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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 34903.1-2026

Replacing GB/T 34903.1-2017

**Petroleum, petrochemical and natural gas industries -
Non-metallic materials in contact with media related to oil and
gas production - Part 1: Thermoplastics**

石油、石化与天然气工业 与油气开采相关介质接触的非金属材料 第1部分：热塑性塑料

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Section 1 of GB/T 34903 "Non-metallic materials in contact with media related to petroleum, petrochemical and natural gas industries and oil and gas extraction".

Parts. GB/T 34903 has published the following parts.

---Part 1: Thermoplastics;

---Part 2: Elastomers;

---Part 4: Fiber-Reinforced Composites.

This document replaces GB/T 34903.1-2017 "Nonmetallic Materials in Contact with Media Related to Petroleum, Petrochemical and Natural Gas Industries and Oil and Gas Extraction".

The changes are as follows.

a) The terms "end user," "seal," "lining," "manufacturer," "materials specification," "operating temperature," and "minimum operating temperature" have been removed.

"degree", "pipeline", "pipeline", "thermoplastic", and "gasket" and their definitions (see 3.1.1, 3.1.3~3.1.7 of the 2017 edition).

(3.1.9~3.1.11, 3.1.14 and 3.1.15)

b) Added "Production Batch", "Certificate of Conformity", "Components", "Mixed Materials", "Processing Technology", "Inspection Batch", "Evaluation Temperature", "Pretreatment", and "Standard Room" the terms and definitions of "temperature," "coefficient of variation," and "threshold time" (see 3.1.1-3.1.5, 3.1.7, 3.1.9-3.1.11, 3.1.15, and 3.1.15) are as follows.

Version 3.1.16 was updated, and the definition of "compatibility" was changed (see 3.1.14, version 3.1.16 in 2017).

c) Performance requirements for materials and their components have been removed (see Chapter 4 in the 2017 edition);

d) Added general requirements for Level 4 testing (see Chapter 4);

e) The "Technical Information Requirements" has been changed to "Physicochemical Performance Testing (L1 Test)" (see Chapter 5, Chapter 5 of the 2017 edition);

f) Manufacturing requirements have been removed (see Chapter 6 of the 2017 edition);

g) The evaluation of thermoplastics has been changed to "short-term testing (L2 test)" (see Chapter 6, Chapter 7 of the 2017 edition), and the relevant provisions have been changed.

The general technical indicators for compliance testing are as follows (see Table 7 in the 2017 edition, 6.6.1), and the section on good field service has been removed.

Military service experience does not require a qualification assessment (see 7.1 in the 2017 edition);

h) An accelerated aging test (L3 test) has been added (see Chapter 7);

i) Added long-term testing (L4 testing) for lifetime prediction (see Chapter 8);

j) The requirements regarding the volume of the test container have been changed (see A.1.1.2, C.2.1 of the 2017 edition), and requirements for changing the test medium have been added (see...).

A.1.2.2 and A.1.2.3);

- k) The initial pressure requirement for multiphase fluid mixtures has been changed (see A.1.4.3, C.1.3.2 of the 2017 version);
- m) Added requirements for leaching rate testing after aging tests (see A.1.8);
- n) The requirements for specimen storage after testing have been changed (see A.1.10, C.3.1.1 in the 2017 version);
- o) The standard corrosion inhibitor-containing salt water test medium (see Table C.3 in the 2017 edition) and the information on thermal stability phases before and after the aging test have been removed.

Determination of relevant parameters (see C.3.2.3 and C.3.4.4 in the 2017 edition).

This document is modified to adopt ISO 23936-1:2022 "Contacts between media in the oil and gas industry, including low-carbon energy sources and oil and gas production".

Non-metallic materials, Part 1: Thermoplastics.

This document has undergone the following structural adjustments compared to ISO 23936-1:2022.

- 6.1 corresponds to 6.1 and 6.2.1 in ISO 23936-1:2022;
- 6.2~6.6 correspond to 6.2.2~6.2.6 in ISO 23936-1:2022, respectively;
- 6.7 and 6.8 correspond to 6.3 and 6.4 in ISO 23936-1:2022, respectively;
- 8.7.2 and 8.7.3 correspond to paragraphs 1 to 3 of B.1 in ISO 23936-1:2022.

The technical differences between this document and ISO 23936-1:2022, and the reasons therefor, are as follows.

---The term and definition of "maximum rated temperature" (see 3.1.13 of ISO 23936-1:2022) have been removed to accommodate the corresponding tests in Table 1.

Modification of the test items;

---The term and definition of "operating temperature" (see 3.1.15 of ISO 23936-1:2022) have been removed to avoid confusion with Table B.5 "maximum operating temperature".

"Temperature" is confused;

---The following terms have been removed. "End User," "Gasket," "Glass Transition Temperature," "Liner," "Pure Resin," "Pipeline," "Pipe," "Thermoplastic," and "Sealing." the terminology and definition of "sealing" (see ISO 23936-1:2022, 3.1.6, 3.1.8~3.1.10, 3.1.14, 3.1.16, 3.1.17) (3.1.22 and 3.1.23), to comply with the relevant national standards;

3.1.16) This document is made more operable;

---The term "room temperature" has been changed to "standard room temperature" (see