRICANT FOR UNDERBALANCE COILED TUBING DRILLING ADDITIVE DRILLING FLUID; YELLOW TO DARK AMBER LIQUID FORM,BLEND OF FATTY AMIDES ACID AND ESTERS, OR POLYOL ESTER OF FATTY ACIDS,FOR COMBUSTIBLE AMBER LIQUID BLEND OF POLYMERIZED FATTY AMIDE, ACID AND ESTER, OR POLYOL ESTER OF FATTY ACID USED IN SOLIDS-FREE DRILL-IN FLUIDS OR MONOVALENT BRINES TO REDUCE TORQUE AND DRAG IN HIGHLY TORTUOUS OR EXTENDED REACH WELLS, INCLUDING COILED TUBING,BLEND OF FATTY AMIDES ACID AND ESTERS, OR POLYOL ESTER OF FATTY ACIDS,55 GAL (208 LITER) DRUM (NET VOLUME),APPEARANCE: YELLOW TO DA AMBER. SWEET AND MILD OD SOLUBILITY IN WATER: INSOLUBLE IN WATER SPECIFIC GRAVITY AT THE RANGE BETWEEN 68F (20C): 0.95 - 1.05 FLASH POINT (PMCC): GREATER THAN 212 (100C) IT WILL NOT GREAS OR PHASE OUT. SAUDI ARAM RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT 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. UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT. LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE MSDS. IT IS NON-DAMAGING TO PRODUCING ZONES, NON-TOXIC, ENVIRONMENTAL FRIENDLY AND HELPS PREVE BIT BALLING AND DIFFERENTIAL STICKING. T PRODUCT IS COMPATIBLE WI SEAWATER AND MONOVALENT BRINE-BASED DRILLING FLUIDS. OTHER ASSOCIATED ELEMENTS MUST NOT BE HARMFUL TO PERSONNEL AND/OR ADVERSELY AFFECT FLUID PROPERTIES. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.
24	Drilling & Chemicals	1001129231	ADDITIVE DRILLING FLUID, WHITE FREE FLOW	CALCIUM BROMIDE(CABR2)DRY 95% ADDITIVE DRILLING FLUID; WHITE FREE FLOWING POWDER,CRYSTALLINE OR GRANULAR FORM,CALCIUM BROMIDE (CABR2) DRY 95%,FOR WHITE FREE FLOWING POWDER,CRYSTALLINE OR GRANULAR WITH NO LUMPS,CALCIUM BROMIDE SALT USED FOR PREPARING COMPLETION FLUIDS AS A SINGLE CABR2 SALT SOLUTION WITH MINIMUM DENSITY OF 1.70 GM/CC,AND CAN BE BLENDED WITH ZINC BROMIDE AND CALCIUM CHLORIDE SOLUT,CALCIUM BROMIDE (CABR2) DRY 95%,25 KG (55.1 LB) BAG (NET WEIGHT),WHITE FREE FLOWING POWDE CRYSTALLINE OR GRANULAR WITH NO LUMPS, CALCIUM BROMIDE SALT USED FOR PREPARING COMPLETION FLUIDS AS A SINGLE CABR2 SALT SOLUTION WITH MINIM DENSITY OF 1.70 GM/CC, A CAN BE BLENDED WITH ZINC BROMIDE AND CALCIUM CHLORIDE SOLUTIONS TO FORMULATE, SOLIDS-FREE NON-DAMAGING HIGH-DENSIT BRINE BLENDS WITH DENSITIES UP TO 143 PCF (19.1 LB/GAL). APPEARANC WHITE FREE FLOWING POWDE CRYSTALLINE OR GRANULAR, NO LUMPS SATURATED BRIND SOLUTION: CLEAR COLORLES PURITY AS CABR2, PERCENT 95 MINIMUM SG AT 77 DEG (25 DEG C): 3.2 - 3.4 SOLUBILITY IN WATER AT 6 DEG F (20 DEG C), WT PERCENT 58 MINIMUM IRON, PPM: 10 MAXIMUM CHLORIDE AS CaCl2, WT PERCENT 1.5 MAXIMUM SULFATE, PPM: 20 MAXIMUM HEAVY METALS, PP PB: 5 MAXIMUM HG: 1 MAXIMUM AS: 5 MAXIMUM CD 5 MAXIMUM SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICAT OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO), PRODUCT MANUFACTURER AND/OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE O ANALYSIS (COA) AND CERTIFICATE OF ORIGIN (COO) FOR EVERY BATCH. U REFERRED IN THIS MATERIA IS NET VOLUME/WEIGHT. LABEL: PRODUCT NAME, BAT NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE MSDS. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY)
25	Drilling & Chemicals	1001078250	ADDITIVE DRILLING FLUID, SINGLE SALT (CA	CALCIUM BROMIDE (CABR2) SOLUTION ADDITIVE DRILLING FLUID; SINGLE SALT (CABR2), SOLIDS-FREE BRINE FORM,CALCIUM BROMIDE (CABR2),FOR A PURE SOLIDS-FREE BRINE USED IN COMPLETION FLUIDS AND CAN BE BLENDED WITH ZINC/CALCIUM BROMIDE AND CALCIUM CHLORIDE SOLUTIONS TO FORMULATE NON-DAMAGING FLUIDS OF DENSITIES UP 143 PCF (19.1 LB/GAL),CALCIUM BROMIDE,275 GALON (IBC) NET VOLUME,REFER TO API 13J FIFTH EDIT OCTOBER 2014,CALCIUM BROMIDE SOLUTION (CABR2): PURE, SOLIDS-FR BRINE USED FOR PREPARING COMPLETION FLUIDS AS A SINGLE CABR2 SALT SOLUTI WITH MINIMUM DENSITY OF 1.70 GM/CC, AND CAN BE BLENDED WITH ZINC BROMID AND CALCIUM CHLORIDE SOLUTIONS TO FORMULATE, SOLIDS-FREE NON-DAMAGING HIGH DENSITY BRINE BLEND WITH DENSITIES UP TO 143 PCF (19.1 LB/GAL). CHEMICAL AND PHYSICAL SPECIFICATIONS: CALCIUM BROMIDE (CABR2) SOLUTION 52% WT. MINIMUM COLORLES CLEAR LIQUID WITH NO ODO CHLORIDE CONTENT: 1000 P (0.1% WT.) MAXIMUM TURBIDITY: 6 NTU MAXIMUM SULPHATE CONTENT: 100 PP (0.01% WT.) MAXIMUM IRON CONTENT: 5 PPM MAXIMUM TOTAL HEAVY METALS (ZN, PB, HG, AS AND CD): 5 PP MAXIMUM DENSITY: 1.70 GM/CC (14.2 LB/GAL / 106 PCF) AT 70° F (20.1° C) MINIMUM PH OF 10% SOLUTI IN DI WATER: [BASIC.] 7- 8.5 TRUE CRYSTALLIZATION TEMPERATURE (TCT): 10° F (-12.2° C) SOLIDS RETAINE ON 5 MICRONS FILTER PAPE NONE SAUDI ARAMCO RESERV THE RIGHT TO COLLECT THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSU COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE O ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). LABEL:PRODUCT NAME, BATC NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE (MSDS) (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY)

Sr.no	COMMODITY	9COM	SHORT DESCRIPTION	LONG DESCRIPTION
26	Drilling & Chemicals	1001071292	ADDITIVE DRILLING FLUID, LIQUID NON-EMUL	NON-EMULSIFIER SURFACTANT. ADDITIVE DRILLING FLUID; LIQUID NON-EMULSIFIER SURFACTANT FORM,NON-EMULSIFIER SURFACTANT,FOR LIQUID FORM, SURFACTANT DESIGNED AS NONEMULSIFIER ADDITIVE FOR ACIDIZING LIMESTONE, DOLOMITE AND SANSDTONE, OR FOR FRACTURE CLEANING TREATMENT LIQUID NON-IONINC WATER DISPERSING NON-EMULSIFIER SURFACTANT DESIGNED FOR APPLICATIONS IN CEMENTING, ACIDICING, WELL STIMATION, AND FRACTURING. THE PRODUCT CAN ALSO BE USED AS TREATEMENT OF THE WELLBORE BEFORE DISPLACEMENT FROM OIL BASED MUDS TO WATER BASE,NON-EMULSIFIER SURFACTANT,5 GAL PAIL, NET PRODUCT VOLUME OF 5 GAL,APPEARANCE: YELLOW LIQUI SPECIFIC GRAVITY AT 68 DEG.F (20 DEG. C): 0.85-0.95. FLASH POINT: >86 DEG. F (30 DEG. C). NON-DEGRADABLE IN 15% HC 5 GAL PAIL(18.9 LITERS), NET PRODUCT VOLUME OF 5 GAL. SAUDI ARAMCO RESERV THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSU COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE O ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). PRODUCT MANUFACTURER AND/OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE O ANALYSIS (COA) AND CERTIFICATE OF ORIGIN (COO) FOR EVERY BATCH. U REFERRED IN THIS MATERIA IS NET VOLUME/WEIGHT.LABEL: PRODUCT NAME, BATCH NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE MSDS. UOM REFERRED IN TH MATERIAL IS NET VOLUME/WEIGHT. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.
