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International Standard



7103

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Liquefied anhydrous ammonia for industrial use — Sampling — Taking a laboratory sample

Ammoniac anhydre liquéfié à usage industriel — Échantillonnage — Prélèvement d'un échantillon pour laboratoire

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 7103 was developed by Technical Committee ISO/TC 47, *Chemistry*, and was circulated to the member bodies in July 1981.

It has been approved by the member bodies of the following countries :

Austria	India	Poland
Belgium	Italy	Portugal
Brazil	Korea, Dem. P. Rep. of	Romania
Czechoslovakia	Korea, Rep. of	South Africa, Rep. of
Egypt, Arab Rep. of	Mexico	Switzerland
France	Netherlands	Thailand
Germany, F. R.	New Zealand	USSR
Hungary	Philippines	

The member body of the following country expressed disapproval of the document on technical grounds :

United Kingdom

This International Standard has also been approved by the International Union of Pure and Applied Chemistry (IUPAC).

Liquefied anhydrous ammonia for industrial use — Sampling — Taking a laboratory sample

WARNING — Liquefied anhydrous ammonia is a highly corrosive, toxic substance, which boils at $-33,3\text{ }^{\circ}\text{C}$ at standard atmospheric pressure. Its action on the skin and eyes is strongly corrosive, producing severe and painful burns.

Its vapour is strongly irritant to the mucous membrane and eyes, and produces a suffocating effect on the respiratory tract.

In concentrations of 16 to 25 % (V/V), gaseous anhydrous ammonia forms explosive mixtures with air.

Personnel responsible for handling the product shall be fully informed as to its dangerous character and the precautions to be taken.

Operators shall wear rubber gloves a rubber apron and full face and head protection, and shall be provided with a protective gas-mask fitted with a filter for ammonia.

Samples shall be handled only inside a well-ventilated fume-cupboard.

For further information, see the appropriate sections of ISO 3165.

1 Scope and field of application

This International Standard specifies the apparatus and the procedure to be used for taking a representative laboratory sample* of liquefied anhydrous ammonia for industrial use, from a container (barrel, cylinder, tank, etc.).

2 Reference

ISO 3165, *Sampling of chemical products for industrial use — Safety in sampling.*

3 Principle

Removal of a liquefied anhydrous ammonia sample into a stainless steel cylinder, which has previously been cleaned, dried and evacuated. Filling the sampling cylinder with the stipulated quantity that is permissible with regard to safety.

The filling rate shall never exceed 75 % of the capacity of the cylinder at ambient temperature.

4 Apparatus

4.1 Equipment for taking the sample, including the following items :

4.1.1 Sampling cylinder (see typical cylinder in figure 1), made of stainless steel, effective capacity not less than 1 litre, capable of withstanding an internal pressure of not less than 3 MPa**.

Check the volume of the cylinder by filling with water. The sampling cylinder shall have two needle valves, A and B, joined to two tubes inside the cylinder, the first reaching almost to the bottom and the other of a length which makes it possible to guarantee the degree of safe filling (see clause 3 and 5.3).

The cylinder shall be designed in such a way as to be easily cleaned and dried, and the valve outlets shall have caps for transportation.

NOTES

1 The capacity of the cylinder depends on the quantity of product required for carrying out all the required tests.

* In this specific case, the laboratory sample is the same as the test sample.

** 3 MPa = 30 bar