



thyssenkrupp

Press release 新闻稿

thyssenkrupp Uhde
蒂森克虏伯伍德

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thyssenkrupp Uhde successfully commissions EnviNOx® emission reduction system for Covestro's NAUCI project in China

蒂森克虏伯伍德 EnviNOx® 减排系统在科思创中国的硝酸装置碳减排项目成功投用

- **Removing N₂O and NO_x below 1 ppmv**
- 氧化亚氮和氮氧化物排放低于 1 ppmv
- **Seamless installation with low effort**
- 完美适配工艺，较低安装成本
- **3rd EnviNOx® system commissioned in China (for various industries and customers)**
- 在中国市场成功投入商业应用的第三套 EnviNOx® 系统（用于不同行业和客户）

thyssenkrupp Uhde is proud to announce the successful commissioning of its EnviNOx® system for Covestro Polymers (China) Co. Ltd. at their nitric acid plant in Shanghai Chemical Industry Park (SCIP). This state-of-the-art technology will significantly reduce nitrogen oxides (NO_x) and nitrous oxide (N₂O) emissions. Covestro's NAUCI plant in SCIP is part of their global network of facilities dedicated to producing high-performance polymers and plastics such as polyurethanes, polycarbonates and precursors for paints, coatings, adhesives and sealants. The successful commissioning of the EnviNOx® system at this site marks another milestone in Covestro's journey towards full circularity and climate neutrality.

蒂森克虏伯伍德宣布其 EnviNOx® 系统在位于上海化学工业区内的科思创上海一体化基地的硝酸工厂中投入使用，先进技术将有效减少氮氧化物（NO_x）和氧化亚氮（N₂O）的排放。科思创的 NAUCI 工厂是其全球工厂的一部分，致力于高性能聚合物和塑料的生产，例如：聚氨酯、聚碳酸酯以及油漆、涂料、粘合剂和密封剂的前体。EnviNOx® 系统在该生产工厂的成功运行标志了科思创在实现“净零”排放的道路上又迈出了重要一步。

Michael Huang, General Manager of Covestro Integrated Site, Shanghai: "We are thrilled with the outstanding performance of the EnviNOx® system and the smooth project execution. This project is a testament to our environmental responsibility and Covestro's commitment to reach climate neutrality in scope 1 and 2 emissions until 2035."

科思创上海一体化基地总经理黄瑜先生表示：“我们对 EnviNOx® 系统的卓越性能和项目的顺利实施感到非常高兴。这个项目展现了科思创对环境保护的承诺，以及我们致力于在 2035 年实现范围 1 和范围 2 运营气候中性的决心。”

Nadja Håkansson, CEO of thyssenkrupp Uhde: "The successful implementation of another EnviNOx® system in China underscores our capability to provide innovative solutions that address global environmental challenges."

蒂森克虏伯伍德首席执行官 Nadja Håkansson 表示：“这是我们在中国市场上成功投入商业应用的又一套 EnviNOx® 系统，彰显了我们拥有创新的技术能力，以应对全球环境问题带来的挑战。”

The EnviNOx® technology, developed by thyssenkrupp Uhde, is a leading solution for the combined removal of N₂O and NO_x from industrial emissions. It has been successfully implemented in over 60 installations worldwide, reducing CO₂-equivalent emissions by more than 24 million metric tons annually. The system's ability to achieve near-zero NO_x

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emissions and significant N₂O reduction makes it an essential tool for industries aiming to meet stringent environmental regulations. Thanks to its versatile design, it can be easily installed into the tail gas systems of industrial chemical plants as a tertiary abatement solution. In addition, the tertiary EnviNOx[®] unit can ideally be combined with secondary measures/catalysts for N₂O removal.

