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Uhde to supply energy-efficient hydrochloric acid electrolysis plant to Yantai Juli, China

Uhde has been awarded an engineering and procurement contract for the construction of a hydrochloric acid electrolysis plant by Yantai Juli Isocyanate Co. Ltd., a Chinese manufacturer of polyurethane. The plant, with a production capacity of 100,000 tpa hydrochloric acid, will be constructed at Laiyang, Shandong Province, China, approximately 100 km north of Qingdao. Commissioning is scheduled for the end of 2011.

Uhde's scope of supplies includes the process licence, major components of the engineering package, supply of the electrolyzers, and assistance with the construction and commissioning of the plant.

"The awarding of this contract is proof of the confidence the chemical industry has in Uhde due to its electrolyser technology. It also shows that the recycling of hydrochloric acid using electrolysis is gaining in importance and making a critical contribution to improving plant efficiencies and meeting environmental requirements", said Dr Sami Pelkonen, Head of the Uhde Electrolysis Division.

The new membrane electrolysis plant will be used to convert the by-product hydrochloric acid which will be obtained in a new production line planned by Yantai Juli. The hydrochloric acid is converted into high-purity chlorine by the oxygen-depolarised cathode technology (ODC). The ODC principle is based on oxygen reacting with hydrogen ions at the cathode side of the cell. This cathode reaction takes place at a notably lower cell voltage than that needed in

conventional diaphragm electrolysis. This allows an energy saving of up to 30 per cent. The anode reaction remains the same. The ODC-technology-based membrane electrolysis provides a wide operating window and maximum process flexibility and is consequently a key factor in optimising the conditions prevailing at the site.

This innovative technology was developed by Uhde and UHDENORA and both companies are selling it worldwide. To date the reference plants which are already operating with the ODC technology have a capacity in excess of 250,000 tpa chlorine.

***Uhde** has a workforce of more than 4,500 employees worldwide and is a company in the Plant Technology business area of the ThyssenKrupp Group. The company's activities focus on the engineering and construction of chemical and other industrial plants in the following fields: fertilisers; electrolysis; gas technologies; oil, coal and residue gasification; refining technologies; organic intermediates, polymers and synthetic fibres; and also coke plant and high-pressure technologies. We also provide our customers with professional services and comprehensive solutions in all areas of industrial plant operation. Details are available at www.uhde.eu*

***UHDENORA S.p.A.** is a joint company of Uhde/Germany and Industrie De Nora/Italy, and has a workforce of 70 employees worldwide. The company's activities focus on the design and construction of chemical and other industrial plants mainly in the following fields: chlor-alkali electrolysis, hydrochloric acid electrolysis and bleaching chemicals.*

***Yantai Juli** is one of the leading manufacturers of toluene diisocyanate (TDI) in China. TDI is marketed under the brand name 'Juli Chemistry'. Yantai Juli was founded as a non-state chemical company in 2001 and started to produce on a commercial scale in 2002. Owing to its commitment to quality and reliability it was able to establish its position on the world market very quickly. The construction of a new TDI production line is planned for 2011.*