
International Standard



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Laboratory sintered (fritted) filters — Porosity grading, classification and designation

Filtres frittés de laboratoire — Échelle de porosité — Classification et désignation

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ISO 4793-1980(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

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 4793 was developed by Technical Committee ISO/TC 48, *Laboratory glassware and related apparatus*, and was circulated to the member bodies in March 1979.

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

Australia	Israel	South Africa, Rep. of
Canada	Italy	Spain
Czechoslovakia	Libyan Arab Jamahiriya	Turkey
France	Mexico	United Kingdom
Germany, F. R.	Netherlands	USSR
Hungary	Poland	
India	Romania	

No member body expressed disapproval of the document.

Laboratory sintered (fritted) filters — Porosity grading, classification and designation

1 Scope and field of application

This International Standard specifies a system of porosity grading, classifying and designating laboratory sintered (fritted) filters by the determination of pore size index.

It is applicable to laboratory filters made of glass, vitreous silica, ceramics, metals and plastic materials.

Test methods are included in annexes B and C for the determination of air permeability and uniformity of pore size, but these characteristics do not form part of the requirements of this International Standard.

2 Definitions

2.1 sintered (fritted) filter : A filter produced from porous material formed by the thermal bonding of particles.

2.2 pore size index : A characteristic of a filter related to pore diameter.

2.3 permeability : A characteristic of a filter related to the rate of flow through it under specified conditions.

3 Quality

Filters shall not shed particles under conditions of normal use and shall withstand a working pressure differential of 1,013 bar applied in the normal direction of use.

When tested for pore size index by the method specified in annex A, there shall be no evidence of faults in the filter material, or the sealing into the holder.

4 Grading of filters

Filters shall be graded according to their pore size index in one of the eight grades specified in table 1.

The designation allotted to each grade consists of the upper limit of its pore size index range, expressed in micrometres preceded by the letter "P".

Filters may be provided in certain materials or for special purposes with pore size indexes falling within narrower ranges than those given in table 1; if so, this should be indicated by stating both the minimum and maximum limits of the range.

Table 1 — Grading of filters

Designation of grade	Pore size index, μm	
	>	\leq
P 1,6	—	1,6
P 4	1,6	4
P 10	4	10
P 16	10	16
P 40	16	40
P 100	40	100
P 160	100	160
P 250	160	250

5 Limits for pore size index

When the filter is tested in accordance with the method specified in annex A, the pore size index shall be within the limits specified in table 1 for its grade.

NOTE — It is recommended that filters be manufactured with pore size indexes near the centre of the range of the appropriate grade.