27	Drilling & Chemicals	1000843350	OIL SOLUBLE H2S SCAVENGER	OIL SOLUBLE ZINC-BASED H2S LIQUID SCAVENGER ADDITIVE DRILLING FLUID; LIQUID H2S SCAVENGER FORM,BLEND OF ZINC ORGANOMETALLICS,FOR LIQUID FORM FOR A HYDROCARB TO NEUTRALIZE HYDROGEN SULF LIMITED TO ZERO FLARING/FLO TRANSPORTATION/SHIPMENTS AN,ZINC COMPOUND,55 GAL DRUM (208 L), NET VOLUM,APPEARANCE/ODOR: VISCOUS YELLOW TO YELLOW-GREEN LIQUID/MILD ODOR. SPECIF GRAVITY AT 77F (25 DEG): 0.8-1.10 FLASH POINT (PMCC) : >149 (65 DEG) SOLUBILITY: INSOLUBLE IN WATER ACTIVE INGREDIENT: ZINC BASED CHELATE CONCENTRATION OF THE ACTIVE INGREDIENT DETERMINED BY GRAVIMETRI METHOD: MINIMUM 70 PERCENTAGE W/W. SAUDI ARAMCO RESERVES THE RIGH TO COLLECT REPRESENTATIV PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICAT OF ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). PRODUCT MANUFACTURER AND/OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE O ANALYSIS (COA) AND CERTIFICATE OF ORIGIN (COO) FOR EVERY BATCH. U REFERRED IN THIS MATERIA IS NET VOLUME/WEIGHT. LABEL: PRODUCT NAME, BAT NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE MSDS. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.
28	Drilling & Chemicals	1000823699	THINNER/DISPERSANT-OBM CONDITIONER	THINNER/DISPERSANT-OBM CONDITIONER ADDITIVE DRILLING FLUID; LIQUID FORM,SULFONATE BLEND WITH FATTY ACID,FOR USED TO LOWER REHEOLOGICAL PROPERTIES OF OIL BASE FLUIDS. ,POLYOLEFIN/ORGANIC SULFONATE BLEND WITH FATTY ACID,55 GALLON (208 LITER) DRUM. SHIPMENT OF PRODUCTS MUST CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,THINNER/DISPERSANT-OIL-B MUD CONDITIONER: LIQUID POLYOLEFIN/ORGANIC SULFONATE BLEND WITH FAT ACID DERIVATIVES USED TO LOWER RHEOLOGICAL PROPERTIES FOR OIL BASE FLUIDS. OTHER ASSOCIATED ELEMENTS MUST NOT BE HARMFUL TO PERSONNEL AND/OR ADVERSELY AFFECT FLUID PROPERTIES. CHEMIC AND PHYSICAL SPECIFICATIONS: APPEARANCE: DARK AMBER LIQUID SOLUBILITY: INSOLUBLE IN WATER SPECIFIC GRAVITY: 0.90 - 0.96 FLASH POINT (PMCC): 212 °F (100 °C) SAUDI ARAM RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICAT 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 NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE (MSDS).UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.
29	Drilling & Chemicals	1000814796	MICRO WASH-GLACIAL ACETIC ACID-BAKER	MICRO WASH-GLACIAL ACID-BAKER HUGHES ADDITIVE DRILLING FLUID; CLEAR, COLORLESS LIQUID FORM,LIQUID CARBOXYLIC ACID,FOR USED FOR ACIDIZING SOLUBLE CALCIUM CARBONATE PARTICLES AFTER USING OBM. ,LIQUID ARBOXYLIC ACID WITH THE MOLECULAR FORMULA OF CH3COOH,275 GALLON IBC TOTE CONTAINER SPECIFICATIONS: LEAK PREVENTION MECHANISM: VALVE CLOSED WITH SCREW CAP PE-DISC AND FLAT GASKET, VALVE HANLDE SECURED WITH A LOCKING SCREW. INNER CONTAINER SHOULD BE HIGH MOLECULAR WEIGHT, HIGH DENSITY POLYETHYLENE (HMWHDPE) W/EXTRUSION BLOW MOLDED, SPECIALLY SHAPED TO ENSURE COMPLETE DISCHARGE OF CONTENTS. OUTER CONTAINER SHOULD BE RIGID, WELDED GALVANIZED TUBULAR STEEL GRID WITH A LARGE PERMANENTLY FIXED IDENTIFICATION PLATE.MOLDED BOTTOM SHELL SHOULD BE PRESSED GALVANIZED STEEL BASE SHAPED TO SUPPORT THE INNER CONTAINER AND ASSIST TOTAL DRAINAGE. PALLETS SHOULD BE STEEL AND HAVE 4 WAYS ENTRIES. SHIPMENT OF PRODUCTS MUST CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,MICRO-WASH ACETIC ACID-BAKER HUGHES: CLEAR LIQUID CARBOXYLIC ACIDS WITH THE FORMULA OF CH3COOH, USED FOR ACIDIZING SOLUBLE CALCIU CARBONATE PARTICLES, AFT USING OBM, IN WELLBORE REMEDIATION AND CLEANUP PROCESS TO IMPROVE WELL PRODUCTIVITY. BAKER HUGH MICRO-WASH ACID SYSTEM CONSISTS OF: PRIME-743 (SAP #1000811425), PRIME-760 (SAP #1000811426), PRIME-770 (SAP #1000811427), OHR-7 (SAP #1000811421), OHR-A (SAP #1000811422), OHR-7 (SAP #1000811423), OHR-7 (SAP #1000811424), GLACI ACETIC ACID (SAP #1000814796), AND FORMIC ACID (SAP #1000811877). CHEMICAL AND PHYSICAL SPECIFICATIONS: APPEARANCE: CLEAR LIQUID STRONG PUNGENT VINEGAR ODOR ACETIC ACID: >96% DENSITY: 1040-1050 KG/M³ (1.040-1.050 G/CM³) AT 25 °C BOILING POINT: 242. °F (117 °C) MINIMUM FLAS POINT: >39 °C/102 °F (CLOSED CUP) AUTO-IGNITI TEMPERATURE: 799 °C. SAUD ARAMCO RESERVES THE RIGH TO COLLECT REPRESENTATIV PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT 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 SHE (MSDS). UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY)
30	Drilling & Chemicals	1000811877	MICRO-WASH FORMIC ACID-BAKER HUGHES	MICRO-WASH FORMIC ACID-BAKER HUGHES ADDITIVE DRILLING FLUID; CLEAR, COLORLESS LIQUID FORM,FORMIC ACID ADDITIVE,FOR USED FOR FORMULATING MICRO-WASH,FORMIC ACID >90%,55 GAL. (208 LITER) DRUM SHIPMENT OF PRODUCTS MUST CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,MICRO-WASH FORMIC ACID-BAKER HUGHES: CLEAR LIQUID FORMIC ACID ADDITIVE FOR FORMULATING MICRO-WASH. [BAKER HUGHE MICRO-WASH ACID SYSTEM CONSISTS OF: PRIME-743 (SAP #1000811425), PRIME-760 (SAP #1000811426), PRIME-770 (SAP #1000811427), OHR-7 (SAP#1000811421), OHR-A (SAP #1000811422), OHR-7 (SAP #1000811423), OHR-7 (SAP #1000811424), GLACI ACETIC ACID (SAP #1000814796), AND FORMIC ACID (SAP #1000811877)]. CHEMICAL AND PHYSICAL SPECIFICATIONS: APPEARANCE: CLEAR COLORLESS LIQUID FORMIC ACID: >90%. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT 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 SHE (MSDS). "UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT" (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP,CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.
31	Drilling & Chemicals	1000757581	H2S SCAVENGER-ZINC-FREE IRON GLUCONATE	H2S SCAVENGER-ZINC-FREE IRON GLUCONATE ADMXTURE DRILLING MUD; POWDER FORM,IRON GLUCONATE,FOR SCAVENGES HYDROGEN SULFIDE FROM DRILLING FLUIDS,IRON GLUCONATE,25 KG (55.1 LBS.) PAIL OR SEALED BAG, VALVE/SPOUT TYPE, COMPLETELY SEALED, 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 SULFID FROM WATER-BASED AND OIL-BASED DRILLING FLUID 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 ARAMC RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT 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 SHE (MSDS). UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.

