



### **The company designs features of hydrochloric acid and sodium sulphate :**

#### **1- High quality of production of hydrochloric acid:**

Quality and purity of product are the most important parameters of hydrochloric acid and sodium sulfate producing plants. Excessive corrosion of equipment during of production process, causes there be always a notable amount of iron ions in productions for traditional units. Also there is possibility of salt or sulfate suction from reactor to adsorption towers that will cause there be these materials in final production of hydrochloric acid. Hydrochloric acid purity is able to be upgraded by using of some special filters and special coating for corrosion controlling in the company. So the product will produce completely colorless.

#### **2- High quality of production of sodium sulfate:**

The majority consumption of sodium sulfate is in detergent and glass industry, so this is very important that there be a high quality material.

There are unreacted salt or sodium bi sulfate in the final product as a problem that they always cause less pure product in the process. To eliminate sulfate and salt, rising of the furnace temperature, installing sulfate washing system at the end of line and complete inhibition of corrosion are what the company has done.

#### **3- Corrosion inhibition:**

Using of metal bottom for furnace and metal mixer in some traditional units causes a lot of corrossions in furnace, even using of radiant heat transfer from furnace roof by silicon carbide bricks has caused some limitation to generate required temperature conditions of furnace. The company is able to eliminate the limitation by correcting of heat transfer method in using of corrosion resistant material in all part of furnace.





**4- Innovation of acid cooler with less depreciation and more life:**

The heat that is produced in water in HCl gas adsorption process, should be eliminated from the system. Glass exchangers are usually used at traditional units for the purpose, but they have very high depreciation and limitations. Also graphite exchangers that are used at some industrial units, have their own limitations too. High mechanical corrosion of the equipment and high cost of the exchangers are kind of these limitations. The company has been able to produce this kind of acid cooler with less cost and depreciation and high efficiency, based on investigating on the material producing process.

**5- Innovation of exhaust fan with very less depreciation and more life:**

There are probably acid drops in the unit electro fans that always cause corrosion on the equipment. The problem has been solved by the company by using ventures and complete polymer fans.

**6- Complete inhibition of environmental pollutions :**

Emission of acid gas from end of lines or acid storage tanks is the problem of the material producing units. The company has caused inhibition of the acid gases and reduction of acid gas concentration about 90% in the end of chimney by using continuous process and accurate instruments. Also it is acted to inhibit and neutralize the maximum possible gases by using scrubber system and collecting released gases from tanks and process. It causes amount of output gases be acceptable based on strict environmental standards.