INTERNATIONAL STANDARD

ISO 12103-1

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Road vehicles — Test dust for filter evaluation —

Part 1:
Arizona test dust

Véhicules routiers — Poussière pour l'essai des filtres —

Partie 1: Poussière d'essai d'Arizona

Reference number
ISO 12103-1:1997(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 12103-1 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 7, *Injection equipment and filters for use on road vehicles*.

ISO 12103 consists of the following parts, under the general title *Road vehicles — Test dust for filter evaluation*:

— *Part 1: Arizona test dust*

— *Part 2: Aluminium oxide test dust*

Annexes A and B of this part of ISO 12103 are for information only.

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Introduction

This part of ISO 12103 specifies four grades of test dusts made from desert sand, which is composed of natural occurring compounds that motor vehicles are commonly subjected to. These test dusts are used to determine performance of filtration systems. Due to the abrasive characteristics of these materials, they have also been used in wear studies involving bearings, seals, fan blades, windshield wipers, etc.

This part of ISO 12103 specifies the particle size distribution of these four dusts by volume, as opposed to by number. The particle size distribution by number will be added to a revision of this part of ISO 12103.

Dusts complying with the volume distribution specified in this part of ISO 12103 are not appropriate for calibration of particle counters. For this purpose refer to ISO 4402, which is currently under review.

Road vehicles — Test dust for filter evaluation —

Part 1:
Arizona test dust

1 Scope

This part of ISO 12103 defines particle size distribution and chemical content limits involving four grades of test dust made from Arizona desert sand.

2 Test dust description

Test dusts according to this part of ISO 12103 are manufactured from Arizona desert sand. Arizona desert sand is a naturally occurring contaminant consisting primarily of silicon dioxide with smaller amounts of other compounds. It is collected from a select area of Arizona desert, jet-milled and classified to specific particle size.

NOTE — Arizona desert sand has also been referred to as Arizona road dust, Arizona test dust, Arizona silica, AC fine or coarse test dust, ACFTD or ACCTD, and SAE fine or coarse test dust (see annex A).

Arizona desert sand has a density of approximately 2650 kg/m³. Bulk density of ISO-specified test dusts made from Arizona sand varies with particle size (see table 1).

Table 1 — Bulk density

Category	Approximate bulk density kg/m^3
ultrafine	500
fine	900
medium	1025
coarse	1200

3 Test dust designation

Arizona test dusts are available in four standard categories, designated as follows:

— ISO 12103-A1 for ultrafine test dust

— ISO 12103-A2 for fine test dust

— ISO 12103-A3 for medium test dust

— ISO 12103-A4 for coarse test dust