

Character sets

Symbol font – Unicode alternatives for Greek and special characters in HTML

ANSI	MACROMAN	DIFFERENCES	WGL4	SYMBOL	WINGDINGS	WINGDINGS 2
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Symbol font should not be used in Web pages. This page is not a demonstration of how to use Symbol font; it provides a warning of the problems that it causes, and shows how to use Unicode instead.

Monotype Typography produce their non-Unicode Symbol font in a Windows OpenType® version which is supplied with Windows Vista, a Windows TrueType® version which was supplied with Windows 3.1x, Windows 95, Windows 98, Windows Me, Windows NT, Windows 2000 and Windows XP, a Macintosh TrueType version which was supplied with Mac OS 9, and PostScript® versions for Windows, Macintosh and UNIX.

For Windows, browsers such as Google Chrome, Internet Explorer, Netscape 4 and Safari 5 that are not standards-compliant allow non-Unicode fonts such as Symbol to be specified in HTML or CSS, to enable the basic Greek alphabet and many other special characters to be displayed. **Specifying Symbol font is contrary to the published specifications, has never been a documented feature of HTML, is not reliable, and should not be done.** Even though the Macintosh and Windows versions of Symbol font have identical character sets, a Web page that specifies Symbol font and displays correctly on Windows cannot be relied on when viewed with Internet Explorer under Mac OS – the Greek letters display as intended, but many of the other characters do not.

The more standards-compliant browsers, such as Firefox, Netscape 6+, Opera 6+, Safari 3, Safari 4 and SeaMonkey (formerly Mozilla), do not support non-Unicode fonts such as Symbol, and correctly display the normal Unicode characters instead. For example, they display D instead of Δ for decimal code point 68.

Fortunately, the greatly extended range of [character entity references](#) supported in HTML 4.01 together with the increased number of characters in Microsoft's [WGL4](#) TrueType fonts and Apple's [Lucida Grande font](#) provide an easier and more reliable way to display most of the characters for which the Symbol font was formerly required. Even more characters are becoming displayable as [Unicode](#) support in browsers and fonts becomes more widespread. The fourth and fifth columns in the following tables show how to use Unicode characters that are equivalent to almost all of the characters in Symbol font.

With Mac OS X 10.1, Apple supply a system font called Symbol that has the characters at their Unicode code points.

In the following tables, the first 2 columns are intended to demonstrate the problems caused by using Symbol font. It is possible that your combination of browser and operating system will show Greek and special characters, but browsers that conform to the published standards will demonstrate why **Symbol font should not be used in Web pages**.

If you want to print this page, you will probably need to use either landscape orientation or shrink-to-fit.

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Basic Latin : Unicode U+0000 – U+007F (0–127)

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
‘ ’	 	space	-	 is ‘ ’	Space	WGL4
!	!	exclam	-	! is !	Exclamation mark	WGL4
#	#	numbersign	-	# is #	Number sign	WGL4
%	%	percent	-	% is %	Percent sign	WGL4
&	&	ampersand	& is &	& is &	Ampersand	WGL4
((parenleft	-	(is (Left parenthesis	WGL4
))	parenright	-) is)	Right parenthesis	WGL4
+	+	plus	-	+ is +	Plus sign	WGL4
,	,	comma	-	, is ,	Comma	WGL4
.	.	period	-	. is .	Full stop	WGL4
/	/	slash	-	/ is /	Solidus	WGL4
0	0	zero	-	0 is 0	Digit zero	WGL4
1	1	one	-	1 is 1	Digit one	WGL4
2	2	two	-	2 is 2	Digit two	WGL4
3	3	three	-	3 is 3	Digit three	WGL4
4	4	four	-	4 is 4	Digit four	WGL4
5	5	five	-	5 is 5	Digit five	WGL4
6	6	six	-	6 is 6	Digit six	WGL4
7	7	seven	-	7 is 7	Digit seven	WGL4
8	8	eight	-	8 is 8	Digit eight	WGL4
9	9	nine	-	9 is 9	Digit nine	WGL4
:	:	colon	-	: is :	Colon	WGL4
;	;	semicolon	-	; is ;	Semicolon	WGL4
<	<	less	< is <	< is <	Less-than sign	WGL4
=	=	equal	-	= is =	Equals sign	WGL4
>	>	greater	> is >	> is >	Greater-than sign	WGL4
?	?	question	-	? is ?	Question mark	WGL4
[[bracketleft	-	[is [Left square bracket	WGL4
]	bracketright	-		Right square	WGL4

