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| **Detailed Description of the Process Flow** | **Remarks** |
| **Production Line:**  1. Paper Machine – 01 2. Board Coating Plant 3. De-inking Plant 4. Paper Machine – 02 5. Art Paper Coating Plant 6. Paper Core Making Plant 7. Sludge Board 8. Mosquito Coil |  |
| **Finish Goods:** a) Paper Machine 01 & 02 : Baby roll & Sheet  b) DIP : De-inked Pulp  c) Board Coating Plant : Coated Mother Roll  d) Art Coating Plant : Baby roll & Sheet  e) Sludge board : Board Sheet  f) Mosquito Coil : Coil |  |
| **The Main Raw Materials:**  1. **Paper Machine – 01**: The main raw materials for this product line are given below   FRM : 1) LBKP  2) NDLKC  3)OCC (L & F)  4) WBN  5) ONP (L & F)  6) OINP (F)  7) Sludge  8) BCTMP  9) Swedish Board  10) UBKP  Chemicals : 1) AKD Size Chemicals  2) Fixing Chemicals (RIL Fix, I Vax Poly Tc,  PolyminSk)  3) Retention Aid (RIL-100,RTN-100,Bufloc-590)  4) Calcium Carbonate(PCC & GCC)  5) OBA  6) Cartazine Violet RNK Liq./ Methyl Violet  7) Cartazine Brown RP liq./Bismark Brown  8) Cartasol Yellow/Auramin Yellow  9) Methelene Blue  10) Direct Black  11) Busperse 2281  12) Bufloc 5165  13) Kerosine Oil  14) Hi Ply starch/Tap Spray Starch/Hi Burst Starch  15) Tapioca Starch  16) Defoamer  17) Fungicide/Nipacide  18) Caustic Soda/ Ditergent  Packing Materials: 1) Paper Core  2) Both Side Adhesive Tape  3) Scotch Tape   1. **Board Coating Machine:**   FRM : Base Paper from Paper Machine – 01(Duplex Board &Art Card U/C)  Chemicals : 1) Binder(Acronals305 D/Maxcote CB  2) Calcium Carbonate(GCC)  3) Kaolin Clay(Hydragloss 90)  4) Dispersing Agent(Dispex AA 4143 Am)  5) Lubricant(Lamkote 50 V)  6) Poly ethylene glycol, MEG -400  7) Antifoamer(Etingal L)  8) Defoamer(Etingal S)  9) Viscosity Modifier(Streocoll FD)  10) Caustic Soda  11) Tapioca Stach  12) CMC  13) Hardener( Maxcote AZC)  14) Dye(Cartasol Brilliant Violet 5BFN)  Packing Materials: 1) Both Side Adhesive Tape(12” & 1”)  2) Scotch Tape(2”)  **c) De-Inking Plant.** FRM: 1) Old White Printed Book b) Old magazine c) Sorted office paper d) Sorted white ledger e) White exam khata f)White/News rough khata g) Old newsprint paper h) Over issue newsprint paper i) sorted white ledger j) Old corrugated cartoon k) New double line kraft paper cutting l) LBKP m) NBKP n) CTMP o) BCTMP p) HWS etc either from local or foreign source.  Chemicals: a) Caustic Soda b) Soap/surfactant c) Sodium silicate d) Hydrozen Peroxide e) Chelating agent f) Dispersing agent g) Dye fixing agent h) Stickies control agent I ) Flocculant j) Alum k) Sodium hydrosulphite l) Hydrocholoric Acid m)Sulfuric Acid n) Refining Aid etc either from local or foreign source.  **d) Paper Machine : 02:**  FRM : 1) Deinked Pulp  2) Virgin Pulp (LBKP)  Chemicals: 1) AKD Size Chemical  2) Fixing Chemical (RIL Fix, I Vax Poly TC,PolyminSk)  3) Retention Aid (RIL-100/ RTN-100/Bufloc 590)  4) Tapioca Starch  5) Busperse 2281  6) Bufloc 5165/ Cartsperse PSM  7) Hi Burst Starch  8) Calcium Carbonate (PCC & GCC)  9) Alum  10) Cartazine Violet / Methyl Violet  11) Cartasol Yellow MGLA  12) Defoamer  13) Nipacide/Fungicide  14) Kerosine Oil  Packing Materials: 1) Paper Core  2) Both Side Adhesive Tape  **e) Art Paper Coating:**  FRM : Base Paper from any Paper Machine of BPML  Chemicals: 1) Binder(Acronals305 D/Maxcote CB  2) Calcium Carbonate(GCC)  3) Kaolin Clay(Hydragloss 90)  4) Dispersing Agent(Dispex AA 4143 Am)  5) Lubricant(Lamkote 50 V)  6) Poly ethylene glycol, MEG -400  7) Antifoamer(Etingal L)  8) Defoamer(Etingal S)  9) Viscosity Modifier(Streocoll FD)  10) Caustic Soda  11) CMC  12) Hardener( Maxcote AZC)  13) Dye(Cartasol Brilliant Violet 5BFN)  Packing Materials: 1) Both Side Adhesive Tape( 1”)  2) Scotch Tape(2”)  **f) Paper Core Making :**  FRM : Base Paper from Paper Machine – 01  Chemicals : 1) Glutex  2) Sodium Silicate  3) Lubricant Oil  Packing Materials : 1) Both side Adhesive Tape(1”)  2) Scotch Tape (2”)  **g) Sludge Board**:  FRM: Sludge from ETP of BPML- 02  Chemicals : 1) Alum  2) Polymer   1. **Mosquito Coil : (Under Construction**)   FRM : 1) Sludge from ETP of BPML- 02  2) Waste Paper  Chemicals:  Packing Materials: |  |
