

**2022 Material Sourcing List**

Commodity	Material	Description	Long Description
Static Equipment	6000001821	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
Static Equipment	6000001822	AIR CONDITIONING UNIT; SELF CONTAINED; O	AIR CONDITIONING UNIT; SELF CONTAINED TYPE, (PACKAGED UNIT) CERTIFIED TO AHRI 340 AND UL 1995 STD
Static Equipment	6000001823	AIR CONDITIONING UNIT; PACKAGED UNIT TRA	AIR CONDITIONING UNIT; PACKAGED UNIT TRAILERIZED TYPE, AIR COOLED, R-22 OR R-134A, MANUFACTURER STANDARD
Static Equipment	6000001826	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
Static Equipment	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
Static Equipment	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.
Static Equipment	6000002404	TOWER; COOLING; WATER;	TOWER COOLING; WATER TYPE, 27-SAMSS-003, ASHRAE 90.1
Static Equipment	6000000066	TUBING; COPPER-ALLOY; EEMUA; ASTM	TUBING; ANY TYPE, COPPER-ALLOY, INCLUDING COPPER NICKEL (90-10, 70-30, C70600, OR C71500), EEMUA144, ASTM B466 ASTM B111
Static Equipment	6000000181	FLANGE; PIPE; COPPER NICKEL, EEMUA 145	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.
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
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
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
Static Equipment	6000000297	VALVE GATE; SIZE NPS 14 AND ABOVE	VALVE GATE; SIZE NPS 14 AND ABOVE, ANY RATING, ALLEND'S SUPPLY, CAST OR DUCTILE IRON BODY, 04-SAMSS-035, AWWA, WITH OR WITHOUT ACTUATOR
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
Static Equipment	6000000317	VALVE; PLUG; 4-WAY DIVERTER; 2 THRU 24	VALVE PLUG; 4-WAY DIVERTER TYPE, SIZE NPS 2 THRU 24, ASME CLASS 150 THRU 600 SUPPLY, FLANGED OR BUTTWELD END CONN, STEEL BODY, 04-SAMSS-042, 04-SAMSS-035 04-SAMSS-048, WITH OR WITHOUT ACTUATOR
Static Equipment	6000000343	VALVE; TUBING; UP TO 1 IN; 10000 PSI AND	VALVE; TUBING TYPE, SIZE 9/16 INCH, 10000 PSI AND UP SUPPLY, AUTOCLAVE F562C OR EQUAL END CONN, STEEL BODY, AA API 6A, ALL VALVE TYPES, KHUFF GAS SERVICE, PSL 3G
Static Equipment	6000000490	LUMBER; PLYWOOD; EXTERIOR OR INTERIOR;	LUMBER; INTERIOR WOOD, EXTERIOR TYPE, ANY NPS, IBC 2006, ONSHORE UTILITIES ONLY
Static Equipment	6000002323	CRANE; JIB; HOISTING; 1/2 TON TO 10 TON;	CRANE JIB; HOISTING TYPE, 1/2 TON TO 10 TON LIFT, SHOPS OPERATIO, HOISTING
Static Equipment	6000002393	BOILER; FIRE TUBE; AND COMONENTS	BOILER; FIRE TUBE AND COMPONENTS TYPE, 32-SAMSS-021
Static Equipment	6000002397	BRICK; REFRACTORY	BRICK REFRACTORY; BRICK REFRACTORY
Static Equipment	6000002415	EJECTOR; AIR; STEAM OR WATER.;	EJECTOR; ANY PROCESS, ANY, AIR, STEAM OR WATER, AIR, STEAM OR WATER.
Static Equipment	6000002481	TANK; FIBER GLASS; 32-SAMSS-002	TANK; ANY TYPE, ANY, FIBER GLASS, 32-SAMSS-002
Static Equipment	6000002748	IGNITER	IGNITER; FLARE TYPE, FLARE
Static Equipment	6000009264	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
Static Equipment	6000009414	VALVE, SANDWICH, 2 IN. AND UP, ASME CLAS	VALVE; GATE, SANDWICH TYPE, SIZE NPS 2 AND UP, STEEL, ASME CLASS 150 AND UP SUPPLY, FLANGE END CONN, 04-SAMSS-035, 04-SAMSS-048
Static Equipment	6000014202	FITTING; PIPE; CUNI; ALL TYPES; EEMUA 146	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-HYDROCARBON UTILITY.
Static Equipment	6000017141	INLINE MIXING SKID;	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
Static Equipment	6000017370	SEAL, PRIMARY, FOR EXTERNAL FLOATING ROOF	SEAL; PRIMARY TYPE, 32-SAMSS-005, FOR EXTERNAL FLOATING ROOFS
Static Equipment	6000017570	BURNER, BOILER, STEAM GENERATOR	BURNER; BOILER, STEAM GENERATOR TYPE, SIZE ANY, ANY SHAPE, ANY METAL, 32-SAMSS-021
Static Equipment	6000017371	SEAL, SECONDARY, EXTERNAL FLOATING ROOFS	SEAL; SECONDARY TYPE, 32-SAMSS-005, FOR EXTERNAL FLOATING ROOFS
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
