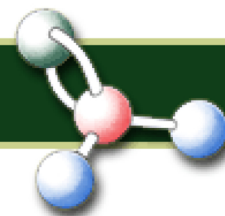


CAL Polymers, Inc.



Mission

Products & Services

Yields & Energy

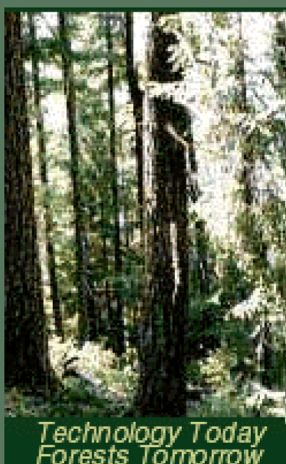
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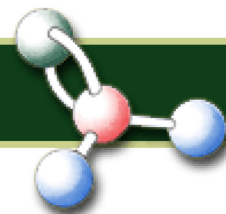
CAL Polymers, Inc. specializes in the design, engineering, technology, licensing and construction of formaldehyde / urea formaldehyde concentrate (UFC) plants and related facilities. CAL Polymers, Inc. has its own proprietary technology for the design of formaldehyde plants, worldwide.

Corporate **CAL Polymers, Inc.**
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USA
Phone: 208-237-8245
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E-mail: cal@calpolymers.com

Russia & CIS If interested in acquiring
Countries: **CAL Polymers, Inc.**
Sales & Service **Process Technology & Design**
FOR INSTALLATION IN RUSSIA
Please e-mail your request to
cal@calpolymers.com and
put "RUSSIA" in the subject line

Download a print copy of the
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in PDF format from the links.
[CAL Polymers Inc. Brochure 98M](#)
[Low-res Brochure 66M](#)





Mission Statement

CAL Polymers, Inc. is an organization dedicated to serving the production needs of the chemical manufacturing and forest products industries.

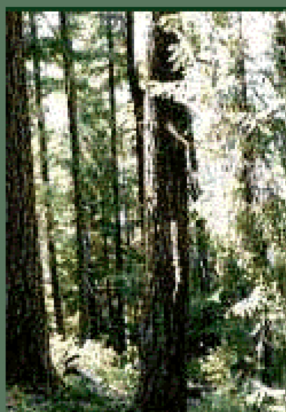
Our explicit understanding of the mixed oxide process has enabled us to develop technology that has proved to be the most effective in energy savings and efficiency.

In keeping with our commitment to the health and well being of our surroundings, our neighbors, and our clients, we will continually strive to offer the finest in environmentally sound equipment.

We will continue to provide our clients with the best available technology through our drive for excellence, and our commitment to quality.

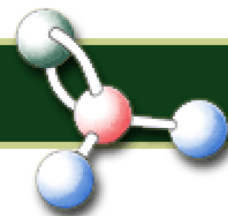
Our flexibility empowers us to meet the commitments to fulfill our clients' individual needs.

Efficiency by Design
Excellence by Quality Control
Integrity Always



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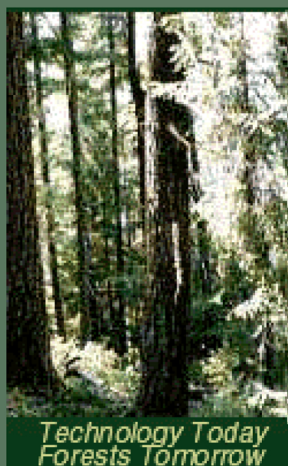
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Products and Services

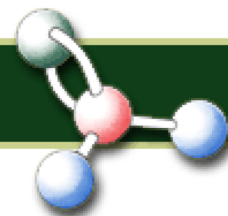
Custom design and engineering of formaldehyde, UFC and resin facilities

- Licensing of our Proprietary Technology
- Fabrication through Custom Designs
- Quality Control & Specification of Fabrication
- OEM Purchasing of Equipment
- Supervision of Installation
- Start-up and Training
- Complete Turn-key facilities

