
Information technology — SGML support facilities — Techniques for using SGML —

Part 13:

Public entity sets for mathematics and science

*Technologies de l'information — Facilités de support pour SGML —
Techniques d'utilisation du SGML —*

*Partie 13: Ensembles d'entités publiques pour les domaines
mathématique et scientifique*



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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The main task of technical committees is to prepare International Standards, but in exceptional circumstances a technical committee may propose the publication of a Technical Report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/IEC/TR 9573-13, which is a Technical Report of type 3, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

ISO/IEC/TR 9573 consists of the following parts, under the general title *Information technology — SGML support facilities — Techniques for using SGML*:

- Part 1: *SGML tutorial*
- Part 2: *Basic techniques*
- Part 3: *Advanced techniques*
- Part 4: *Using short references for identifying markup*
- Part 5: *Using non-Latin alphabets*

- Part 6: Referencing and synchronisation
- Part 7: Mathematics and chemistry
- Part 8: Tables
- Part 9: Using SGML for computer to computer interchange
- Part 10: Designing application for database interfacing
- Part 11: Application at ISO/CS for International Standards and Technical Reports
- Part 12: Public entity sets for general and publishing symbols
- Part 13: Public entity sets for mathematics and sciences
- Part 14: Public entity sets for Latin based alphabets
- Part 15: Public entity sets for non-Latin based alphabets
- Part 16: Public entity sets for ideograms

ISO/IEC/TR 9573 was first published in 1988 as a single volume. The material has undergone revision and expansion and some of the tutorial material of ISO 8879:1986 has been incorporated in some parts:

- a) Part 1 replaces ISO 8879:1986 annexes B and C (in part);
- b) Part 2 replaces ISO/IEC/TR 9573:1988 clauses 4, 5, 6, 7, 10, 13, and 14, and ISO 8879:1986 annex E (in part);
- c) Part 3 replaces ISO 8879:1986 annexes C (in part), and D (in part);
- d) Part 5 replaces ISO/IEC/TR 9573 clauses 11, 12, and 15;
- e) Part 7 replaces ISO/IEC/TR 9573 clause 8;
- f) Part 8 replaces ISO/IEC/TR 9573 clause 9;
- g) Part 12 replaces ISO 8879:1986 annex D (in part);
- h) Part 13 replaces ISO 8879:1986 annex D (in part);
- i) Part 14 replaces ISO 8879:1986 annex D (in part);
- j) Part 15 replaces ISO 8879:1986 annex D (in part);

Annex A of this part of ISO/IEC/TR 9573 is for information only.

Introduction

ISO 8879, *Information processing — Text and office systems — Standard Generalized Markup Language (SGML)*, states the rules for the description and markup of documents for publishing and interchange. ISO/IEC TR 9573 complements ISO 8879 by providing additional tutorial information. It is not intended, and should not be regarded, as an extension, modification, or interpretation of ISO 8879.

ISO/IEC TR 9573 includes a tutorial on the basic components of the SGML language. It includes notes on the analysis of a document prior to the writing of a formal document type definition, and a series of examples illustrating the use of SGML in various situations together with a discussion of the advantages and disadvantages of different approaches. One example given is for a general document type, others of a general nature are for letter and memorandum, and the mixing of text and graphics. The special considerations that apply for use of SGML with non-Latin based languages, as well as linguistic applications, are discussed and examples shown. Other parts of ISO/IEC TR 9573 contain sample applications of a specialized nature, such as for mathematics, chemistry, and tables. Public entity sets covering a wide variety of widely used special graphic characters are defined.

The titles of the parts of ISO/IEC TR 9573 are listed in the foreword.

Information technology — SGML support facilities — Techniques for using SGML —

Part 13:

Public entity sets for mathematics and science

1 Scope

Tens of thousands of graphic characters are used in the publishing of text, of which relatively few have been incorporated into standard coded character sets. Even where standard coded representations exist, however, there may be situations in which they cannot be keyboarded conveniently, or in which it is not possible to display the desired visual depiction of the characters.

To help overcome these barriers to successful interchange of SGML documents, this part of ISO/IEC TR 9573 defines character entity sets for some of the widely used special graphic characters. The entity repertoires are based on applicable published and proposed International Standards for coded character sets, and current industry and professional society practice.

