

SPP 71
Plastic Parts Marking



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1. Introduction

This document provides the requirements for marking X-Rite's plastic parts and products. This marking will be used during subsequent recycling, reuse, or disposal.

2. Scope

The requirements of this document apply to all molded plastic parts used in products specified by or purchased for X-Rite. Implementation of these requirements is mandatory for products designed/tooled after the release of this document.

This document does not apply to plastic packaging materials.

This document specifies uniform requirements for physically marking products and parts made of polymeric (plastic) materials according to internationally recognized standards (refer to references in section 5).

In the case of a discrepancy between this document and the referenced standards, the referenced standards in effect at the time of application take precedence.

3. Marking requirements

If the part size, geometry, and cosmetic and effective function allow, all plastic parts and products must be physically marked at least with the appropriate symbols or codes identified in the tables within this SPP to designate the following:

- Basic polymer in the part
- Flame retardant material used
- Filler or reinforcement used to fabricate the part
- Plasticizer used

When additional information is desired, and if the available space for marking is a constraint, the order of priority of what information to mark is as follows:

- Recycling information / recycling mark
- Polymer (including blends, laminates, flame retardants, fillers, plasticizers as appropriate)
- Cavity number
- Part number
- Date code

3.1 Parts to be marked

All parts that weigh 25 grams or more must be physically marked, if adequate space is available and the functionality of the part is not compromised.

On all parts weighing less than 25 grams, it is strongly encouraged to include physical marking, where practical. Where physical marking on parts weighing less than 25 grams is mandatory, this requirement will be noted on applicable drawings or procurement documents.

3.2 Character size

The physical marking code location, size, and process must be specified on the applicable part drawing.

The marking process must be compatible with the recycling process. Marking should be placed where it is readily visible to product disassemblers, but does not detract from the normal use of the part.

The preferred character size is 3mm to 5 mm high and with a profile depth (or height) of approximately 0.2 mm. On smaller parts where 3mm to 5 mm text is not possible, smaller text can be used. The materials identification text must be no smaller than the part number or identifier that is engraved on the part.

3.3 Character legibility and method of marking

Physical marking of plastic parts and products must remain legible during the entire life of the part. The physical marking must be by injection molding, embossing melt imprint, or other legible marking in the surface of the polymer, with the provision for future revisions. The material code markings must be updated whenever material is changed.

4. Marking identification symbols

4.1 Polymers

The material identification symbol is to be marked between two angle brackets, ">" and "<", using only capital letters. Example: >ABS<. See Tables 1 and 2 for symbols.

4.2 Polymer blends

Polymer blends or alloys must be labeled with the appropriate abbreviated terms for the component polymers, separated by a plus (+) sign. There should be no spaces before or after the plus sign. Example: >PC+ABS< or >PVC+ABS+SAN<. If copolymers are used, the symbols of the polymer components are separated by "/", as in: >PA 6/12<. See Table 3 for symbols.

4.3 Laminates

Laminates must be physically marked with the appropriate abbreviated terms for the component polymers, separated by a comma. The primary visible material is identified first and the main component, by weight, is identified with an underline. Example: >PVC,PUR,ABS<. See Tables 1, 2, or 3 for symbols.

4.4 Flame retardant materials

All plastics containing flame retardants that have been intentionally added or that exceed 1% by weight must include the flame-retardant code. The term FR, in capital letters without spaces, is also followed by a two-digit code number that states the type of FR material used. The two-digit code must be enclosed in parentheses. Example: >PC FR(52)<. See Table 4 for symbols.

4.5 Filler and reinforced composition marking

Compositions with a single filler or reinforcing material must include the abbreviated term for the polymer followed by a dash, then the material symbol followed by the form/structure symbol of the

additive, followed by the filler's percentage by mass. Example: a polypropylene containing 30% mineral powder is indicated as follows: **>PP-MD30<**. See Table 5 for symbols.

Compositions with a mixture of fillers or reinforcing materials must include the filler's indicator and percentage within parentheses. There must be no space before or after the plus (+) sign. Example: a polyamide 66 containing a mixture of 15% mineral powder and 25% glass fiber is indicated as follows: **>PA66-(GF25+MD15)<**. See Table 5 for symbols.

