



Case story #2

INDUSTRY	PHARMACEUTICAL API
MEDIA – COND	THIONYL CHLORIDE – ORGANIC SOLVENT - 110°C
MATERIAL	GT FLON PHARMA
EQUIPMENT	SHELL & BLOCKS CONDENSER + SUBCOOLER
YEAR	2014

A Chinese pharmaceutical company manufacturing active products for veterinary formulations used glass shell and tubes heat exchangers to condense vapor from a reactor. Each reactor equipped with a condenser and a sub-cooler. For safety issue, their main customer (from USA) requested them to replace glass equipment by another material. Glass face easy breakage due to pressure variation from time to time and particles of glass had to be avoided in the active product.

Customer had already experience of graphite heat exchangers from local Chinese suppliers. All made of phenolic impregnated graphite grade.

Customer use a mix of thionyl chloride with solvent in 2 reactors installed. This media is corrosive to phenolic resin at temperature over 100°C. The possible material of construction for this equipment is reactive metal (Nickel alloys, Tantalum) with high capital cost.

During one exhibition in Shanghai, customer saw GT's PTFE impregnated block which do not face corrosion issue with thionyl chloride even at 200°C. We designed for each reactor a condenser with the following specifications;

Flow of 2350kg/hour of vapor at 100°C with toluene and thionyl chloride to condense and sub-cool condensate to 35°C.

Condenser of 11.2m², made of 4 blocks in grade GT-FLON PHARMA with separator gas/liquid at outlet. Equipment horizontal. Dimensions diam.510mm x 1870mm length with similar dimensions of glass heat exchanger to limit modifications of piping.

GT-FLON PHARMA is an exclusivity of GT. To avoid possible pollution of media, GT FLON PHARMA is impregnated graphite with PTFE followed by a surface polishing. This treatment prevents particle pollution unlike traditional graphite heat exchangers.

The 2 equipment were delivered in 12 weeks in-line with the project schedule. After installation, GT visited customer site to check the correct installation in replacement of glass heat exchanger.

Start-up and operation were smoothly and customer is satisfied of our products which are working well since end 2014.



Graphite Technology

Allow customers to confidently and smoothly operate media in harshest conditions of corrosion, fouling, temperature and pressure.

Allow customers to push forward the efficiency and cost effectiveness of their chemical processes.

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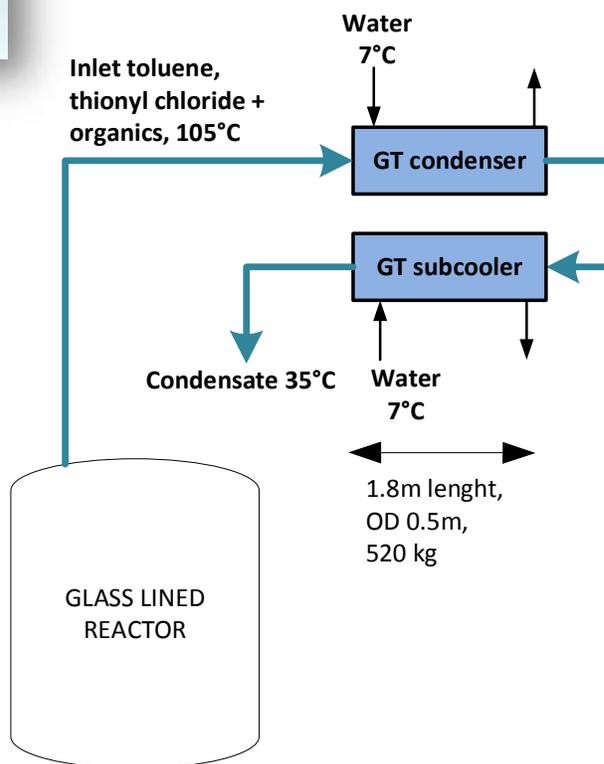


Existing glass heat exchanger replaced by GT-FLON heat exchanger.



New heat exchanger GT-FLON

Sketch principle



Graphite Technology manufactures a wide range of equipment with a wide range of graphite materials for all chemical processes industries.

Heat exchangers, column, reactors, piping & fittings, fuel cells, ...adapted to pressure, highest corrosion and wide temperature range up to 1500°C (2730°F).

Contact us : info@graphite-technology.com