NOTE 1 Entity repertoires are necessarily larger and more repetitious than character sets, as they deal in general with higher-level constructs. For example, unique entities have been defined for each accented Latin alphabetic character, while a character set might represent such characters as combinations of letters and diacritical mark characters. These public entity sets should therefore not be construed as requirements for new standard coded character sets.

In many instances upper- and lower-case is used to differentiate the names of different entities. It is thus assumed that a concrete syntax where entity names are case sensitive is used.

NOTE 2 In the reference concrete syntax, the entity names are case sensitive.

2 Reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO/IEC/TR 9573. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC/TR 9573 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 8879:1986, *Information processing — Text and office systems — Standard Generalized Markup Language (SGML)*.

3 Definitions

For the purposes of this part of ISO/IEC/TR 9573, the definitions given in ISO 8879 apply.

4 General considerations

This clause discusses design criteria applicable to the public entity sets included in this part of ISO/IEC TR 9573.

4.1 Format of Declarations

The entity sets published here are definitional; the entity text simply consists of the entity name in square brackets, and there is a comment describing the symbol, rather than (possibly) system-dependent data that would cause a visual depiction of it to be rendered:

```
<!ENTITY frac78 SDATA "[frac78]"--fraction seven-eighths-->
```

If, as in the following example, the comment includes a name (of any length) preceded by a solidus, the name is an identifier of a visual depiction of the character in *MathSci, an expansion of mathfile, Appendix D, 1/90*, published by the American Mathematical Society, 201 Charles St., Providence, RI 02904, U.S.A.

```
<!ENTITY frown SDATA "[frown ]"--/frown R: down curve-->
```

NOTE 3 In the MathSci document, an identifier is preceded by a reverse solidus, rather than a solidus.

A comment can include a single upper-case letter, followed by a colon, as in the previous example. The letter indicates that the character belongs to a class whose glyphs are given special treatment in conventional mathematical typesetting. These characters are:

| | |
|---|--------------------|
| A | Relation (arrow) |
| B | Binary operator |
| C | Closing delimiter |
| L | Large operator |
| N | Relation (negated) |
| O | Opening delimiter |
| P | Punctuation |
| R | Relation |

4.2 Corresponding Display Entity Sets

Each character has a characteristic visual depiction a "glyph". A system will need to provide corresponding display entity sets for the output devices it supports, in which the entity text is replaced by system data that will cause the glyph to be rendered. The entity name and descriptive comment would, of course, remain the same. For example, the declaration

```
<!ENTITY frac78 SDATA "7/8"--fraction seven-eighths-->
```

might be used in a display character entity set for output devices that did not support ISO 6937-2, while

```
<!ENTITY frac78 SDATA "&#223;"--fraction seven-eighths-->
```

might be used in an entity set for 8-bit coded devices that did. For a text formatter driving a photocomposer, a declaration like the following might be used:

```
<!ENTITY frac78 SDATA "AFII-glyph 00DF"--fraction 7/8-->
```

NOTE 4 All of the entity declarations use the "SDATA" keyword as a reminder that the entity text could be system-specific character data that might require modification for different output devices and applications.

4.3 Entity Names

The entity names are derived from the English language. They were chosen for maximum mnemonic value, consistent with the logical and systematic use of abbreviations.

NOTE 5 Translations may be desired for other languages.

The entity names are case-sensitive, so the case of letters within the name can identify the case of the character, indicate the doubling of a line, or be used for some other convention.

The entity names employ only letters and numerals, so they can be used with a variety of concrete syntaxes.

NOTE 6 If shorter names are desired for frequently used entities, they can be defined in the documents where the frequent use occurs.

Some characters have different semantic connotations in different application contexts. Multiple entities were defined for some of them.

NOTE 7 If a different name would be more expressive in the context of a particular document, the entity can be redefined within the document.

As many technical symbols can be used in more than one context, the entity names in this category normally describe the character's usual glyph, rather than attempting to convey the semantic concept of the characters.

The following abbreviations are used with substantial consistency.

