
**Diesel engines — NO_x reduction agent
AUS 32 —**

**Part 1:
Quality requirements**

Moteurs diesel — Agent AUS 32 de réduction des NO_x —

Partie 1: Exigences de qualité



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Foreword

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ISO 22241-1 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 5, *Engine tests*.

This first edition cancels and replaces ISO/PAS 22241-1:2005, which has been technically revised.

ISO 22241 consists of the following parts, under the general title *Diesel engines — NO_x reduction agent AUS 32*:

— *Part 1: Quality requirements*

— *Part 2: Test methods*

The following parts are under preparation:

— *Part 3: Packaging, transportation and storage*

— *Part 4: Refilling interface*

Annexes A, B and C are for information only.

Introduction

In order to protect the environment, keeping the air quality as clean as possible, exhaust emissions regulations around the world have been strengthened considerably. In motor vehicles with diesel engines, particulate matters (PM) and nitrogen oxide (NOx) emissions are the main concern, and efforts have been focused on the development of technology which can reduce them effectively with minimum fuel economy penalty. Selective catalytic reduction (SCR) converters using urea solution as the reduction agent is considered to be a key technology for reducing NOx emissions. The quality of the urea solution used for that technology needs to be specified to ensure reliable and stable operation of the SCR converter systems. The ISO 22241 series provides the specifications for quality characteristics, for handling, transportation and storage and for the refilling interface as well as the test methods, needed by the manufacturers of motor vehicles and their engines, by converter manufacturers, by producers and distributors of the urea solution and by fleet operators.

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Diesel engines — NOx reduction agent AUS 32 —

Part 1: Quality requirements

1 Scope

This part of ISO 22241 specifies the quality characteristics of the NOx reduction agent AUS 32 (aqueous urea solution) which is needed to operate converters with selective catalytic reduction, so-called SCR (selective catalytic reduction) converters, in motor vehicles with diesel engines. SCR converters are particularly suitable for selectively reducing the nitrogen oxide (NOx) emissions of diesel engines.

In the remaining parts of ISO 22241, the term “NOx reduction agent AUS 32” will be abbreviated to “AUS 32”.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3675, *Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method*

ISO 4259, *Petroleum products — Determination and application of precision data in relation to methods of test*

ISO 12185, *Crude petroleum and petroleum products — Determination of density — Oscillating U-tube method*

ISO 22241-2, *Diesel engines — NOx reduction agent AUS 32 — Part 2: Test methods*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

NOx reduction agent AUS 32

aqueous urea solution, manufactured from technically pure urea – with no addition (see NOTE) of any other substances – and pure water, having a urea content of 32,5 % and with the quality characteristics defined in Clause 5

NOTE With the possible exception of a tracer in accordance with the requirement in Table 1.

3.2

technically pure urea

industrially produced grade of urea with traces of biuret, ammonia and water only, free of aldehydes or other substances such as anticaking agent, and free of contaminants such as sulphur and its compounds, chloride, nitrate or other compounds

NOTE For the contaminants mentioned above, which are not a result of the urea production process, limit values and analytical methods are not considered, as this definition excludes urea grades usually used in agriculture, which might contain such chemical compounds.