



PLANTA DE PRODUCCIÓ D'ÀCID FÒRMIC

PROJECTE DE FINAL DE CARRERA

GRAU EN ENGINYERIA QUÍMICA

ACME
chemicals

Guillermo Bachiller Pérez

Paula Gómez Lorente

Jordi Andreu Morales Tapia

Jaume Rota i Sariol

David Torrent Herrero

Tutor: Marc Peris

Cerdanyola del Vallès, Juny 2016

Volum III

Índex:

9- Manual de càlcul

10- Diagrames i plànols

11- Bibliografia

Annex

11- Bibliografia

- Trambouze, P., Euzen J-P. *"Chemical reactors : from design to operation"*. (2004).
- McKetta Jr, John J.: *"Encyclopedia of Chemical Processing and Design"*: Volume 23- Fluid Flow: Two-Phase Design to Froth Flotation. CRC Press Book. (1976).
- Ullmann's encyclopedia of industrial chemistry. Editorial Willey (1999-2012).
- Chen,L; Zhang,J;*Kinetics of Methanol Carbonylation to Methyl Formate Catalyzed by Sodium Methoxide*. Journal of Natural Gas Chemistry 13 (2004)225-230; Manuscript received August 23,2004;revised November 15,2004
- 2010 ASME Boiler & Pressure Vessel Code 2011a Addenda July 1, 2011
<https://www.asme.org/getmedia/1adfc3df-7dab-44bf-a0788b1c7d60bf0d/ASME_BPVC_2013-Brochure.aspx> [Consulta 1/4/2016]
- "<Branan's rules of Thumb for Chemical Engineers-Butterworth Heinemann (2012)> [consulta 17/4/2016]
- Schineider, D. *Process for preparing methyl formate by reaction of methanol with carbon monoxide in the presence of catalyst System comprising alkali metal formate and alkali metal alkoxide*. US 2014/0148614 A1. 29 de maig de 2014.
- Hladly, S. *Method for production of formic acid*. US 6713649. 30 de març de 2004.
- Zehner, P., *Preparation of methyl formate*. 5401873. 28 de Maig de1995.
- Instituto Nacional de Salud i Higiene en el Trabajo
<<http://www.insht.es/portal/site/Insht/>>. [Consulta: 10/3/2016].
- EWK. *"EWB cooling towers"* <<http://www.ewk.eu/index.php/producto/en/ewb>>. [Consulta 27/5/2016].
- Pompetravaini. *"Bombas centrífugas TCH"*.
<<http://www.pompetravaini.it/pages/prodotto/descrizione.aspx?id=20>>. [Consulta: 13/6/2016].
- Sauer Compressor USA. *"Series Passat Series Boosters"*.
<<http://catalog.sauerusa.com/category/all-categories/boosters-and-gas-compressors/item-1035>> [Consulta: 13/6/2016].
- Linde "Processes for manufacturing CarbonMonoxide" <<http://www.linde-engineering.com/en/index.html>> [Consulta 20/5/2016]

- Linde "Nitrogen generation" <http://www.linde-engineering.com/en/process_plants/adsorption_plants/nitrogen_generation_by_pressure_swing_adsorption/index.html> [consulta 20/05/2016]
- Rockwell "Automation components & integrated control systems" <<http://ab.rockwellautomation.com/es/>> [Consulta 24/5/2016]
- Praxair "N₂ líquid". <<http://www.praxair.es>> [Consulta 20/5/2016]
- Endress Hauser "Sensors". <<http://www.endress.com/en>> [Consulta 24/5/2016]
- Lapesa "Silos". <<http://www.lapesa.es>> [Consulta 29/5/2016]
- Buhlergroup "Discharge_Station" <<http://www.buhlergroup.com/europe/es/home.htm#.V2cD01e4TIM>> [Consulta 29/5/2016]
- Rockwool "ROCKWOOL BUILDING INSULATION" <<http://www.rockwool.es>> [Consulta 25/5/2016]
- Sulzer "Vaporizadors" <<http://www.sulzer.com>> [Consulta 30/5/2016]
- Veolia water "Planta osmosi". <<http://veoliawater.com>> [Consulta 28/5/2016]