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**Plastics — Symbols —**

**Part 3:  
Plasticizers**

*Plastiques — Symboles —*

*Partie 3: Plastifiants*

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## 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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 1043-3 was prepared by Technical Committee ISO/TC 61, *Plastics*.

Together with ISO 1043-1 and ISO 1043-2, it cancels and replaces ISO 1043 : 1978, of which it constitutes an extension and a partial revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

# Plastics — Symbols —

## Part 3: Plasticizers

### 1 Scope and field of application

**1.1** This part of ISO 1043 provides uniform symbols for terms relating to plasticizers. It includes, in general, only those symbols that have come into established use.

**1.2** The purpose of this part of ISO 1043 is to prevent the occurrence of more than one symbol for a given plasticizer. The symbols are primarily intended to be a convenient shorthand for chemical names in publications and other written matter.

NOTE — Mixtures of plasticizers are not considered in this part of ISO 1043.

### 2 Explanatory notes

**2.1** Unless otherwise indicated, the alkyl groups are *n*-alkyl groups and the phthalates are esters of *o*-phthalic acid.

**2.2** The first appearance of the symbols in texts shall be enclosed in parentheses and shall be preceded by the term written in full.

**2.3** No letter is used in the symbols to indicate normal (*n*-) linear alcohols. For branched (iso-) alcohols, the additional letter *i* is used, with one exception: in view of worldwide usage of the letter *O* for 2-ethylhexyl (for example, in DOP and DOA), this practice is observed in this part of ISO 1043 and the *n*-octyl group is coded *NO* (as in DNOP). Because of this dual usage, the application of the rule specified in 2.2 is most important.

**2.4** The letter *I* designates iso-branched groups (for example, DIOP). However, DTDP is sometimes used instead of DITDP because di-*n*-tridecyl phthalate is not used as a plasticizer; when DTDP is used, it is important that the rule specified in 2.2 is observed.

**2.5** For plasticizers based on di-esters of the same alcohol, the first letter of the symbol is *D*.

**2.6** The letter *P* may be used in place of *F* for "phosphate" in plasticizer symbols. (See also footnote to clause 3.)

### 3 Symbols for plasticizers

Symbol	Plasticizer
<b>ASE</b>	Alkylsulfonic acid ester
<b>BBP</b>	Benzyl butyl phthalate
<b>BOA</b>	Benzyl octyl adipate (Benzyl 2-ethylhexyl adipate)
<b>BOP</b>	Butyl octyl phthalate (Butyl 2-ethylhexyl phthalate)
<b>DBP</b>	Dibutyl phthalate
<b>DBS</b>	Dibutyl sebacate
<b>DCHP</b>	Dicyclohexyl phthalate
<b>DCP</b>	Dicapryl phthalate
<b>DDP</b>	Didecyl phthalate
<b>DEP</b>	Diethyl phthalate
<b>DHP</b>	Diheptyl phthalate
<b>DHXP</b>	Dihexyl phthalate
<b>DIBP</b>	Diisobutyl phthalate
<b>DIDA</b>	Diisodecyl adipate
<b>DIDP</b>	Diisodecyl phthalate
<b>DIHP</b>	Diisooheptyl phthalate
<b>DIHXP</b>	Diisohexyl phthalate
<b>DINA</b>	Diisononyl adipate
<b>DINP</b>	Diisononyl phthalate
<b>DIOA</b>	Diisooctyl adipate
<b>DIOP</b>	Diisooctyl phthalate
<b>DIPP</b>	Diisopentyl phthalate
<b>DITDP</b>	Diisotridecyl phthalate (see 2.4)
<b>DMP</b>	Dimethyl phthalate
<b>DNOP</b>	Di- <i>n</i> -octyl phthalate (see 2.3)
<b>DNP</b>	Dinonyl phthalate
<b>DOA</b>	Dioctyl adipate (Di-2-ethylhexyl adipate)
<b>DOIP</b>	Dioctyl isophthalate (Di-2-ethylhexyl isophthalate)
<b>DOP</b>	Dioctyl phthalate (Di-2-ethylhexyl phthalate)
<b>DOS</b>	Dioctyl sebacate (Di-2-ethylhexyl sebacate)
<b>DOTP</b>	Dioctyl terephthalate (Di-2-ethylhexyl terephthalate)
<b>DOZ</b>	Dioctyl azelate (Di-2-ethylhexyl azelate)
<b>DPCF</b>	Diphenyl cresyl phosphate
<b>DPOF</b>	Diphenyl octyl phosphate
<b>DUP</b>	Diundecyl phthalate
<b>ELO</b>	Epoxidized linseed oil
<b>ESO</b>	Epoxidized soya bean oil

