

MEDIA RELEASE

Clariant's StyroMax[®] UL3 catalyst demonstrates outstanding productivity at Risun's new styrene monomer plant in China

- **Risun's new styrene monomer plant in Tangshan reports productivity with rates exceeding 120% of the plant's nominal design capacity with usage of StyroMax UL3**
- **StyroMax UL3 catalyst offers high activity and selectivity with significantly reduced steam consumption**
- **The project is a collaboration between Clariant Catalysts and the process and engineering company, Ruihua Technology**

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Clariant announced today that its StyroMax UL3 catalyst is demonstrating successful results at Risun's new styrene monomer plant located in Tangshan, China. After a smooth and stable catalyst start-up in October 2020, the plant is reporting very profitable operation with excellent production output. The project is a cooperation between Clariant Catalysts and engineering company Changzhou Ruihua Chemical Engineering Technology Co. Ltd (Ruihua Technology). Through Ruihua's technology and Clariant's catalyst, the Risun plant has been able to achieve productivity rates exceeding 120% of the new plant's nominal design capacity — which is also the highest among all Ruihua process plants in China.

Stefan Heuser, Senior Vice President & General Manager at Clariant Catalysts, commented, "We are delighted by the results of our cooperation with Ruihua in this project. As one of China's leading private chemicals groups, Tangshan Risun is a highly valuable reference for our StyroMax UL3 styrene catalyst, which has more than demonstrated its excellence for profitable styrene monomer production."

Based on current catalyst performance, the plant is expected to maintain increased yields with productivity of 120% or more. At the same time, it is able to operate at an extremely low steam-to-oil ratio of 1.1 wt/wt, which is the lowest among all Ruihua process plants in operation. Consequently, the Risun plant is reporting exceptional energy efficiency. Such benefits are possible for plants operating adiabatic units with low steam-to-oil ratios, since the catalyst is specially designed for these conditions.

The latest generation of the series, the StyroMax UL3 catalyst, is designed to promote dehydrogenation from ethylbenzene to styrene at ultra-low steam-to-oil ratios. While previous catalysts could provide either high activity or high selectivity at such conditions, StyroMax UL3 is the first catalyst to support both, thereby improving yield and significantly reducing process expenses for styrene producers.

Zhi Gang Xu, President of Ruihua Technology, commented, “Clariant’s advanced StyroMax UL3 catalysts and our ethylbenzene-to-styrene process have proven that they are a great match, bringing significant economic and process benefits for Tangshan Risun’s new plant. We look forward to continued excellent results at the Risun plant, and to further collaboration with Clariant.”

Ruihua Technology is China’s largest process technology licensor for ethylbenzene to styrene monomer, focused on processes with low energy and material consumption using various ethylene feedstock, such as polymer grade ethylene or high ethylene gas content. Over the past decade, the company has been awarded 22 references in China.



Clariant’s highly active and selective StyroMax UL3 styrene production catalyst for ultra-low steam-to-oil ratio conditions.

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Clariant is a focused, sustainable and innovative specialty chemical company based in Muttenz, near Basel/Switzerland. On 31 December 2020, the company employed a total workforce of 13 235. In the financial year 2020, Clariant recorded sales of CHF 3.860 billion for its continuing businesses. The company reports in three business areas: Care Chemicals, Catalysis and Natural Resources. Clariant's corporate strategy is led by the overarching purpose of 'Greater chemistry – between people and planet' and reflects the importance of connecting customer focus, innovation, sustainability, and people.

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Clariant's Catalysts business unit is a leading global developer and producer of catalysts for industrial processes. It has been part of the Catalysis business area of the Clariant Group since the acquisition of the German Süd-Chemie in 2011. Clariant Catalysts has a total of 14 production sites (incl. Joint Ventures), 7 sales offices, and 10 R&D and technical centers around the world. Approximately 2 044 employees serve customers across all regional markets. Aimed at delivering sustainable value to customers, Clariant's catalysts and adsorbents are designed to increase production throughput, lower energy consumption, and reduce hazardous emissions from industrial processes. The broad portfolio also includes products that enable the use of alternative feedstock for chemical and fuel production.

Press release and photography can be downloaded from www.clariant.com or www.PressReleaseFinder.com.