

International Standard



5916

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Methyl chloride for industrial use — Determination of impurities — Gas chromatographic methods

Chlorure de méthyle à usage industriel — Détermination des impuretés — Méthodes par chromatographie en phase gazeuse

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Foreword

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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 5916 was developed by Technical Committee ISO/TC 47, *Chemistry*, and was circulated to the member bodies in June 1981.

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

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

No member body expressed disapproval of the document.

Methyl chloride for industrial use — Determination of impurities — Gas chromatographic methods

WARNING — Methyl chloride is flammable and forms explosive mixtures with air. In the presence of aluminium, it may react vigorously to produce methyl aluminium compounds. Its vapour has toxic and narcotic properties and care should be taken to avoid inhaling it. The liquid can generate very low temperatures by rapid evaporation, thereby causing severe burns if spilled on the skin. The product should be handled in a well ventilated area, away from naked flames and using a protective mask and gloves. Fires should be tackled with carbon dioxide, chemical powders, foam or commercially available extinguishing agents using suitable halogenated hydrocarbon derivatives. In no event should water be used.

1 Scope and field of application

This International Standard specifies gas chromatographic methods for the determination of impurities in methyl chloride.

The methods are applicable for the determination of the impurities listed in table 1, in concentrations equal to or greater than those indicated.

Table 1 — Applicability

Impurity	Minimum concentration, mg/kg
Vinyl chloride	5
Methanol	5
Dichloromethane	5
Acetone	5
Ethyl chloride	2
Dimethyl ether	1

2 References

ISO 3427, *Gaseous halogenated hydrocarbons (liquefied gases) — Taking of a sample.*

ISO 5921, *Fluorochlorohydrocarbons for industrial use — Analysis by gas chromatography.*

3 Principle

Analysis, by gas chromatography, of a vaporized test portion and determination of the contents of impurities, as appropriate, using calibration factors obtained by analysis of external methyl chloride calibration mixtures containing known quantities of the impurities under consideration.

NOTE — Specific gas chromatographic systems are required (see clause 5) for the following groups of impurities :

- acetone, dichloromethane and methanol;
- dimethyl ether;
- ethyl chloride and vinyl chloride.

4 Reagents and materials

During the analysis, unless otherwise stated, use only reagents of recognized analytical grade.

4.1 Carrier and auxiliary gases

4.1.1 Nitrogen, minimum purity 99,9 % by volume.

4.1.2 Hydrogen, minimum purity 99,5 % by volume.

WARNING — Highly flammable : explosive when mixed with air at concentrations ranging approximately from 4 to 75 % (V/V).

4.1.3 Air, freed from organic material by passing through a column approximately 250 mm long and 25 mm in diameter, packed with type 5A molecular sieve of particle size 50 nm.

4.2 Reagents for preparation of calibration mixtures

WARNING — The reagents used for calibration are :

- either gaseous or highly volatile at ambient temperatures and pressures;
- highly to extremely flammable (except dichloromethane);
- in varying degrees, harmful by inhalation (vapours) or contact with the skin (liquids).

In addition vinyl chloride is carcinogenic.

Avoid inhalation of vapours and prevent contact with skin.

4.2.1 Methyl chloride, of the maximum purity available, but containing not less than 99,5 % (m/m) of methyl chloride.