
**Plain bearings — Fluid film bearing
materials for vehicular turbocharger**

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Foreword

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This document was prepared by Technical Committee ISO/TC 123, *Plain bearings*, Subcommittee SC 7, *Special types of plain bearings*.

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.

Plain bearings — Fluid film bearing materials for vehicular turbocharger

1 Scope

This document specifies the material compositions and required properties of fluid film bearings used for vehicular turbochargers.

2 Normative references

There are no normative references in this document.

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

4 Requirements for bearing material

4.1 General

Distinctive conditions of turbochargers are:

- sliding speed is high,
- bearings are exposed to high temperature oil, and
- oil contains contaminants such as soot from the engine.

Therefore, fluid film bearing materials for vehicular turbochargers shall have special properties of seizure resistance, wear resistance and chemical corrosion resistance as described in the following subclauses.

Materials of mating runner parts such as shaft and thrust collar shall be hard and smooth enough to use the maximum capability of the bearing materials.

See [Annex A](#) for a general description of a vehicular turbocharger and bearings.

4.2 Seizure resistance

There are cases when the sliding speed of bearings exceeds 100 m/s. For such high speed condition, seizure resistance against a possible metal contact is required for bearing materials.

4.3 Wear resistance

If a bearing comes to contact with the rotating shaft, or if soot is mixed into the lubricating oil, bearing wear can occur. In recent years, oil viscosity grade has also been decreasing from an environmental