

adpap

ADRECIPE - MANAGING THE INGREDIENTS OF CHEMICAL PROCESSES

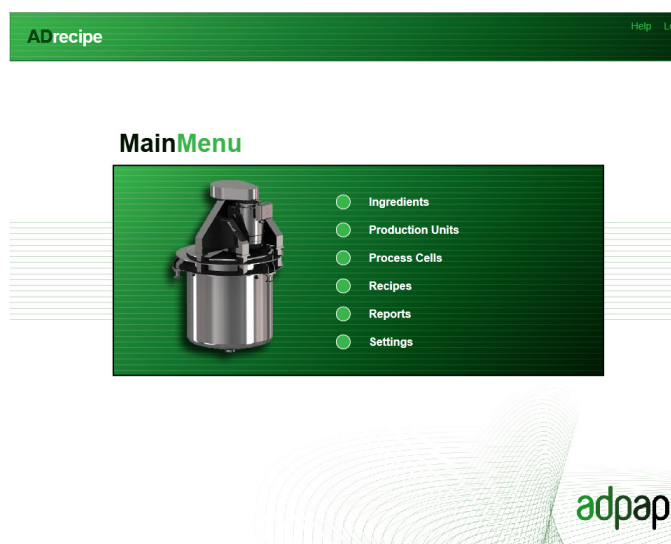
About Adpap

Adpap Ltd. provides advanced process applications for chemical handling, especially for the pulp & paper industry. The company develops and delivers necessary process components, such as mixers, filters and pressure screens, as well as complete systems for de-inking chemical handling, wet-end chemical handling, surface size make down, coating color make down, coating color recovery as well as supply systems for sizers and coater heads.

The chemical processes are typically batch or continuous production processes. The processes are controlled with recipes, which define various ingredients and operations that are loaded in a sequence to a batch mixer, or continuously to a process line. A typical process consists of several mixers that can be grouped together, and a bigger number of tanks used for storage of raw material as well as the intermediate and final products.

ADrecipe

Prosys designed and developed with Adpap a recipe handling application, called ADrecipe, which is used to manage the recipes of any chemical process delivered by Adpap. The application takes use of the ISA S88 Batch standard and provides a web browser based user interface for defining the ingredients, production units and process cells of a chemical plant. The users can define master and control recipes and load them to the Adpap production system from any computer in the factory. The system also provides production and consumption reports of finished batches and continuous making.



ADrecipe was implemented as a stand-alone application that acts as a web server and OPC client at the same time. The software can handle requests from several user interface sessions at a time and simultaneously making sure that the production data is loaded to the automation system via its OPC server. All recipe and reporting data is stored in a background database. The application is fully configurable, including full user specific multi-language capabilities and easy-to-use user interface.

Built on Prosys Sentrol

The implementation is based on Delphi and Prosys Sentrol, a leading SDK (software development kit) for OPC client, server and application development. IntraWeb was used in connection with Delphi to implement the web user interfaces in a RAD (Rapid Application Development) way and to support full object-oriented design of the application data.

The visual style of the user interfaces is designed using pure CSS styles. JavaScript is used to provide client-side functionality in the user interfaces, such as quick sorting and filtering of different list views. Other tools that have been used include ModelMaker for UML design, FinalBuilder for project build automation, Subversion for version control and MySQL for the database backend.

About OPC

The development and first pilot of ADrecipe was performed using ABB Freelance process control system. AD-recipe can be connected with different automation systems using OPC technology, which is a vendor neutral interoperability standard used especially by technology and industrial companies.

System Name	Incoming Lines
T103	
Name	T103
Unit Type	Mixer
Ingredient Type	
Main Ingredient	
Phase	Liquid

Charging line from	Ingredient	Equipment	Measurement	Min Capacity	Max Capacity	Overhead
T00A	Astragalce powder	E010	Weight	0	0	0
T00B		E008	Weight	0	0	0
T00M		E122	Weight	0	0	0
T112	Warm water	HV105	Weight	0	0	0
T116	Pit water	HV133	Weight	0	0	0
T201	Caustic soda	E201	Time	0	0	0
T202	Bioctide	E202	Time	0	0	0

Equipment	Outgoing line ID
HV121	D121
HV120	T007
HV112	T006
HV118	T005

Order	Phase	Source Tank	Parts	Meas. Type	Temp	Solid Content	Dry	Wet	Speed	Time
1	Warm water	T112	100	Weight	20	0	0	2576		0:00:00
2	Agitator start									0:00:00
3	Caustic soda	T201	0.1	Time	20	48	6.01	12.52		0:00:00
4	Bioctide	T202	0.02	Time	20	100	1.202	1.202		0:00:00
5	Pit water	T116	3	Weight	20	30.68	180.3	587.6		0:00:00
6	Astragalce powder	T00A	100	Weight	20	99	6010	6070		0:00:00
7	Mixing time									1
8	Pause									0:00:00
9	Agitator stop									0:00:00

Main Parts: 100
Additive Parts: 3.12
Water Parts: 100

“Prosys has solid expertise in both database and user interface design. These skills combined with the latest OPC technology resulted in state-of-the-art system design – which Prosys also implemented very productively.”

Peter Hartman, Adpap Oy.

Prosys PMS Oy

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