

# Selective Catalytic Reduction

## Diesel emissions control solutions

Selective Catalytic Reduction (SCR) is the process of selectively reducing (reduction meaning the removal of oxygen) nitrogen oxides (NO<sub>x</sub>) across a catalyst. This process requires the use of a reducing agent such as AdBlue®, a high-purity urea solution. BASF is one of the leading manufacturers of AdBlue.

### Operation

Urea is injected into the stream of exhaust gas that contains nitrogen oxides. The SCR process breaks down the harmful NO<sub>x</sub> into water vapor and elementary nitrogen, which is a natural constituent of the air we breathe.

### Technology

BASF has long been a leader in SCR technology for stationary source emissions. Building on that expertise, BASF has developed SCR technologies to meet NO<sub>x</sub> mobile emissions regulations around the globe. Options include an integrated NH<sub>3</sub> (ammonia) slip catalyst.

In addition to vanadium based technologies, BASF has patented zeolite SCR catalysts that offer high temperature stability.

### Benefits

BASF SCR catalyst technology offers:

- NO<sub>x</sub> removal over a wide temperature range
- Improved resistance to hydrocarbon poisoning
- Increased durability

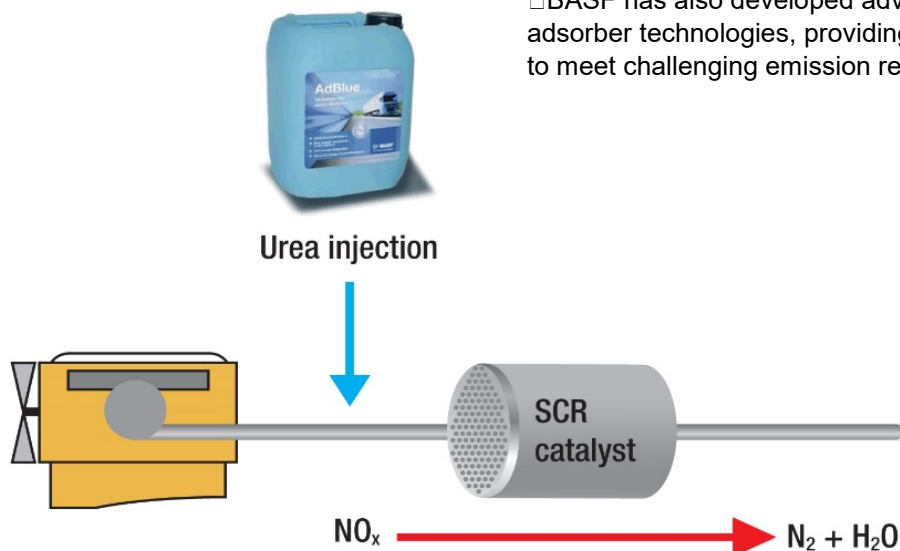
Plus, the ability of the SCR catalyst to remove more than 90 percent of NO<sub>x</sub> in diesel engine exhaust enables engine manufacturers to tune their engines for improved fuel economy. This increase can be in the range of 3-8%.

### System

The SCR system is integrated in the engine and vehicle design that has the following main components – SCR catalyst, urea storage tank, urea pump, urea dosing system, urea injector/nozzle, and a control unit.

### NO<sub>x</sub> traps

□ BASF has also developed advanced NO<sub>x</sub> adsorber technologies, providing more options to meet challenging emission requirements.



## About Us

BASF's Catalysts division is the world's leading supplier of environmental and process catalysts. The group offers exceptional expertise in the development of technologies that protect the air we breathe, produce the fuels that power our world and ensure efficient production of a wide variety of chemicals, plastics and other products, including advanced battery materials. By leveraging our industry-leading R&D platforms, passion for innovation and deep knowledge of precious and base metals, BASF's Catalysts division develops unique, proprietary solutions that drive customer success.

**BASF - We create chemistry**

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