Prefixes:

l=left; r=right; u=up; d=down; h=horizontal; v=vertical
 b=back, reversed
 cu=curly
 cw=clockwise; aw=anti-clockwise
 g=greater than; l=less than
 n=negated
 o=in circle
 s=small, short
 sq=square shaped
 thk=thick
 x=extended, long, big (large)

Bodies:

ap=approx
 arr=arrow; har=harpoon
 pr=precedes; sc=succeeds
 sub=subset; sup=superset

Suffixes:

b=boxed
 f=filled, black, solid
 e=single equals; E=double equals
 hk=hook
 s=slant
 t=tail
 v=variant
 w=wavy, squiggly
 2=two of

An upper-case letter means "doubled" (or sometimes "two of") or upper-case;

4.4 Organization of Entity Sets

The entity sets were organized principally to reflect the structure of the ISO 6937 character sets, or to group large numbers of similar characters together. This organization is not likely to be optimal for most applications, which

will normally require a mix of entities from a number of sets. Permission is granted to copy all or part of the public entity sets in clause 6 in any form for use with conforming SGML systems and applications, provided the ISO copyright notice (including the permission-to-copy text) is included in all copies. In particular, entities can be copied from a number of public sets to form a new set, provided the ISO copyright notice is included in the new set.

NOTE 8 If the same entity name occurs in more than one public set, and both are needed in a document, an entity with a different name should be declared for one of them within the document.

It should be noted, however, that permission is not granted to copy the tables in clause 5 illustrating the characteristic glyphs corresponding to the entities.

5 Entity names, characteristic glyph, registered glyph identifier, and short description

The columns of the table contain:

- the name of the entity (see also 4.3);
- a characteristic rendition ("glyph") of the character;
- a glyph identifier, registered in accordance with ISO/IEC 10036¹⁾. The glyph identifier is shown in decimal²⁾ and hexadecimal representation;
- a comment describing the character (see also 4.1).

5.1 Basic mathematical and scientific symbols

5.1.1 General

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-----------------------------|
| acd | ~ | DB3B | 56123 | ac current |
| aleph | ℵ | E140 | 57664 | /aleph aleph, Hebrew |
| and | ∧ | 22B2 | 8882 | /wedge /land B: logical and |
| And | ⋈ | DB3C | 56124 | dbl logical and |
| andand | ⋈ | DB3D | 56125 | two logical and |
| andd | ⋈ | DB3E | 56126 | and, horizontal dash |
| andslope | ∧ | DB3F | 56127 | sloping large and |

1) Registrar designated by the Registration Authority: Association for Font Information Interchange, 2961 Copa de Oro, Los Alamitos, CA 90720, U.S.A.

2) This form is given to assist in the creation of ISO10036 glyph names. These are of the form "ISO/IEC 10036/RA/Glyphs::nnnn"; where nnnn is the decimal representation of the glyph identifier.

| Entity name | Character- istic glyph | Registered glyph identifier (hexa- decimal) | Registered glyph identifier (decimal) | Short description |
|-------------|------------------------------|---------------------------------------------------------|------------------------------------------------|-----------------------------------------|
| andv | ∧ | DB40 | 56128 | and with middle stem |
| angrt | └ | EEDD | 61149 | right (90 degree) angle |
| angsph | ∠ | EBDB | 60379 | /sphericalangle angle-spherical |
| angst | Å | F12A | 61738 | Angstrom capital A, ring |
| ap | ≈ | EF79 | 61305 | /approx R: approximate |
| apacir | ≈̂ | DB41 | 56129 | approximate, circumflex accent |
| awconint | ∮ | EBC2 | 60354 | contour integral, anti-clockwise |
| awint | ∫ | DB42 | 56130 | anti clock-wise integration |
| becaus | ∴ | EF6F | 61295 | /because R: because |
| bernou | ℬ | DB43 | 56131 | Bernoulli function (script capital B) |
| bne | ≠ | DB44 | 56132 | reverse not equal |
| bnequiv | ≢ | DB45 | 56133 | reverse not equivalent |
| bnot | ⌈ | EE6A | 61034 | reverse not |
| bNot | ≡ | DB46 | 56134 | reverse not with two horizontal strokes |
| bottom | ⊥ | 22AA | 8874 | /bot bottom |
| cap | ∩ | EF56 | 61270 | /cap B: intersection |
| Cconint | ∯ | EB37 | 60215 | triple contour integral operator |
| cirfnint | ∮ | DB47 | 56135 | circulation function |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------------------------------------|
| compfn | ○ | EB5A | 60250 | /circ B: composite function (small circle) |
| cong | ≈ | EF78 | 61304 | /cong R: congruent with |
| conint | ∫ | EF76 | 61302 | /oint L: contour integral operator |
| Conint | ∬ | EB36 | 60214 | double contour integral operator |
| ctdot | ... | DB48 | 56136 | /cdots, three dots, centered |
| cup | ∪ | EF57 | 61271 | /cup B: union or logical sum |
| cwconint | ∮ | EBC1 | 60353 | contour integral, clockwise |
| cwint | ∫ | DB49 | 56137 | clockwise integral |
| cylcty | ℓ | EE4B | 61003 | cylindricity |
| disin | ∈ | DB4A | 56138 | set membership, long horizontal stroke |
| Dot | ¨ | 2322 | 8994 | dieresis or umlaut mark |
| DotDot | ⋯ | EB5C | 60252 | four dots above |
| dsol | ∕ | DB4B | 56139 | solidus, bar above |
| dtidot | ∴ | DB4C | 56140 | /ddots, three dots, descending |
| dwangle | ∟ | DB4D | 56141 | large downward pointing angle |
| elinters | ⋈ | DB4E | 56142 | electrical intersection |
| epar | ∥ | DB4F | 56143 | parallel, equal; equal or parallel |
| eparsl | ∥ | DB50 | 56144 | parallel, slanted, equal; homothetically congruent to |