Other Services for existing Mixed Oxide Facilities

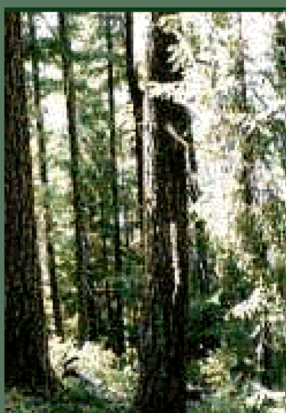
- Troubleshooting
- Upgrades
 - Increase Production
 - Lower Operating Costs
 - Improve Efficiencies
 - Environmental Corrections
- Service Contracts
- Training
- Re-catalyzation

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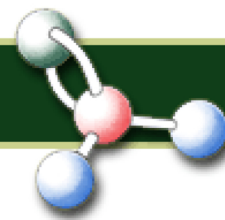


Yields and Energy Consumption

- 93 - 95% yields from methanol to formaldehyde
- 50 kWh per 1000 Kg 37% formaldehyde
- 30 kWh per 1000 Kg 37% formaldehyde with energy saving package
- 50,000 Kg 37% formaldehyde per kilo catalyst is attainable through adhering to CAL Polymers, Inc. training program



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Environmental Issues

The engineering staff at CAL Polymers, Inc. will assist you by providing information required to complete the necessary environmental permits for emissions.

We will design your process to satisfy the environmental regulations you are required to meet.

CAL Polymers, Inc. can provide the technology for **zero water discharge** including cooling tower and boiler blow-downs.

Mission

Products & Services

Yields & Energy

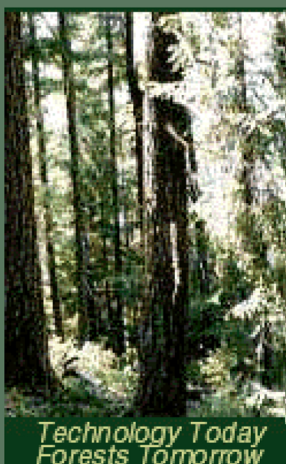
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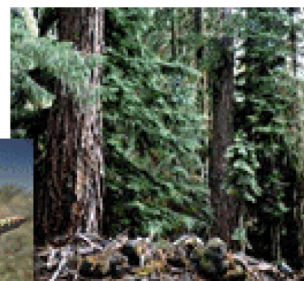
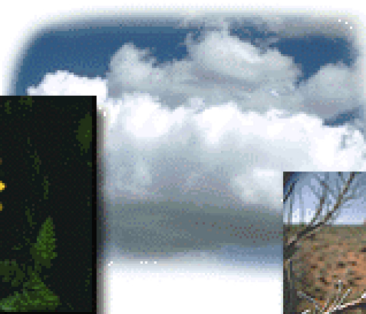
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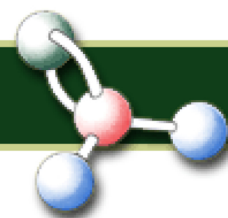


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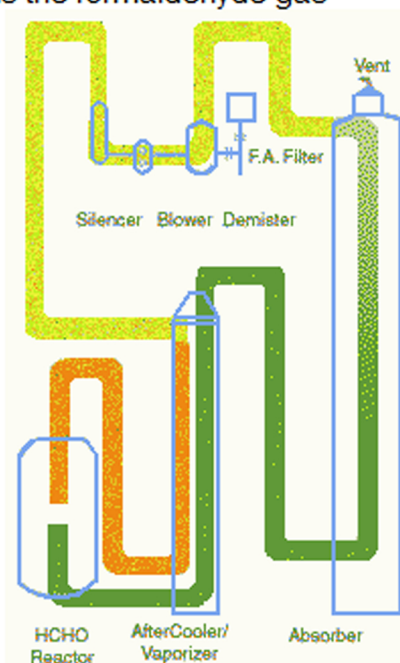
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The Formaldehyde & UFC Process