Static Equipment	6000011206	SKID; FILTRATION SYSTEM	SKID; 32-SAMSS-038 (IF SKID), DESIGN, ASSEMBLY AND DESIGN OF FILTRATION SYSTEM (HYDROCARBON SERVICE) OIL /GAS/WATER STREAM
Static Equipment	6000000342	VALVE; KNIFE;	VALVE; KNIFE GATE, ALL MATERIALS TYPE, SIZE ALL SIZES, 04-SAMSS-035, 04-SAMSS-048, ALL PRESSURES
Static Equipment	6000000012	PIPE; STEEL API 5L; SAW STRAIGHT; SOUR	PIPE METALLIC; ALL SIZE NPS, ANY, STEEL, GR GRADE B THRU X65, SAW STRAIGHT SEAM, BARE, BEVELED ENDS, API 5L, 01-SAMSS-035, SOUR SERVICE
Static Equipment	6000010871	PIPE METALLIC; SAW STRAIGHT; NON SOUR	PIPE METALLIC; ALL SIZE NPS, ANY, CS, GR GRADE B THRU X70, STRAIGHT SAW, API 5L, 01-SAMSS-035, NON SOUR SERVICE
Static Equipment	6000000160	CEMENT LINING; TYPE INTERNAL; FITTING	LINING; ANY TYPE, CEMENT, 01-SAMSS-005, INTERNAL LINING FOR STEEL PIPE FITTING#
Static Equipment	6000000003	CEMENT LINING; TYPE INTERNAL;	LINING; ANY TYPE, CEMENT, 01-SAMSS-005, INTERNAL LINING FOR STEEL PIPE. ONSHORE UTILITIES
Static Equipment	6000015607	VALVE; BALL; MS, 2-1/16 IN & UP, 2K-5K PSI,	VALVE; BALL; SIZE 2-1/16 IN AND UP, 2000-5000 PSI SUPPLY, FLANGED, HUBBED OR BUTTWELD END CONN, ANY BODY, STYLE SPLIT BODY OR TOP ENTRY, TRUNNION SUPPORTED SUPPORT, METAL SEATED SEAT, 04-SAMSS-055, API 6A
Static Equipment	6000000482	LUMBER; PRESSURE TREATED	LUMBER; ANY NPS, PRESSURE TREATED, 09-SAMSS-002, ONSHORE UTILITIES ONLY
Static Equipment	6000002260	CRANE; TOWER;	CRANE; FIXED BASE FREE STANDING HAMMERHEAD TOWER CRANE LATTICE TYPE, 18 METRIC TON (MAXIMUM), SIZE VARIES AS PER DSN REQUIREMENT, E B30.3, D1.1 D14.3, A 70 ASME B30.3, AWS D1.1 AWS D14.3, NFPA 70 OFFSHORE: SAES-W-013, ONSHORE CRANE: 12-SAMSS-007 SAES-H-001 # OFFSHORE CRANE: 12-SAMSS-018 SAES-H-004# SAES-W-013
Static Equipment	6000014710	FLANGE; PIPE; CONNECTOR, MECHANICAL END	FLANGE PIPE; CONNECTOR TYPE, ANY NPS, ANY, MECHANICAL END CONNECTORS
Rotating Equipment	6000017500	UNIT, METALLIC 3DPRINTING/ADDITIVE MANUF	UNIT; METALLIC 3DPRINTING/ADDITIVE MANUFACTURING INCLUDING ALL TYPE OF STEEL (E.G. INCONEL, TITANIUM, STAINLESS STEEL) TYPE, ANY METALLIC 3D PRINTED PRODUCT INCLUDING NEW PARTS MANUFACTURING, PART MODIFICATION AND REPAIR. METALLIC PART SUCH AS ROTATING EQUIPMENT, STATIC EQUIPMENT AND DRILL EQUIPMENT
Rotating Equipment	6000002244	COMPRESSOR; AIR; CENTRIFUGAL; INTEGRALLY	COMPRESSOR AIR; CENTRIFUGAL, INTEGRALLY GEARED TYPE, 31-SAMSS-006
Rotating Equipment	6000002417	FILTER; ELEMENT; COMBUSTION GAS TURBINE;	FILTER ELEMENT; FOR COMBUSTION GAS TURBINE, 32-SAMSS-008, AIR INLET, FINAL STAGE
Rotating Equipment	6000002367	PUMP; CENTRIFUGAL; CANNED MOTOR;	PUMP CENTRIFUGAL; CANNED MOTOR TYPE, SIZE ANY, ANY, SINGLE STAGE(S), ASME B73.3M / ISO15783
Rotating Equipment	6000016780	EJECTOR; PROCESS GAS	EJECTOR; GAS OR LIQUID, ANY PROCESS, ANY, NACE MR-0175/ISO-15156, EJECTOR PACKAGE FOR PROCESS GAS COMPRESSION. NOT FOR STEAM-VACUUM SERVICES.
Rotating Equipment	6000002371	PUMP; CENTRIFUGAL; VERTICAL; MOLTON SULFUR	PUMP CENTRIFUGAL; VERTICAL TYPE, SIZE ANY, ANY, SINGLE STAGE(S), MFR STD DESIGN +SAES-G-005, MOLTEN SULFUR, SUMP
Rotating Equipment	6000002452	Mixer; Process; Propeller; Geared; Belt	MIXER; PROCESS TYPE, MFR STANDARDS, PROPELLER, GEARED, BELT OR DIRECT DRIVE
Rotating Equipment	6000010363	PUMP; MULTIPHASE, HELICO-AXIAL TYPE, ANY, 31-SAMSS-004	PUMP; MULTIPHASE, HELICO-AXIAL TYPE, ANY, 31-SAMSS-004
Rotating Equipment	6000017940	PUMP SUBMERSIBLE, CRYOGENIC PER API 610	PUMP SUBMERSIBLE; ANY, CRYOGENIC PER API 610, COMPLETE UNIT, PUMP ALONE OR MOTOR ALONE, INCLUDING ACCESSORIES
Rotating Equipment	6000012484	MICROTURBINES: GAS TURBINE GENERATORS, U	TURBINE COMBUSTION GAS; GAS TURBINE GENERATORS TYPE, UP TO 500 KW, 32-SAMSS-100, S-K-502, MICROTURBINES
Electrical	6000001011	POWER SUPPLY; ELECTRICAL; SOLAR, CP	POWER SUPPLY ELECTRICAL; HODIC PROTECTION POWER PLY ELECTRICAL SOLAR POWER TYPE, ANY POWER, ANY, 17-SAMSS-012
Electrical	6000001040	ANODE GALVANIC; MAGNESIUM, WITHOUT LEAD, CP	ANODE GALVANIC; MAGNESIUM, 17-SAMSS-006, CATHODIC PROTECTION WITHOUT LEADS
