DuPont™ IsoTherming® Clean Fuel Technology

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**Local Fuel Inversion**

Lower catalytic cracking to achieve the proper process output results in the production of fuel oils and various other products. In order to achieve the highest efficiency and best performance of the catalyst, it is important to ensure that the fuel oil is properly refined to meet the specifications required for its intended use.

**Reduced Expansion Delivery Lines**

The delivery load lines on heavy fuel residues are less than 5% and this is generally considered a good design. However, if the load line is too low, it can lead to issues with transportation and storage. By using lower load lines, it is possible to reduce the expansion and minimize the risk of leaks and other problems.

**Reduced Light Knock Water**

The lower temperatures required for the Isothermic reactor allow for a better achievement of the required water knock. This is important because it helps to reduce the potential for corrosion and other issues that can arise from excessive water knock.

**Increased Contact Life**

Increased contact life can be achieved by reducing the residence time on the catalyst, which can be achieved by increasing the flow rate and reducing the catalyst temperature. This helps to extend the life of the catalyst and reduce maintenance costs.

**Reduced Maintenance and Operating Costs**

A key advantage of the Isothermic reactor is that it requires less maintenance and operating costs. This is because it operates at lower temperatures and pressures, which reduces the risk of damage and increases efficiency.

**Configuration Flexibility**

For refineries undergoing a refinery revitalization project, the Isothermic reactor offers options for a variety of configurations. This allows refineries to choose the configuration that best suits their needs and optimize their operations.

**Surface area which may experience fouling**

If your process involves producing sulfuric acid or sulfuric esters, it is important to understand the surface area that may experience fouling. This can help you to design your process to minimize fouling and improve efficiency.

**Process Design**

When designing a process, it is important to consider the potential for fouling and how it can be minimized. This includes selecting the right catalyst, optimizing the operating conditions, and incorporating effective cleaning and maintenance procedures.

**Governmental Experience**

The heat exchanger in the Isothermic reactor is designed to be corrosion resistant and to provide a safe and reliable operation. This is important because it helps to extend the life of the equipment and reduce maintenance costs.

**Operating Conditions**

The operating conditions for the Isothermic reactor are designed to be efficient and effective. This includes controlling the temperature, pressure, and flow rate to achieve the desired results.

**Application**

The Isothermic reactor is suitable for a range of applications, including the production of sulfuric acid, sulfuric esters, and other products. This makes it an attractive option for refineries and other industries that require efficient and reliable processing.