4.6 Marking for additional materials

Additional information combining more data, such as flame retardants, fillers, and resin characteristics, must be supplied, based upon the appropriate current material specification.

For example, **>PA11G30<** describes a material composition of PA= Polyamide, 11= a specific nylon 11 as outlined in Table 1, and G30, which is glass reinforced at 30%.

For example, nylon 6, 30% GF with red phosphorus flame retardant would be marked as:
>PA6 GF30 FR(52)<

4.7 Plasticizers

Compositions containing plasticizers must be physically marked with the abbreviated term for the polymer, followed by a hyphen, then the symbol "P" followed by the abbreviated term of the plasticizer in parentheses, as described in ISO 1043-3. For example, PVC containing dibutyl phthalate is marked: **>PVC-P(DBP)<**. See Table 6 for symbols.

4.8 Additional identification marking

Additional identification marking, such as date code, country of origin, part model name, part version, ISO supplemental part marking, and so forth, may be included on the part if specified. However, no additional information may replace the universal material marking code defined in this SPP. See Table 7.

To achieve maximum value from the plastic to be recycled, it is recommended that the X-Rite part number, along with an ID for the supplier, be shown in the line below the material marking code.

For example, to mark the part AT240-05 polycarbonate with 20% glass fiber supplied by company A, whose X-Rite supplier ID is #####, the marking would be:

**>PC-GF20<
AT240-05 #####**

4.9 Supplemental symbols for special characteristics

The abbreviated terms from ISO 1043-1 for basic polymers may be supplemented by up to four symbols (identified in Table 7) to differentiate between or among modifications of the polymer, if desired. The supplementary symbols shall be placed after the abbreviated term of the basic polymer, separated by a hyphen, with no spacing before or after the hyphen. No symbol shall be placed in front of the abbreviated term of the basic polymer. For example, Polypropylene, block copolymer: >PP-B<.

5. References

- ASTM D1600, *Standard Terminology Relating to Abbreviations and Codes for Terms Related to Plastics*.
- ASTM D1972, *Standard Practice for Generic Marking of Plastic Products*
- ISO 1043-1 (JIS K 6899-1) *Plastics - Symbols. Part 1: Basic polymers and their special characteristics*.
- ISO 1043-2 (JIS K 6899-2) *Plastics- Symbols Part 2: Fillers and Reinforcing Materials*.
- ISO 1043-3 (JIS K 6899-3) *Plastics-Symbols and abbreviated terms Part 3 Plasticizers*
- ISO 1043-4 (JIS K 6899-4) *Plastics-Symbols Part 4 Flame retardants*.
- ISO/DIS 11469. *Plastics - Generic Identification and Marking of Plastic Products*.
- SAE J1344. *Marking of Plastics Parts*

Revision History

Revision	Change
A. April 21 2009	SJW - Initial release

Tables 1 through 7

Table 1: Symbols for Homopolymeric			
Symbol	Material	Symbol	Material
CA	Celluloseacetate	PET	Poly (ethyleneterephthalate)
CAB	Celluloseacetatebutyrate	PEUR	Polyetherurathane
CAP	Celluloseacetatepropionat	PF	Phenol-formaldehyde
CF	Cresol-formaldehyde	PFA	Perfluoralkoxlalkanepolymer
CMC	Carboxymethylcellulose	PI	Polyimide
CN	Cellulosenitrate	PIB	Polyisobutylene
CP	Cellulosepropionate	PIR	Polyisocyanurate
CTA	Celluloseetriacetate	PMI	Polymethacylimide
EC	Ethylcellulose	PMMA	Poly(methylmethacrylate)
EP	Epoxide;Epoxy	PMS	Poly-(fÑ-methylstyrene)
FF	Furan-formaldehyde	POM	Poly(oxymethylene);Polyformadehyde
MC	Methylcellulose	PP	Polypropylene
MF	Melamine-formaldehyde	PPE	Poly(phenyleneEther)
PA	Polyamide	PPS	Poly(phenylenesulfide)
PAEK	Polyacyetherketone	PPSU	Poly(phenylenesulfone)
PAI	Polyamidimide	PS	Polystyrene
PAN	Polyacrylonitrile	PS-HI	Highimpactmodifiedpolystyrene
PB	Polybutene	PSU	Polysulfone
PBAK	Poly(butylaclyate)	PTFE	Polytetrafluorouethylene
PBT	Poly(butyleneterephthalate)	PUR	Polyurethane
PC	Polycarbonate	PVAC	Poly(vinylacetate)
PCTFE	Polychlorotrifluoroethylene	PVAL	Poly(vinylalcohol)
PDAP	Poly(diallylphthalate)	PVB	Poly(vinylbutyral)
PE	Polyethylene	PVC	Poly(vinylchloride)
PEEK	Polyetheretherketone	PVDC	Poly(viynlidenechloride)
PEEKK	Polyehtheretherketoneketone	PVDF	Poly(vinylidenefluoride)
PEEST	Polyesterester	PVF	Poly(vinylfluoride)
PEI	Polyetherimide	PVFM	Poly(vinylformal)
PEK	Polyetherketone	PVK	Poly(vinylcarbazole)
PEKEKK	Polyetherketoneetherketoneketone	PVP	Poly(vinylpyrrolidone)
PEKK	Polyetherketoneketone	SI	Silicone
PEO	Poly(ethyleneoxide)	UF	Urea-formaldehyde
PES	Polyethersulfone	UP	Unsaturatedpolyester

