ATIS-2L

Improve the economics of your isomerization unit

Add the value of historical excellence

Our customers' need to reduce catalyst expenses has driven our development of cost-effective catalysts for paraffin isomerization since our entry into the market in 1995. Considerable effort was expended to develop ATIS-2L, a catalyst we recently developed in cooperation with Axens.

The challenge was clear—to bring a catalyst to market with the high activity typical of our previous AT catalysts, but that provided lower fill costs and platinum requirements.

At Albemarle, we continue to focus on designing the most cost-effective refining catalysts for our customers. And, with ATIS-2L, we can provide documented economic benefits for your operations.

Lower density

ATIS-2L's 20% lower density contributes to savings in platinum requirements. For a typical 10,000-barrels-per-stream-day (bpsd) isomerization unit, replacement of incumbent catalyst with ATIS-2L allows a refiner to convert about 1500 troy ounces of platinum to cash. At today's platinum price, your saving through platinum reduction is worth $1.2 million.

Extra activity

The extra activity of ATIS-2L typically translates into an increase in isomerate research octane number (RON) of 0.2. For a 10,000-bpsd unit, the added value to a typical refinery gasoline pool is close to $0.3 million annually.

Proven performance over the years

For many years we have led the way in providing effective paraffin isomerization catalysts. Table 1 documents the development and introduction of our portfolio.

More than 20 units worldwide have selected a catalyst from the AT family since its debut. AT-20 is still the most active paraffin isomerization catalyst available in the marketplace. And ATIS-2L continues to make history with its performance superiority. In a series of pilot plant tests, the performance of ATIS-2L was compared with another widely used catalyst.

Year	Catalyst	Application	Description
1995	AT-2	C_4	High activity, high stability butane isomerization catalyst
1996	AT-2G	C_5/C_6	High activity, high stability light naphtha isomerization catalyst
1999	AT-10	C_4	Same characteristics as AT-2 at only 50% platinum content
1999	AT-20	C_5/C_6	Improved activity compared to AT-2G due to optimized platinum dispersion
2002	ATIS-2L	C_5/C_6	Low density light naphtha isomerization catalyst with same volumetric activity as AT-20
2004	ATIS-1L	C_4	Low density, high stability butane isomerization catalyst

Table 1: Portfolio of paraffin isomerization catalysts.

Figure 1 shows the paraffin isomerization activity of ATIS-2L when compared with the competitor catalyst under two test conditions and with equal catalyst weight. The observed activity difference translates into 20% extra activity on a volumetric basis. This means that 20% more of the competitor catalyst is required to achieve a similar performance. Two major independent research centers confirmed our findings.

For more information on this or other Albemarle products and technologies, please contact your Albemarle representative.

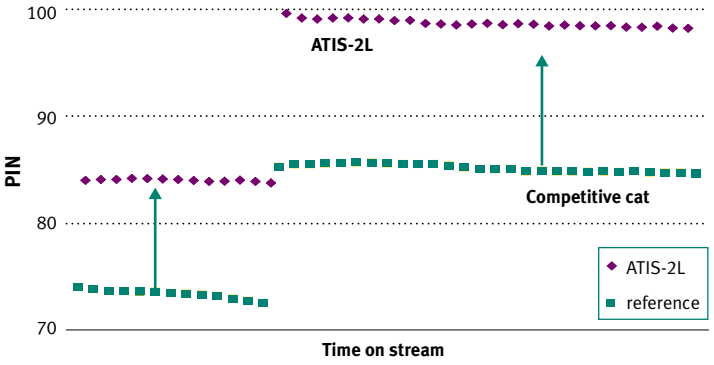

Figure 1: Comparison ATIS-2L and competitive catalyst (performance is presented on basis of PIN, Paraffin Isomerization Number).

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ISOM-01-06