Sr.no	COMMODITY	9COM	SHORT DESCRIPTION	LONG DESCRIPTION
32	Drilling & Chemicals	1000022538	CALCIUM CHLORIDE(94-98%) 1000 KG BIG BAG	<p>CALCIUM CHLORIDE (94-98%) 1000 KG/BIG BAG ADDITIVE DRILLING FLUID; DRY FLAKES, PELLETS, OR GRANULAR FORM,DRY FLAKES, PELLETS, OR GRANULAR, WATER-SOLUBLE USED AS</p> <p>WEIGHTING AGENT FOR FORMULATING SOLIDS-FREE COMPLETION BRINES AND TO PROVIDE THE DESIRED WATER PHASE SALINITY AND ACTIVITY IN INVERT EMULSION MUDS IN ADDITION, IT IS USED AS AN ACCELERATOR IN OIL WELL CEMENT SLURRIES. CALCIUM 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.,FOR USED AS WEIGHTING AGENT FOR FORMULATING SOLIDS-FREE COMPLETION BRINES AND TO PROVIDE THE DESIRED WATER PHASE SALINITY AND ACTIVITY IN INVERT EMULSION MUDS IN ADDITION, IT IS USED AS AN ACCELERATOR IN OIL WELL CEMENT SLURRIES,CALCIUM CHLORIDE 94-98%,1000 KG (2204 LBS.) MULTI-WALL MOISTURE-PROOF POLYETHYLENE LINED BAGS WITH LIFTING STRAPS,WITHOUT BOTTOM SPOUT. LIFTING STRAP BAG IS DISPOSABLE, TOP CLOSURE WATERTIGHT, STACKABLE. MINIMUM TENSILE STRENGTH FACTOR 5, FLEXURAL STRENGTH FOR NORMAL HANDLING & OUTSIDE STORAGE. THE DISPOSABLE SUPER SACKS SHOULD HAVE AT LEAST 75% OF THEIR SHELF LIFE REMAINING (THE PERIOD FROM DATE OF MANUFACTURING TO THE WARRANTED EXPIRATION DATE) WHEN SHIPPED OR RECEIVED AT DESIGNATED PLACE OF DELIVERY TO SAUDI ARAMCO. REFER TO SAP NUMBER: 1000840600 FOR # DISPOSABLE SUPER SACKS SPECIFICATIONS. SUPPLIERS ARE REQUIRED TOWEIGHT THE TRUCKS BEFORE AND AFTER LOADING AND SUBMIT TOMATERIAL SUPPLY AN OFFICIAL TICKET PRINT DATA STATING: DATE AND TIME, COMPANY AND ADDRESS, TRUCK IDENTITY NUMBER, MATERIAL NAME, TRUCK WEIGHT BEFORE AND AFTER LOADING. SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,ASTM D98-68/PRACTICE E29 / ASTM D345 - 02 (2010) STANDARD TEST METHOD FOR CACL2 SAMPLING AND TESTING,CHEMICAL AND PHYSICAL SPECIFICATIONS APPEARANCE DRY FREE FLOWING WHITE FLAKES OR PELLETS - PURITY: CACL2 94 %WT. MINIMUM PASS THROUGH 4 MESH SCREEN: 100%WT. NO PARTICLES GREATER THAN 4.5MM IN ANY DIMENSION ALKALI CHLORIDES AS NACL 5.0%WT. MAXIMUM - AS MGCL2: 0.5%WT. MAXIMUM HEAVY METALS AS PB: 0.005%WT. MAXIMUM. SULFA AS CASO4: 0.05%WT. MAXIM FE: 15 PPM MAXIMUM WATER INSOLUBLE: 0.20%WT. MAXIMUM. REMAINING COMPONENT IS WATER OF CRYSTALLIZATION PH: 10% SOLUTION: 7.5 - 10.5 SATURATED SOLUTION: CLEAN COLORLESS. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT 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). PRODUCT MANUFACTURER AND/OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE O ANALYSIS (COA) AND CERTIFICATE OF ORIGIN (COO) FOR EVERY BATCH. LABEL: PRODUCT NAME, BAT NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE MSDS). “UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT”. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY)</p>
33	Drilling & Chemicals	1000022536	CALCIUM CHLORIDE (94-98%) 50 KG BAG	<p>CALCIUM CHLORIDE (94-98%) 50 KG/BAG ADDITIVE DRILLING FLUID; DRY FLAKES, PELLETS, OR GRANULAR FORM,WATER-SOLUBLE USED AS WEIGHTING AGENT FOR FORMULATING SOLIDS-FREE COMPLETION BRINES AND TO PROVIDE THE DESIRED WATER PHASE SALINITY AND ACTIVITY IN INVERT EMULSION MUDS IN ADDITION, IT IS USED AS AN ACCELERATOR IN OIL WELL CEMENT SLURRIES.,CALCIUM CHLORIDE 94-98%,50 KG (110 LBS) MULTI- WALLED 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 MIN. NATURAL KRAFT PAPER (INTERIOR PLY) 2ND PLY 50 LB MIN. NATURAL KRAFT PAPER 3RD PLY SEPARATE INNER BAG LINER HIGH DENSITY ORIENTED AND CROSS-LAMINATED INNER ETHYLENE RESIN 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).SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,ASTM D98-68/PRACTICE E29/ASTM D345 - 02 (2010) STANDARD TEST METHOD FOR CACL2 SAMPLING AND TESTING,CHEMICAL AND PHYSICAL SPECIFICATIONS APPEARANCE DRY FREE FLOWING WHITE FLAKES OR PELLETS PURITY CACL2 94 %WT. MINIMUM PASS THROUGH 4 US MESH SCREEN: 100%WT. NO PARTICLES GREATER THAN 4.5MM IN AN DIMENSION ALKALI CHLORIDE AS NACL: 5.0%WT. MAXIMUM - AS MGCL2: 0.5%WT. MAXIMUM. HEAVY METALS AS PB: 0.005%WT. MAXIMUM. SULFATE AS CASO4: 0.05%W MAXIMUM FE: 15 PPM MAXIMUM WATER INSOLUBLES: 0.20%W MAXIMUM. REMAINING COMPONENT IS WATER OF CRYSTALLIZATION PH: 10% SOLUTION: 7.5 - 10.5 SATURATED SOLUTION: CLEAR COLORLESS. 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) “UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT”. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.</p>
34	Drilling & Chemicals	1000022533	CALCIUM CHLORIDE(77-78%) 1000 KG BIG BAG	<p>CALCIUM CHLORIDE (77-78%) 1000 KG/BIG BAG ADDITIVE DRILLING FLUID; DRY FLAKES, PELLETS, OR GRANULAR FORM,DRY FLAKES, PELLETS, OR GRANULAR, WATER-SOLUBLE, USED AS WEIGHTING AGENT TO FORMULATE SOLIDS-FREE COMPLETION BRINES AND TO PROVIDE THE DESIRED WATER PHASE SALINITY AND ACTIVITY IN INVERT EMULSION MUDS. IN ADDITION, IT IS USED AS AN ACCELERATOR IN OIL WELL CEMENT SLURRIES. CALCIUM 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.,FOR USED AS WEIGHTING AGENT TO FORMULATE SOLIDS-FREE COMPLETION BRINES AND TO PROVIDE THE DESIRED WATER PHASE SALINITY AND ACTIVITY IN INVERT EMULSION MUDS. IN ADDITION, IT IS USED AS AN ACCELERATOR IN OIL WELL CEMENT SLURRIES,CALCIUM CHLORIDE 77-78%,1000 KG (2204 LBS) MULTI- WALL MOISTURE-PROOF POLYETHYLENE LINED BAGS WITH LIFTING STRAPS, WITHOUT BOTTOM SPOUT. LIFTING STRAP, BAG IS DISPOSABLE, TOP CLOSURE WATERTIGHT, STACKABLE. MINIMUM TENSILE STRENGTH FACTORS, FLEXURAL STRENGTH FOR NORMAL HANDLING AND OUTSIDE STORAGE. THE DISPOSABLE SUPER SACKS SHOULD HAVE AT LEAST 75% OF THEIR SHELF LIFE REMAINING (THE PERIOD FROM DATE OF MANUFACTURING TO THE WARRANTED EXPIRATION DATE) WHEN SHIPPED OR RECEIVED AT DESIGNATED PLACE OF DELIVERY TO SAUDI ARAMCO. REFER TO SAP NUMBER: 1000840600 FOR # DISPOSABLE SUPER SACKS SPECIFICATIONS. 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, MATERIAL NAME, TRUCK WEIGHT BEFORE AND AFTER LOADING. SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,ASTM D98-68/PRACTICE E29 / ASTM D345 - 02(2010) STANDARD TEST METHOD FOR CACL2 SAMPLING AND TESTING,CHEMICAL AND PHYSICAL SPECIFICATIONS APPEARANCE DRY FREE FLOWING WHITE FLAKES OR PELLETS -PURITY CACL2 77% WT. MINIMUM PA THROUGH 7/16 IN SCREEN: 100%WT. NO PARTICLES GREATER THAN 11MM IN ANY DIMENSION. ALKALI CHLORIDES AS NACL: 7% WT MAXIMUM AND MGCL2: 1% WT MAXIMUM HEAVY METALS AS PB: 0.005% WT. MAXIMUM. SULFATE AS CASO4: 0.05% WT. MAXIMUM. FE: 15 PPM MAXIMUM WATER INSOLUBLE: 0.20% WT. MAXIMUM. REMAINING COMPONENT IS WATER OF CRYSTALLIZATION PH: (10 % DI ATER SOLUTION): 7.5 - 10.5. SAUDI ARAMCO RESERVES TH 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 O ANALYSIS FOR EVERY BATCH (COA) AND CERTIFICATE OF ORIGIN (COO). 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, BAT NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE MSDS). “UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT”. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY)</p>
35	Drilling & Chemicals	1000022136	CORROSION INHIBITOR-MICROBIOSTAT	<p>CORROSION INHIBITOR-MICROBIOSTAT ADDITIVE DRILLING FLUID; LIQUID FORM,CORROSION INHIBITOR AND BIOCID,FOR USED AS A PACKER FLUID CORROSION INHIBITOR,LIQUID AMINE WITH METHANOL MICROBIOSTAT,55 GAL (208 LITER) DRUM SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,CORROSION INHIBITOR-MICROBIOSTAT: COMBINED LIQUID BIOCID AND CORROSION INHIBITOR, CATIONIC, WATER SOLUBLE, HETEROCYCLIC AMINE BLEND WITH METHANOL MICROBIOST TO CONTROL AEROBIC AND ANAEROBIC BACTERIA GROWT IT IS USED AS A PACKER FLUID CORROSION INHIBITO TO CONTROL GENERAL CORROSION ATTACK ON CASING, TUBING AND DOWNHOLE TOOLS IN CONTAC WITH CLEAR AND VISCOSIFI COMPLETION BRINES. CHEMICAL AND PHYSICAL SPECIFICATIONS: LIGHT (O PALE) COLORED LIQUID WAT SOLUBLE SPECIFIC GRAVITY 68°F (20°C): 0.98 -1.07. SAUDI ARAMCO RESERVES TH RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSU COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND/OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE O ANALYSIS (COA) AND CERTIFICATE OF ORIGIN (COO) FOR EVERY BATCH. LABEL: PRODUCT NAME, BAT NUMBER, PRODUCTION DATE, SAP NUMBER, EXPIRATION DATE, AND COUNTRY OF ORIGIN, MANUFACTURER NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE (MSDS). UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4-WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.</p>
