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INNOVATIVE ISOA™ TECHNOLOGY ALLOWS REFINERS TO INCREASE OCTANE AND REDUCE RVP OF LIGHT PARAFFINIC NAPHTHA STREAMS

Koch-Glitsch and INVISTA Performance Technologies offer technology to create high-octane blend stock from light paraffinic naphtha feeds

WICHITA, Kan. – Koch-Glitsch and INVISTA Performance Technologies (IPT), affiliates of Koch Industries, announced today an expansion of their partnership to offer the innovative IsoA[™] technology allowing refineries to transform low value, light paraffinic feeds into high-octane gasoline blend stock.

The IsoA[™] process technology <u>Iso</u>merizes and <u>A</u>romatizes C5 to C7+ paraffins simultaneously boosting the octane, reducing the RVP and significantly increasing the value of these light feeds.

"Today's market is long in these low-octane, light paraffinic streams and short in high-octane blend stock," said Christoph Ender, Koch-Glitsch vice-president of sales and marketing. "This technology can shift that balance and generate greater value for refineries."

Commercially demonstrated in six refineries, the IsoA[™] technology can deliver an 85 wt% C5+ liquid yield with a typical octane boost of 20-25 points. The process reduces sulfur content more than 90 percent, generating a product with less than 10 ppm sulfur from a feed with less than 150 ppm. While the technology aromatizes the paraffinic feed, the catalyst is optimized to minimize benzene formation — typically achieving less than 1 percent in the blend stock product.

This low CAPEX, low pressure process has a small footprint and utilizes standard refinery equipment, such as fixed-bed reactors, absorption and separation columns. The heterogeneous catalyst is sulfur tolerant and eliminates the hydrotreating process required for conventional isomerization processes. Recycle gas is not required, therefore maintenance and energy intensive hydrogen compression, required by the conventional isomerization process, is eliminated as well. The process can be further optimized with a boost in octane and a reduction in operating cost by co-feeding olefin-containing LPG.

"This is an exciting technology to add to our expanding refinery portfolio that addresses an unmet market need," said Mike Massa, INVISTA Performance Technology licensing director. "As the oil industry produces and processes more light, tight oils, the glut of this low value, paraffinic feed stream is expected to increase globally. Our IsoA technology creates an attractive alternative for this stream."

To implement the IsoA[™] technology in your facilities, please email KGProcessTechnology@kochglitsch.com, or contact a local Koch-Glitsch representative. For more information visit, http://www.ipt.invista.com/en.



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About Koch-Glitsch

Koch-Glitsch, LP is a global leader in the design and manufacture of mass transfer, mist elimination, and liquid-liquid coalescing equipment for the refining, chemical, petrochemical and gas processing industries. With the largest installed base in the industry, Koch-Glitsch engineers have the knowledge and experience to supply innovative designs for an extensive array (wide range) of applications and requirements. The company's products and services are available worldwide through its (global) network of sales, engineering, manufacturing and service facilities. Koch-Glitsch, based in Wichita, Kansas, is a Koch Chemical Technology Group, LLC company. More information is available at www.koch-glitsch.com.

About Koch Chemical Technology Group

Koch Chemical Technology Group, LLC and its subsidiaries design, manufacture, install and service process and pollution control equipment, and provides engineering services for industries and municipalities worldwide. Subsidiaries include Koch-Glitsch, LP; Koch Membrane Systems, Inc.; Koch Heat Transfer Company, LP; John Zink Hamworthy Combustion; Optimized Process Designs, LLC; Koch Specialty Plant Services, LLC, and Koch Knight, LLC

About INVISTA Performance Technologies

INVISTA Performance Technologies (IPT) is the technology licensing group within INVISTA. IPT provides the resources and know how to deliver world-scale technology for licensing to a growing portfolio of technologies in the polyester, polyurethane, nylon and refining value chains. Plant process design and project execution skills have been married with expert functional engineering and production know-how to provide unparalleled expertise in technology licensing. www.ipt.invista.com/en.