



Case story #17

INDUSTRY	ALL INDUSTRIES
MEDIA – COND	PHOSPHORIC / HYDROGEN FLUORIDE
EQUIPMENT	REACTOR / HEAT EXCHANGER
YEAR	2016

Graphite equipment is convenient solution for processes lab development.

Unlike metals, GT-FLON and GT CARB grades are not sensitive to fluorides and chlorides. They are really multipurpose equipment which can be used for the harshest processes. Hot caustic soda, hydrogen fluoride does not allow to use glass material due to corrosion. Moreover the low thermal conductivity of glass and fragility do not allow designing pressure vessel working at several bar of pressure. Graphite on the contrary allow it.

GT had the experience of several very difficult processes for which customers wishes to develop lab scale equipment and pilot for further process testing.

GT proposed also some key processes knowledge to support customer to design the equipment, taking in account absorption, thermosiphon, chemical reactions, quenching. The design of the equipment is easily modular and can be modified easily for future modifications due to assembly of components using gaskets. The dimensions can be adapted to customer wishes from 3 liters to 300 liters.

GT is able to drill holes for media circulation of 4mm or machine groove for mini plate heat exchanger of 1mm with a high precision (CNC machining). The equipment can be skid mounted.

GT has 2 grades of material very different from traditional graphite phenolic resin impregnated which has some issues regarding solvent swelling, thermal shock sensitivity and limited temperature and corrosion resistance.

GT-FLON allows development of processes until 300°C in very corrosives media.

GT CARB allows development of processes until 1500°C in very corrosives media and up to 500°C in presence of oxygen.

Consult us for the selection of the right material for your processes.

Customers developing processes with fluids up to 550°C and could not find adapted piping. GT proposes sets of pipings elements (tee, cross, straight pipe, elbow, reducer, temperature well) and their connecting flanges which enable customer to build their piping lines able to withstand extremely high temperature. Graphite expanded gaskets are used for connection of the piping element.



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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Reactor with heat exchanger (all in 1) – 350°C – phosphorus chemistry – China



Length 1.3m , diam ~ 300mm – 400 kg – HTA 0.1 m2 - 1 service side circuit, cooling and heating – 5 thermowell – 3 process inlet/outlet nozzle



Reactor with thermosiphon – 300°C – phosphorus chemistry – Japan

Length 1.1m , diam ~ 250mm – 250 kg – HTA 0.086 m2 - 3 service side circuit, cooling and heating – 6 thermowell – 9 process inlet/outlet nozzle



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