Electrical	6000012080	BOX; JUNCTION, FOR U/G ANODE BED, CP	BOX ELECTRICAL; CATHODIC PROTECTION UNDERGROUND ANODE BED JUNCTION BOX TYPE, SIZE 2500CM3 (MINIMUM), CYLINDRICAL OR BOX SHAPE, 12X16MM2 AND 2X70MM2 CONNECTN, 12+2 TERMINAL SCREW LUG COONECTN, FOR WEATHERPROOF (DIRECT BURIAL), NON-CCLASSIFIED, NON-METALLIC SUITABLE FOR DIRECT BURIAL AND IMMERSION SERVICE IN AMBIENT TEMPERATURE SEAWATER, OPTIONAL FINISH, OPTIONAL THK, 17-SAMSS-008 'JUNCTION BOX FOR CATHODIC PROTECTION', MEMBRANE GLANDS & FILLER/ SEALING COMPOUND SUITABLE FOR DIRECT BURIAL AND IMMERSION SERVICE IN AMBIENT TEMPERATURE SEAWATE
Electrical	6000016800	ANODE; GALVANIC; ALUMINUM, WITHOUT LEAD	ANODE GALVANIC; ALUMINUM, WITHOUT LEAD, 17-SAMSS-006, CATHODIC PROTECTION
Electrical	6000016801	ANODE; GALVANIC; ZINC, WITHOUT LEAD; CP	ANODE GALVANIC; ZINC, WITHOUT LEAD, 17-SAMSS-006, CATHODIC PROTECTION
Electrical	6000016802	ANODE; MMO GRID, WITHOUT LEAD; CP	ANODE IMPRESSED CURRENT; GRID SYSTEM, WITHOUT LEAD TERMINAL, MIXED METAL OXIDE COATED TITANIUM BASE, TITANIUM CONDUCTOR BAR & ANODE WIRE CONNECTION, FOR CATHODIC PROTECTION, 17-SAMSS-007
Electrical	6000011555	UPS SYSTEM ABOVE 200 KVA	POWER SUPPLY UNINTERRUPTIBLE; ABOVE 200 KVA POWER, 17-SAMSS-516, SAES-P-103
Electrical	6000012042	UPS SYS ABOVE 10 TO 200KVA FOR IT & COMM	POWER SUPPLY UNINTERRUPTIBLE; ABOVE 10 KVA UP TO 200 KVA POWER, 17-SAMSS-516, SAES-P-103, MANUFACTURER STANDARD PRODUCT, IT & COMMUNICATION PRODUCT RANGE

**2022 Material Sourcing List**

Commodity	Material	Description	Long Description
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 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. #
Electrical	6000016594	CAPACITOR BANK	UNIT; SHUNT CAPACITOR TYPE, 43-TMSS-01, SAES-P-116, POWER FACTOR CORRECTION CAPACITOR BANK 4.16KV THROUGH 380KV
Electrical	6000017620	UNIT, PREFABRICATED SUBSTATION, Yes, Yes	UNIT; PREFABRICATED SUBSTATION TYPE, 16-SAMSS-524, PREFABRICATED SUBSTATIONS RATED UP TO 52KV FOR OFFSHORE AND ONSHORE.
Electrical	6000009903	SWITCH; DISCONNECT; HIGH VOLTAGE;	SWITCH DISCONNECT; HIGH VOLTAGE, ANY ACTION, ELECTRICAL TYPE, 30-TMSS-01
Electrical	6000015923	BUS; ISOLATED PHASE BUS DUCT	BUS; SIZE ANY, ANY, 16-SAMSS-523, ISOLATED PHASE BUS DUCT
Electrical	6000016991	UNIT; MOBILE SUBSTATION; 69KV AND BELOW	UNIT; MOBILE SUBSTATION TYPE, OPERATING AT 69KV AND BELOW
Electrical	6000017680	COATING, ELECTRICAL INSULATORS, HIGH VOL	COATING; ELECTRICAL INSULATORS TYPE, FOR HIGH VOLTAGE, SILICON
Electrical	6000012401	OHL COMPOSITE INSULATOR FOR T & D	INSULATOR TRANSMISSION & DISTRIBUTION; OHL COMPOSITE TYPE, UP TO 230 KV, 15-SDMS-02, 15-TMSS-5
Electrical	6000007774	TRAY; CABLE, FIBERGLASS	TRAY; CABLE TYPE, FIBERGLASS, NEMA FG-1, S-P-104 SEC. 9
Instrumentation and IT	6000001582	CONTROLLER; ELECTRONIC; COMPRESSOR	CONTROLLER; COMPRESSOR INCLUDING SURGE CONTROL TYPE, ANY RANGE, SPECIALIZED CONTROL SYSTEMS
Instrumentation and 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
Instrumentation and IT	6000002677	FLOWMETER; ANNUBAR; PITOT TUBE;	FLOWMETER; ANNUBAR, PITOT TUBE TYPE
Instrumentation and IT	6000002742	FLOWMETER; FOR REDUCE PIPING REQUIREMENTS	FLOWMETER; 34-SAMSS-010, SPECIALTY FLOWMETER FOR REDUCING PIPING REQUIREMENTS
Instrumentation and IT	6000002782	MONITOR; GAS; COMBUSTIBLE	MONITOR GAS; COMBUSTIBLE, ANY RANGE, 34-SAMSS-514
Instrumentation and IT	6000002782	MONITOR; GAS; COMBUSTIBLE	MONITOR GAS; COMBUSTIBLE, ANY RANGE, 34-SAMSS-514
Instrumentation and IT	6000002786	MONITOR; GAS; HYDROGEN SULFIDE;	MONITOR GAS; HYDROGEN SULFIDE, ANY RANGE, 34-SAMSS-514
Instrumentation and IT	6000002787	MONITOR; GAS; COMBUSTIBLE; OPEN PATH TYP	MONITOR GAS; COMBUSTIBLE, ANY RANGE, 34-SAMSS-514, OPEN PATH TYPE
Instrumentation and IT	6000002886	GAUGE; LEVEL; GLASS	GAUGE LEVEL; GLASS TYPE, 34-SAMSS-010, WITH BACKFLOW PREVENTER VALVE OR CHECK VALVE AS ASSEMBLY IF REQUIRED.
