INTERNATIONAL STANDARD

ISO 1043-4

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1998-02-15

Plastics — Symbols and abbreviated terms —

Part 4: Flame retardants

Plastiques — Symbols et abréviations —

Partie 4: Ignifuges

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Reference number
ISO 1043-4:1998(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 1043-4 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 1, *Terminology*.

ISO 1043 consists of the following parts, under the general title *Plastics — Symbols and abbreviated terms*:

— *Part 1: Basic polymers and their special characteristics*

— *Part 2: Fillers and reinforcing materials*

— *Part 3: Plasticizers*

— *Part 4: Flame retardants*

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International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet central@iso.ch
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

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Plastics — Symbols and abbreviated terms —

Part 4:
Flame retardants

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1 Scope

This part of ISO 1043 provides uniform symbols for flame retardants added to plastics materials. The symbols are written with the abbreviated term “FR” and one or more succeeding code numbers as given in clause 5. They are used in addition to the symbols for the plastics materials, for plastics material designation and for identification and marking of plastics products.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 1043. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 1043 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1043-1:1997, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*.

ISO 1043-2:1988, *Plastics — Symbols — Part 2: Fillers and reinforcing materials*.

ISO 1043-3:1996, *Plastics — Symbols and abbreviated terms — Part 3: Plasticizers*.

3 Definition

For the purposes of this part of ISO 1043, the following definition applies:

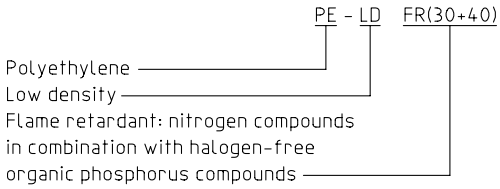
3.1 flame retardant: A substance that markedly retards the propagation of a flame.

NOTE — Included are flame retardants that are incorporated in prepolymers.

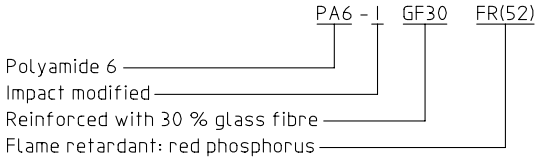
4 Application of symbols

The symbols are written with the abbreviated term “FR”, in capital letters, followed, without a space, by a two-digit code number enclosed in parentheses and selected, as appropriate, from the list given in clause 5. Only flame retardants exceeding 1 % (m/m) have to be identified. These symbols are used in addition to the symbols for a plastics material derived from parts 1, 2 and 3 of ISO 1043.

EXAMPLE 1:



EXAMPLE 2:



5 Code numbers for flame retardants

The code numbers are grouped according to the chemical composition of the flame retardant.

NOTE — Additional materials will be coded as required and will form amendments to this part of ISO 1043.

Halogenated compounds:

Code	
10	aliphatic/alicyclic chlorinated compounds
11	aliphatic/alicyclic chlorinated compounds in combination with antimony compounds
12	aromatic chlorinated compounds
13	aromatic chlorinated compounds in combination with antimony compounds
14	aliphatic/alicyclic brominated compounds
15	aliphatic/alicyclic brominated compounds in combination with antimony compounds
16	aromatic brominated compounds (excluding brominated diphenyl ether and biphenyls)
17	aromatic brominated compounds (excluding brominated diphenyl ether and biphenyls) in combination with antimony compounds
18	polybrominated diphenyl ether
19	polybrominated diphenyl ether in combination with antimony compounds
20	polybrominated biphenyls
21	polybrominated biphenyls in combination with antimony compounds
22	aliphatic/alicyclic chlorinated and brominated compounds
23, 24	not allocated
25	aliphatic fluorinated compounds
26 to 29	not allocated

Nitrogen compounds:

Code	
30	nitrogen compounds (confined to melamine, melamine cyanurate, urea)
31 to 39	not allocated

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