

## List of Major items procured on LTE basis in Nalco

SL No	Items	Annual Requirement (Approx)	Plant
1	<p><b><u>Sulphuric Acid:</u></b></p> <p>SULPHURIC ACID TECHNICAL GRADE            SULPHURIC ACID AS PER IS: 266/1993 (REAFFIRMED 2003 WITH AMENDMENT-1)HAVING THE SPECIFICATIONS AS MENTIONED BELOW:            1. TOTAL ACIDITY (AS H<sub>2</sub>SO<sub>4</sub>): 98% MIN BY MASS.            2. RESIDUE ON IGINION :0.2%(MAX)BY MASS.            3. IRON(AS Fe) : 0.05%(MAX) BY MASS.            4. HEAVY METALS (AS LEAD):0.005 %(MAX) BY MASS.            5. ARSENIC (AS AS):0.004 %(MAX) BY MASS.</p>	700 MT	Alumina Refinery, Nalco, Damanjodi
2	<p><b><u>Coal Mill Liners:</u></b></p> <p>CYLINDRICAL LINER(HIGH CHROME)AS PER DRG            NALCO/MECH/SPP/3301 SHEET 1 TO 5            MUST HAVE FOLLOWING CHEMICAL COMPOSITION AND PHYSICAL PROPERTIES:            C-2.4-2.8%;CR-22.0-28.0%;MN-1.5% MAX NI-0.5%MAX;MO-0.6%MAX            HARDNESS-57-62 RC RETAINED AUSTENITE:MAX 5% PRIMARY CARBIDES IN MARTENISTIC MATRIX.</p>	288 Nos	Alumina Refinery, Nalco, Damanjodi
3	<p><b><u>MS ERW Steel Pipe:</u></b></p> <p>Size: 350 NB            Thickness of Pipe: 9.5 mm thick (minimum)            Confirming to IS with Gr.: IS:3589, Gr. Fe 410            End Connection: Bevelled End            Working Pressure: 26 Kg/sq cm(g)            Test Pressure: Pipe shall be tested hydraulically as per relevant Standard at twice the working pressure.            Required pipe length for each pipe segment: 10 to 12 M (preferably).</p>	7000 to 8000 Mtr	Captive power Plant, Nalco, Angul
4	<p><b><u>POLY ALUMINIUM CHLORIDE (LIQUID)</u></b> OF HIGH BASICITY USED FOR TREATMENT OF RAW WATER CONFIRMING TO IS: 15573:2005 OR LATEST REVISION</p>	600 MT	Captive power Plant, Nalco, Angul
5	<p><b><u>BORIC ACID GRANULAR</u></b></p> <p>TYPICAL CHEMICAL ANALYSIS AS PER FOLLOWING:            BORIC OXIDE(B<sub>2</sub>O<sub>3</sub>): 56.22%            WATER( H<sub>2</sub>O) : 43.58%            CHLORIDE(CL) : 0.01%            SULPHATE(SO<sub>4</sub>) : 0.1%            IRON(Fe) : 0.005%            ASSAY(H<sub>3</sub>BO<sub>3</sub>): 99.5% MINIMUM</p>	100000 KG	Smelter Plant, Nalco, Angul

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6	<p><b><u>THERMOCOUPLE N TYPE</u></b></p> <p>211 D X 270 D X L 1120 MM  ELEMENT: MINERAL INSULATED THERMOCOUPLE TYPE N, MICROBELL D SEATH MATERIAL, SEATH DIA 8 MM OD  INTERNAL SEATH: CERAMIC KER 710 PROTECTING TUBE- 17 OD X 13 ID MM CLOSED AT BOTTOM END  EXTERNAL SEATH: SEAMLESS / EXTRUDED PROTECTION TUBE ( THERMO WELL KANTHAL APM 26.67 MM OD X 20.93 MM ID CLOSED AT BOTTOM END)  DIE CAST ALUMINIUM HEAD ( TYPE A ) WITH CERAMIC BLOCK SPECIAL CABLE ENTRY GLAND EXTENSION WIRE AS SILICON RUBBER INSULATION / FIBRE GLASS JACKET WITH SS OVER BRAIDING OVERALL ( 3 MTR LONG) WITH JAB IN MALE FEMALE CONNECTOR  THE THERMO COUPLE SHALL BE SIMPLEX, UNDERGROUND LENGTH BELOW TERMINAL BLOCK : 1110 MM COMPLETE WITH TERMINAL BLOCK AND TERMINALS. THE ABOVE MATERIAL MUST BE SUITABLE TO WITHSTAND A MAX TEMP OF 1300 DEG CENTIGRADE FOR SHORT DURATION AND CONTINUOUS TEMP OF 1160 DEG CENTIGRADE IN CARBURISING SULPHUROUS ATMOSPHERE OR OTHER REDUCING ADVERSE CONDITION OF OUR FURNACE</p>	300 Nos	Smelter Plant, Nalco, Angul
7	<p><b><u>ALUM {NON-FERRIC}</u></b></p> <p>TECHNICAL GRADE CONFORMING TO IS: 260/2001 OF LATEST REVISION (SUPPLIED IN 500GM TO 3KG PIECES PACKED IN 40KG NEW HDPE BAG.</p> <p>DEVIATION IN PRODUCT PURITY WOULD BE ACCEPTED WITH PRORATA DEDUCTION WHICH IS AS FOLLOWS:</p> <p>i. ALUMINA CONTENT BELOW 17% UP TO 15% WILL BE ACCEPTABLE WITH PRORATA PRICE DEDUCTION FOR EVERY 0.1% VARIATION @ 0.6% ON LANDED COST. BEYOND THIS RELAXATION, THE MATERIAL SHALL BE OUTRIGHTLY REJECTED.</p> <p>ii. PH VALUE OF 5% SOLUTION UP TO 2.8 (MIN.) WITH PENALTY FOR EVERY 0.1% VARIATION @ 0.2% ON THE LANDED COST.</p> <p>iii. INSOLUBLE MATTER UP TO 0.3% (MAX.) WITH PENALTY FOR EVERY 0.01% VARIATION @ 0.05% ON THE LANDED COST.</p> <p>iv. IRON CONTENT UP TO 0.01% (MAX.) WITH PENALTY FOR EVERY 0.001% VARIATION @ 1% ON THE LANDED COST.</p>	720 MT	Smelter Plant, Nalco, Angul