Instrumentation and IT	6000002925	ANALYZER; NIR SPECTROMETER;	ANALYZER; NIR SPECTROMETER TYPE, ANY RANGE,
Instrumentation and IT	6000002926	TRANSMITTER; MULTIVARIABLE;	TRANSMITTER; MULTIVARIABLE TYPE, ANY RANGE
Instrumentation and IT	6000007215	FLOW METER; VENTURI TUBE	FLOWMETER; VENTURI TUBE AND NOZZLE TYPE, 34-SAMSS-010
Instrumentation and IT	6000009881	Custody Meter, Multi-Path, Ultrasonic Liquid	FLOWMETER; CUSTODY TRANSFER LIQUID TYPE, CUSTODY TRANSFER LIQUID
Instrumentation and IT	6000009890	CUSTODY PROVER, SMALL VOLUME, UNI PISTON	METER; UND PISTON (SMALL VOLUM) PROVER TYPE, 34-SAMSS-119, FOR LIQUID CUSTODY TRANSFER
Instrumentation and IT	6000009890	CUSTODY PROVER, SMALL VOLUME, UNI PISTON	METER; UND PISTON (SMALL VOLUM) PROVER TYPE, 34-SAMSS-119, FOR LIQUID CUSTODY TRANSFER
Instrumentation and IT	6000009906	CUSTODY PRESET CONTROLLER, TRUCK LOADING	COMPUTER FLOW; CUSTODY PRESET CONTROLLER TYPE, 34-SAMSS-847, FOR TRUCK LOADING AND UNLOADING SYSTEMS
Instrumentation and IT	6000009910	CUSTODY WEIGH SCALE	SCALE WEIGH; CUSTODY TRANSFER TYPE, 34-SAMSS-180
Instrumentation and IT	6000014021	Analyzer; Physical Property	ANALYZER; PHYSICAL PROPERTY TYPE, ANY RANGE, (EXAMPLE: BOILING POINT, FLASH POINT, POUR POINT, CFP, RVP, COLOR, CLOUD POINT, FREEZE POINT, OCTANE, AND VISCOSITY )
Instrumentation and IT	6000014531	MPPM FOR GAS FIELD APPLICATION	FLOWMETER; MULTIPHASE FLOWMETER TYPE, 34-SAMSS-001, FOR GAS, FLOW RATE MEASUREMENT
Instrumentation and IT	6000014614	CUSTODY TANK GAUGING SYSTEM, RADAR	GAUGE TANK LEVEL; RADAR CUSTODY TRANSFER TYPE, ANY RANGE, 34-SAMSS-321, SAES-Y-301, RADAR TANK GAUGING SYSTEMS FOR CUSTODY TRANSFER
Instrumentation and 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.
Instrumentation and IT	6000009831	CUSTODY METER, TURBINE, LIQUID	FLOWMETER TURBINE; CUSTODY TRANSFER LIQUID TYPE, ANY, 34-SAMSS-117
Instrumentation and IT	6000009832	CUSTODY METER, POS DISPL, LIQUID	FLOWMETER POSITIVE DISPLACEMENT; CUSTODY TRANSFER LIQUID TYPE, ANY, 34-SAMSS-118
Instrumentation and IT	6000009895	CUSTODY DENSITY METER, LIQUID	METER DENSITY; CUSTODY TRANSFER LIQUID TYPE, 34-SAMSS-510
Instrumentation and IT	6000009898	CUSTODY CHROMATOGRAPH, GAS OR LIQUID	CHROMATOGRAPH PROCESS; FOR CUSTODY TRANSFER CHROMATOGRAPHY, ANY DETECTOR, ANY CARRIER, 34-SAMSS-510
Instrumentation and IT	6000009908	Custody Tank Gauge, Radar	GAUGE TANK LEVEL; ANY TYPE, ANY RANGE, 34-SAMSS-321, CUSTODY TANK RADAR GAUGE, CUSTODY TRANSFER TANK LEVEL GAUGING
Instrumentation and IT	6000009900	CUSTODY FLOW COMPUTER, GAS, PANEL-MNTD	COMPUTER FLOW; PANEL MOUNTED TYPE, 34-SAMSS-846, FOR GAS CUSTODY TRANSFER
Chemicals	1000757581	H2S SCAVENGER, POWDER	H2S SCAVENGER-ZINC-FREE IRON GLUCONATE ADMIXTURE 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 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 H2S SCAVENGER-ZINC-FREE IRON GLUCONATE ADMIXTURE 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 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
Chemicals	1000022136	WATER SOLUBLE CORROSION INHIBITOR	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 ANUAL, CORROSION INHIBITOR-MICROBIOSTAT: A COMBINED LIQUID BIOCID AND CORROSION INHIBITOR, CATIONIC, WATER SOLUBLE, HETEROCYCLIC AMINE BLENDED WITH METHANOL MICROBIOSTAT TO CONTROL AEROBIC AND ANAEROBIC BACTERIA GROWTH. IT IS USED AS A PACKER FLUID CORROSION INHIBITOR TO CONTROL GENERAL CORROSION ATTACK ON CASING, TUBING AND DOWNHOLE TOOLS IN CONTACT WITH CLEAR AND VISCOSIFIED COMPLETION BRINES. CHEMICAL AND PHYSICAL SPECIFICATIONS: LIGHT (OR PALE) COLORED LIQUID WATER SOLUBLE SPECIFIC GRAVITY @ 68°F (20°C): 0.98 -1.07. 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.
Chemicals	1000022533	CALCIUM CHLORIDE (77-78%) 2200 lb/BAG	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 FACTOR 5, 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 WEIGH 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 PASS 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 WATER SOLUTION): 7.5 - 9.5. 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). 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".

2022 Material Sourcing List

Commodity	Material	Description	Long Description
Chemicals	1000022538	CALCIUM CHLORIDE (94-98%) 2200 lb/BAG	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 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 TO WEIGHT THE TRUCKS BEFORE AND AFTER LOADING AND SUBMIT TO MATERIAL SUPPLY AN OFFICIAL TICKET PRINT DATA STATING: DATE AND TIME, COMPANY AND 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 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% SOLUTION: 7.5 - 9.5 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 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, 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".
Chemicals	1001129231	Anhydrous Calcium Bromide Dry	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 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 SOLUTIONS TO FORMULATE, SOLIDS-FREE NON-DAMAGING HIGH-DENSITY BRINE BLENDS WITH DENSITIES UP TO 143 PCF (19.1 LB/GAL). APPEARANCE: WHITE FREE FLOWING POWDER CRYSTALLINE OR GRANULAR, NO LUMPS SATURATED BRINE SOLUTION: CLEAR COLORLESS PURITY AS CaBr2, PERCENT 95 MINIMUM SG AT 77 DEG F (25 DEG C): 3.2 - 3.4 SOLUBILITY IN WATER AT 68 DEG F (20 DEG C), WT PERCENT 58 MINIMUM IRON, PPM: 10 MAXIMUM CHLORIDE AS CaCl2, WT PERCENT 1.5 MAXIMUM SULFATE, PPM: 200 MAXIMUM HEAVY METALS, PPM: 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 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). 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 NAME AND CONTACT INFORMATION. HAZCOM ACCORDING TO THE MATERIAL SAFETY DATA SHEET MSDS.
