Technologies offered by the Chematur Engineering Group

- Explosives & propellants
- Nitric Acid
- Fertilizers
- Isocyanates
- Nitroaromatics
- Ethanol and its derivatives
- Hydrogen peroxide
- Supercritical Fluids
- Acid concentration and recovery system
- Evaporation & Crystallization
- Electrochemistry

Environmentally Friendly Process plants

Compressed /Supercritical Fluid Technologies

- Environmental friendly extraction of wanted components, Xtractor™
- Precision parts cleaning, Rotowasher™
- Depainting of waxes
- Solvent for chemical reactions, Swan SCF™
- Particle formation
- Chromatography

Application areas scCO₂

Supercritical Water Oxidation
Supercritical Carbon Dioxide Technology

Rotowasher
**scCO₂ Technology**

- **APPLICATION SPECIFIC EQUIPMENT**
- **CARBON DIOXIDE LOOP**
- **Rotowasher/Superdebind™**
  - Over 75 L CO₂/h, 400 bar
  - Unique rotating cleaning basket
  - Suitable for small precision parts
  - Successfully used at Viking Sewing Machines since 1999
  - Recently developed for use in the debinding step of PIM components production

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**SCCO₂ Reactions**

- Built the world first SCF Reaction plant.
- The system show very similar results to the Lab work.
- Plant can run a variety of different types of SCF reactions, such as Hydrogenation and Friedel Craft reactions.

**Particle formation**

- Number of different processes use compressed fluids to produce particles.
- Currently insulin for inhalation is being manufactured using such a process.

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**SCCO₂ Chromatography**

- Built SCF Chromatography Column in the 1990’s.
- Developed a system to ensure even flow through the column.

**Supercritical Water Processes**

- **Highly efficient** process for:
  - Waste water purification, Aqua Critox™
  - Treatment of industrial and municipal sludge, Aqua Reci™
  - Recovery of valuable inorganics from waste materials, e.g. spent catalysts, AquaCar™
Compressed Fluids are in use in a number of Industrial applications.
Typically they use environmentally benign compounds to be the solvent.
Using compressed fluids can speed up traditional processes, reactions/ extraction times.