| Entity name | Character- istic glyph | Registered glyph identifier (hexa- decimal) | Registered glyph identifier (decimal) | Short description |
|-------------|------------------------------|---------------------------------------------------------|------------------------------------------------|-------------------------------------------|
| equiv | \equiv | EF72 | 61298 | /equiv R: identical with |
| eqvparsl | $\#$ | DB51 | 56145 | equivalent, equal; congruent and parallel |
| exist | \exists | EFB4 | 61364 | /exists at least one exists |
| ftns | \square | EE4A | 61002 | flatness |
| fnof | <i>f</i> | EE54 | 61012 | function of (italic small f) |
| forall | \forall | EFB5 | 61365 | /forall for all |
| fpartint | \int | DB52 | 56146 | finite part integral |
| ge | \geq | 2166 | 8550 | /geq /ge R: greater-than-or-equal |
| hamilt | \mathcal{H} | EB22 | 60194 | Hamiltonian (script capital H) |
| iff | \Leftrightarrow | 2268 | 8808 | /iff if and only if |
| iinfin | ∞ | DB53 | 56147 | infinity sign, incomplete |
| imped | Z | EE39 | 60985 | impedance |
| infin | ∞ | 2167 | 8551 | /infty infinity |
| infintie | ∞ | DB54 | 56148 | tie, infinity |
| int | \int | EF75 | 61301 | /int L: integral operator |
| Int | \iint | 226A | 8810 | double integral operator |
| intlarhk | \int | DB55 | 56149 | integral, left arrow with hook |
| isin | \in | EF4A | 61258 | /in R: set membership |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------------------------------------------|
| isindot | € | DB56 | 56150 | set membership, dot above |
| isinE | € | DB57 | 56151 | set membership, two horizontal strokes |
| isins | € | DB58 | 56152 | set membership, vertical bar on horizontal stroke |
| isinsv | € | DB59 | 56153 | large set membership, vertical bar on horizontal stroke |
| isinv | € | DB5A | 56154 | set membership, variant |
| lagran | ℒ | EE44 | 60996 | Lagrangian (script capital L) |
| lang | < | EF32 | 61234 | /lang O: left angle bracket |
| Lang | « | 2238 | 8760 | left angle bracket, double |
| lArr | ⇐ | EF4D | 61261 | /Leftarrow A: is implied by |
| lbrk | { | 214C | 8524 | left broken bracket |
| le | ≤ | 2165 | 8549 | /leq /le R: less-than-or-equal |
| loang | ⌊ | 2148 | 8520 | left open angular bracket |
| lobrk | [| 214A | 8522 | left open bracket |
| lopar | (| EB38 | 60216 | left open parenthesis |
| lowast | * | EB5D | 60253 | low asterisk |
| minus | − | EE2D | 60973 | B: minus sign |
| mnplus | ± | EF7D | 61309 | /mp B: minus-or-plus sign |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|------------------------------------------------|
| nabla | ∇ | EFB9 | 61369 | /nabla del, Hamilton operator |
| ne | ≠ | 2162 | 8546 | /ne /neq R: not equal |
| nedot | ≠̇ | DB5B | 56155 | not equal, dot |
| nhpar | ∥ | DB5C | 56156 | not, horizontal, parallel |
| ni | ∋ | EF4C | 61260 | /ni /owns R: contains |
| nis | ∋̅ | DB5D | 56157 | contains, vertical bar on horizontal stroke |
| nisd | ∋̈ | DB5E | 56158 | contains, long horizontal stroke |
| niv | ∋̇ | DB5F | 56159 | contains, variant |
| Not | ≠̅ | DB60 | 56160 | not with two horizontal strokes |
| notin | ∉ | EF4B | 61259 | /notin N: negated set membership |
| notindot | ∉̇ | DB61 | 56161 | negated set membership, dot above |
| notinE | ∉̅ | DB62 | 56162 | negated set membership, two horizontal strokes |
| notinva | ∉̈ | DB63 | 56163 | negated set membership, variant |
| notinvb | ∉̇ | 22BA | 8890 | negated set membership, variant |
| notinvc | ∉̈ | DB64 | 56164 | negated set membership, variant |
| notni | ∋̅ | 21F8 | 8696 | negated contains |
| notniva | ∋̈̅ | EBBB | 60347 | negated contains, variant |
| notnivb | ∋̇̅ | DB65 | 56165 | contains, variant |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|------------------------------------------|
| notnivc | ⊃ | DB66 | 56166 | contains, variant |