Table 2: Symbols For Copolymeric

Symbol	Material	Symbol	Material
ABAK	Acrylonitrile-butadiene-acrylate	PAR	Polyarylate
ABS	Acrylonitrile-butadiene-styrene	PEBA	Poly(ether blockamide)
ACS	Acrylonitrilechlorinatedpolyethylene-styrene	PESTUR	Polyesterurethane
AEPDS	Acrylonitrile/ethylene-propylenediene/styrene	PFEP	Perfluoro(ethylene-propylene)
AMMA	Acrylonitrile-methylmethacrylate	PMMI	Poly(N-methylmethylacrylimide)
ASA	Acrylonitrile-styrene-acrylate	PMP	Poly(4-methylpent-1-ene)
CFS	Casein-formaldehyde	SAN	Styrene-acrylonitrile
EEAK	Ethylene-ethylacrylate	SB	Styrene-butadiene
EMA	Ethylene-methacrylicacid	SMAH	Styrene-maleicanhydride
E/P	Ethylene-propylene	SMS	Styrene-fÑ-methylstyrene
ETFE	Ethylene-tetrafluoroethylene	VCE	Vinylchloride-ethylene
EVAC	Ethylene-vinylacetate	VCEMAK	Vinylchloride-ethylene-methylacrylate
EVOH	Ethylene-vinylalcohol	VCEVAC	Vinylchloride-ethylene-vinylacetate
LCP	Liquid-crystalpolymer	VCMAC	Vinylchloride-methylacrylate
MBS	Methacrylate-butadiene-styrene	VCMMA	Vinylchloride-methylmethacrylate
MMABS	Methylmethacrylate-acrylonitrilebutadiene-styrene	VCOAK	Vinylchloride-octylacrylate
MPF	Melamine-phenol-formadehyde	VCVAC	Vinylchloride-vinylacetate
		VCVDC	Vinylchloride-vinylidenechloride