]] is]	bracket	
_	_	underscore	-	_ is _	Low line	WGL4
{	{	braceleft	-	{ is {	Left curly bracket	WGL4
	 	bar	-	| is	Vertical line	WGL4
}	}	braceright	-	} is }	Right curly bracket	WGL4

[\[TOP\]](#)**Latin-1 Supplement : Unicode U+0080 – U+00FF (128–255)**

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
°	°	degree	° is °	° is °	Degree sign	WGL4
±	±	plusminus	± is ±	± is ±	Plus-minus sign	WGL4
×	´	multiply	× is ×	× is ×	Multiplication sign	WGL4
÷	¸	divide	÷ is ÷	÷ is ÷	Division sign	WGL4
®	Ò	registerserif	® is ®	® is ®	Registered sign (serif)	WGL4
©	Ó	copyrightserif	© is ©	© is ©	Copyright sign (serif)	WGL4
¬	Ø	logicalnot	¬ is ¬	¬ is ¬	Not sign	WGL4
®	â	registersans	® is ®	® is ®	Registered sign (sans-serif)	WGL4
©	ã	copyrightsans	© is ©	© is ©	Copyright sign (sans-serif)	WGL4

[\[TOP\]](#)**Latin Extended-B : Unicode U+0180 – U+024F (384–591)**

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
ƒ	¦	florin	ƒ is ƒ	ƒ is ƒ	Latin small letter f with hook	WGL4

[\[TOP\]](#)**Greek : Unicode U+0370 – U+03FF (880–1023)**

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4

Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
A	A	Alpha	Α is Α	Α is Α	Greek capital letter alpha	WGL4
B	B	Beta	Β is Β	Β is Β	Greek capital letter beta	WGL4
G	G	Gamma	Γ is Γ	Γ is Γ	Greek capital letter gamma	WGL4
D	D	Delta	Δ is Δ	Δ is Δ	Greek capital letter delta	WGL4
E	E	Epsilon	Ε is Ε	Ε is Ε	Greek capital letter epsilon	WGL4
Z	Z	Zeta	Ζ is Ζ	Ζ is Ζ	Greek capital letter zeta	WGL4
H	H	Eta	Η is Η	Η is Η	Greek capital letter eta	WGL4
Q	Q	Theta	Θ is Θ	Θ is Θ	Greek capital letter theta	WGL4
I	I	Iota	Ι is Ι	Ι is Ι	Greek capital letter iota	WGL4
K	K	Kappa	Κ is Κ	Κ is Κ	Greek capital letter kappa	WGL4
L	L	Lambda	Λ is Λ	Λ is Λ	Greek capital letter lamda	WGL4
M	M	Mu	Μ is Μ	Μ is Μ	Greek capital letter mu	WGL4
N	N	Nu	Ν is Ν	Ν is Ν	Greek capital letter nu	WGL4
X	X	Xi	Ξ is Ξ	Ξ is Ξ	Greek capital letter xi	WGL4
O	O	Omicron	Ο is Ο	Ο is Ο	Greek capital letter omicron	WGL4
P	P	Pi	Π is Π	Π is Π	Greek capital letter pi	WGL4
R	R	Rho	Ρ is Ρ	Ρ is Ρ	Greek capital letter rho	WGL4
S	S	Sigma	Σ is Σ	Σ is Σ	Greek capital letter sigma	WGL4
T	T	Tau	Τ is Τ	Τ is Τ	Greek capital letter tau	WGL4
U	U	Upsilon	Υ is Υ	Υ is Υ	Greek capital letter upsilon	WGL4
F	F	Phi	Φ is Φ	Φ is Φ	Greek capital letter phi	WGL4
C	C	Chi	Χ is Χ	Χ is Χ	Greek capital letter chi	WGL4
Y	Y	Psi	Ψ is Ψ	Ψ is Ψ	Greek capital letter psi	WGL4

