



DNX<sup>®</sup>



SCR catalysts



For waste incinerator

### **A better way to beat NO<sub>x</sub>**

Reduce NO<sub>x</sub> by 95% and dioxins by 99% while saving money

Waste incineration plants are having to cope with increasingly tight controls on NO<sub>x</sub> emissions. Our DNX<sup>®</sup> family of SCR catalysts takes the pain out of emissions control, achieving NO<sub>x</sub> reduction rates above 95% while also destroying gaseous dioxins.

Umicore DNX<sup>®</sup> catalysts feature a porous, reinforced titania carrier material that is impregnated with vanadium pentoxide. A unique tri-modal pore structure enables exceptionally high activity at temperatures down to 150°C (300°F). This eliminates the need for costly reheating of the flue gas prior to processing, which can mean considerable savings in operating costs.

### High activity, low temperatures

A special tri-modal pore structure gives the DNX<sup>®</sup> an unusually large internal surface area with easy access to the active sites. This results in very high activity, even at low operating temperatures.

### Months of operation below the ABS dew point

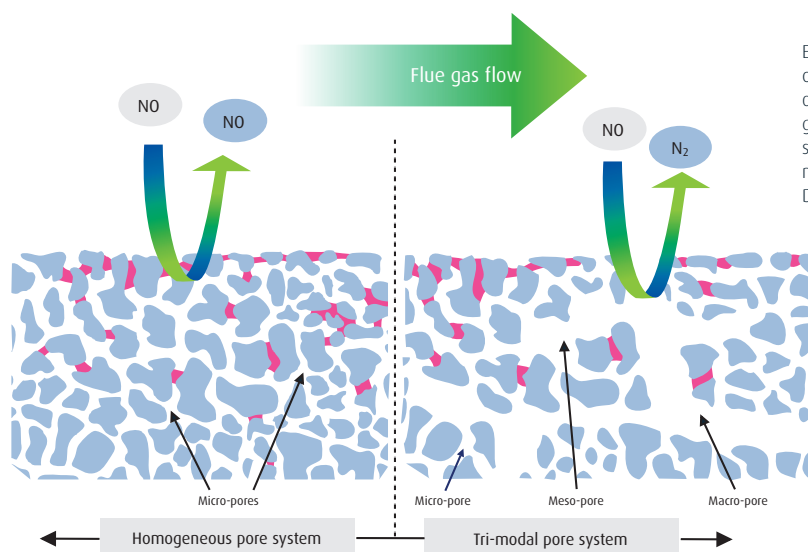
To save a plant from costly flue-gas reheating due to de-dusting, a SCR catalyst must be able to operate at temperatures below 250°C (482°F). Yet low-temperature operation often means the catalysts need to be regenerated regularly, due to ABS and other salt formation. With the DNX<sup>®</sup>, plants can operate below the ABS dew point for months. When regeneration is required, it only involves heating the gas to above the ABS dew point 310–350°C (590–662°F) for a few hours.

### Superior poison resistance

In addition to ensuring high activity, the tri-modal pore structure enables the DNX<sup>®</sup> to accommodate significant catalyst poisoning without affecting activity. This means longer catalyst lifetimes despite exposure to dust slips from your ESP or bag filter.

### Destruction of dioxins and furans

Another major advantage with the DNX<sup>®</sup> is that it destroys gaseous dioxins through catalytic oxidation. With the right SCR system design, the DNX<sup>®</sup> can remove over 99% of these emissions, enabling plants to meet EU directive limits of 0.1 ng/m<sup>3</sup>.



Even with significant ABS condensation in the micropores of the catalyst, the access of the gaseous reactions to active catalytic sites is secured via the presence of macro- and mesopores in Umicore's DNX<sup>®</sup> catalysts



### Benefits

- Excellent activity at temperatures down to 150°C (300°F)
- High tolerance towards poisonous elements in flue gas
- Extended operation below the ABS dew point
- Combined NOx and dioxin removal
- No need to reheat flue gas with the right setup