由蒂森克虏伯伍德公司开发的 EnviNOx[®]技术，是消除工业排放中氧化亚氮和氮氧化物的领先解决方案。该技术已在全球 60 多套装置中成功应用，每年减少超过 2400 万吨二氧化碳当量排放。该系统能实现氮氧化物近零排放，并显著降低氧化亚氮的浓度，是工业企业满足严苛环保法规的重要工具。凭借多功能的设计，该技术可作为三级减排方案便捷集成至化工厂尾气处理系统。此外，EnviNOx[®] 的三级减排技术还可以与氨氧化炉内的氧化亚氮二级减排措施/催化剂协同作用，实现理想减排目标。

World-leading, high-performance climate protection technology

全球领先的高性能气候保护技术

The EnviNOx[®] system, licensed, engineered and supplied by thyssenkrupp Uhde, comes as a complete package of proprietary reactor, a proprietary high-performance tertiary catalyst manufactured by BASF, and all necessary components and control systems for integration into the tail gas system.

由蒂森克虏伯伍德授权、设计并提供的 EnviNOx[®]系统，是一套完整的减排解决方案，包含专有反应器、巴斯夫生产的高性能三级减排催化剂，以及集成到尾气系统中所需的所有组件与控制系统。

By additionally combining Uhde's EnviNOx[®] technology with a secondary catalyst from BASF, Covestro achieved a reduction in N₂O and NO_x emissions well beyond 99%, successfully lowering the levels to below 1 ppm. This advancement is expected to enable Covestro to reduce annual N₂O emissions in their nitric acid plant in addition by more than 200,000 tons of CO₂ equivalents. "Our combined expertise with thyssenkrupp Uhde is already making a difference in our joint goal to reduce greenhouse gas emissions. Our research and development teams are continuously pushing the boundaries of conventional thinking to design and produce catalysts with high activity and durability, supporting our customers in their sustainability transformation", said Detlef Ruff, Senior Vice President, Chemical Catalysts and Adsorbents at BASF.

通过将蒂森克虏伯伍德的 EnviNOx[®] 技术与巴斯夫的二级减排催化剂结合，科思创成功将氧化亚氮和氮氧化物的排放减少超过 99%，浓度降至 1 ppm 以下。这一技术突破，预计每年可为科思创的硝酸工厂额外减少超过 20 万吨二氧化碳当量的氧化亚氮排放。巴斯夫化工催化剂与吸附剂业务高级副总裁 Detlef Ruff 表示：

“巴斯夫与蒂森克虏伯伍德的强强联合已经在致力于减少温室气体排放的共同目标中取得显著成效。我们的研发团队将不断突破传统思维，设计和生产高活性、高耐久性的催化剂，助力客户实现可持续转型。”

Well-proven solution, designed and built to last

久经验证的解决方案，以长效运行为设计目标

Originally developed for nitric acid plants, the EnviNOx[®] system can be adapted to various industrial processes. This flexibility makes it a versatile solution for emission control in various applications. In China, for example, it has first been successfully installed in caprolactam plants over 10 years ago. The current project for Covestro is the third EnviNOx[®] system in China in total, contributing to the country's environmental ambitions. The very first installation of an EnviNOx[®] unit at an industrial scale dates back more than 20 years. Since then, the EnviNOx[®] process and catalyst

have been continuously developed further and optimized. With the experience of over 3000 chemical plants built in a broad range of process technologies, thyssenkrupp Uhde offers a robust, low-maintenance solution.

EnviNOx® 系统最初为硝酸工厂开发，现可适配多种工业流程，其灵活性使其成为多领域排放控制的通用方案。例如，在中国，早在十多年前，就首次将该技术成功应用于己内酰胺工厂。此次科思创的项目是 EnviNOx® 在中国的第三套装置，以助力中国实现减排目标。全球首套工业级 EnviNOx® 装置可追溯至二十多年前，此后其工艺和催化剂持续优化升级，在拥有超过 3,000 多座化工厂的业绩经验下，蒂森克虏伯伍德提供了可靠且低维护成本的解决方案。

About thyssenkrupp Uhde

thyssenkrupp Uhde combines unique technological expertise and decades of global experience in the engineering, procurement, construction and service of chemical plants. We develop innovative processes and products for a more sustainable future and thus contribute to the long-term success of our customers in almost all areas of the chemical industry. Our portfolio includes leading technologies for the production of base chemicals, fertilizers and polymers as well as complete value-chains for green hydrogen and sustainable chemicals. www.thyssenkrupp-uhde.com