Table 3: Symbols For Blends

Symbol	Material	Symbol	Material
ABS+PA	Acrylonitrile-butadiene-styrene+polyamide	PC+PBT	Polycarbonate+Poly(butylene terephthalate)
ABS+PC	Acrylonitrile-butadiene-styrene+polycarbonate	PC+PE	Polycarbonate+polyethylene
ABS+PPSU	Acrylonitrile-butadiene-styrene+polyphenylenesulfone	PC+PET	Polycarbonate+poly(ethyleneterephthalate)
ABS+PTFE	Acrylonitrile-butadiene-styrene+polytetrafluoroethylene	PC+SMA	Polycarbonate+styrenemaleicanhydride
ABS+PVC	Acrylonitrile-butadiene-styrene+poly(vinylchloride)	PC+TPU	Polycarbonate+thermoplasticpolyurethane
ABS+SMA	Acrylonitrile-butadiene-styrene+styrenemaleicanhydride	PET+PMMA	Poly(ethyleneterephthalate)+poly(methylmethacrylate)
ABS+TPU	Acrylonitrile-butadiene-styrene+thermoplasticpolyurethane	PET+PPSU	Poly(ethyleneterephthalate)+polyphenylenesulfone
ASA+PC	Acrylonitrile-styrene-acrylate+polycarbonate	PET+RBR	Poly(ethyleneterephthalate)+rubber
ASA+PMMA	Acrylonitrile-styrene-acrylate+poly(methylmethacrylate)	POM+PTFE	Polyoxymethylene+polytetrafluoroethylene
ASA+PVC	Acrylonitrile-styrene-acrylate+poly(vinylchloride)	POM+RBR	Polyoxymethylene+rubber
PA	Polyamide(amorphous)blend	PPE+IPS	Poly(phenyleneether)+highimpactpolystyrene
PA+EMA	Polyamide+ethylenemethacrylicacid(ionomer)	PPS+PTFE	Poly(phenylenesulfide)+polytetrafluoroethylene
PA+PE	Polyamide+polyethylene	PUR+PIR	Polyurethane+polyisocyanurate
PA+PPE	Polyamide+poly(phenyleneether)	PVC+CPE	Poly(vinylchloride)+chlorinatedpolyethylene
PA+RBR	Polyamide+rubber	PVC+NBR	Poly(vinylchloride)+nitrile-butadienerubber
PA+SAN	Polyamide+styrene-acrylonitrile	PVC+PMMA	Poly(vinylchloride)+poly(methylmethacrylate)
PBT+PET	Poly(butylene terephthalate)+poly(ethyleneterephthalate)	PVC+PUR	Poly(vinylchloride)+polyurethane
PBT+PPE	Poly(butylene terephthalate)+poly(phenyleneether)	PVC+PU	Poly(vinylchloride)+polyurethane
PBT+RBR	Poly(butylene terephthalate)+rubber	SMA+IPS	Styrenemaleicanhydride+highimpactpolystyrene

Table 4: Code numbers for flame retardants	
Code numbers are grouped according to the chemical composition of the flame retardant.	
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	
30	nitrogen compounds (confined to melamine, melamine cyanurate, urea)
31 to 39	not allocated
ORGANIC PHOSPHORUS COMPOUNDS	
40	Halogen-free organic phosphorus compounds
41	Chlorinated organic phosphorus compounds
42	Brominated organic phosphorus compounds
43 to 49	Not allocated
INORGANIC PHOSPHORUS COMPOUNDS	
50	ammonium orthophosphates
51	ammonium polyphosphates
52	red phosphorus
53 to 59	not allocated
METAL OXIDES, METAL HYDROXIDES, METAL SALTS	
60	aluminum hydroxide
61	magnesium hydroxide
62	antimony (III) oxide
63	alkali-metal antimonite
64	magnesium/calcium carbonate hydrate
65 to 69	not allocated
BORON AND ZINC COMPOUNDS	
70	inorganic boron compounds
71	organic boron compounds
72	zinc borate
73	organic zinc borate
74	not allocated
SILICA COMPOUNDS	
75	inorganic silica compounds
76	organic silica compounds
77 to 79	not allocated
OTHERS	
80	Graphite
81 to 89	not allocated
90 to 99	not allocated

Symbol	Material*	Symbol	Form/Structure
B	Boron	B	Beads, spheres, balls
C	Carbon	C	Chips, cuttings
D	Alumina trihydrate	D	Fines, powders
E	Clay	F	Fiber, fibre
G	Glass	G	Ground
K	Calcium carbonate	H	Whisker
L	Cellulose	K	Knitted fabric
M	Mineral: metal**	L	Layer
N	Natural organic(cotton, sisal: hemp: flax: and so forth.)	M	Mat (thick)
P	Mica	N	Non-woven (fabric, thin)
Q	Silica	P	Paper
R	Aramid	R	Roving
S	Synthetic organic (finely divided PTFE: polyimides or thermoset resins)		
T	Talcum	S	Flake
W	Wood	T	Twisted or braided fabric, cord
X	Not specified	V	Veneer
Z	Others, (not included on this list)	W	Woven fabric
		X	Not specified
		Y	Yarn
		Z	Others (not included in list)

* The materials may be further defined by their chemical symbols or by additional symbols defined in the relevant International Standard.