| nparsl | ∥ | DB67 | 56167 | not parallel, slanted |
| npart | ∂ | DB68 | 56168 | not partial differential |
| npolint | ∮ | DB69 | 56169 | line integration, not including the pole |
| nvinfin | ∞ | DB6A | 56170 | not, vert, infinity |
| olcross | ⊗ | DB6B | 56171 | circle, cross |
| or | ∨ | 22B3 | 8883 | /vee /lor B: logical or |
| Or | ∇ | DB6C | 56172 | dbl logical or |
| ord | ↖ | DB6D | 56173 | or, horizontal dash |
| order | o | DB6E | 56174 | order of (script small o) |
| oror | ∞ | DB6F | 56175 | two logical or |
| orslope | ∨ | DB70 | 56176 | sloping large or |
| orv | ∨ | DB71 | 56177 | or with middle stem |
| par | ∥ | 2142 | 8514 | /parallel R: parallel |
| parsl | ∥ | EF48 | 61256 | parallel, slanted |
| part | ∂ | EFBA | 61370 | /partial partial differential |
| permil | ‰ | EF41 | 61249 | per thousand |
| perp | ⊥ | EF70 | 61296 | /perp R: perpendicular |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------------------|
| pertenk | ‰ | 223E | 8766 | per 10 thousand |
| phmmat | \mathcal{M} | EB5E | 60254 | physics M-matrix (script capital M) |
| pointint | \oint | EB34 | 60212 | integral around a point operator |
| prime | ' | 216C | 8556 | /prime prime or minute |
| Prime | '' | 216D | 8557 | double prime or second |
| profalar | \ominus | EE4E | 61006 | all-around profile |
| proflin | \frown | EE4C | 61004 | profile of a line |
| profsurf | \smile | EE4D | 61005 | profile of a surface |
| prop | \propto | 2279 | 8825 | /propto R: is proportional to |
| qint | \iiint | DB72 | 56178 | /iiiint quadruple integral operator |
| qprime | '''' | DB74 | 56180 | quadruple prime |
| quatint | \oint | EB35 | 60213 | quaternion integral operator |
| radic | $\sqrt{\quad}$ | EF7C | 61308 | /surd radical |
| rang | \rangle | EF33 | 61235 | /rangle C: right angle bracket |
| Rang | \gg | 2239 | 8761 | right angle bracket, double |
| rArr | \Rightarrow | EF4F | 61263 | /Rightarrow A: implies |
| rbbrk | $\})$ | 214D | 8525 | right broken bracket |
| roang | $\})$ | 2149 | 8521 | right open angular bracket |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------------------------|
| robrk | ⌋ | 214B | 8523 | right open bracket |
| ropar |) | EB39 | 60217 | right open parenthesis |
| rppolint | ∮ | DB76 | 56182 | line integration, rectangular path around pole |
| scpolint | ∫ | DB77 | 56183 | line integration, semi-circular path around pole |
| sim | ~ | EE7E | 61054 | /sim R: similar |
| simdot | ˜ | DB78 | 56184 | similar, dot |
| sime | ≈ | EF77 | 61303 | /simeq R: similar, equals |
| smeparsl | ≍ | DB79 | 56185 | similar, parallel, slanted, equal |
| square | □ | 2222 | 8738 | /square, square |
| squarf | ■ | 2223 | 8739 | /blacksquare, square, filled |
| strns | — | EE49 | 61001 | straightness |
| sub | ⊂ | EF5B | 61275 | /subset R: subset or is implied by |
| sube | ⊆ | EF59 | 61273 | /subseteq R: subset, equals |
| sup | ⊃ | EF5A | 61274 | /supset R: superset or implies |
| supe | ⊇ | EF58 | 61272 | /supseteq R: superset, equals |
| tdot | ⋯ | EB5B | 60251 | three dots above |
| there4 | ∴ | 2168 | 8552 | /therefore R: therefore |
| tint | ∭ | EB59 | 60249 | /iiint triple integral operator |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------------------------------------|
| top | ⌈ | EE70 | 61040 | /top top |
| topbot | ⌈⌋ | EED3 | 61139 | top and bottom |
| topcir | ⌋ | DB7A | 56186 | top, circle below |
| tprime | ''' | 216B | 8555 | triple prime |
| utdot | ⋮ | DB7B | 56187 | three dots, ascending |
| uwangle | ⌋ | DB7C | 56188 | large upward pointing angle |
| vangrt | ⌋ | DB7D | 56189 | right angle, variant |
| veeeq | ≡ | EE3E | 60990 | logical or, equals |
| Verbar | | 2142 | 8514 | /Vert dbl vertical bar |
| wedgeq | ≅ | EE3D | 60989 | /wedgeq R: corresponds to (wedge, equals) |
| xnis | ⊃ | DB7E | 56190 | large contains, vertical bar on horizontal stroke |

