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Ethylene for industrial use — Sampling in the liquid and the gaseous phase

Éthylène à usage industriel — Échantillonnage en phase liquide et en phase gazeuse

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Contents

Page

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 47, *Chemistry*.

This second edition cancels and replaces the first edition (ISO 7382:1986), which has been technically revised.

The main changes are as follows:

— the Scope has been expanded to apply to sampling for the determination of trace polar compounds in ethylene products;

— Clauses 2 and 3 have been added;

— content from Clauses 4 and 7, including safety precaution and maintenance of sampling apparatus, has been moved elsewhere in the document;

— in Clause 4, the critical pressure for ethylene has been corrected to 5,04 MPa;

— in Clause 5, explanations regarding apparatus have been added;

— in Clause 5, some specific parameters, including volume of sampling cylinder, size of connecting pipe and time to purge sampling cylinder, have been deleted;

— in 5.2.1, specially passivated sampling apparatus has been recommended, especially when sampling for the determination of trace polar compounds in ethylene products.

— Annex A, and Figures 1, 5 and A.1 have been revised.

— in 5.2.2: the procedure of purging and sampling for non-closed sampling apparatus has been revised;

— sampling apparatus -no.2 in the first edition and its procedure have been deleted and a new sampling apparatus was introduced as closed sampling apparatus no.2;

— in 5.3, 5.4, 5.5, two closed-sampling apparatuses for liquefied ethylene and a sampling apparatus with heated pressure regulator have been added.

— in 6.2, the connecting pipes for non-closed sampling of gaseous ethylene has been revised;

— in 6.3, the closed-sampling apparatuses for gaseous ethylene has been added.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Ethylene for industrial use — Sampling in the liquid and the gaseous phase

WARNING — The use of this document can involve hazardous material, operation and equipment. This document does not purport to address all of the safety problems associated with its use. It is the responsibility of the users of this document to take appropriate measures to ensure the safety, health of personnel prior to application of the document and fulfil other applicable requirement for this purpose.

1 Scope

This document describes the procedures and the precautions to be taken in drawing representative samples of ethylene in the liquid phase stored at -100 °C and in the gaseous phase, for the purpose of their analysis.

Annex A sets out a diagrammatic representation of a system for the disposal of the portion of the sample which is not used in the analysis.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3165:1976, *Sampling of chemical products for industrial use — Safety in sampling*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
closed sampling apparatus
set of apparatus assembled by a sampling cylinder and connecting pipes to take samples under closed conditions, by which the sampling process does not permit the release of any sample or vapour to the surrounding environment

3.2
non-closed sampling apparatus
set of apparatus assembled by a sampling cylinder and connecting pipes to take samples in open air, by which the sampling process permits the release of sample or vapour to the surrounding environment

4 Safety precautions

The safety precautions in all sampling and testing operations with liquefied and gaseous ethylene shall be carefully followed in accordance with ISO 3165:1976. Relevant legal and statutory regulations to ensure the safety, health and environmental protection in the procedure of the sampling methods can apply.