关于 thyssenkrupp Uhde

蒂森克虏伯伍德

蒂森克虏伯伍德集独特的工艺技术专长与数十载全球化工程经验于一体，涵盖化工装置的工程设计、采购、建造及服务全生命周期。我们致力于开发创新的工艺和产品，旨在打造一个更加可持续的未来，在几乎所有化学工业领域为我们的客户实现长期成功做出贡献。我们的产品组合包括：基础化学品、肥料和聚合物生产方面的领先技术，以及绿氢和可持续化学品的完整价值链解决方案。

官网链接：www.thyssenkrupp-uhde.com

About Covestro:

Covestro is one of the world's leading manufacturers of high-quality polymer materials and their components. With its innovative products, processes and methods, the company helps enhance sustainability and the quality of life in many areas. Covestro supplies customers around the world in key industries such as mobility, building and living, as well as the electrical and electronics sector. In addition, polymers from Covestro are also used in sectors such as sports and leisure, telecommunications and health, as well as in the chemical industry itself.

The company is geared completely to the circular economy. In addition, Covestro aims to achieve climate neutrality for its Scope 1 and Scope 2 emissions by 2035, and the Group's Scope 3 emissions are also set to be climate neutral by 2050. Covestro generated sales of EUR 14.2 billion in fiscal year 2024. At the end of 2024, the company had 46 production sites worldwide and employed approximately 17,500 people (calculated as full-time equivalents).

关于科思创

科思创是全球领先的高品质聚合物及其组分的生产商之一。依托创新的产品、工艺和方法，公司在众多领域帮助促进可持续发展和提高生活品质。科思创在全球范围为交通出行、建筑和生活起居以及电子电气等重要行业的客户提供服务。此外，科思创聚合物还应用于运动休闲、电信和医疗健康等领域，以及化工行业本身。

公司致力于实现全面循环，目标到 2035 年实现范围 1 和范围 2 净零排放，到 2050 年实现范围 3 净零排放，最终达成气候中性。2024 财年，科思创销售额达到 142 亿欧元。截至 2024 年底，科思创在全球拥有 46 个生产基地，约 17500 名员工（按全职员工计算）。

About BASF Chemical Catalysts and Adsorbents

BASF is a leading global manufacturer of catalysts for the chemical industry, with solutions across the chemical value chain. The business comprises chemical catalysts, adsorbents and custom catalysts. Priority is given to developing new and improved products that enable the chemical industry transformation to net-zero emissions. To learn more, visit www.chemical-catalysts-and-adsorbents.basf.com.

BASF's Chemical Catalysts and Adsorbents business is part of the company's Performance Chemicals division. The division's portfolio also includes refinery catalysts, fuel and lubricant solutions, as well as oilfield chemicals and mining solutions. Customers from a variety of industries including Chemicals, Plastics, Consumer Goods, Energy & Resources and Automotive & Transportation benefit from our innovative solutions. To learn more, visit www.performancechemicals.basf.com.

关于巴斯夫化工催化剂和吸附剂

巴斯夫是全球领先的化工催化剂制造商，为整个化工价值链提供解决方案。业务范围涵盖化工催化剂、吸附剂和定制催化剂产品组合。巴斯夫优先开发新品并改良产品，以推动化工行业向净零排放转型。如需了解更多，敬请访问：www.chemical-catalysts-and-adsorbents.basf.com。

巴斯夫的化工催化剂和吸附剂业务隶属于巴斯夫特性化学品部门。该部门的产品组合还包含：炼油催化剂，燃料和润滑油解决方案，以及油田化学品和矿业解决方案。来自化工、塑料、消费品、能源与资源、汽车与运输等行业的客户受益于我们的创新解决方案。请访问官方网站以了解更多信息：www.performancechemicals.basf.com。

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