36	Drilling & Chemicals	1000022135	HIGH TEMPERATURE CORROSION INHIBITOR	<p>HIGH TEMPERATURE CORROSION INHIBITOR ADDITIVE DRILLING FLUID; LIQUID FORM,CORROSION INHIBITOR FOR HIGH TEMPERATURE,FOR ALLEVIATE FRESH, BRACKISH OR BRINE PACKER FLUIDS CORROSION,LIQUID AMINES AND AMIDE,55 GAL (208 LITER)DRUM SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,HIGH TEMPERATURE CORROSI INHIBITOR: A BLEND OF AMINES AND IMIDAZOLINE AMIDE, SOLUBLE IN OIL AN DISPERSIBLE IN WATER USE TO ALLEVIATE CORROSION I FRESH, BRACKISH OR BRINE PACKER FLUID AT HIGH WELLBORE TEMPERATURES UP TO 400°F.IMIDAZOLINE ADSORPTION FORMS A CHEMICAL FILM ON IRON AN STEEL SURFACES AND DEVELOPS A PASSIVATION LAYER THAT PROVIDES CORROSION PROTECTION IN SOUR H2S, SWEET CO2 AND OXYGEN CORROSION ENVIRONMENT ENCOUNTERED OIL AND GAS WELLS. CHEMICAL AND PHYSICAL SPECIFICATIONS: DARK AMB LIQUID OIL SOLUBLE AND WATER DISPERSIBLE SPECIF GRAVITY @ 59°F (15°C): 0 - 0.9 FLASH POINT (PMCC) >136.4°F (58°C). SAUDI ARAMCO RESERVES THE RIGH TO COLLECT REPRESENTATIV PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT 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 SHE (MSDS). UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.</p>

Sr.no	COMMODITY	9COM	SHORT DESCRIPTION	LONG DESCRIPTION
37	Drilling & Chemicals	1000021930	XANTHAN GUM BIO-POLYMER	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 (PASS THROUGH 40 US MESH SCREEN) - 95% MINIMUM LESS THAN 75 MM (PASS THROUGH 200 S 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) EMPERATURE 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 = 11CP 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 10 ML 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 37C FOR 7 DAYS. COLONIES APPEARING
38	Drilling & Chemicals	1000021558	CALCIUM HYDROXIDE (HYDRATED LIME)	CALCIUM HYDROXIDE (HYDRATED LIME) ADDITIVE DRILLING FLUID; DRY, FREE FLOWING FINE POWDER FORM,CALCIUM HYDROXIDE, CA(OH)2,FOR TO CONTROL PH, BICARBONATE, AND H2S CONTAMINATION. LIME IS ALSO A PRIMARY COMPONENT OF INVERT EMULSION MUDS,CALCIUM HYDROXIDE (HYDRATED LIME),25 KG (55.1 LBS.) MULTI WALLED PAPER BAG WITH INNER POLYETHYLENE SEALED LINER. SHIPMENT OF PRODUCTS MUST CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL .,CALCIUM HYDROXIDE CA(OH) HYDRATED LIME - TECHNICA GRADE USED TO INCREASE T PH AND TO PROVIDE CALCIU IONS IN DRILLING AND COMPLETION FLUIDS TO MAINTAIN A BASIC PH. IT AN ESSENTIAL ADDITIVE US AS A MEANS OF ADJUSTING THE ALKALINITY WHEN BICARBONATE /CARBONATE AN H2S CONTAMINATIONS EXIST IN ADDITION, LIME IS USE FOR MAINTAINING THE ALKALINITY OF OIL-BASED DRILLING FLUIDS TO ACTIVATE THE FATTY ACID BASED EMULSIFIERS AND OFFERS A DEGREE OF CORROSION PROTECTION. CHEMICAL AND PHYSICAL SPECIFICATIONS WHITE POWDER CALCIUM HYDROXIDE CA(OH)2: 90% WT. MINIMUM MOISTURE: 1%WT. MAXIMUM PH: 2 MINIMUM - SATURAT SOLUTION IN DI WATER AT 68° F (20° C) PECIFIC GRAVITY AT 68° F (20° C): 2.2 - 2.4 INSOLUBLE IMPURITIES IN 15% HYDROCHLORIC ACID): 0.2% WT. MAXIMUM MAGNESIUM AN ALKALI SALTS:2.5% WT. MAXIMUM IRON CONTENT: 0. WT. MAXIMUM PASS THROUGH 5 MM SIEVE (DRY SCREEN):100%. SAUDI ARAM RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICAT 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 NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHE (MSDS).UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.
39	Drilling & Chemicals	1000021557	CALCIUM BROMIDE (CaBr2) SOLUTION	CALCIUM BROMIDE (CaBr2) SOLUTION ADDITIVE DRILLING FLUID; SINGLE SALT (CABR2), SOLIDS-FREE BRINE FORM,CALCIUM BROMIDE (CABR2),FOR A PURE SOLIDS-FREE BRINE USED IN COMPLETION FLUIDS AND CAN BE BLENDED WITH ZINC/CALCIUM BROMIDE AND CALCIUM CHLORIDE SOLUTIONS TO FORMULATE NON-DAMAGING FLUIDS OF DENSITIES UP 143 PCF (19.1 LB/GAL),CALCIUM BROMIDE,55 GAL (208 LITER) 340 KG POLYPROPYLENE-LINED STEEL DRUMS SHIPMENT OF PRODUCTS MUST CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,REFER TO API 13J FIFTH EDITION, OCTOBER 2014,CALCIUM BROMIDE SOLUTION (CABR2): PURE, SOLIDS-FR BRINE USED FOR PREPARING COMPLETION FLUIDS AS A SINGLE CABR2 SALT SOLUTI WITH MINIMUM DENSITY OF 1.70 GM/CC, AND CAN BE BLENDED WITH ZINC BROMID AND CALCIUM CHLORIDE SOLUTIONS TO FORMULATE, SOLIDS-FREE NON-DAMAGING HIGH DENSITY BRINE BLEND WITH DENSITIES UP TO 143 PCF (19.1 LB/GAL). CHEMICAL AND PHYSICAL SPECIFICATIONS: CALCIUM BROMIDE (CABR2) SOLUTION 52% WT. MINIMUM COLORLES CLEAR LIQUID WITH NO ODO CHLORIDE CONTENT: 1000 P (0.1% WT.) MAXIMUM TURBIDITY: 6 NTU MAXIMUM SULPHATE CONTENT: 100 PP (0.01% WT.) MAXIMUM IRON CONTENT: 5 PPM MAXIMUM TOTAL HEAVY METALS (ZN, PB, HG, AS AND CD): 5 PP MAXIMUM DENSITY: 1.70 GM/CC (14.2 LB/GAL / 06 PCF) AT 70° F (20.1° C) MINIMUM PH OF 10% SOLUTI IN DI WATER: BASIC.] 7- 8.5 TRUE CRYSTALLIZATION TEMPERATURE (TCT): 10° F -12.2° C) SOLIDS RETAINE ON 5 MICRONS FILTER PAPE NONE SAUDI ARAMCO RESERV THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSU COMPLIANCE WITH THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICATE O 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 NAM AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY ATA SHE (MSDS). “UOM REFERRED IN THIS MATERIAL IS NET OLUME/WEIGHT” (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY). PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.
40	Drilling & Chemicals	1000021556	GLUTARALDEHYDE SOLUTION	GLUTARALDEHYDE SOLUTION ADDITIVE DRILLING FLUID; AQUEOUS SOLUTION FORM,GLUTARALDEHYDE,FOR MICROBIOCIDЕ USED IN DRILLING FLUIDS TOCONTROL AEROBIC AND ANAEROBIC BACTERIA,AQUEOUS SOLUTION OF GLUTARALDEHYDE,5 GALLON EPOXY PLASTIC CANS (IDEAL STORAGEEMPERATURE 80° F/ 26.7° C) SHIPMENT OF PRODUCTS MUST CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL.,GLUTARALDEHYDE SOLUTION: USED AS MICRO BIOCIDЕ IN WATER-BASED DRILLING FLUIDS TO CONTROL AEROBI AND ANAEROBIC BACTERIA INCLUDING THE SULFATE REDUCING BACTERIA (SRB). IT SHOULD BE COMPOSED OF GLUTARALDEHYDE 25% WT. MINIMUM. IT IS CORROSIVE TO COMMON METAL AND SHOUBE PACKAGED IN EPOXY PLASTIC CONTAINER, PROPERLY LABELED. CHEMIC AND PHYSICAL SPECIFICATIONS: GLUTARALDEHYDE AQUEOUS SOLUTION: 25% WT. MINIMU DOR: PUNGENT LIKE ROTTE APPLES SPECIFIC GRAVITY 68° F (20° C):1 - 1.1 IRON FE: 5 PPM MAXIMUM PH: 4. MAXIMUM. SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WIT THE MATERIAL DESCRIPTION AND SPECIFICATIONS. PRODUCT MANUFACTURER AND OR SUPPLIER ARE REQUIRED TO SUBMIT LAB CERTIFICAT 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 SHE (MSDS).UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT. (AS APPLICABLE, SAFETY DATA SHEET SHOULD BE SUBMITTED WITH PO OFFER AND DURING MATERIAL DELIVERY).#PALLET, PLASTIC TYPE, HEAVY-DUTY SIZE (W X L X H), 120 X 120 X 15 CM, DOUBLE-DECK, 4- WAY ENTRY, RACKABLE/STACKABLE, ANTI-SLIP, CHEMICAL AND WEATHER RESISTANT, HYGIENIC AND RECYCLABLE AND SHALL BE CERTIFIED (BY A SAUDI ARAMCO RECOGNIZED INDEPENDENT MATERIALS TESTING AGENCY) FOR MINIMUM STATIC LOAD CAPACITY AS PER ISO 8611, MS 8314-05 PALLET PACKING SPECIFICATION.
41	Drilling & Chemicals	6000016483	MUD SYSTEM - Cutting Edge Drilling Chemical / System Technonlogy	ANY CHEMICAL OR MUD SYSTEM THAT IS NEW TECHNOLOGY WITH VERY FEW FIELD DEPLOYMENT OR COMMERCIALIZATION. IN SHORT, DRILLING FLUIDS NEW TECHNOLOGY.
42	Drilling & Chemicals	6000016483	MUD SYSTEM - Non-Conventional LCM. Examples: Cross-Link LCM, High Solids - High Fluid Loss LCM, Swelling LCM, Others.	ANY KIND OF NON-CONVENTIONAL LCM TO HELP CURING/MANAGING LOSS OF CIRCULATION. THESE TYPE OF SYSTEM MUST NOT BE SIMPLE PARTICULATES, FIBER, FLAKES, ETC., RATHER A SYSTEM WITH A DIFFERENT SETTING MECHANISM (EXAMPLES ARE HIGH FLUID LOSS PILLS, CROSS LINKING POLYMERS, NETWORKING POLYMER, SWELLING AGENTS, TEMPERATURE SETTING SYSTEMS, SHEARING SETTING SYSTEMS, ETC.