Chemicals	1001130337	Radiagreen EME Salt	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 DARK AMBER. SWEET AND MILD ODOR SOLUBILITY IN WATER: INSOLUBLE IN WATER SPECIFIC GRAVITY AT THE RANGE BETWEEN 68F (20C): 0.95 - 1.05 FLASH POINT (PMCC): GREATER THAN 212F (100C) IT WILL NOT GREASE OR PHASE OUT. 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. 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 NAME AND CONTACT INFORMATION.
Chemicals	1000823699	THINNER OBM	THINNER/DISPERSANT-OBM CONDITIONER ADDITIVE DRILLING FLUID; LIQUID FORM, SULFONATE BLEND WITH FATTY ACID, FOR USED TO LOWER RHEOLOGICAL 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-BASE MUD CONDITIONER: LIQUID POLYOLEFIN/ORGANIC SULFONATE BLEND WITH FATTY 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. CHEMICAL 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 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). UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT
Chemicals	1000021672	HYDROXY ETHYL CELLULOSE (HEC)	HYDROXY ETHYL CELLULOSE (HEC) ADDITIVE DRILLING FLUID; DRY FREE FLOWING WHITE POWDER FORM, HYDROXY ETHYL CELLULOSE (HEC), FOR MULTI-PURPOSE VISCOSIFYING POLYMER FOR FRESHWATER, SEA WATER SALT SATURATED WATER AND COMPLEX BRINE SYSTEMS., HYDROXY ETHYL CELLULOSE (HEC), 50 LBS. (22.7 KG). 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 (INTERIOR PLY) 10# COATING 0.00285 MICRON ALUMINUM SHEET #6 PE COATING 50 LB NATURAL KRAFT PAPER THE ALUMINUM SHEET IS COATED ON ONE SIDE WITH 10# PE THE 10# IS NEXT TO THE PRODUCT. THE COATED ALUMINUM SHEET LAMINATED TO THE 50 LB KRAFT PAPER. 2ND PLY 50 LB NATURAL KRAFT PAPER. 3RD PLY 50 LB NATURAL KRAFT PAPER. 4TH PLY 50 LB BLEACH WHITE NATURAL KRAFT PAPER (EXTERIOR PLY). THE BLEACHED PAPER IS "FULLY BLEACHED WHITE". SHIPMENT OF PRODUCT SHALL CONFORM TO SAUDI ARAMCO EXPORT PACKING MANUAL., HEC-HYDROXY ETHYL CELLULOSE: IS A NON-IONIC POLYMER, DRY FREE FLOWING WHITE POWDER DISPERSES EASILY AND RAPIDLY DISSOLVES IN FRESH WATER, SEA WATER, SALT SATURATED BRINE AND COMPLEX DIVALENT BRINE BLENDS TO DEVELOP VISCOSITY RELATED CHARACTERISTICS FOR DRILLING AND COMPLETION FLUIDS THAT IMPART MINIMUM FORMATION DAMAGE. THE HEC SHOULD BE EASILY BROKEN WITH ACID, ENZYMES, OR OXIDIZING AGENTS TO MAXIMIZE THE POTENTIAL FOR HYDROCARBON RECOVERY AND SHOULD BE STABLE AT TEMPERATURES UP TO 250°F (121°C). CHEMICAL AND PHYSICAL SPECIFICATIONS: APPEARANCE: WHITE TO CREAM-COLORED HYDROXYETHYLCELLULOSE (HEC) SHALL NOT CONTAIN ANY STARCH, GUAR OR ANY OTHER POLYMERS OR THEIR DERIVATIVES. MOISTURE: 8%WT. MAXIMUM SPECIFIC GRAVITY, 1.38-1.40 PARTICLE SIZE: PASS THROUGH U.S. 20 MESH SCREEN (840 MICRON): 100% 1% WT. SOLUTION IN DEIONIZED WATER BROOKFIELD SPINDLE #4, 30 RPM. (ASTM D 2196-91): VISCOSITY AT 77°F (25°C): 4,400-6,500 PH @ 77°F (25°C): 6-7 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.
Chemicals	6000016483	Flat Rheology Oil Based Systems (FROBS).	ADMIXTURE DRILLING MUD; ANY, DRILLING FLUIDS SYSTEM OR PRODUCT USED AS WATER BASED MUD (WBM) OR OIL BASED MUD (OBM) OR FOR SPECIAL APPLICATION TO DRILL THE RESERVOIR OR NON-RESERVOIR HOLE SECTIONS. EXAMPLES NON-CONVENTIONAL LCM, HIGH OVER BALANCE MUD SYSTEM, SHALE INHIBITION MUD SYSTEM, RESERVOIR DRILL-IN FLUID (RDF), FILTER CAKE REMOVAL SYSTEM, HIGH PERFORMANCE WATER BASE MUD (HPWBM), HIGH PERFORMANCE OIL BASE MUD (HPOBM), SPACER CLEANING SYSTEM
Chemicals	1000814796	ACETIC ACID > 96%	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 CARBOXYLIC 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 HANDLE 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 ANUAL., MICRO-WASH ACETIC ACID-BAKER HUGHES: CLEAR LIQUID CARBOXYLIC ACIDS WITH THE FORMULA OF CH3COOH, USED FOR ACIDIZING SOLUBLE CALCIUM CARBONATE PARTICLES, AFTER USING OBM, IN WELLBORE REMEDIATION AND CLEANUP PROCESS TO IMPROVE WELL PRODUCTIVITY. BAKER HUGHES MICRO-WASH ACID SYSTEM CONSISTS OF: PRIME-743 (SAP #1000811425), PRIME-760