The **CAL Polymers, Inc.** formaldehyde process utilizes a mixed oxide catalyst bed for oxidation of methanol to formaldehyde. The formaldehyde gas exiting the reactor preheats the diluted methanol vapor stream. This prepares the methanol stream for optimum reaction with the catalyst as well as cools the formaldehyde gas stream to stabilize the formaldehyde prior to absorption. Our triple fold aftercooler is designed to transfer the optimum amount of heat to the steam recovery system and lower the cooling requirements of the absorber. This new adaptation of the aftercooler system prevents the formation of unwanted paraformaldehyde in the equipment. After absorption, the recycled air stream exhausts a portion of the gas containing ppm trace amounts of formaldehyde from the top of the absorption tower to the catalytic converter. The catalytic converter converts 98+% of all pollutants in the exhaust stream into carbon dioxide and water prior to atmospheric release. The balance of the gas stream is recycled from the absorber and mixed with fresh air. This stream is now ready for the introduction of methanol, which will be preheated for oxidation by the catalyst and the cycle continues.



The energy of oxidation, being transferred into steam has many uses throughout your plant. We are currently in the design phase of incorporating a steam turbine into the process in order to convert excess steam into usable power by the blower, thus reducing energy consumption. The CAL Polymers, Inc. entire operation is extremely efficient. The recirculation process combined with the catalytic converter also satisfies environmental issues, so necessary in today's businesses. If customers desire a more efficient plant we can recover additional heat, for the generation of steam, from the catalytic converter.

Mission

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Yields & Energy

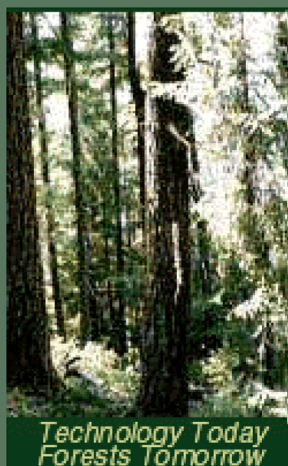
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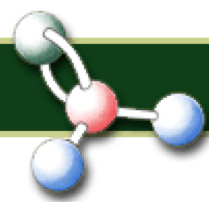
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Corporate Experience and Client List

CAL Polymers, Inc. has licensed it's process technology to the following clients from 1995 to present date:

Owner	Type	Design & Engineering	Equipment Specifications	Q.C. of Fabrication	Construction Installation	Start-up & Training	Products R & D	Sales & Service
— Evergreen Fibreboard - Malaysia	HCHO/UFC/RESIN	X	X			X		X
— Nizhne-Maltsevskiy - Russia	HCHO	X	X					
— Schekino Azot - Russia	HCHO/UFC	X	X		X	X		X
— Flakeboard - Canada	HCHO/UFC Refit	X	X					X
— AmmCarb - Russia	Ammonium Carbonate	X	X					
— ARC Resins - Canada	HCHO/UFC Refit	X	X					
— Stirol - Ukraine	HCHO	X	X		X	X		X
— Karelia - Russia	HCHO/UFC/RESIN	X	X		X	X		X
— Star Plus Chemicals - Thailand	HCHO/UFC/RESIN	X	X	X	X	X	X	X
— Plantation Timber Products - China	HCHO/UFC/RESIN	X	X		X	X	X	X
— Merbok- Malaysia	HCHO/UFC/RESIN	X	X	X	X	X	X	X
— Venlon - India	HCHO	X	X		X	X		X
— Hadjilucas - Greece	HCHO/UFC	X	X	X	X	X		X
— Borden - United States	Process Consultant	X	X			X		X
— Woodchem Australia - Australia	HCHO/UFC	X	X	X		X		X
— Chimar Hellas - Greece	RESIN	X	X	X	X	X	X	X
— Chimar Hellas - Greece	HCHO/UFC	X	X	X	X	X		X
— Spurlock Adhesives - United States	HCHO Retrofit	X	X	X	X	X		X
— Woodchem Europe - Belgium	HCHO Retrofit	X	X	X	X	X		X
— Masisa - Argentina	HCHO/UFC	X	X	X	X	X		X

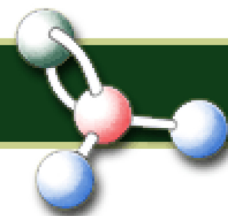
Plants where CAL Polymers, Inc. personnel were responsible while employed elsewhere:

— Masisa - Chile	HCHO/UFC	X	X	X	X	X
— Hexa-Neste - Malaysia	HCHO/UFC	X	X	X	X	
— Borden - United States	(2) HCHO/UFC	X	X	X	X	X