43	Drilling & Chemicals	1000032699	TBG 2-3/8" 4.7# L-80.1 CS HYDRIL R-2	TUBING: 2-3/8 IN. 4.7 LB/FT, L-80, HYDRIL CS, R-2; TUBING OCTG; STEEL,SEAMLESS,45-SAMSS-006,API 5CT, API-5B API, GR L-80.1,SIZE 2-3/8 IN OD,4.70 LB/FT WT,HYDRIL CS OR EQUIVALENT END CONN,RANGE 2 LG,BLUE BAND 1,GREEN BAND 2,PIPE I.D 1.995 IN, DRIFT 1.901 IN, THREAD PER INCH 8 TPI, MAKE-UP LOSS 2.31 IN, PIPE BODY STRENGTH 104 KLBS, JOINT STRENGTH 104 KLBS, BURST PRESSURE 11,200 PSI, COLLAPSE PRESSURE 11,780 PSI, FIELD END MAKE-UP TORQUE (MIN 1,500, OPT1 1,700, MAX 1,900) FT-LBS. SAUDI ARAMCO COLOR CODE. A 2 IN WD BLUE BAND 1 IN FROM BOX UPSET EXTREME & A 2 IN WD GREEN BAND 9 IN FROM BOX UPSET EXTREME. UPDATED ON: FEB.16
44	Drilling & Chemicals	1000032750	TBG 2-7/8" 8.7# L-80.1 PH-6 R-2	TUBING OCTG; STEEL,SEAMLESS,45-SAMSS-006,API 5CT API-5B,GR L-80.1,SIZE 2-7/8 IN OD,8.70 LB/FT WT,HYDRIL PH-6 OR EQUIVALENT END CONN,RANGE 2 LG,BLUE BAND 1,GREEN BAND 2,PIPE I.D 2.259 IN, DRIFT 2.165 IN, THREAD PER INCH 6 TPI, MAKE-UP LOSS 3.04 IN, PIPE BODY STRENGTH 199 KLBS, JOINT STRENGTH 199 KLBS, BURST PRESSURE 15,000 PSI, COLLAPSE PRESSURE 15,310 PSI, FIELD END MAKE-UP TORQUE (MIN 3,000, OPT1 3,400, MAX 3,800) FT-LBS. SAUDI ARAMCO COLOR CODE. A 2 IN WD BLUE BAND 1 IN FROM BOX UPSET EXTREME & A 2 IN WD GREEN BAND 9 IN FROM BOX UPSET EXTREME.UPDATED ON: FEB.16
45	Electrical	6000012401	OHL COMPOSITE INSULATOR FOR T & D	INSULATOR TRANSMISSION & DISTRIBUTION; OHL COMPOSITE TYPE,UP TO 230 KV,15-SDMS-02, 15-TMSS-5
46	Electrical	6000000774	TRAY; CABLE, FIBERGLASS	TRAY; CABLE TYPE,FIBERGLASS,NEMA FG-1,S-P-104 SEC. 9
47	Electrical	6000014870	POLE LINE; POWER TRANSMISSION, 69 KV	POLE LINE; POWER TRANSMISSION TYPE,ANY LG,TAPERED TUBULAR STEEL SHAPE,GALVANIZED STEEL,SEC 20-TMSS-02,RATED 69 KV AND UP.
48	Electrical	6000000841	CIRCUIT BREAKER; AIR; 480 V; LOW VOLTAGE	CIRCUIT BREAKER AIR; ANY POLE,480 V,LOW VOLTAGE POWER TYPE,FRAME ANY,40 DEG C AMBIENT,FOR INDOOR, 16-SAMSS-502
49	Electrical	6000000882	TRANSFER SWITCH; AUTOMATIC, INDOOR, LV	SWITCH TRANSFER; 600V MAX,AUTOMATIC AND NON-AUTOMATIC ACTION,COMPLETELY ENCLOSED AND OPEN TRANSFER SWITCHES AND INTENDED FOR USE IN OTHER EQUIPMENT SUCH AS CONTROLGEAR AND SWITCHBOARD POSITION,AUTOMATIC TYPE,FOR INDOOR, 16-SAMSS-521, LOW VOLTAGE,
50	Electrical	6000000903	SWITCH; DISCONNECT; HIGH VOLTAGE;	SWITCH DISCONNECT; HIGH VOLTAGE,ANY ACTION,ELECTRICAL TYPE,30-TMSS-01
51	Electrical	6000000999	FORM-WOUND BRUSHLESS SYNCH. MOTOR	MOTOR SYNCHRONOUS; 500 HP MINIMUM POWER,4000 V MINIMUM,3 PHASE PHASE,HORIZONTAL MTG, 17-SAMSS-520
52	Electrical	6000015902	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 INCLUDESBUT 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.#

Sr.no	COMMODITY	9COM	SHORT DESCRIPTION	LONG DESCRIPTION
53	Electrical	6000016991	UNIT; MOBILE SUBSTATION; 69KV AND BELOW	UNIT; MOBILE SUBSTATION TYPE, OPERATING AT 69KV AND BELOW
54	Electrical	6000017680	COATING, ELECTRICAL INSULATORS, HIGH VOL	COATING; ELECTRICAL INSULATORS TYPE,FOR HIGH VOLTAGE,SILICON
55	Electrical	6000018420	MACHINE; TRANSFORMER FLUID TREATMENT	MACHINE; TRANSFORMER FLUID TREATMENT TYPE, 26-SAMSS-059, IEC 60292-1 IEC 60292-2, IEC 60296 IEC 60529, EN 60204-1 ASTM D3487 PNEUROP 6606-1981 - DIN 28403
56	Electrical	6000018430	REACTOR; AIR CORE, 4.16KV UP TO 380KV	REACTOR; AIR CORE SERIES TYPE,4.16KV UP TO 380KV SUPPLY, SAES-P-116, 58-TMSS-02, FOR CURRENT LIMITING (DAMPING) IN SERIES WITH SHUNT CONNECTED CAPACITOR UNITS 4.16KV UP TO 380KV
57	Environmental	6000008582	Water Treatment & Desalination Membranes	MEMBRANE; WATER TREATMENT & DESALINATION MEMBRANES TYPE,MEMBRANES FOR WATER PURIFICATION. SERVICE: WATER TREATMENT. TYPES: RO MEMBRANES AND BRACKISH WATER. MATERIAL: POLYAMIDE, CELLULOSE ACETATE/CELLULOSE TRIACETATE SPIRAL WOUND, HOLLOW FINE FIBER DIAMETER, NANO MEMBRANES: FOR SEAWATER AND BRACKISH WATER. MATERIAL: POLYSULFONE, CELLULOSE ACETATE, THIN FILM COMPOSITE SPIRAL WOUND, HOLLOW FIBER/CAPILLARY. CLASSIFICATION: WATER DESALINATION, WATER TREATMENT CONFIGURATION: FOR SEAWATER SIZE: 4/8/10 INCH
58	Fire	6000001301	DETECTOR; FIRE PROTECTION; SMOKE, HEAT	DETECTOR FIRE PROTECTION; SMOKE, HEAT, RADIANT ENERGY DETECTORS TYPE,UL-LISTED,FM-APPROVED NFPA 70,NFPA 72 (LAST ED) AND SAE-M-100, INCLUDE LINEAR, SPOT-TYPE, PROJECTED BEAM, IR/IR/IR, LASER, AIR-SAMPLING DETECTORS,#FIRE ALARM CONTROL PANELS, PULL STATIONS AND NOTIFICATION DEVICES. THE FIRE#ALARM/DETECTION COMPONENTS ND/OR FIRE ALARM/DETECTION SYSTEM SHALL HAVE AN#ADDRESSABLE PERFORMANCE OF CLASS A (SLC) AND CLASS A (NAC) WITH PATHWAY SURVIVABILTY#LEVEL 2. FOR INDUSTRIAL AND COMMERCIAL APPLICATIONS ONLY,
59	Fire	6000001304	UNIT: MOBILE FIREWATER SUPPLY	UNIT; MOBILE FIRE WATER SUPPLY SYSTEM TYPE,FULLY INTEGRATED ENGINEERED MOBILE FIREWATER SUPPLY SYSTEM SUCH AS SUBMERSIBLE PUMP SYSTEM, PORTABLE FIRE PUMP SKID PACKAGE, OR TRAILER MOUNTED PACKAGE (CONSISTING OF DIESEL DRIVE ENGINE, PUMP, HOSES, OIL SYSTEM, TANK, ELECTRICAL SYSTEM ENCLOSED IN A CONTAINER), THE CENTRIFUGAL PUMP IS 316 SS, DUPLEX STEEL, OR BETTER, IMPELLER/PUMP CASING/SHAFT UL/FM LISTED/APPROVED AND COMPLIES WITH THE MOST RECENT EDITION OF NFPA 20
60	Fire	6000001310	HYDRANT; FIRE; CASTED; 6 IN INLET	HYDRANT FIRE; 6 IN INLET, PR 200 PSI WP, UL OR/AND FM,COMPLYING WITH 21-SAMSS-15. WITH OR WITHOUT FIRE MONITOR FLANGE. WITH OR WITHOUT BREAKABLE FLANGE CHECK VALVE ASSEMBLY .FOR BREAKABLE FLANGE VALVE SEPARATELY. PURCHASE ORDER MUST SPECIFY THE OPTIONS AS PER 21-SAMSS-15.