Chemicals	1000021930	XANTHAN GUM (POWDER)	XANTHAN GUM BIO-POLYMER ADDITIVE DRILLING FLUID; DRY FREE FLOWING POWDER FORM, PURE XANTHAN GUM BIO-POLYMER, FOR 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 ANIONIC POLYSACCHARIDE, READILY SOLUBLE IN WATER BRINE. THE BIO-POLYMER PRODUCED BY A DISTINCT FERMENTATION PROCESS OF XANTHOMONAS CAMPESTRIS. THE PRODUCT SHALL NOT CONTAIN ANY OTHER POLYSACCHARIDE, SUCH AS STARCH, GUAR GUM OR OTHER

2022 Material Sourcing List

Commodity	Material	Description	Long Description
Chemicals	1000021557	CALCIUM BROMIDE (SOL 53% WT MINIMUM)	ALCIUM BROMIDE (CaBr2) SOLUTION DDITIVE DRILLING FLUID; SINGLE SALT (CABR2), SOLIDS-FREE BRINE ORM,CALCIUM BROMIDE (CABR2),FOR A PURE SOLIDS-FREE BRINE USED N COMPLETION FLUIDS AND CAN BE BLENDED WITH ZINC/CALCIUM ROMIDE AND CALCIUM CHLORIDE SOLUTIONS TO FORMULATE NON-DAMAGING LUIDS OF DENSITIES UP 143 PCF (19.1 LB/GAL),CALCIUM BROMIDE,55 AL (208 LITER) 340 KG POLYPROPYLENE-LINED STEEL DRUMS SHIPMENT F PRODUCTS MUST CONFORM TO SAUDI ARAMCO EXPORT PACKING ANUAL.,REFER TO API 13J FIFTH EDITION, OCTOBER 2014,CALCIUM ROMIDE SOLUTION (CABR2): PURE, SOLIDS-FREE BRINE USED FOR REPARING COMPLETION FLUIDS AS A SINGLE CABR2 SALT SOLUTION WITH INIMUM DENSITY OF 1.70 GM/CC, AND CAN BE BLENDED WITH ZINC ROMIDE AND CALCIUM CHLORIDE SOLUTIONS TO FORMULATE, SOLIDS-FREE ON-DAMAGING HIGH DENSITY BRINE BLENDS WITH DENSITIES UP TO 143 CF (19.1 LB/GAL). CHEMICAL AND PHYSICAL SPECIFICATIONS: CALCIUM ROMIDE (CABR2) SOLUTION 52% WT. MINIMUM COLORLESS, CLEAR LIQUID ITH NO ODOR CHLORIDE CONTENT: 1000 PPM (0.1% WT.) MAXIMUM URBIDITY: 6 NTU MAXIMUM SULPHATE CONTENT: 100 PPM (0.01% WT.) AXIMUM IRON CONTENT: 5 PPM MAXIMUM TOTAL HEAVY METALS (ZN, PB, G, AS AND CD): 5 PPM MAXIMUM DENSITY: 1.70 GM/CC (14.2 LB/GAL /106.2 PCF) AT 70°F (20.1°C) MINIMUM PH OF 10% SOLUTION IN DI ALCIUM BROMIDE (CaBr2) SOLUTION DDITIVE DRILLING FLUID; SINGLE SALT (CABR2), SOLIDS-FREE BRINE ORM,CALCIUM BROMIDE (CABR2),FOR A PURE SOLIDS-FREE BRINE USED N COMPLETION FLUIDS AND CAN BE BLENDED WITH ZINC/CALCIUM ROMIDE AND CALCIUM CHLORIDE SOLUTIONS TO FORMULATE NON-DAMAGING LUIDS OF DENSITIES UP 143 PCF (19.1 LB/GAL),CALCIUM BROMIDE,55 AL (208 LITER) 340 KG POLYPROPYLENE-LINED STEEL DRUMS SHIPMENT F PRODUCTS MUST CONFORM TO SAUDI ARAMCO EXPORT PACKING ANUAL.,REFER TO API 13J FIFTH EDITION, OCTOBER 2014,CALCIUM ROMIDE SOLUTION (CABR2): PURE, SOLIDS-FREE BRINE USED FOR REPARING COMPLETION FLUIDS AS A SINGLE CABR2 SALT SOLUTION WITH INIMUM DENSITY OF 1.70 GM/CC, AND CAN BE BLENDED WITH ZINC ROMIDE AND CALCIUM CHLORIDE SOLUTIONS TO FORMULATE, SOLIDS-FREE ON-DAMAGING HIGH DENSITY BRINE BLENDS WITH DENSITIES UP TO 143 CF (19.1 LB/GAL). CHEMICAL AND PHYSICAL SPECIFICATIONS: CALCIUM ROMIDE (CABR2) SOLUTION 52% WT. MINIMUM COLORLESS, CLEAR LIQUID ITH NO ODOR CHLORIDE CONTENT: 1000 PPM (0.1% WT.) MAXIMUM URBIDITY: 6 NTU MAXIMUM SULPHATE CONTENT: 100 PPM (0.01% WT.) MAXIMUM IRON CONTENT: 5 PPM MAXIMUM TOTAL HEAVY METALS (ZN, PB, HG, AS AND CD): 5 PPM MAXIMUM DENSITY: 1.70 GM/CC (14.2 LB/GAL /106.2 PCF) AT 70°F (20.1°C) MINIMUM PH OF 10% SOLUTION IN DI WATER: [BASIC.] 7- 8.5 TRUE CRYSTALLIZATION TEMPERATURE (TCT): 10°F (-12.2°C) SOLIDS RETAINED ON 5 MICRONS FILTER PAPER: NONE 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). *UOM REFERRED IN THIS MATERIAL IS NET VOLUME/WEIGHT**