— Borden Chemical & Plastics - United States	HCHO/UFC	X	X	X		X	X	X
— Neste Resins - United States	RESIN	X	X	X	X		X	X
— Liquid Carbonics - United States	HCHO/UFC	X	X	X	X			
— Borden - Canada	HCHO/UFC	X	X	X		X		
— Capital Resins - United States	HCHO/UFC	X	X	X	X	X		
— Spurlock Adhesives - United States	UFC	X	X	X	X	X	X	
— Woodchem Canada - Canada	HCHO/UFC/RESINS	X	X	X	X			
— Neste Resins - United States	HCHO/UFC	X	X	X	X	X		
— Borden - United States	HCHO/UFC	X	X	X				
— Georgia Pacific - United States	RESIN							
— Trintoc - Trinidad	UFC	X	X	X	X	X		
— NAFCON - Nigeria	UFC	X	X	X	X	X		
— Bison ACM/Mars - Nigeria	HCHO/UFC	X	X	X	X	X		X
— D.B. Western - United States	HCHO		X	X	X	X		X
— New Mexico Adhesives - United States	HCHO/UFC/RESINS	X	X	X	X	X	X	X
— Borden Canada - Canada	HCHO/UFC					X		

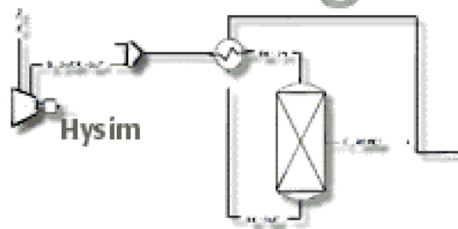
HCHO = Formaldehyde, **UFC** = Urea Fromaldehyde Concentrate, **R**= Resin Plant, **Q.C.**= Quality Control

CAL Polymers, Inc.

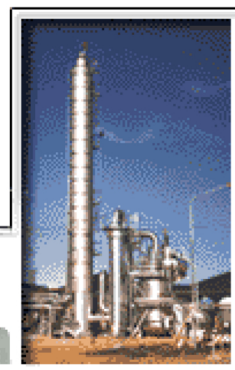


Pictures

From Design



To Production



Design



AutoCAD drawing of a complete site.

Final Product



Ready for Production



Final Installation Phase



Well done at Sunset

Mission

Products & Services

Yields & Energy

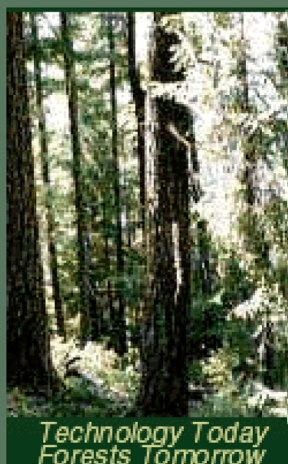
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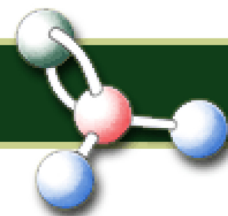
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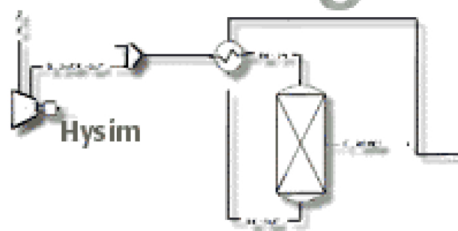


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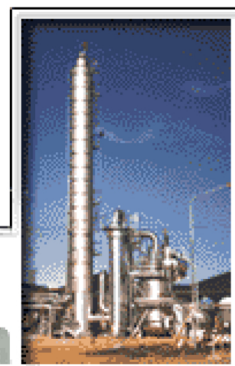