W	W	Omega	Ω is Ω	Ω is Ω	Greek capital letter omega	WGL4
a	a	alpha	α is α	α is α	Greek small letter alpha	WGL4
b	b	beta	β is β	β is β	Greek small letter beta	WGL4
g	g	gamma	γ is γ	γ is γ	Greek small letter gamma	WGL4
d	d	delta	δ is δ	δ is δ	Greek small letter delta	WGL4
e	e	epsilon	ε is ε	ε is ε	Greek small letter epsilon	WGL4
z	z	zeta	ζ is ζ	ζ is ζ	Greek small letter zeta	WGL4
h	h	eta	η is η	η is η	Greek small letter eta	WGL4
q	q	theta	θ is θ	θ is θ	Greek small letter theta	WGL4
i	i	iota	ι is ι	ι is ι	Greek small letter iota	WGL4
k	k	kappa	κ is κ	κ is κ	Greek small letter kappa	WGL4
l	l	lambda	λ is λ	λ is λ	Greek small letter lamda	WGL4
m	m	mu	μ is μ	μ is μ	Greek small letter mu	WGL4
n	n	nu	ν is ν	ν is ν	Greek small letter nu	WGL4
x	x	xi	ξ is ξ	ξ is ξ	Greek small letter xi	WGL4
o	o	omicron	ο is ο	ο is ο	Greek small letter omicron	WGL4
p	p	pi	π is π	π is π	Greek small letter pi	WGL4
r	r	rho	ρ is ρ	ρ is ρ	Greek small letter rho	WGL4
V	V	sigma1	ς is ς	ς is ς	Greek small letter final sigma	WGL4
s	s	sigma	σ is σ	σ is σ	Greek small letter sigma	WGL4
t	t	tau	τ is τ	τ is τ	Greek small letter tau	WGL4
u	u	upsilon	υ is υ	υ is υ	Greek small letter upsilon	WGL4
f	f	phi	φ is φ	φ is φ	Greek small letter phi	WGL4
	c	chi	χ is χ	χ is χ	Greek small letter	WGL4

ç					chi	
ϣ	y	psi	ψ is ψ	ψ is ψ	Greek small letter psi	WGL4
ω	w	omega	ω is ω	ω is ω	Greek small letter omega	WGL4
ϑ	J	theta1	ϑ is ϑ	ϑ is ϑ	Greek theta symbol	-
ϕ	j	phi1	-	ϕ is ϕ	Greek phi symbol	-
π	v	omega1	ϖ is π	ϖ is π	Greek pi symbol	-
ι	¡	Upsilon1	ϒ is Υ	ϒ is Υ	Greek upsilon with hook symbol	-

[\[TOP\]](#)**General Punctuation : Unicode U+2000 – U+206F (8192–8303)**

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
¢	¢	minute	′ is ’	′ is ’	Prime	WGL4
⁄	¤	fraction	⁄ is ⁄	⁄ is ⁄	Fraction slash	WGL4
²	²	second	″ is "	″ is "	Double prime	WGL4
¼	¼	ellipsis	… is ...	… is ...	Horizontal ellipsis	WGL4

[\[TOP\]](#)**Letterlike Symbols : Unicode U+2100 – U+214F (8448–8527)**

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
À	À	aleph	ℵ is ℵ	ℵ is ℵ	Alef symbol	-
Á	Á	Ifraktur	ℑ is Š	ℑ is Š	Black-letter capital I	-
Â	Â	Rfraktur	ℜ is ℝ	ℜ is ℝ	Black-letter capital R	-
Ã	Ã	weierstrass	℘ is ℘	℘ is ℘	Script capital P	-
Ô	Ô	trademarkserif	™ is ™	™ is ™	Trade mark sign (serif)	WGL4
ä	ä	trademarksans	™ is ™	™ is ™	Trade mark sign (sans-serif)	WGL4

[\[TOP\]](#)**Currency Symbols : Unicode U+20A0 – U+20CF (8352–8399)**

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
€	ð	Euro	€ is €	€ is €	Euro sign	WGL4