5.1.2 Greek Symbols

This entity set defines the Greek character names for use as variable names in technical applications.

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------------|
| alpha | α | 2661 | 9825 | /alpha small alpha, Greek |
| beta | β | 2662 | 9826 | /beta small beta, Greek |
| chi | χ | 267B | 9851 | /chi small chi, Greek |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|----------------------------------------|
| delta | δ | 2665 | 9829 | /delta small delta, Greek |
| Delta | Δ | 2645 | 9797 | /Delta capital Delta, Greek |
| epsi | ϵ | FD5B | 64859 | /straightepsilon, small epsilon, Greek |
| epsiv | ε | 2666 | 9830 | /varepsilon |
| eta | η | 266A | 9834 | /eta small eta, Greek |
| gamma | γ | 2664 | 9828 | /gamma small gamma, Greek |
| Gamma | Γ | 2644 | 9796 | /Gamma capital Gamma, Greek |
| gammad | \digamma | 2668 | 9832 | /digamma |
| Gammad | Γ | 2648 | 9800 | capital digamma |
| iota | ι | 266C | 9836 | /iota small iota, Greek |
| kappa | κ | 266D | 9837 | /kappa small kappa, Greek |
| kappav | \varkappa | FD60 | 64864 | /varkappa |
| lambda | λ | 266E | 9838 | /lambda small lambda, Greek |
| Lambda | Λ | 264E | 9806 | /Lambda capital Lambda, Greek |
| mu | μ | 266F | 9839 | /mu small mu, Greek |
| nu | ν | 2670 | 9840 | /nu small nu, Greek |
| omega | ω | 267D | 9853 | /omega small omega, Greek |
| Omega | Ω | 265D | 9821 | /Omega capital Omega, Greek |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------------------------|
| phi | ϕ | 267A | 9850 | /straightphi - small phi, Greek |
| Phi | Φ | 265A | 9818 | /Phi capital Phi, Greek |
| phiv | φ | FD5F | 64863 | /varphi - curly or open phi |
| pi | π | 2673 | 9843 | /pi small pi, Greek |
| Pi | Π | 2653 | 9811 | /Pi capital Pi, Greek |
| piv | ϖ | FD5C | 64860 | /varpi |
| psi | ψ | 267C | 9852 | /psi small psi, Greek |
| Psi | Ψ | 265C | 9820 | /Psi capital Psi, Greek |
| rho | ρ | 2675 | 9845 | /rho small rho, Greek |
| rhov | ϱ | FD5E | 64862 | /varrho |
| sigma | σ | 2676 | 9846 | /sigma small sigma, Greek |
| Sigma | Σ | 2656 | 9814 | /Sigma capital Sigma, Greek |
| sigmav | ς | 2677 | 9847 | /varsigma |
| tau | τ | 2678 | 9848 | /tau small tau, Greek |
| theta | θ | 266B | 9835 | /theta straight theta, small theta, Greek |
| Theta | Θ | 264B | 9803 | /Theta capital Theta, Greek |
| thetav | ϑ | FD5D | 64861 | /vartheta - curly or open theta |
| upsi | υ | 2679 | 9849 | /upsilon small upsilon, Greek |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------------------|
| Upsi | Υ | 2659 | 9817 | /Upsilon capital Upsilon, Greek |
| xi | ξ | 2671 | 9841 | /xi small xi, Greek |
| Xi | Ξ | 2651 | 9809 | /Xi capital Xi, Greek |
| zeta | ζ | 2669 | 9833 | /zeta small zeta, Greek |