Chemicals	1000845612	MANGANESE TETRAOXIDE - BAG	MICROMAX – MANGANESE TETROXIDE ADDITIVE DRILLING FLUID; FINE REDDISH BROWN POWDER FORM,FINE REDDISH BROWN POWDER OF MANGANESE TETROXIDE (MN3O4) WITH AVERAGE SPHERICAL PARTICLE DIAMETER 0.5 – 2 MICRONS. IT IS USED AS WEIGHT MATERIAL IN DRILLING, COMPLETION AND CEMENTING FLUIDS TO REACH HIGH DENSITY DRILLING FLUIDS WITH LOW EQUIVALENT CIRCULATING DENSTY (ECD), MINIMAL SAG AND CAUSE LESS FORMATION DAMAGE. THE CHEMICAL AND ITS ASSOCIATED ELEMENTS MUST NOT BE HARMFUL TO PERSONNEL AND/OR PROPERTIES,FOR USED AS WEIGHT MATERIAL IN DRILLING, COMPLETION AND CEMENTING LUIDS,MANGANESE TETRAOXIDE,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 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, MICROMAX – MANGANESE TETROXIDE ADDITIVE DRILLING FLUID; FINE REDDISH BROWN POWDER FORM,FINE REDDISH BROWN POWDER OF MANGANESE TETROXIDE (MN3O4) WITH AVERAGE SPHERICAL PARTICLE DIAMETER 0.5 – 2 MICRONS. IT IS USED AS WEIGHT MATERIAL IN DRILLING, COMPLETION AND CEMENTING FLUIDS TO REACH HIGH DENSITY DRILLING FLUIDS WITH LOW EQUIVALENT CIRCULATING DENSTY (ECD), MINIMAL SAG AND CAUSE LESS FORMATION DAMAGE. THE CHEMICAL AND ITS ASSOCIATED ELEMENTS MUST NOT BE HARMFUL TO PERSONNEL AND/OR PROPERTIES,FOR USED AS WEIGHT MATERIAL IN DRILLING, COMPLETION AND CEMENTING FLUIDS,MANGANESE TETRAOXIDE,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 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.,APPEARANCE: REDDISH-BROWN POWD,CHEMICAL AND PHYSICAL SPECIFICATIONS APPEARANCE: FINE REDDISH BROWN POWDER, ODORLESS. MN3O4: 85%WT MINIMUM FE CONTENT: 4.5%WT MAXIMUM PARTICLE DIAMETER: D90 LESS THAN 5 MICRONS AND D50 0.5 – 2 MICRONS, SOLUBILITY IN WATER: INSOLUBLE, PH (5G IN 50 ML DI WATER): 7 – 10.5, SPECIFIC GRAVITY @ 68 DEG F (20 DEG C): 4.8, MINIMUM BULK DENSITY: 84 LB/FT3 (950-1050 KG/M3), SURFACE AREA: 1 – 5 M2/G.MICROMAX IS ONLY SLIGHTLY SOLUBLE IN ORGANICA ACIDS SUCH AS CITRIC ACID, AND IT MUST NOT BE TREATED WITH HYDROCHLORIC ACID (HCL), BECAUSE THE REACTION PRODUCES CHLORINE GAS.SAUDI ARAMCO RESERVES THE RIGHT TO COLLECT REPRESENTATIVE PRODUCT SAMPLES AND CONDUCT LABORATORY TESTS TO ENSURE COMPLIANCE WITH THE MATERIAL DESCRIPTION AND PECIFICATIONS. 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.
Nonmetallic	6000018060	VESSEL, PRESSURE, ANY, FIBREGLASS-REINFO	VESSEL; PRESSURE TYPE,ANY,FIBREGLASS-REINFORCED PLASTIC (FRP),WATER SERVICES ONLY
Nonmetallic	6000000030	PIPE; NON-METALLIC; THERMOPLASTIC; CPVC;	PIPE NON-METALLIC; ANY NPS, CHLORINATED POLYVINYL CHLORIDE (CPVC),ISO 15877,ASTM F441,SOLID-WALL, MAXIMUM TEMPERATURE IS 82 C HOT AND COLD WATER INSTALLATIONS AND FOR HEATING SYSTEM INSTALLATIONS SYSTEM. HOT AND COLD WATER INSTALLATIONS WITHIN BUILDINGS, WATER FOR HUMAN CONSUMPTION, WATER FOR HEATING SYSTEMS.# SSURIZED
Nonmetallic	6000000031	PIPE; NON-METALLIC; ALL SIZES; THERMOPLA	PIPE NON-METALLIC; ANY NPS,THERMOPLASTIC, UPVC,M D1785,1452 AND ASTM D4216,SOLID-WALL, MAXIMUM TEMPERATURE IS 45 C, (UNPLASTICIZED) POLYVINYL CHLORIDE (PVC/ UPVC) WATER SUPPLY AND FOR BURIED AND ABOVE-GROUND DRAINAGE AND SEWERAGE UNDER PRESSURE WATER MAINS AND SERVICES, WATER ABOVE GROUND FOR BOTH OUTSIDE AND INSIDE BUILDINGS, BURIED AND ABOVE GROUND DRAINAGE AND SEWERAGE UNDER PRESSURE, HYDROCHLORIC ACID,PHOSPHORIC ACID AND LPG, NGL.# IED
Nonmetallic	6000000409	Hose; High pressure 500 psig and greater	HOSE; SIZE ANY,FOR GENERAL PURPOSES,PR HIGH PRESSURE 500 PSIG AND GREATER, REINFORCED NATURAL OR SYNTHETIC RUBBER,SAE 100R,FOR GENERAL PURPOSES SUCH AS OIL AND WATER-BASED FLUIDS, PNEUMATIC APPLICATIONS, LOW PRESSURE HYDRAULIC, LUBRICATING FLUIDS, WATER#.ETC.
Nonmetallic	6000000410	Hose: Rubber wire reinforced dock hoses	HOSE; SIZE 102 MM (4 IN) TO305 MM (12 IN),FOR ANY,RUBBER WIRE REINFORCED DOCK HOSE,22-SAMSS-003,FOR OIL SUCTION AND DISCHARGE OPERATIONS. NOMINAL HOSE BORE USED FOR TRANSFERRING CRUDE OIL AND LIQUID PETROLEUM PRODUCT (OTHER THAN LIQUEFIED PETROLEUM GAS AND LIQUEFIED NATURAL GAS). TEMPERATURE RANGES FROM 5°C (41°F) TO 80°C (180°F) AND MAXIMUM 40% AROMATIC HYDROCARBON CONTENT. FOR CRUDE OIL, TANKER FUEL AND HYDROCARBON PRODUCTS OTHER THAN LIQUEFIED PETROLEUM AND NATURAL GAS.