[\[TOP\]](#)**Arrows : Unicode U+2190 – U+21FF (8592–8703)**

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
↔	«	arrowboth	↔ is ↔	↔ is ↔	Left right arrow	WGL4
↵	¬	arrowleft	← is ←	← is ←	Leftwards arrow	WGL4
↗	­	arrowup	↑ is ↑	↑ is ↑	Upwards arrow	WGL4
↘	®	arrowright	→ is →	→ is →	Rightwards arrow	WGL4
⇩	¯	arrowdown	↓ is ↓	↓ is ↓	Downwards arrow	WGL4
↵↵	¿	carriagereturn	↵ is ↵	↵ is ↵	Downwards arrow with corner leftwards	-
↔↔	Û	arrowdblboth	⇔ is ↔↔	⇔ is ↔↔	Left right double arrow	-
↵↵	Ü	arrowdblleft	⇐ is ←←	⇐ is ←←	Leftwards double arrow	-
↗↗	Ý	arrowdblup	⇑ is ↑↑	⇑ is ↑↑	Upwards double arrow	-
↘↘	Þ	arrowdblright	⇒ is →→	⇒ is →→	Rightwards double arrow	-
⇩⇩	ß	arrowdbldown	⇓ is ↓↓	⇓ is ↓↓	Downwards double arrow	-

[\[TOP\]](#)**Mathematical Operators : Unicode U+2200 – U+22FF (8704–8959)**

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
∀	"	universal	∀ is ∀	∀ is ∀	For all	-
∃	$	existential	∃ is ∃	∃ is ∃	There exists	-
⊃	'	suchthat	-	∍ is ⊃	Small contains	-

'					as member	
*	#42;	asteriskmath	∗ is *	∗ is *	Asterisk operator	-
–	#45;	minus	− is –	− is –	Minus sign	WGL4
@	#64;	congruent	≅ is ≅	≅ is ≅	Approximately equal to	-
\	#92;	therefore	∴ is ∴	∴ is ∴	Therefore	-
⊥	#94;	perpendicular	⊥ is ⊥	⊥ is ⊥	Up tack	-
~	#126;	similar	∼ is ~	∼ is ~	Tilde operator	-
£	#163;	lessequal	≤ is ≤	≤ is ≤	Less-than or equal to	WGL4
¥	#165;	infinity	∞ is ∞	∞ is ∞	Infinity	WGL4
³	#179;	greaterequal	≥ is ≥	≥ is ≥	Greater-than or equal to	WGL4
μ	#181;	proportional	∝ is ∝	∝ is ∝	Proportional to	-
¶	#182;	partialdiff	∂ is ∂	∂ is ∂	Partial differential	WGL4
•	#183;	bullet	-	∙ is •	Bullet operator	WGL4
¹	#185;	notequal	≠ is ≠	≠ is ≠	Not equal to	WGL4
º	#186;	equivalence	≡ is ≡	≡ is ≡	Identical to	WGL4
»	#187;	approxequal	≈ is ≈	≈ is ≈	Almost equal to	WGL4
Ä	#196;	circlemultiply	⊗ is ⊗	⊗ is ⊗	Circled times	-
Å	#197;	circleplus	⊕ is ⊕	⊕ is ⊕	Circled plus	-
Æ	#198;	emptyset	∅ is ∅	∅ is ∅	Empty set	-
Ç	#199;	intersection	∩ is ∩	∩ is ∩	Intersection	WGL4
È	#200;	union	∪ is ∪	∪ is ∪	Union	-
É	#201;	proversuperset	⊃ is ⊃	⊃ is ⊃	Superset of	-
Ê	#202;	reflexsuperset	⊇ is ⊇	⊇ is ⊇	Superset of or equal to	-
Ë	#203;	notsubset	⊅ is ⊈	⊄ is ⊈	Not a subset of	-
Ì	#204;	proversubset	⊂ is ⊂	⊂ is ⊂	Subset of	-
					Subset of or	