61	Fire	6000001314	MONITOR; FIRE FIGHTING; HYDRANT-MOUNTED	MONITOR; FIREFIGHTING, HYDRANT-MOUNTED MANUALLY OPERATED TYPE,ANY RANGE, MEETING 21-SAMSS-16, INDUSTRIAL MONITOR SYSTEM, WILL BE INSTALLED ON# 9COM 6000001310
62	Fire	6000001380	VALVE; FIRE WATER/PROTECTION SYSTEMS	VALVE; FIRE FIGHTING WATER SYSTEMS TYPE,SIZE ANY,AA UL/FM LISTED/APPROVED,INCLUDE POST INDICATOR VALVES (PIV), CHECK, SECTIONAL VALVES, OUTSIDE STEM & YOLK#(OS&Y), GATE OR BUTTERFLY VALVES, WALL POST INDICATOR VALVES (WPIV), CONTROL VALVES,#ALL VALVES MUST BE INDICATING, , COMPLIES WITH NFPA,, EXTERNAL COATING MUST BE CERTIFIED FOR C5-I/C5-M PER ISO 12944-6 BY 3RD PARTY LAB. IM2/IM3 3RD PARTY LAB CERTIFICATION IS ADDITIONALLY REQUIRED IF VALVE IS IMMERSED/BURIED. MANUFACTURER#S STANDARD COATING CAN BE MAINTENANCE COATED BY SAUDI ARAMCO APCS CONFIRMED BY LETTER. INTERNAL COATING MUST BE RATED FOR USE IN STAGNANT SEAWATER FOR EXTENDED PERIODS. VALVE CONSTRUCTION MATERIAL SHALL BE AS PER SAES-L-108 TABLE 1 SALINE ENVIRONMENT CLASSIFICATION (EXCLUDING NOTE #22) SEE SAES-L-108 TABLE 4-B FOR SPECIFIC ALLOYS. ALL VALVES SHOULD BE PREPARED AND SHIPPED FOLLOWING MANUFACTURER'S RECOMMENDATIONS FOR OUTSIDE LONG TERM STORAGE IN CORROSIVE, HOT, AND HUMID ENVIRONMENT, CONTACT FRPD RSA FOR DETAILS S MUST BE
63	Fire	6000017250	SUPPRESSOR, FIRE PROTECTION, WET CHEMICA	SUPPRESSOR; FIRE PROTECTION, WET CHEMICAL SYSTEM FOR COMMERICAL COOKING EQUIPMENT TYPE, UL 300 LISTED,FIRE EXTINGUISHING SYSTEMS FOR,ALL COMPONENTS INCLUDING AGENT CYLINDERS, INSTRUMENTATION, FUSIBLE LINKS, INITIATING DEVICES, WET CHEMICAL, EXPELLANT GAS, PENUMATIC RELEASE, ACTIVATION MECHANISM, CONTROL EQUIPMENT FOR POWER/GAS, COVERS, CONTROL PANELS.
64	Fire	6000014422	MONITOR; FIREFIGHTING, REMOTE CONTROL TYPE, ELECTRICALLY OPERATED	MONITOR; FIREFIGHTING, REMOTE CONTROL TYPE,ANY RANGE, ELECT OR HYDRAULIC OPERATED SUPPLY,MEETING 21-SAMSS-16,FULL SYSTEM FULL CONTROL INDUSTRIAL APPLICATIONS MEETING PROJECT SPECS
65	HVAC	6000001823	AIR CONDITIONING UNIT; PACKAGED UNIT TRA	AIR CONDITIONING UNIT; PACKAGED UNIT TRAILERIZED TYPE, AIR COOLED,R-22 OR R-134A,MANUFACTURER STANDARD
66	HVAC	6000001828	CHILLER; WATER; PACKAGED WATER COOLED FO	CHILLER WATER; PACKAGED WATER COOLED FOR UTILITY APPLICATIONS TYPE,ANY NOM,CENTRIFUGAL COMPRESS, R-134A,27-SAMSS-001,AHRI-550/590 ASHRAE 90.1
67	HVAC	6000001838	CONTROLLER; PROGRAMMABLE LOGIC; ENERGY M	CONTROLLER PROGRAMMABLE LOGIC; ANY INPUT PT,ANY OUTPUT P, SAES-K-011,UL-916 ASHRAE 135, ENERGY MANAGEMENT SYSTEM: BUILDING
68	HVAC	6000001846	HEATER; DUCT; ELECTRIC;	HEATER DUCT; ELECTRIC ELEMENT, ANY
69	HVAC	6000001860	DAMPER ; VALVE BLAST FOR HVAC SYSTEM	PREVENTER BACKFLOW; VALVE AND DAMPER TYPE,ANY NOM PIPE,ANY,ASTM-1642-04,GSA-TS01-2003 UFGS-23-33-56,VALVE AND DAMPER: BLAST PROTECTION FOR AC AND VENTILATION
70	HVAC	6000001862	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.
71	HVAC	6000012733	CHILLER: ABSORPTION; WATER COOLED	CHILLER; ANY TYPE,ANY SUPPLY,AHRI 560,UL-1995 ASHRAE 90.1,ABSORPTION, SUSTAINABLE, HIGH EFFICINCY, COMPRESSOR-LESS, WATER COOLED DIRECT FIRED OR EXCESS/WASTE STEAM/HEAT FOR HVAC APPLICATION.
72	HVAC	6000013330	FILTER, AIR, CHEMICAL	FILTER; ANY TYPE,FOR AIR, CHEMICAL,ISA 571.04,ASTM-D6646 OR ASHRA
73	HVAC	6000013331	FILTER, AIR, HEPA	FILTER; ANY TYPE,FOR AIR, HEPA,UL-586
74	HVAC	6000013332	AIR HANDLING UNIT; CHILLED WATER	AIR HANDLING UNIT; CHILLED WATER,ASHRAE-127, UL-1995,PRECISION COOLING FOR CONTROL, COMMUNICATION AND DATA PROCESSING ROOMS
75	HVAC	6000013333	AIR CONDITIONING UNIT; SPLIT	AIR CONDITIONING UNIT; SPLIT TYPE,DIRECT EXPANSION,R-22 OR R-134A,ASHRAE-127,UL-1995,PRECISION COOLING FOR CONTROL, COMMUNICATION, AND DATA PROCESSING
76	HVAC	6000013337	HOOD; FUME, COMMERCIAL COOKING	HOOD; FUME, COMMERCIAL COOKING TYPE,ANSI/ASHRAE 154
77	HVAC	6000013339	HOOD; FUME, LABORATORY	HOOD; FUME, LABORATORY TYPE,ANSI/ASHRAE 110, UL-1805
78	HVAC	6000014524	HUMIDIFIER: HVAC; DUCTED	HUMIDIFIER; ELECTRIC, GAS, OR HOT WATER COMMERCIAL/INDUSTRIAL TYPE,ANY,110 VAC-460 VAC, 60 HZ,ANSI/AHRI-640,ANSI/AHRI-640 CERTIFICATE
79	HVAC	6000002404	TOWER; COOLING; WATER;	TOWER COOLING; WATER TYPE,27-SAMSS-003,ASHRAE 90.1
80	HVAC	6000016831	FIRE AND GAS DAMPER (OFFSHORE)	DAMPER; FIRE & GAS DAMPER-OFFSHORE TYPE,SIZE VARIES,STAINLESS STEEL 316L SHEET OR BETTER,INTERNATIONAL MARITIME ORGANIZATION [IMO] & SAFETY OF LIFE AT SEA [SOLAS] EN 1751,FIRE & GAS DAMPER FOR OFFSHORE [FGD-O] APPLICATIONS SHALL CONFORM TO THE FOLLOWING: #1)APPROVED 3RD-PARTY CERTIFICATE TO INTERNATIONAL MARITIME ORGANIZATION [IMO] AND SAFETY OF LIFE AT SEA [SOLAS]. #2)FGD-O SHALL BE CONSTRUCTED AND ASSEMBLED IN ITS ENTIRETY AT FACTORY, INCLUDING ACTUATOR, INSULATION AND APPURTENANCES. #3)FGD-O SHALL BE CLASS 3 TYPE IN ACCORDANCE WITH EN 1751, MULTI-LEAF, OPPOSED BLADE TYPE COMPLETE WITH OPERATING CONTROLS AND INCORPORATING SPRING SIDE SEALS. #4)FGD-O CONSTRUCTION INSIDE BATTERY ROOMS SHALL BE CONSTRUCTED OF STAINLESS STEEL 316L SHEET OR BETTER. #5)ALL BLADES SHALL BE TOTALLY ENCLOSED WITHIN THE CASING WITH THE FGD-O IN THE FULLY OPEN POSITION. #6)FGD-O CLOSING TIME SHALL NOT BE GREATER THAN 3 SEC. #7)FGD-O SHALL BE EQUIPPED WITH FUSIBLE LINKS THAT ARE RATED FORTEMPERATURES AS PER SOLAS/IMO. #8)LOCAL VISUAL INDICATION OF FGD-O OPEN OR CLOSE STATUS SHALL BE PROVIDED BY A VISIBLE POINTER. #9)ENGRAVED NAMEPLATES SHALL BE MECHANICALLY FIXED TO EACH FGD-O WHICH SHALL INDICATE, INFORMATION THAT INCLUDE, BUT NOT LIMITED TO THE FOLLOWING: #A) MANUFACTURER NAME #B) SERIAL NUMBER#C) TAG NUMBER#D) PROJECT REFERENCE#E) YEAR OF MANUFACTURE#F) AIRFLOW#G) SIZE#H) WEIGHT#I) FIRE RATING #J) DIRECTION OF AIRFLOW.#
81	Instrumentation & IT	6000001582	CONTROLLER; ELECTRONIC;COMPRESSOR	CONTROLLER; COMPRESSOR INCLUDING SURGE CONTROL TYPE, ANY RANGE,SPECIALIZED CONTROL SYSTEMS
82	Instrumentation & IT	6000002655	ANALYZER; BOTTOM SEDIMENT AND WATER;	ANALYZER; BOTTOM SEDIMENT AND WATER TYPE,ANY RANGE,TO BE USED FOR LIQUID SERVICE APPLICATION ONLY NOT IN MULTI-PHASE SERVICE
83	Instrumentation & IT	6000002677	FLOWMETER; ANNUBAR; PITOT TUBE;	FLOWMETER; ANNUBAR, PITOT TUBE TYPE
84	Instrumentation & IT	6000002689	CALIBRATION GAS CYLINDER FOR GAS MONITOR	CYLINDER; CALIBRATION GAS TYPE,SIZE ANY,ANY,FOR COMBUSTIBLE & TOXIC GAS MONITORS ONLY
85	Instrumentation & IT	6000002739	FLOWMETER; VORTEX; VORTEX SHEDDING;	FLOWMETER VORTEX; SHEDDING TYPE,ANY OPERATIN,34-SAMSS-010
86	Instrumentation & IT	6000002764	INSTRUMENT; LEVEL; RADIATION TYPE;	INSTRUMENT; LEVEL TYPE,LEVEL,RADIATION TYPE
87	Instrumentation & IT	6000002786	MONITOR; GAS; HYDROGEN SULFIDE;	MONITOR GAS; HYDROGEN SULFIDE,ANY RANGE,34-SAMSS-514
88	Instrumentation & IT	6000002810	REGULATOR; PRESSURE OR FLOW;	REGULATOR; PRESSURE OR FLOW TYPE
89	Instrumentation & IT	6000002822	GAUGE; RADAR; TANK GAUGING;	GAUGE; RADAR TYPE,ANY RANGE,34-SAMSS-319,TANK GAUGING EQUIPMENT FOR INVENTORY TANK USE ONLY.