Nonmetallic	6000000411	Hose: Rubber, reinforced, smooth bore,	HOSE; SIZE 150 MM(6 IN) TO 600 MM(24 IN),FOR OIL, MARINE FOR TANKER LOADING,RUBBER, REINFORCED,SMOOTH BORE,22-SAMSS-004,OIL SUCTION AND DISCHARGE HOSES FOR USE AT OFFSHORE INSTALLATIONS. NOMINAL DIAMETER. THE HOSE TYPES ARE AS FOLLOWS: # FLOATING HOSE: VARIABLY REINFORCED HALF FLOAT (VRHF), FULL FLOAT (FF), AND RAIL/TAIL (R/T) # SUBMARINE HOSE: STANDARD SUBMARINE (SS), SPECIALLY REINFORCED FOR SALM SERVICE (SRSS), AND VARIABLY REINFORCED FOR SPM SERVICE (VRSS). TEMPERATURE RANGES FROM 5°C (41°F) TO 63°C (145°F) AND MAXIMUM 25% AROMATIC HYDROCARBON CONTENT. OFFSHORE OIL SUCTION AND DISCHARGE#CRUDE OIL AND LIQUID PETROLEUM PRODUCT (OTHER THAN LIQUEFIED PETROLEUM GAS AND LIQUEFIED NATURAL GAS)
Nonmetallic	6000010400	HOSE:OFFSHORE,OIL SUCT/DISC HOSES	HOSE; SIZE ANY,FOR ANY,22-SAMSS-004,RUBBER, REINFORCED, SMOOTH BORE, OIL SUCTION AND DISCHARGE HOSES FOR USE AT OFFSHORE INSTALLATIONS. SIZE RANGES FROM 150 MM (6 IN) TO 600 MM (24 IN) NOMINAL DIAMETER. 22-SAMSS-004, THE HOSE TYPES ARE AS FOLLOWS:#FLOATING HOSE: VARIABLY REINFORCED HALF FLOAT (VRHF), FULL FLOAT (FF), AND RAIL/TAIL (R/T) SUBMARINE HOSE: STANDARD SUBMARINE (SS), SPECIALLY REINFORCED FOR SALM SERVICE (SRSS), AND VARIABLY REINFORCED FOR SPM SERVICE (VRSS)#TEMPERATURE RANGES FROM 5°C (41°F) TO 63°C (145°F) AND MAXIMUM 60% AROMATIC HYDROCARBON CONTENT. 22-SAMSS-004. OFFSHORE OIL SUCTION AND DISCHARGE CRUDE OIL AND LIQUID PETROLEUM PRODUCT (OTHER THAN LIQUEFIED PETROLEUM GAS AND LIQUEFIED NATURAL GAS)
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.
Others	6000001829	COIL; REFRIGERATION;HVAC USE	COIL; COIL, REFRIGERATION, HOT/CHILLED WATER APPLICATIONS TYPE, AHRI 410 CERTIFIED
Others	6000001882	AIR CONDITIONING UNIT; DIRECT EXPANSION;	AIR CONDITIONING UNIT; DIRECT EXPANSION TYPE, 27-SAMSS-002, UL-1995 AHRI-210/240 (< 5.5 TON), AH, HVAC/REFRIGERATION:SYSTEMS FOR PROCESS AND OFFSHORE APPLICATIONS
Others	6000014875	DAMPER; BACK DRAFT	DAMPER; BACK DRAFT TYPE,SIZE ANY, AMCA 511
Others	6000014878	AIR HANDLING UNIT; CUSTOM BUILT	AIR HANDLING UNIT; AIR HANDLING UNIT CUSTOM BUILT TYPE, ANY, AMCA 99, NFPA 70, NFPA 90A, AHRI 430, AHRI 410 SEAL FOR COILS, AMCA 210 AND 301 SEA FOR FANS
Others	6000008555	Thermal & Electro-dialysis Desal Sys	ESALINATION; THERMAL & ELECTRO-DIALYSIS DESALINATION SYSTEMS YPE, REVERSAL (EDR) EQUIPMENT
Others	6000012705	Oil Skimmer	UNIT; OIL SKIMMER TYPE,OIL/WATER-OIL SKIMMERS: A DRUM, DISK SURFACE OIL SKIMMER, OR DOUBLE ARM INTERNAL FLOAT OIL SKIMMER THAT REMOVES SURFACE OILS FLOATING ON OILY WATER RELY ON ADHESION OF OIL TO THE SURFACE OF THE MECHANISM.
Others	6000010110	Water Media Filters	FILTER; WATER MEDIA FILTERS TYPE
Others	6000012655	WASTEWATER ODOR CONTROL	CONTROL; WASTEWATER ODOR TYPE,
Others	6000016133	REACTOR ; MOVING BED BIOLOGICAL	REACTOR; MOVING BED BIOLOGICAL REACTOR TYPE, SAES-A-104, IS A SINGLE OR MULTIPLE- STAGE ACTIVATED SLUDGE BIOLOGICAL TREATMENT PROCESS SYSTEM FOR CARBON AND/OR NITROGEN REMOVAL USING MOVING PLASTIC CARRIERS WITH FIXED BIOFILM
Others	6000017280	UNIT; ELECTRO-DEIONIZATION	UNIT; ELECTRO-DEIONIZATION TYPE, NA,WATER ELECTRO-DEIONIZATION (EDI) UNIT ASSEMBLED AND READY TO CONNECT AND START. CONSISTS OF: (1) ELECTRO-DEIONIZATION UNIT TO PRODUCE DEIONIZED WATER FROM RO 2ND PASS. (2) CO2 REMOVAL SYSTEM THROUGH MEMBRANE CONTACTORS. (3) CONTROL AND INSTRUMENTATION.
Others	6000010115	Wastewater Package Treatment Plant	UNIT; WASTEWATER PACKAGE TREATMENT PLANT TYPE

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Others	6000001314	MONITOR; FIREFIGHTING, HYDRANT-MOUNTED TYPE,UL/FM	MONITOR; FIREFIGHTING, HYDRANT-MOUNTED MANUALLY OPERATED TYPE,ANY RANGE,MEETING 21-SAMSS-16,INDUSTRIAL MONITOR SYSTEM, WILL BE INSTALLED ON# 9COM 6000001310
Others	6000002696	PANEL CONTROL; FIRE PUMP TYPE,UL/FM LISTED/APPROVED,COMPLY	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
Others	6000011727	DETECTOR FIRE PROTECTION; VERY EARLY WARNING ASPIRED SMOKE	DETECTOR FIRE PROTECTION; VERY EARLY WARNING ASPIRED SMOKE DETECTION SYSTEM TYPE,UL/FM LISTED/APPROVED,COMPLY W,CONSISTING OF HIGH SENSITIVITY AIR ASPIRATED SMOKE DETECTION EQUIPMENT. MUST BE UL/FM#LISTED/APPROVED AND COMPLY WITH NFPA, CONTACT FRPD RSA FOR DETAILS.
Others	6000017250	SUPPRESSOR; FIRE PROTECTION, WET CHEMICAL SYSTEM FOR COMMERCIAL	SUPPRESSOR; FIRE PROTECTION, WET CHEMICAL SYSTEM FOR COMMERCIAL 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.
Others	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
Others	6000001014	CP,POWER SUPPLY;RECTIFIER;IMPRESSED CURR	RECTIFIER IMPRESSED CURRENT; HODIC PROTECTION SE CONTROL TYPE, ANY OUTPUT, 17-SAMSS-005