Í	#205;	reflexsubset	⊆ is \subseteq	⊆ is \subseteq	equal to	-
Î	#206;	element	∈ is \in	∈ is \in	Element of	-
Ï	#207;	notelement	∉ is \notin	∉ is \notin	Not an element of	-
Ð	#208;	angle	∠ is \angle	∠ is \angle	Angle	-
Ñ	#209;	gradient	∇ is ∇	∇ is ∇	Nabla	-
Õ	#213;	product	∏ is \prod	∏ is \prod	N-ary product	WGL4
Ö	#214;	radical	√ is $\sqrt{}$	√ is $\sqrt{}$	Square root	WGL4
×	#215;	dotmath	⋅ is \cdot	⋅ is \cdot	Dot operator	-
Ù	#217;	logicaland	∧ is \wedge	∧ is \wedge	Logical and	-
Ú	#218;	logicalor	∨ is \vee	∨ is \vee	Logical or	-
ã	#229;	summation	∑ is \sum	∑ is \sum	N-ary summation	WGL4
ò	#242;	integral	∫ is \int	∫ is \int	Integral	WGL4

[\[TOP\]](#)**Miscellaneous Technical : Unicode U+2300 – U+23FF (8960–9215)**









Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
½	#189;	arrowvertex	-	⏐ is \mid	Vertical line extension	-
¾	#190;	arrowhorizex	-	⎯ is —	Horizontal line extension	-
á	#225;	angleleft	⟨ is \langle	〈 is \langle	Left-pointing angle bracket	-
æ	#230;	parenlefttp	-	⎛ is \langle	Left parenthesis upper hook	-
ç	#231;	parenleftex	-	⎜ is \mid	Left parenthesis extension	-
è	#232;	parenleftbt	-	⎝ is \backslash	Left parenthesis lower hook	-
é	#233;	bracketlefttp	-	⎡ is \lceil	Left square bracket upper corner	-
ê	#234;	bracketleftex	-	⎢ is \mid	Left square bracket extension	-

ë	#235;	bracketleftbt	-	⎣ is ⌋	Left square bracket lower corner	-
ì	#236;	bracelefttp	-	⎧ is ⌈	Left curly bracket upper hook	-
í	#237;	braceleftmid	-	⎨ is ⌋	Left curly bracket middle piece	-
î	#238;	braceleftbt	-	⎩ is ⌋	Left curly bracket lower hook	-
ï	#239;	braceex	-	⎪ is ⌋	Curly bracket extension	-
ñ	#241;	angleright	⟩ is >	〉 is >	Right-pointing angle bracket	-
ó	#243;	integralt	-	⌠ is ∫	Top half integral	WGL4
ô	#244;	integrale	-	⎮ is ⌋	Integral extension	-
õ	#245;	integralbt	-	⌡ is ∫	Bottom half integral	WGL4
ö	#246;	parenrighttp	-	⎞ is ⌋	Right parenthesis upper hook	-
÷	#247;	parenrightex	-	⎟ is ⌋	Right parenthesis extension	-
ø	#248;	parenrightbt	-	⎠ is ⌋	Right parenthesis lower hook	-
ù	#249;	bracketrighttp	-	⎤ is ⌋	Right square bracket upper corner	-
ú	#250;	bracketrightex	-	⎥ is ⌋	Right square bracket extension	-
û	#251;	bracketrightbt	-	⎦ is ⌋	Right square bracket lower corner	-
ü	#252;	bracerighttp	-	⎫ is ⌋	Right curly bracket upper hook	-
ý	#253;	bracerightmid	-	⎬ is ⌋	Right curly bracket middle piece	-
þ	#254;	bracerightbt	-	⎭ is ⌋	Right curly bracket lower hook	-

[\[TOP\]](#)**Geometric Shapes : Unicode U+25A0 – U+25FF (9632–9727)**

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
à	à	lozenge	◊ is 	◊ is 	Lozenge	WGL4

[\[TOP\]](#)**Miscellaneous Symbols : Unicode U+2600 – U+26FF (9728–9983)**

Symbol			Unicode			
Character	HTML code for character	PS name	Character entity	Numeric reference	Name	WGL4
§	§	club	♣ is 	♣ is 	Black club suit	WGL4
♦	¨	diamond	♦ is 	♦ is 	Black diamond suit	WGL4
©	©	heart	♥ is 	♥ is 	Black heart suit	WGL4
♠	ª	spade	♠ is 	♠ is 	Black spade suit	WGL4

[\[TOP\]](#)**Character with no Unicode equivalent**

Character	HTML code for character	PS name	WGL4
`	`	radicalex	-

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