| **Basic Production Process****Paper Machine – 01:** This product line follows by three steps.Stock preparation: Slushing of pulp of different types as per product requirement and maintain the pulp quality at different position. The pulp possess to refiner to maintain proper °SR. After ensuring of all in process quality , the pulp then transfer to machine chest and add some chemicals with dye to make paper.Paper Making: The ready pulp mix with chemicals and huge water to make an pulp suspension which possess to Head Box . The suspension pour on Fourdrinier Wire with high velocity which is concentrated by following some mechanical device and turn into a paper sheet. The sheet then presses to bring out moisture by a series of Press. After pressing the sheet then enter into dryer to make the sheet almost moisture free. For smoothening the sheet passes to online calendar and reeling .Finishing : At reel part, a jumbo roll/Mother Roll is produced which is shifted to rewinder or any other product line to get finish product as per market or internal demand.    1. **Board Coating Plant :**   This product line follows by three steps. Chemical Preparation & Paper Coating & Finishing   1. Chemical Preparation : Coating Color is prepared using several types of chemicals with different formulation for different grades of paper. 2. Paper Coating : Prepared coating color is applied on top of paper web using 1st coater and on bottom of paper web using 2nd coater. After every coater paper is passed through hot air box & one dryer cylinder for proper drying. After drying paper passes to gloss calendar follows by brush roll to improve gloss then it goes to reel part. At reel part, a Coated jumbo roll/Mother Roll is produced which is shifted to Paper Machine rewinder for finishing.      1. ***De-Inking line (ONP/MOW):***   Generally following major steps are used in our de-inking plant:  ***Repulping:***  Based on required Pulp & Paper quality, different raw materials & Chemicals added into the Pulper. After proper slushing the pulp supply to the Dump chest. Non fiber impurities like laminated plastic, cotton, old electronic parts, rope etc separated & removed from the pulp before enter to the dump chest through Hydra purge & Select purge.  ***HDC:***  From Dump chest the pulp feed to the High Density Cleaner (HDC) where coarse & heavy  rejects like small stone parts, stapler pins, small plastic particle, sand etc removed by cyclone  separation way.  ***Coarse screen:***  After HDC the slurry feed to the Coarse Screening zone. We have three stage cascade  screening system where the pulp at first goes to the primary coarse screen and impurities  with the size of more than 1.5mm diameter removed.  ***Fine Screen:***  The coarse rejects free pulp feed to the fine screening system to remove the rejects with  the size of more than 0.15mm dia. The fine screening also consist of three stages. Only the  accept from fine screen feed to the Flotation De-Inking cell and rejects send to the 2ry/3ry  stage for further purification & fiber collection.  ***Flotation de-inking:***  There are ten large flotation cell, among them primary cell(4 nos) remove maximum ink, stickie, coating etc and secondary cell(4 nos)remove similar remaining impurities. All rejects either from primary or secondary cell feed to the rejects cells (2 nos) for further ink separation and fiber recovery.  ***Washing:***  The Ink free pulp feed to the washing system to remove soap, ink, dirtetc from fiber and then feed to the dispersing unit.  ***Dispersing:***  At dispersing unit pulp squeezes to 25% consistency and temperature increase to 105®C for proper dispersing of remaining dirt, ink, stickie etc.  ***Low density cleaner(LDC):***  The three stage LDC remove light non fiber impurities like sand, metal, plastic etc from fiber by cyclone separating way.  ***Bleaching:***After disperser the pulp supply to the bleaching tower. At first pulp pass through the oxidative bleaching stage to remove dye, colour, stickieetc and to increase the pulp brightness. Finally the pulp treated with reductive bleaching chemical to remove residual peroxide and the dye or colour which unaffected during oxidative bleaching. The de-inked pulp either supply to the paper machine-2 of the same unit or different paper machine of other unit of the Group through pulp thickening plant, sometimes the pulp also use in the middle layer of the Duplex Board.   1. **Paper Machine -02:**   This product line follows by three steps.  1 )Stock preparation: Slushing of pulp of different types as per product requirement and maintain the pulp quality at different position. The pulp possess to refiner to maintain proper °SR. After ensuring of all in process quality , the pulp then transfer to machine chest and add some chemicals with dye to make paper.   1. Paper Making: The ready pulp mix with chemicals, huge water and make an pulp suspension which possess to Head Box . The suspension pour on Fourdrinier Wire with high velocity which is concentrated by following some mechanical device and turn into a paper sheet. The sheet then presses to bring out moisture by a series of Press. After pressing the sheet then enter into dryer to make the sheet almost moisture free. For smoothening the sheet passes to online calendar and reeling . 2. Finishing : At reel part, a jumbo roll/Mother Roll is produced which is shifted to rewinder to get finish product as per market or internal demand and may be shifted to any other product line.          1. **Art Paper Coating Plant** :   This product line follows by three steps. Chemical Preparation & Paper Coating & Finishing   1. Chemical Preparation : Coating Color is prepared using several types of chemicals with different formulation for different grades of paper. 2. Paper Coating : Prepared coating color is applied on top of paper web using 1st coater and on bottom of paper web using 2nd coater. After every coater paper is passed through hot air box & dryer cylinder for proper drying. After drying it goes to reel part. At reel part, a jumbo roll/Mother Roll is produced which is shifted to super calendar. 3. Finishing : After super calendaring jumbo roll/Mother Roll is shifted to rewinder. By the Rewinder baby roll is produced from Jumbo roll/Mother Roll to get finish product as per market demand.      1. **Core Making :**   Core making plant follows with few steps.   1. Coil Slitting: Taking a base paper which is generally comes from PM-01 of   BPML-2. The base paper is slitted according to acceptable ply size.   1. Core Making: 24-30 nos. of plies are jointed with adhesive using lubricating oil which moves forward spirally and cut off automatically according to demandable sizes.      1. **Sludge Board Machine (Basic Production Process):**   The sludge generated from effluent treatment plant feed to the level box for the uniform supply to the Sludge board former. The sludge board layer become more dry by vacuum pump and intertwisted for required thickness. The wet sludge board (50%cons.) feed to the dryer section to reduce the moisture up to 5%.     1. **Mosquito Coil :**   **Under Construction** |  |
