
REDUCTION OF ENERGY

KEY TO PROCESS INNOVATION

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PROCESS INDUSTRY INNOVATES FOR

- Reduction in Operating Cost
- Emissions in keeping with Environmental Regulations
- Reduction in Capital Cost
- Economic Disposal of Co-products

REDUCTION IN OPERATING COST

- Yield & Selectivity
- Energy Consumption
(Both Thermal & Electricity)

CHLOR ALKALI

Earlier Technologies : Diaphragm Cell
Mercury Cell

Latest Technology : Membrane Cell

Advantage of Latest Technology : - Reduction of Electrical Power by about 600 KWH / TE
- For 100 TPD Plant Reduction of about 2.5 MW Electricity

SODA ASH

Earlier Technology : Straight Solvay Process

Latest Technology : Modified Solvay – Dry Lime (AKZO)

Advantage : - Lowest Steam Consumption

AMMONIA

- Earlier Technology : High Pressure & Temperature
Small Size Plants (300 – 600 TPD)
13 Gcal / MT of NH₃
- Latest Technology : Low Pressure & Temperature
- Advantage :
 - Large Size Plants (2,000 TPD)
 - 7GCal / MT of NH₃
 - Small Reformer Box

METHANOL

Earlier Technology : High Pressure & Temperature
High Energy (+ 10 GCal / MT)

Latest Technology : Low Pressure

Advantage : - Low Energy (7.5 Gcal / MT)
- Single Stream 3,000 – 5,000 TPD

PHOSPHORIC ACID

Earlier Technology : HEMI Hydrate / Di Hydrate

Latest Technology : HEMI Di Hydrate

Advantage : - HEMI-DI reduces Steam Consumption to
NIL

CONCLUSION

PROCESS INDUSTRY NEEDS INNOVATION

TO REDUCE

**ENERGY
(THERMAL & ELECTRICAL)**

FOR

THEIR SURVIVAL & GROWTH