Pictures

From Design



To Production



Construction Phase



Absorber, under construction



Hot Oil Condenser

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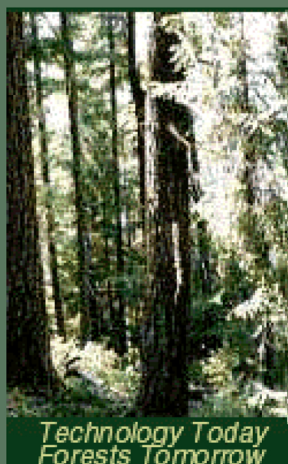
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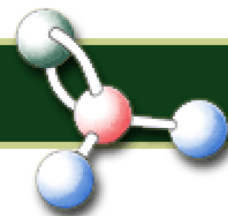
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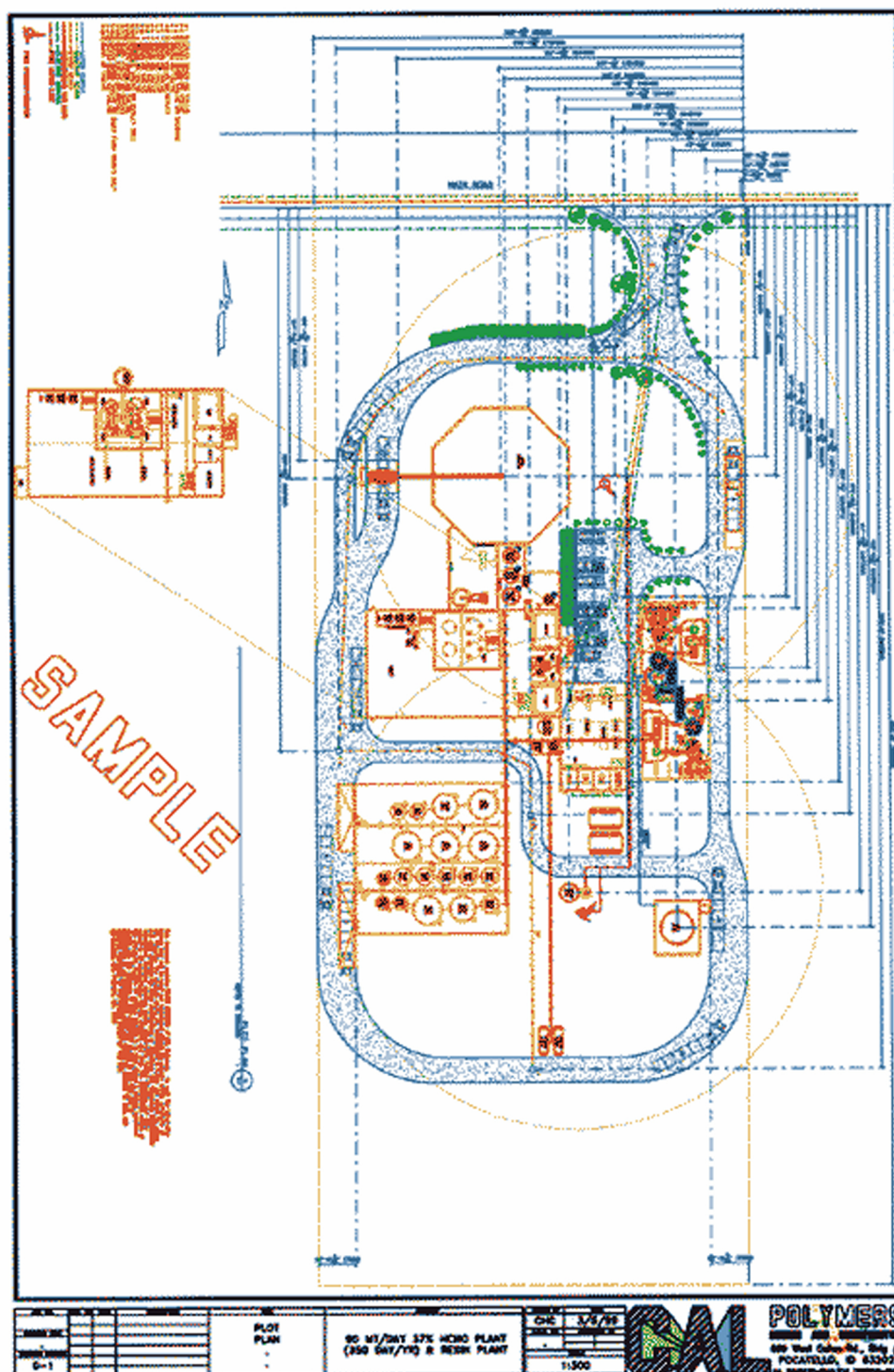