Symbol	Plasticizer	Symbol	Plasticizer
<b>HNUA</b>	Heptyl nonyl undecyl adipate (= 711 A)	<b>TCF<sup>1)</sup></b>	Tricresyl phosphate; tritolyl phosphate (TTP)
<b>HNUP</b>	Heptyl nonyl undecyl phthalate (= 711 P)	<b>THTM</b>	Triheptyl trimellitate
<b>HXODA</b>	Hexyl octyl decyl adipate (= 610 A)	<b>TIOTM</b>	Triisooctyl trimellitate
<b>HXODP</b>	Hexyl octyl decyl phthalate (= 610 P)	<b>TOF</b>	Trioctyl phosphate (Tri-2-ethylhexyl phosphate)
<b>NUA</b>	Nonyl undecyl adipate (= 911 A)	<b>TOPM</b>	Tetraoctyl pyromellitate (Tetra-2-ethylhexyl pyromellitate)
<b>NUP</b>	Nonyl undecyl phthalate (= 911 P)	<b>TOTM</b>	Trioctyl trimellitate (Tri-2-ethylhexyl trimellitate)
<b>ODA</b>	Octyl decyl adipate	<b>TPF</b>	Triphenyl phosphate
<b>ODP</b>	Octyl decyl phthalate	<b>TTP</b>	See TCF above
<b>ODTM</b>	<i>n</i> -octyl decyl trimellitate	<b>TXF</b>	Trixylyl phosphate
<b>TCEF</b>	Trichloroethyl phosphate		

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1) It is normal practice in the United Kingdom to use P in place of F to signify "phosphate". However, the abbreviation "TCP" is not acceptable because it is a registered trade mark in the United Kingdom. Consequently, the abbreviation TTP (derived from the chemical name "tritolyl phosphate") has been adopted.

## Annex

### List of symbols used for components of terms

(This annex forms an integral part of the standard.)

#### A.1 List by symbols

Letter	Components of terms	Component	Symbol
		Decyl	D
		Di	D
A	adipate, alkyl		
B	benzyl, butyl		
C	capryl, chloro, cresyl	Epoxidized	E
CH	cyclohexyl	Ester	E
D	decyl, di	Ethyl	E
E	epoxidized, ester, ethyl		
F	phosphate	Heptyl	H
H	heptyl	Hexyl	HX
HX	hexyl		
I	iso	Iso	I
LO	linseed oil		
M	methyl	Linseed oil	LO
N	nonyl, normal		
O	octyl	Methyl	M
P	pentyl, phenyl, phthalate, phosphate (see 2.6)		
PM	pyromellitate	Nonyl	N
S	sebacate, sulfonic acid	Normal	N
SO	soya bean oil		
T	tere, tetra, tri	Octyl	O
TM	trimellitate		
U	undecyl	Pentyl	P
X	xylyl	Phenyl	P
Z	azelate	Phosphate	F, P (see 2.6)
		Phthalate	P
		Pyromellitate	PM
		Sebacate	S
		Soya bean oil	SO
		Sulfonic acid	S
		Tere	T
		Tetra	T
		Tri	T
		Trimellitate	TM
		Undecyl	U
		Xylyl	X

#### A.2 List by components of terms

Component	Symbol
Adipate	A
Alkyl	A
Azelate	Z
BenzyI	B
Butyl	B
CapryI	C
Chloro	C
Cresyl	C
Cyclohexyl	CH

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