SINOx® for Marine Propulsion Engines in Operation for the Environment

The SINOx® exhaust gas cleaning system is based on Selective Catalytic Reduction (SCR) the most effective and proven process for NOx reduction. Harmful nitrogen oxides are reduced into harmless nitrogen and water through use of urea solution and SINOx® catalyst. The main features of the honeycomb type catalyst used in the SINOx® System are large specific surface areas, high activity and resistance against chemical substances, which allow compact dimensions with low exhaust gas backpressures and low ammonia slip.

Reducing NOx Emissions on the High Seas and in Coastal Regions

IMO NOx Regulations for New Ship Constructions (EIAPP Reg 13)

- IMO Tier 1 - From Jan 1 2000 - Global
- IMO Tier 2 - From July 1 2011 - Global (15 - 22% reduction from Tier 1)
- IMO Tier 3 - From Jan 1 2016 - ECAs (80% reduction from Tier 1)

Urea SCR Technology
Johnson Matthey supplies complete exhaust gas cleaning systems for sources of NOx emissions, including internal combustion engines operating with diesel or heavy fuel oil.

For marine diesel engines, the SINOx® System is installed downstream of the engine in the exhaust duct and consists of the SINOx® catalytic reactor, a control unit based on either open or closed-loop control, and a dosing unit for the reducing agent. The control unit ensures optimum and safe operation and regulates the injection of reducing agent according to the required load of the engine. This intelligent control equipment guarantees minimum consumption of reducing agent to keep your operating costs low.

**Our SINOx® exhaust gas cleaning system ensures**

- compliance with stipulated emissions limits
- reliable and proven technology for marine applications
- low installation and operating costs
- maximum service reliability
- compact and low weight building structure
- low ammonia slip

**References:**

Johnson Matthey has equipped more than 30 ships with over 120 engines worldwide with a total engine power of about 450 MW with SINOx® exhaust gas cleaning systems.