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Design Pictures

AutoCAD Drawing of Completed Site



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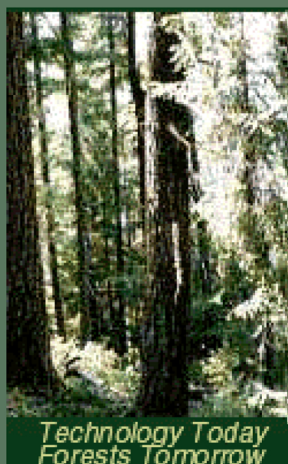
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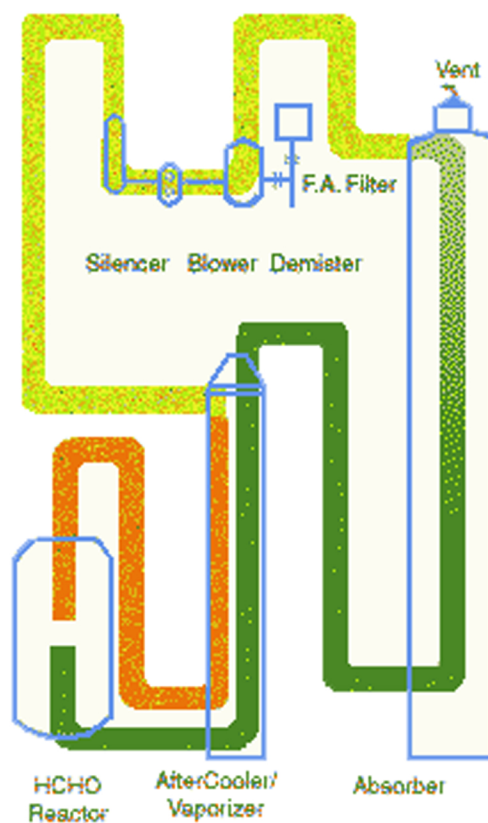
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Diagram of CAL Polymer's Process

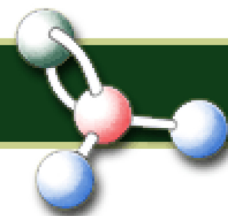


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Production Pictures



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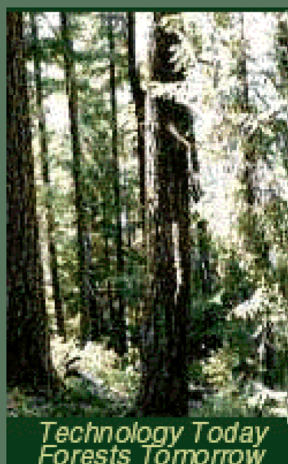
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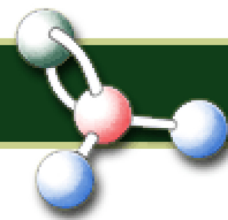
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Construction Pictures



Absorber under construction



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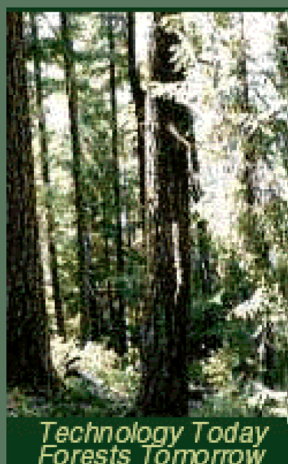
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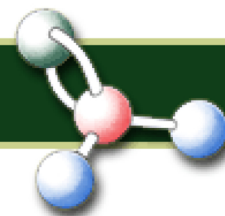
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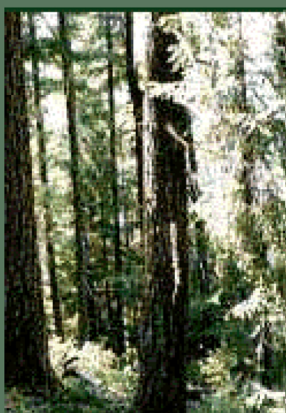
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