** In the case of metals (M), the type of metal must be indicated by its chemical symbol.

Table 6: Plasticizers

Abbreviated Term	Common Name	IUPAC* equivalent	MaterialCAS-RN**
ASE	Alkylsulfonic acid ester	Alkylsulfonates or Alkyl lkanesulfonates	not known
BAR	butyloacetylricinoleate	Butyl [®] -12-acetoxystearate	140-04-5
BBP	Benzyl butyl phthalate	same	85-68-7
BCHP	Butyl cyclohexyl phthalate	same	84-64-0
BEP	di-(2-butoxyethyl) phthalate	same	117-83-9
BNP	Butyl nonyl phthalate	same	not known
BOA	Benzyl octyladipate	benzyl2-ethylhexyl adipate	3089-55-2
BOP	Butyl octyl phthalate	butyl2-ethylhexyl phthalate	85-69-8
BST	Butyl stearate	same	123-95-5
DBA	Dibutyl adipate	same	105-99-7
DBF	dibutyl fumarate	same	105-75-9
DBM	dibutyl maleate	same	105-76-0
DBP	dibutyl phthalate	same	84-74-2
DBS	dibutyl sebacate	same	109-43-3
DBZ	dibutyl azelate	same	2917-73-9
DCHP	dicyclohexyl phthalate	same	84-61-7
DCP	dicapryl phthalate	bis(1-methylheptyl) phthalate	131-15-7
DDP	didecyl phthalate	same	84-77-5
DEGDB	diethylene glycol dibenzoate	Oxydiethylene dibenzoate	120-55-8
DEP	diethyl phthalate	same	84-66-2
DHP	diheptyl phthalate	same	3648-21-3
DHXP	dihexyl phthalate	Same	84-75-3
DIBA	diisobutyl adipate	Same	141-04-8
DIBM	diisobutyl maleate	Same	14234-82-3
DIBP	diisobutyl phthalate	Same	84-69-5
DIDA	diisobutyl adipate	8	27178-16-1
DIDP	diisodecyl phthalate	8	26761-40-0
DIHP	diisooheptyl phthalate	8	41451-28-9
DIHXP	diisooheptyl phthalate	Same	71850-09-4
DINA	diisononyl adipate	8	33703-08-1
DINP	diisononyl phthalate	8	28553-12-0
DIOA	diisooctyl adipate	8	1330-86-5
DIOM	diisooctyl maleate	8	1330-76-3
DIOP	diisooctyl phthalate	8	27554-26-3
DIOS	diisooctyl sebacate	8	27214-90-0
DIOZ	diisooctyl azelate	8	26544-17-2
DIPP	diisooctyl phthalate	Same	605-50-5
DMEP	di-(2-methoxyethyl) phthalate	bis(2-methoxyethyl) phthalate	117-82-8
DMP	dimethyl phthalate	Same	131-11-3
DMS	dimethyl sebacate	Same	106-79-6
DNF	dinonyl fumarate	Same	2787-63-5
DMN	dinonyl maleate	same	2787-64-6
DNOP	di-n-octyl phthalate	dioctyl phthalate	117-84-0
DNP	dinonyl phthalate	Same	14103-61-8
DNS	dinonyl sebacate	same	4121-16-8
DOA	dioctyl(3) adipate	bis(2-ethylhexyl)3) adipate	103-23-1
DOIP	dioctyl isophthalate	bis(2-ethylhexyl) isophthalate	137-89-3
DOP	dioctyl phthalate	bis(2-ethylhexyl) phthalate	117-81-7
DOS	dioctyl sebacate	bis(2-ethylhexyl) sebacate	122-62-3
DOTP	dioctyl terephthalate	bis(2-ethylhexyl) terephthalate	6422-86-2
DOZ	dioctyl azelate	bis(2-ethylhexyl) azelate	2064-80-4
DPCF	diphenyl cresyl phosphate	diphenyl x-tolyl orthophosphate where x demotes o, m, p or mixture	26444-49-5
DPGDB	di-x-propylene glycol dibenzoate	not possible	not known

