

Our clients testify



DP World - Antwerp - Operator of maritime terminals

Jurgen de Breuck - Rolling equipment and welding manager

"At DP World - Antwerp Gateway, we like to make things happen.

To reach 3.4 million TEUs (equivalent to twenty feet) by 2025, DP World is constantly investing in new state-of-the-art equipment.

In addition to **automatic cranes**, our fleet has 63 **self-propelled gantries**, of which 66% have a hybrid diesel engine.

This type of machines operate at a low load, TotalEnergies advised us to use **ClearNOx® to prevent clogging** of SCR systems.

Thus, **since 2019 we have been using ClearNOx® for all our equipment** (all brands engine and applications).

The SCRs remain clean, **no breakdown's since**, we are very satisfied with **ClearNOx®!**"



Energy is our future, save it!



TotalEnergies



ClearNOx[®]

Do not let
crystallization
stop you
any longer.

DEF
Substitute



TotalEnergies



totalenergies.rs

ClearNOx[®], the solution against crystallization

Like the DEF, ClearNOx[®] is a ready-to-use urea solution, which allows operate the SCR treatment system nitrogen oxides (NOx).

But ClearNOx[®] goes further: Thanks to its exclusive formula as a result of TotalEnergies Research, ClearNOx[®] prevents downtime risks by stopping crystallization in the SCR system.

ClearNOx[®] complies with the physical and chemical specifications in the ISO 22241 standard.

How does it work?

Under certain operating conditions, the exhaust gas temperature is not sufficient for the reaction of DEF to complete.

Cyanuric acid crystals can then form and obstruct the SCR system, causing immobilization of the vehicle. **ClearNOx[®] ensures optimal spraying** and thus allows complete reaction at a lower temperature, **avoiding crystallization of the SCR system**.

Image of an SCR mixer⁽¹⁾



Without ClearNOx[®]



With ClearNOx[®]

(1) View of an SCR mixer without the use of ClearNOx[®] and with the use of ClearNOx[®]. Tests carried out on a laboratory bench test at 250°C (december 2018, TotalEnergies Solaize Research Center).

ClearNOx[®], the product that makes the difference

AVOID CRYSTALLIZATION:

- ▶ Preserves the SCR system and the engine.
- ▶ Reduces breakdowns and downtime of your fleet.
- ▶ Contributes to controlling your fuel consumption.

DEF SUBSITUTE:

- ▶ Ready to use.
- ▶ Enables compliance with emission level anti-pollution standards.

PATENTED APPLICATION:

- ▶ Result of TotalEnergies Research.
- ▶ Exclusive formula tested in collaboration with engine manufacturers and manufacturers.

To ensure optimal operation of the SCR system:

- ClearNOx[®] must be continuously used.
- Before use, carry out de-crystallization of your vehicle at an authorized repairer.

Compatible with any type of vehicle



ClearNOx[®] is API certified
(American Petroleum Institute).

ClearNOx[®], less downtime, more savings

Additional cost ClearNOx [®] ⁽²⁾		Cost of an injector change ⁽³⁾	
Consumption diesel	38 L/100	1 injector	650 €
Volume annual diesel	11 400 L	1 hour labor	80 €
Consumption DEF (7%)	800 L	1/2 day immobilization	500 €
200 €		VS	1230 €

(2) Additional cost per year and per vehicle estimated on the basis of 30,000 km / year, and the price of ClearNOx[®] as of march 1, 2021.

(3) Prices generally observed (march 2021).

That is more than six years of ClearNOx[®] financed.

Without counting the cost of replacement of the SCR system (≈ € 8,000).

Bulk delivery or packaged