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8	<p><b><u>STEEL SHOTS OF SS-1400 GRADE.</u></b></p> <p>HEAT TREATED STEEL SHOTS, GRADE: SS-1400 &amp; AS PER IS-4606 OF 1983(AS AMENDED UPTO- DATE) SIZE:- 2.00MM - ALL PASS. 1.40MM-85% MIN. ETAIN, 1.18MM-12% MAX. RETAIN PAN-3% MAX.RETAIN</p> <p>NOTE:            Chemical Composition:            Carbon-0.6 to 1.25%            Manganese-1.25% max.            Silicon-0.2 to 1.1%            Sulphur-0.08% Max.            Phosphorous-0.08% Max.            Hardness-400-550HV            Packing- Steel Shots shall be packed in double line bag each weighing 25KG.</p>	360 MT	Smelter Plant, Nalco, Angul
9	<p><b><u>Flue wall Bricks for ABF I</u></b></p> <p>Consisting following item:</p> <ol style="list-style-type: none"> <li>42-44% AL<sub>2</sub>O<sub>3</sub> REFRACTORY BRICKS WITH IDENTIFICATION MARK ' A-229'</li> <li>A-182 43% Al<sub>2</sub>O<sub>3</sub> BRICK. MARK: A - 182.DRG.NO:NAL/05/ABF/FW/BS/126.</li> <li>42-44% AL<sub>2</sub>O<sub>3</sub> REFRACTORY BRICK WITH IDENTIFICATION MARK ' A-277'</li> <li>TextB1-460 BRICKS 43% Al<sub>2</sub>O<sub>3</sub> BRICK. MARK:B1-460 .DRG. NO: NAL/05/ABF/FW/BS/124.</li> <li>B2-46043% Al<sub>2</sub>O<sub>3</sub> BRICK. MARK: B2-460. DRG.NO:NAL/05/ABF/FW/BS/125.</li> <li>REFRACTORY BRICKS MARK T-260.5.DRG.NO:NAL/05/ABF/FW/BS/118</li> <li>ABF MORTAR.</li> </ol>	240 sets	Smelter Plant, Nalco, Angul
10	<p><b><u>Flue wall Bricks for ABF II &amp; III</u></b></p> <p>Consisting following item:</p> <ol style="list-style-type: none"> <li>DENSE REFRACTORY BRICKS, TYPE-K1 FOR ABF-II &amp; III.</li> <li>DENSE REFRACTORY BRICKS, TYPE-K2 FOR ABF-II &amp; III.</li> <li>DENSE REFRACTORY BRICKS, TYPE-K3 FOR ABF-II &amp; III.</li> <li>DENSE REFRACTORY BRICKS, TYPE-L1 FOR ABF-II &amp; III.</li> <li>DENSE REFRACTORY BRICKS, TYPE-L2 FOR ABF-II &amp; III.</li> <li>DENSE REFRACTORY BRICKS, TYPE-L3 FOR ABF-II &amp; III.</li> <li>DENSE REFRACTORY BRICKS, TYPE-M FOR ABF-II &amp; III.</li> <li>DENSE REFRACTORY BRICKS, MARK-E FOR ABF-II &amp; III.</li> <li>AIR SETTING CEMENT MORTAR FOR ABF-II &amp; III.</li> <li>80%AL<sub>2</sub>O<sub>3</sub> CALCINED BAUXITE MARK-CB FOR ABF-II &amp; III.</li> </ol>	240 sets	Smelter Plant, Nalco, Angul
11	<p><b><u>Anode Carrying Pallets</u></b></p> <p>ANODE CARRING PALLET FOR RODDED ANODE TRANSPORTATION            ANODE CARRYING PALLETS FOR RODDED ANODE AND BATH TRANSPORTTION.            AS PER OUR DRAWING NO :ROD/GA/MECH/A0/4281 REV.02            MATERIALS: CARBON STEEL AS BELOW :</p> <ol style="list-style-type: none"> <li>IS-226 (FOR 5MM TO 20 MM THICK PLATE)</li> <li>IS-2062 (FOR 20MM PLATE AND ABOVE)</li> </ol>	50 EA	Smelter Plant, Nalco, Angul