90	Instrumentation & IT	6000002886	GAUGE; LEVEL; GLASS;	GAUGE LEVEL; GLASS TYPE,34-SAMSS-010,WITH BACKFLOW PREVENTER VALVE OR CHECK VALVE AS ASSEMBLY IF REQUIRED.
91	Instrumentation & IT	6000002914	ANALYZER; GAS CHROMATOGRAPH; Sheltered	ANALYZER; GAS CHROMATOGRAPH TYPE,ANY RANGE,34-SAMSS-510,PROCESS GAS OR LIQUID
92	Instrumentation & IT	6000009893.0	CUSTODY AUTOMATIC SAMPLING, LIQUID	SAMPLER; CUSTODY TRANSFER TYPE,34-SAMSS-525
93	Instrumentation & IT	6000009906	CUSTODY PRESET CONTL, TRUCK LOAD & UNLOAD	COMPUTER FLOW; CUSTODY PRESET CONTROLLER TYPE,34-SAMSS-847, FOR TRUCK LOADING AND UNLOADING SYSTEMS
94	Instrumentation & IT	6000010782.0	CONTROLLER; SMART VALVE POSITION TYPE	CONTROLLER; SMART VALVE POSITION TYPE,ANY RANGE,34-SAMSS-634, FOR USE WITH EMERGENCY SHUTDOWN VALVES.
95	Instrumentation & IT	6000014531.0	MPFM FOR GAS FIELD APPLICATION	FLOWMETER; MULTIPHASE FLOWMETER TYPE,34-SAMSS-001,FOR GAS, FLOW RATE MEASUREMENT
96	Instrumentation & IT	6000014893	FIBER OPTIC SENSING PLDS	DETECTOR LEAK; FIBER OPTIC TYPE,FOR PIPELINE,SAES-Z-003,THE FIBER OPTIC CABLE SENSING METHOD ANALYSES THE HEAT/TEMP AND THE CONDUCTIVITY OF THE CABLE TO DETECT THE LEAK OCCURS. FOR PIPELINE LEAK DETECTION SYSTEM (PLDS) APPLICATIONS.

Sr.no	COMMODITY	9COM	SHORT DESCRIPTION	LONG DESCRIPTION
97	Nonmetallic	6000017500	UNIT, 3D PRINTED PARTS FOR CRITICAL APP.	UNIT; SAEP-411,ANY METALLIC AND NONMETALLIC 3D PRINTED PARTS COMPONENTS FOR CRITICAL APPLICATIONS AS DEFINED IN SAEP-411
98	Nonmetallic	6000017130	FIRE-RETARDANT RTR	PIPE NON-METALLIC; ANY NPS,ANY,01-SAMSS-034, SAES-B-017, ISO 14692,PIPE & FITTING, FIRE-RETARDANT NONMETALLIC RTR FOR ABOVEGROUND FIREWATER SYS. EPOXY BASED REINFORCED THERMOSETTING RESIN PRESSURIZED PIPE. FILAMENT WOUND MANUFACTURING PROCESS WITH ADDITIONAL FIRE RETARDANT LAYER FOR ABOVEGROUND FIREWATER PIPING SYSTEMS (RAW/FIRE COMBINED WATER SYSTEM AND DEDICATED FIREWATER SYSTEM) IN ACCORDANCE WITH FM 1614. FIRE PERFORMANCE CLASSIFICATION AS PER ISO 14692-2 SECTION 6.5.2.
99	Nonmetallic	6000013900	PIPE & FITTINGS; NONMETALLIC; PTFE&PFA	PIPE NON-METALLIC; SIZES RANGES FROM NPS 1 TO 20 NPS,ASME/ANSI CLASS 150 AND 300 SUPPLY,CARBON STEEL,NGED PIPE&FITTINGS SYSTEM VY DUTY PTFE& PFA LINED,01-SAMSS-025,CORROSIVE FLUIDS INCLUDING ACIDS AND ALKALINE SOLUTIONS SUCH AS HYDROCHLORIC ACID, NITRIC ACID, PHOSPHORIC ACID, CHLORINE/WATER, HYDRAULIC OIL, HYPOCHLORITE (SODIUM OR CALCIUM), SODIUM HYDROXIDE (CAUSTIC SODA), WATER, SEA/SALINE, WATER, AERATED AQUIFER, DESALINATION BRINE, PRODUCED WATER, DISPOSAL SALT, WATER BRINE.
100	Nonmetallic	6000001430	FLOAT COLLAR; FOR MARINE HOSE	BEADS; SIZE ANY,NATURAL OR SYNTHETIC RUBBER SPONGE, POLYVINYL CHLORIDE FOAM, POLYETHYLENE FOAM OTHER SUITABLE MATERIAL.,FLOAT COLLAR FOR MARINE HOSES UNIT. 22-SAMSS-004 E FLOATATION
101	Nonmetallic	6000000037	PIPE & FITTINGS; NONMETALLIC, SUBSEA	PIPE METALLIC; ANY NPS,ANY,PE, PEX, PA, PVDF, PEEK,FLEXIBLE PIPE,ER, INTERMEDIATE LAYERS AND ER SHEATHING STRUCTURE,API 17J,APPLICATIONS: ONSHORE / OFFSHORE WATER AND HYDROCARBON APPLICATIONS, REINFORCEMENT: STEEL AND FIBER
102	Nonmetallic	6000000042	PIPE & FITTINGS ;NONMETALLIC, RTP PIPE	PIPE NON-METALLIC; MAXIMUM 8 INCHES NPS,REINFORCED THERMOPLASTIC (RTP),INTERNAL / EXTERNAL LINING THERMOPLASTIC(PE,PE- RT, PP PA,PVDF,PREFABRICATED SPOOL ENDS,FOR WATER AND HYDROCARBON APPLICATIONS MAX TEMP 180 F,API RP 155,ONSHORE / OFFSHORE WATER AND HYDROCARBON APPLICATIONS
103	Rotating Equipment	6000000722	TRANSMISSION: VARIABLE SPEED	COUPLING SHAFT; STYLE ANY,ANY BORE,13-SAMSS-001,API 613,HYDRAULIC OR PERMANENT MAGNET, VARIABLE OR ADJUSTABLE SPEED, WITH OR WITHOUT GEAR, WHEN GEARED ROTORS USED SHALL COMPLY WITH 13-SAMSS-001 AND API-613.
104	Rotating Equipment	6000002338	COMPRESSOR; DRY-SCREW, FOR AIR SERVICE	COMPRESSOR; DRY-SCREW TYPE,31-SAMSS-002,FOR AIR SERVICE
105	Safety	6000018110	FENCE, RIGID WELDED MESH (RWM), 3 METERS	FENCE; RIGID WELDED MESH (RWM) FENCE TYPE,AS PER SAES-O-202 REQUIREMENTS
106	Static Equipment	6000000066	TUBING; COPPER-ALLOY; EEMUA; ASTM	TUBING; ANY TYPE,COPPER-ALLOY, INCLUDING COPPER NICKEL (90-10,70-30, C70600, OR C71500),EEMUA144,ASTMB466 ASTMB111
107	Static Equipment	6000000134	SLEEVE; PIPE; TWO HALVES; BOLTED FLANGED	SLEEVE PIPE BOLTED; ANY NOM PIPE,STEEL,ANY WP,FOR PIPE REPAIR,FOR PIPE REPAIR
108	Static Equipment	6000000150	TEE; PIPE, SPLIT TEE; HOT TAPPING; CS	TEE PIPE; ANY NPS,STEEL,EXTRUDED OR WELDED BRANCH,02-SAMSS-006,SPLIT TEE, FLANGE WELDED TO BRANCH, FOR HOT TAPPING
109	Static Equipment	6000000181	FLANGE; PIPE; COPPER NICKEL, EEMUA 234	FLANGE PIPE; ALL DESIGNS TYPE,ANY NPS,ANY,EEMUA 234,COPPER-ALLOY FLANGES AND CS BACKING (LAP JOINT) FLANGES PER EEMUA 234. OR OTHER COPPER ALLOYS AS PER ASME 16.5, PIPE FLANGES AND FLANGED FITTINGS, UTILITY, NON-HYDROCARBON.