| **Process Operation Capacity**  1. Paper Machine – 01: 100 MT/Day   Product Grade Capacity/Day  Duplex Board 160 GSM UC/BP 80 MT  Duplex Board 205 GSM UC/BP 100 MT  Duplex Board 230 GSM UC/BP 100 MT  Duplex Board 225 GSM UC 100 MT  Duplex Board 250 GSM UC 100 MT  Duplex Board 280 GSM BP 100 MT  Duplex Board 330 GSM BP 100 MT  Brown Liner 110 GSM 60 MT  Brown Liner 115 GSM 70 MT  Brown Liner 150 GSM 80 MT  Fluting Media 120 GSM 70 MT  Core BP 200 GSM 80 MT  Core BP 350 GSM 80 MT  Sack Kraft 70 GSM 60 MT  Sack Kraft 80 GSM 65 MT  Brown Packing Paper 65 GSM 50 MT  Brown Packing Paper 70 GSM 60 MT  Brown Packing paper 90 GSM 70 MT  Brown Packing Paper 50 GSM 40 MT  Stiffner 180 GSM 90 MT  Cartidge Paper 100 GSM 80 MT  Art Card 205 GSM BP 100 MT   1. Board Coating Machine – 90 MT/ Day   Product Grade Capacity/Day  Coated Duplex Board 180 GSM 65 MT  Coated Duplex Board 225 GSM 70 MT  Coated Duplex Board 250 GSM 70 MT  Coated Duplex Board 300 GSM 80 MT  Coated Duplex Board 350 GSM 90 MT  Art Card 225 GSM 30 MT  Art Paper 80 GSM 25 MT   1. Deinking Plant 220 MT/Day   Deinked Pulp 200 MT.   1. Paper Machine – 02 : 120 MT/Day   Newsprint 46 GSM(56% PV) 100 MT  Newsprint 46 GSM(60% PV) 100 MT  Newsprint 46 GSM(65% PV) 100 MT  Newsprint 46 GSM (70%PV) 100 MT  White Writing Paper 50 GSM(DIP,80%PV) 100 MT  White Writing Paper 55 GSM(DIP,80%PV) 110 MT  White Writing Paper 61 GSM(DIP,80%PV) 110 MT  Cream laid 57 GSM(DIP) 100 MT  White Writing paper 42 GSM (VP) 80MT  White Writing Paper 55 GSM (VP) 110 MT  White writing paper 61 GSM (VP) 110 MT  White Writing Paper 42 GSM DIP + VP) 90 MT  White Writing Paper 50 GSM (DIP +VP) 100 MT  White Writing Paper 55 GSM (DIP+VP) 110 MT  White writing paper 61 GSM (DIP+VP) 110 MT  White Writing Paper 52 GSM (DIP+SB+VP) 100 MT.   1. Art Paper Machine: 20 MT/Day   Art Paper 68 GSM 15 MT  Art Paper 80 GSM 18 MT  Art Paper 110 GSM 20 MT   1. Paper Core Making 80 inch/min   Paper Core 70 inch/min   1. Sludge Board – 3 MT/day   Sludge Board Sheet 2.5 MT   1. Mosquito Coil   Coil Under Construction |  |
| **Production Type** Make To Order  Make To Stock |  |
| **Major Machine List**  1. **Paper Machine – 01**   1.Pulper  2. HDC  3. Fiberizer  4. Coarse Screen  5. MDC  6. LDC  7. X-Clone  8. Washer  9. TDR  10. Fan Pump  11. Pressure Screen  12. Former  13. Head Box  14. Fourdrinier  15. Press  16. Dryer  17. yankee  18. Calender  19. Reel  20. Rewinder  **b) Board Coating Machine**  1. Chemical Preparation Kitchen  2. Coater  3. Hot Air Box  4. Dryer Cylinder  5. Brush Roll  6. Gloss Calender  7. Reel  **c) De-inking Plant:**  1.Pulper  2. Triple Disk Refiner  3. Hydrapurge  4. Selectpurge  5. High Density Cleaner  6. Coarse Screen(3stage)  7. Fine screen(3stage)  8. Flotation cell  9. Washer  10. Disperser  11. Low Density Cleaner(3stage)  **d) Paper Machine – o2**  1. TDR  2. LDC  3. Fan Pump  4. Pressure Screen  5. Head Box  6. Wire Part  7. Press  8. Dryer  9. Calender  10. Reel  11. Rewinder  **e) Art Coating Machine**:  1.Chemical Preparation Kitchen  2.Coater  3. Hot Air Box  4. Dryer  5. Reel  6. Super Calender  7. Rewinder  **f) Paper Core Making Machine**:  1. Slitting Machine  2. Core Making Machine  3. Core Cutting Machine  **g) Sludge Board Machine**  1. Pulper  2. Former  3. Dryer  **h) Mosquito Coil**  Under Construction |  |
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| **Wastage**  1. Paper Machine-01 : ~10 % 2. Board Coating Machine : 2 % 3. De-inking Plant : 25 % 4. Paper Machine – 02 : 2 % 5. Art Paper Machine – 15 % 6. Paper Core Making – 5 % 7. Sludge Board – 2 % 8. Mosquito Coil – Under Construction |  |
| **Working Hours** A Shift – 6.00 AM – 2.00 PM  B Shift – 2.00 PM – 10.00 PM  C Shift – 10.00 PM- 6.00 AM |  |
| **Rework** Convert into under size product if available as per market demand. |  |
| **Report** Generally reporting procedure is made after end of the day which is cumulated end of the month. Declaration of daily production may be on calculative basis or assumption basis if and when mother roll lying on floor and daily machine production may be changed from earlier declaration. Sometimes mother roll that lying on floor may be added in daily machine production after getting proper instruction from marketing department.  Usually the following reports are maintained.  Daily Report, Monthly report and Yearly repot for both production and chemical consumption. |  |