

## AUS 32 sampling recommendations

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### 1 General

ISO 22241-1:2019 specifies the quality characteristics of the NO<sub>x</sub> reducing agent AUS 32 (aqueous urea solution) required to operate selective catalytic reduction converters, so-called SCR (selective catalytic reduction) catalysts in motor vehicles with diesel engines. SCR converters are particularly suitable for the selective reduction of nitrogen oxide (NO<sub>x</sub>) emissions from diesel engines. In other parts of ISO 22241, the term "NO<sub>x</sub> reducer AUS 32" will be abbreviated to "AUS 32".

In addition, ISO 22241-2:2019 specifies the test methods required to determine the quality characteristics of the NO<sub>x</sub> reducing agent AUS 32 (aqueous urea solution) specified in ISO 22241-1.

### 2 Sampling procedure

The sample must be protected from any contamination before testing. Therefore, suitable bottles and sampling equipment should be used for sampling, which do not contaminate the sample, especially for trace elements, and which minimize the risk of algae or bacterial growth.

During sampling, foreign objects can cause contamination of the sample. In real-world conditions, the following sources of contamination will cause major hazards and negative test results, more common contaminants may include:

- Residues of process aids used in the production of sampling bottles;
- Contaminants settled in the empty bottles while they are stored empty;
- Pollutants from the air, i.e. dust or any foreign matter from the environment, during sampling;
- Residues of cleaning agents also used for cleaning sampling equipment and bottles;
- Fuel and solvents.

### 3 Recommended sample bottles

Use 1000 ml wide-necked bottles (at least 3 cm in diameter). Suitable materials for sampling bottles are HD-PE, LD-PE polyethylene, HD polypropylene, polyfluoroethylene, polyvinylidene difluoride and tetrafluoroethylene-perfluoroalkylvinylether copolymer (PFA).

### 4 Sampling

Nitrile or latex gloves and goggles are recommended during sampling to avoid any risk of sample contamination and to protect the sampler. It is forbidden to hold the bottle by the neck to avoid foreign objects entering the sample.

Before using the first AUS 32 sample bottle, the bottles should be cleaned and rinsed with deionized water and then with AUS 32 solution, if available, to ensure the highest level of purity.

When the closed wide-necked bottle is opened, then the cap is placed on a clean surface with the opening facing down. After rinsing the sampling site, the bottle is completely filled with AUS 32 solution, from the tank or other sampling site, and the bottle is screwed closed with its cap. The bottle with the solution is shaken several times and then the first filling must be poured out.

The bottle should be refilled with half of its volume with AUS 32 solution, the bottle should be closed with its cap and the bottle should be shaken several times. The second filling of the bottle must be poured out. The third filling of the bottle will be your sample, the bottle is filled to its maximum volume and tightly closed with its cork.

Maximum care should be taken when filling the sample so that neither dust nor liquid contaminants enter the bottle. The label must be glued or otherwise attached to the sample bottle.

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### 5 Amount of the sample

The required and recommended amount of sample material is 1 liter (1 L).

### 6 Sample marking - labelling

Labels and writing on labels or sample containers must be water and AUS 32 resistant

The label must include at least the following information:

- Product name and type;
- the name of the company that owns the product sample;
- the address from which the sample was taken;
- manufacturer of the sample product (if known);
- batch number or lot number;
- the container from which the sample was taken and the part of the container from which the sample was taken (sampling point);
- date and time of sampling;
- sample shipment date;
- name, surname and signature of the person sending the sample.

### 7 Shipment of the sample

Bottles containing samples must be placed in a plastic bag and packed in a suitable shipping container.

The filled bottle should reach the laboratory as soon as possible. During transportation and storage, the sample should be kept away from direct sunlight to prevent algae growth and changes in the sample's structure, and its temperature should be between -10°C and +30°C.

Address for sample shipment:

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