



**International
Standard**

ISO 25095-2

**Propylene oxide for industrial
use —**

Part 2:
**Determination of aldehydes by
liquid chromatography**

**First edition
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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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 preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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*.

A list of all parts in the ISO 25095 series can be found on the ISO website.

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.

Propylene oxide for industrial use —

Part 2:

Determination of aldehydes by liquid chromatography

WARNING — Persons using this document should be familiar with normal laboratory practice. This document does not purport to address all the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices.

1 Scope

This document specifies a test method for determination of aldehydes in propylene oxide by liquid chromatography.

This document is applicable to the determination of aldehydes in propylene oxide for industrial use, including formaldehyde, acetaldehyde, propionaldehyde and acrolein. The concentration for each aldehyde ranges from 0,5 mg/kg to 100 mg/kg.

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*

ISO 3170:2025, *Hydrocarbon Liquids — Manual sampling*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 6353-2, *Reagents for chemical analysis — Part 2: Specifications — First series*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological 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/>

4 Principle

A certain mass of the sample is reacted with excessive 2, 4-dinitrophenylhydrazine (hereafter referred to as DNPH) in acidic buffer solution at 40 °C, in which the aldehydes (such as formaldehyde, acetaldehyde, propionaldehyde, acrolein, and so on) and ketones (such as acetone) are converted into the corresponding aldehydes-DNPH or ketones-DNPH (such as formaldehyde-DNPH, acetaldehyde-DNPH, propionaldehyde-DNPH, acrolein-DNPH, acetone-DNPH, and so on). The reacted sample solution is injected into liquid chromatograph to separate each component, which is detected by ultraviolet detector or diode array detector and quantified by external standard method.