Abbreviated Term	Common Name	IUPAC* equivalent	MaterialCAS-RN**
DPOF	diphenyl octyl phosphate	2-ethylhexyl diphenyl orthophosphate or octyl diphenyl orthophosphate	1241-94-7
DPP	diphenyl phthalate	same	84-62-8
DTDP	diisotridecyl phthalate (see note X)	8	27253-26-5
DUP	diundecyl phthalate	same	3648-20-2
ELO	epoxidized linseed oil	not possible	8016-11-3
ESO	epoxidized soya bean oil	not possible	8013-07-8
GTA	glycerol triacetate	same	102-76-1
HNUA	heptyl nonyl undecyl adipate (=711A)	Not possible	Not known
HNUP	heptyl nonyl undecyl phthalate (=711P)	Not possible	68515-42-4
HXODA	heptyl octyl decyl adipate (=610A)	Not possible	Not known
HXODP	heptyl octyl decyl phthalate (=610P)	Not possible	68515-51-5
NUA	nonyl undecyl adipate (=911A)	Not possible	Not known
NUP	nonyl undecyl phthalate (=911P)	Not possible	Not known
ODA	octyl decyl adipate	decyl octyl adipate	110-29-2
ODP	octyl decyl phthalate	decyl octyl phthalate	68515-52-6
ODTM	<i>n</i> -octyl decyl trimellitate	decyl octyl hydrogen Benzene1,2,4-tricarboxylate	not known
PO	paraffin oil	not possible	8012-95-1
PPA	poly(propylene adipate)	same	not known
PPS	poly(propylene sebacate)	same	not known
SOA	sucrose octa-acetate	sucrose octaacetate	126-14-7
TBAC	tributyl <i>o</i> -acetyl citrate	same	77-90-7
TBEP	tri-(2-butoxyethyl) phosphate	tris(2-butoxyethyl) orthophosphate	78-51-3
TBP	tributyl phosphate	Tributyl orthophosphate	126-73-8
TCEF	Trichloroethyl phosphate	tris(2-chloroethyl) orthophosphate	6145-73-9
TCF	tr cresyl phosphate	tri- <i>x</i> -tolyl orthophosphate where <i>x</i> denotes <i>o</i> , <i>m</i> , <i>p</i> or mixture	1330-78-5
TDBPP	tri-(2,3-dibromopropyl) phosphate	tris(2,3- dibromopropyl) orthophosphate	126-72-7
TDCPP	tri-(2,3-dichloropropyl) phosphate	tris(2,3-dichloropropyl) orthophosphate	78-43-3
TEAC	triethyl <i>o</i> -acetyl citrate	same	77-89-4
THFO	Tetrahydrofurfuryl oleate	same	5420-17-7
THTM	triheptyl trimellitate	triheptyl benzene- 1,2,4-tricarboxylate	1528-48-9
TIOTM	triisooctyl trimellitate	tris(6-methylheptyl) Benzene-1,2,4-tricarboxylate	27251-75-8
TOF	trioctyl phosphate	tris(2-ethylhexyl) orthophosphate	78-42-2
TOPM	tetraoctyl pyromellitate	tetrakis(2-ethylhexyl) benzene-1,2,4,5-tetracarboxylate	3126-80-5
TOTM	trioctyl trimellitate	tris(2-ethylhexyl) benzene- 1,2,4,5-tetracarboxylate	89-04-3
TPP	triphenyl phosphate	triphenyl orthophosphate	115-86-6
TXF	trixyl phosphate	tri- <i>x,y</i> -xyl yl orthophosphate, where <i>x</i> and <i>y</i> denotes <i>o</i> , <i>m</i> , <i>p</i> or mixture	25155-23-1

* IUPAC is the International Union of Pure and Applied Chemicals.

** CAS-RN identifies the Chemical Abstracts Service - Registry Number

Symbol	Meaning	Symbol	Meaning
B	Block	O	Oriented
B	Brominated	P	Plasticized
C	Chlorinated	R	Raised
D	Density	R	Resol
E	Elastomer	S	Saturated
E	expanded, expandable	S	Sulfonated
F	Flexible	T	Temperature (resistance)
F	Fluid	T	Thermoplastic
H	High	T	Thermosetting
I	Impact	T	Toughened
L	Linear	U	Ultra
L	Low	U	Unplasticized
M	Medium	U	Unsaturated
M	Molecular	V	Very
N	Normal	W	Weight
N	novolak	X	Crosslinked, Crosslinkable