110	Static Equipment	6000000188	FLANGE; COMPACT WN PAIR, M-F CONNECTOR	FLANGE PIPE; COMPACT FLANGE WN PAIR, WN-BLIND, WN-WN SWIVEL-RING OR AS DESIGNED TYPE,ASME CLASS 900 AND ABOVE SUPPLY,WN WITH SELF-ENERGIZING SEAL TERMINAL,ANY NPS,ANY STEEL PER 02-SAMSS-011,ASME SEC VIII DESIGN,02-SAMSS-011,COMPLETE ASSEMBLY WITH MALE-FEMALE CONNECTOR, SEAL RING, BOLTS AND NUTS
111	Static Equipment	6000000275	VALVE; CHECK;SWING;UP TO 12 IN; CI OR DI	VALVE CHECK; SIZE UP TO 12 INCH,CAST OR DUCTILE IRON BODY,SWING,FLANGED, LUG OR WAFER END CONN,04-SAMSS-035,04-SAMSS-048 04-SAMSS-005
112	Static Equipment	6000000296	VALVE; GATE; WEDGE OR DBL DISC; UP TO 12	VALVE GATE; SIZE UP TO NPS 12,ANY RATING, ALLEND S SUPPLY,CAST OR DUCTILE IRON BODY,04-SAMSS-035,04-SAMSS-048 AWWA,WITH OR WITHOUT ACTUATOR
113	Static Equipment	6000000302	VALVE; GLOBE; CAST OR DUCTILE IRON;	VALVE GLOBE; ANY NPS,ANY RATING SUPPLY,ANY ENDS END CONN,CAST OR DUCTILE IRON BODY,04-SAMSS-035,04-SAMSS-048 04-SAMSS-002,WITH OR WITHOUT ACTUATOR, ANY SIZE
114	Static Equipment	6000000308	VALVE; PLUG; LUBRICATED	VALVE PLUG; LUBRICATED TYPE,SIZE ANY SIZE,ANY PRESSURE RATIN SUPPLY,ANY END CONN,STEEL BODY,04-SAMSS-035,04-SAMSS-048 04-SAMSS-053,04-SAMSS-055 ASME B16.34,API 599 API 6A, WITH OR WITHOUT ACTUATOR,ASME CLASS 150 AND UP, API 2000 TRHU 5000.
115	Static Equipment	6000000390	CHAIN; LOAD RATED; GRADE 80 OR 100	CHAIN LOAD RATED; ANY TRADE SI,ANY LOAD,M A391,M A973,CHAIN 80 OR 100 FOR SLINGS LIFTING ASSEMBLIES EXCLUDING POWER ANCHOR CHAIN DE D RATED HORE NSMISSION AND
116	Static Equipment	6000000686	BUILDING; SPACE FRAME; STEEL;	BUILDING; SPACE FRAME TYPE,SIZE ANY,STEEL,12-SAMSS-007,SAES-M-001 SAES-M-100,ONSHORE
117	Static Equipment	6000002255	CRANE;OVERHEAD;BRIDGE OR GANTRY;150T MAX	CRANE OVERHEAD; BRIDGE & GANTRY TYPE,UP TO 150 METRIC TON LIFT,VARIES SPAN,AS PER P.O. SPEED,LONG & CROSS TRAVEL TRAVEL,MANUAL OR ELECTRICAL DRIVE,N OR ENCLOSED PS OPERATIO,PENDANT OR CABIN CONTROL,BRIDGE,GANTRY,E B30. A 70 S-M-001
118	Static Equipment	6000002323	CRANE; JIB; HOISTING; 1/2 TON TO 10 TON;	CRANE JIB; PILLAR MOUNTED OR WALL MOUNTED TYPE,1/2 TON TO 10 TON LIFT,ANY SPAN,ANY MAX HT,ANY ROTATION,MATERIAL HANDLING OPERATIO,SAMSS-007,S-H S-M-001,E B 30.11 & ASME B A 74
119	Static Equipment	6000002415	EJECTOR; AIR; STEAM OR WATER.;	EJECTOR; ANY PROCESS,ANY,AIR,STEAM OR WATER.,AIR, STEAM OR WATER.
120	Static Equipment	6000002428	TIP; FLARE;	TIP; FLARE TYPE,32-SAMSS-022
121	Static Equipment	6000002430	FURNACE; DIRECT FIRED; 32-SAMSS-029;	FURNACE; DIRECT FIRED TYPE,32-SAMSS-029
122	Static Equipment	6000002431	FURNACE; INDIRECT FIRED;	FURNACE; INDIRECT FIRED TYPE,32-SAMSS-029
123	Static Equipment	6000002434	HEAT EXCHANGER; MULTI-PIPE; 32-SAMSS-028	HEAT EXCHANGER; MULTI-PIPE TYPE,32-SAMSS-028
124	Static Equipment	6000002436	HEAT EXCHANGER; ELECTRIC; 32-SAMSS-027;	HEAT EXCHANGER; ELECTRIC TYPE,32-SAMSS-027
125	Static Equipment	6000002508	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.
126	Static Equipment	6000014202	FITTING; PIPE; CUNI;ALL TYPES;EEMUA 234	FITTING: PIPE; EEMUA 234,CUNI PIPE FITTINGS, ALL TYPES, INCLUDING ELBOWS, TEES, REDUCERS, CAPS, COUPLING, BRANCH CONNECTION, BW OR SW OR THREADED AS PER EEMUA 234. NON-HYDRCARBON UTILITY.
127	Static Equipment	6000014710	FLANGE; PIPE: CONNECTOR, MECHANICAL END	FLANGE PIPE; CONNECTOR TYPE,ANY NPS,ANY,MECHANICAL END CONNECTORS
128	Static Equipment	6000014900	MACHINE; HOT TAP; PIPELINE SERVICE	MACHINE; HOT TAP TYPE,WITH/WITHOUT POWER UNIT
129	Static Equipment	6000017141	INLINE MIXING UNIT;	UNIT; VALVE/SPOOL TYPE,SAES-A-010,01-SAMSS-010 ANSI B31.3,INLINE HIGH EFFICIENCY MIXER PACKAGE, ADJUSTABLE OR STATIC, TYPICALLY HAS SPOOL OR VAVLE, FITTINGS, INJECTION CONE, INJECTION PIPE SPOOL, INJECTION QUILL, HOUSING, INTERNAL MIXING PARTS. FOR SOUR AND NON SOUR SERVICE NPS PRODUCT RANGE PER PR, ANSI FLANGE 150 TO 900#. FOR MIXING OIL WITH WATER OR CHEMICALS. FABRICATION WITH APPROVED MANUFACTURER
130	Static Equipment	6000017260	SKID, NITROGEN; PRESSURE SWING ADSORPTIO	SKID; NITROGEN ADSORPTION (PSA) SSURE SWING TYPE,32-SAMSS-038,NITROGEN GENERATION UNIT, PSA (PRESSURE SWING ADSORPTION) TYPE. USES ADSORBENT SUCH AS CARBON MOLECULAR SIEVE. MORE THAN 95% VOLUME PURITY NITROGEN
131	Static Equipment	6000017370	SEAL, PRIMARY,FOR EXTERNAL FLOATING ROOF	SEAL; PRIMARY TYPE,32-SAMSS-005,FOR EXTERNAL FLOATING ROOFS
132	Static Equipment	6000017371	SEAL, SECONDARY, EXTERNAL FLOATING ROOFS	SEAL; SECONDARY TYPE,32-SAMSS-005,FOR EXTERNAL FLOATING ROOFS
133	Static Equipment	6000018060	VESSEL, PRESSURE, ANY, FIBREGLASS-REINFO	VESSEL; PRESSURE TYPE,ANY,FIBREGLASS-REINFORCED PLASTIC (FRP), 32-SAMSS-039,WATER SERVICES ONLY
134	Static Equipment	6000017570	BURNER, BOILER, STEAM GENERATOR	BURNER; BOILER, STEAM GENERATOR TYPE,SIZE ANY,ANY SHAPE,ANY METAL, 32-SAMSS-021
135	Static Equipment	6000000068	TUBING METALLIC; ANY OD, STAINLESS STEEL, ASTM, 01-SAMSS-047	TUBING METALLIC; ANY OD,STAINLESS STEEL,ASTM, 01-SAMSS-047
136	Environmental	6000008580	WATER MEMBRANE FILTERS	FILTER; WATER MEMBRANE FILTERS TYPE,MICRON FILTERS FOR WATER SERVICE CROSS-FLOW, DEAD-END CARTRIDGE FILTERS NOMINAL OR ABSOLUTE 1-100 MICRON. MATERIAL: STRING WOUND POLYPROPYLENE, PLEATED POLYPROPYLENE & POLYESTER, RESIN BONDED CELLULOSE, PVDF, POLYSULFONE. ULTRA FILTERS FOR WATER SERVICE CONFIGURATION: CROSS-FLOW SPIRAL WOUND, HOLLOW FIBER/CAPILLARY, PLATE-AND-FRAME POLYSULFONE, POLYETHERSULFONE. POLYACRYLONITRILE, CELLULOSE ACETATE. RATING: < 200 PSIG. CLASSIFICATION: WATER FILTRATION, MEMBRANE FILTRATION, CARTRIDGE FILTRATION. CONFIGURATION: MATERIAL: RATING: SIZE:
137	Fire	6000002696	PANEL; CONTROL; FIRE PUMP;	PANEL CONTROL; FIRE PUMP TYPE,UL 218 LISTED,FOR DIESEL/ELECTRICAL FIRE PUMP CONTROLLERS PANELS SHALL BE LISTED FOR +50 DEG CELSIUS, ENCLOSURE MUST BE NEMA 250/NEMA TYPE 4 FOR ONSHORE AND NEMA TYPE 4X FOR OFFSHORE AND NEAR SHORE ENVIRONMENT OUTDOOR WITH SHELTER INSTALLATION, INDOOR WITH AIR-CONDITIONED INSTALLATIONS ARE ALLOWED TO BE ONLY UL 218 LISTED WITHOUT 50 DEG/NEMA 4/4X ENCLOSURE, ALL PANELS MUST BE CAPABLE OF PROVIDING THE PUMPS SEQUENCING FUNCTIONS IN SAES-B-017 / SAES-P-116