
**Solvents for paints and varnishes —
Demineralized water for industrial
applications — Specification and test
methods**

*Solvants pour peintures et vernis — Eau déminéralisée pour
l'application industrielle — Spécification et méthodes d'essai*

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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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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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 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

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.

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Solvents for paints and varnishes — Demineralized water for industrial applications — Specification and test methods

1 Scope

This document specifies the properties and requirements for demineralized water used as solvent for paints and varnishes industrial applications, e.g. production of electro-deposition coating materials, water-based coating materials, water-based resins and plastics dispersions.

This document is not applicable to water for analytical use.

NOTE See ISO 3696.

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 3696:1987, *Water for analytical laboratory use — Specification and test methods*

ISO 4618, *Paints and varnishes — Terms and definitions*

ISO 10304-1, *Water quality — Determination of dissolved anions by liquid chromatography of ions — Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate*

ISO 15091, *Paints and varnishes — Determination of electrical conductivity and resistance*

ISO 19396-1, *Paints and varnishes — Determination of pH value — Part 1: pH electrodes with glass membrane*

ISO 19396-2, *Paints and varnishes — Determination of pH value — Part 2: pH electrodes with ISFET technology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4618 and the following apply.

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 <http://www.electropedia.org/>

3.1

demineralized water

water of which the mineral matter or salts have been removed by deionization

4 Requirements

Demineralized water used as a solvent for paints and varnishes for industrial applications shall conform to the requirements specified in [Table 1](#).

Table 1 — Requirements and test methods for demineralized water

Property			Requirement	Test method
Appearance			clear, without foreign matter	visually
Electrical conductivity	at 25 °C	µS/cm	max. 20	ISO 15091
pH-value	at 23 °C		5 to 8	ISO 19396-1 or ISO 19396-2
Chloride content		mg/l	max. 3	ISO 10304-1
Evaporation residue		mg/kg	max. 5	ISO 3696:1987, 7.5, 2 h at 110 °C
Colony content		CFU	without findings	to be agreed between the interested parties A suitable test-strip method is described in Clause 5 . Any other suitable meth- od may be used.

5 Example of the determination of the colony content

5.1 Apparatus

5.1.1 **Glass tubes with screw cap** for the determination of the bacterial count.

5.1.2 **Heating cabinet**, heatable up to 200 °C.

5.1.3 **Incubator**.

5.1.4 **Refrigerator**.

5.2 Materials

5.2.1 **Media** for the determination of the total colony count (media for liquids). Media are perishable; observe use-by date by all means.

5.3 Sterilization of the tap before sampling of water

Ensure that no contamination from the outer surface of the tap reaches the sample. Scrape off any dirt (scale slime, grease or other extraneous matter) and fully open and close the tap repeatedly to rinse out the dirt from the tap. Disinfect the tap preferentially by flaming (after flaming and opening the tap, a sizzling noise should occur). Subsequently, open the tap to half-flow and flush until constant water temperature is reached. Then place the open sample bottle in the water flow and fill it under aseptic conditions.

Only if flaming is not possible, disinfect the tap by other adequate methods. To disinfect the mouth of a plastic tap, after thorough cleaning, dip it for 2 min to 3 min in a beaker with hypochlorite solution, $\rho(\text{ClO}^-) \approx 1 \text{ g/l}$, ethanol, volume fraction of 70 %, or isopropanol, volume fraction of 70 %. Alternatively, a swap or a wash bottle or similar device may be used to disinfect the outside and as much of the inside as possible (see ISO 19458:2006, 4.4.1.3[1]).