

Intervening Technology/ Technique	Modification in the Filtration Technology
About the industry	M/s. Devarsons Industries Private Limited located at Odhav, Gujarat. Company engaged in manufacturing of powder solvent Dyes, liquid solvent dyes, vat dyes, acid dyes, food dyes etc.
Implemented Techniques/ Technology	<p>Before</p> <div style="text-align: center;"> <div style="border: 2px solid #00AEEF; padding: 5px; display: inline-block; margin-bottom: 10px;">Existing System</div> </div> <pre> graph TD RM[Reaction Mass] --> FPF[Recycle plate type Filter press] FPF --> F[Filtration] F --> W[Washing] W --> A[Aeration] A --> D[Dumping] D --> C[Centrifuge] C --> DR[Drying] F -.-> Filtrate W -.-> NAF[Normal Acidic final] A -.-> DH[Dewatering Hardening] D -.-> Normal C -.-> CA[Charging Acidic] C -.-> WN[Wash Normal] C -.-> WD[Wash Discharge] </pre> <p>Losses in the Conventional Drying methods which are calculated as follows:</p> <ul style="list-style-type: none"> - Blow down losses because of high TDS water (Approx losses - 10%) - Boiler efficiency (Approx losses - 10%) - Steam transportation losses (Approx losses - 5%) - Hot air generation by steam through Radiator losses (Approx losses - 10%) - Steam evaporation loss due to manual system (Approx losses - 5%)

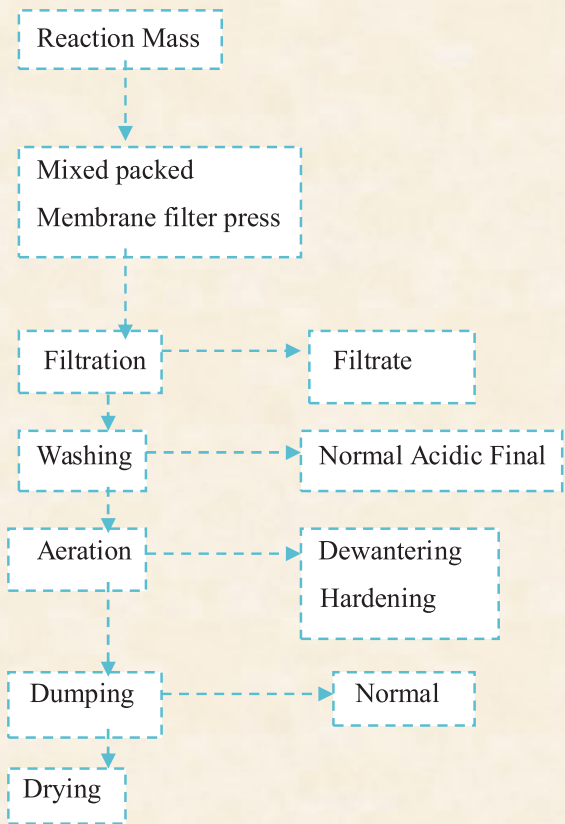


Benefits	After CP	Before CP
<i>Economical</i>	<ul style="list-style-type: none"> • Power: 803 kWh • Labour: 14 nos. • Water :43 kL 	<ul style="list-style-type: none"> • Power: 560 kWh • Labour: 5 nos. • Water :38 kL

After

Filtration System

Proposed System



- By adopting new filtration technology, the power consumption has been reduced efficiently. As power consumption is mainly due to the centrifugation of the product which will be avoided by adopting new technology. The reduction in power consumption is 30%.
- On completion of reaction, filtration and washing are the prime stages for the good quality product.
- In recessed type press, the dewatering process was carried out by compressed air at 0.2 kg of Pressure. The same process is totally avoided in the newly mixed pack membrane press as it removes water from wet cake hydraulically at 8 kg Pressure.
- The process of centrifugation will be avoided because of reduction in water by almost 16% in the wet cake.



	PNG: 480 Scm	<ul style="list-style-type: none">• PNG: 348 Scm
<i>Environmental</i>	<ul style="list-style-type: none">• Sludge Generation is more which is more problematic for environment and also cause disposable problem.	<ul style="list-style-type: none">• Reduction in sludge quantity and found less moisture in sludge.