5.1.3 Alternative Greek Symbols

The characters in this entity set can be used in conjunction with the preceding one when a separate class of variables is required. By convention, they are displayed in a different font or style (usually emboldened).

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|----------------------|
| b.alpha | α | N/A | N/A | small alpha, Greek |
| b.beta | β | N/A | N/A | small beta, Greek |
| b.chi | χ | N/A | N/A | small chi, Greek |
| b.delta | δ | N/A | N/A | small delta, Greek |
| b.Delta | Δ | N/A | N/A | capital Delta, Greek |
| b.epsi | ε | N/A | N/A | small epsilon, Greek |
| b.epsiv | ε | N/A | N/A | variant epsilon |
| b.eta | η | N/A | N/A | small eta, Greek |
| b.gamma | γ | N/A | N/A | small gamma, Greek |
| b.Gamma | Γ | N/A | N/A | capital Gamma, Greek |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------------------|
| b.gammad | Γ | N/A | N/A | digamma |
| b.Gammad | Γ | N/A | N/A | capital digamma |
| b.iota | ι | N/A | N/A | small iota, Greek |
| b.kappa | κ | N/A | N/A | small kappa, Greek |
| b.kappav | \varkappa | N/A | N/A | variant kappa |
| b.lambda | λ | N/A | N/A | small lambda, Greek |
| b.Lambda | Λ | N/A | N/A | capital Lambda, Greek |
| b.mu | μ | N/A | N/A | small mu, Greek |
| b.nu | ν | N/A | N/A | small nu, Greek |
| b.omega | ω | N/A | N/A | small omega, Greek |
| b.Omega | Ω | N/A | N/A | capital Omega, Greek |
| b.phi | ϕ | N/A | N/A | straight phi, small phi, Greek |
| b.Phi | Φ | N/A | N/A | capital Phi, Greek |
| b.phiv | φ | N/A | N/A | variant phi - curly or open phi |
| b.pi | π | N/A | N/A | small pi, Greek |
| b.Pi | Π | N/A | N/A | capital Pi, Greek |
| b.piv | ϖ | N/A | N/A | variant pi |
| b.psi | ψ | N/A | N/A | small psi, Greek |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------------------|
| b.Psi | Ψ | N/A | N/A | capital Psi, Greek |
| b.rho | ρ | N/A | N/A | small rho, Greek |
| b.rhov | ϱ | N/A | N/A | variant rho |
| b.sigma | σ | N/A | N/A | small sigma, Greek |
| b.Sigma | Σ | N/A | N/A | capital Sigma, Greek |
| b.sigmap | ς | N/A | N/A | variant sigma |
| b.tau | τ | N/A | N/A | small tau, Greek |
| b.theta | θ | N/A | N/A | straight theta, small theta, Greek |
| b.Theta | Θ | N/A | N/A | capital Theta, Greek |
| b.thetav | ϑ | N/A | N/A | variant theta - curly or open theta |
| b.upsilon | υ | N/A | N/A | small upsilon, Greek |
| b.Upsi | Υ | N/A | N/A | capital Upsilon, Greek |
| b.xi | ξ | N/A | N/A | small xi, Greek |
| b.Xi | Ξ | N/A | N/A | capital Xi, Greek |
| b.zeta | ζ | N/A | N/A | small zeta, Greek |

5.2 Additional mathematical symbols

5.2.1 Ordinary Symbols

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|------------------------------------|
| ang | \angle | EF6C | 61292 | /angle - angle |
| ange | \sphericalangle | DBA1 | 56225 | angle, equal |
| angmsd | \sphericalangle | EF6D | 61293 | /measuredangle - angle-measured |
| angmsdaa | \sphericalangle | DBA2 | 56226 | angle-measured, arrow, up, right |
| angmsdab | \sphericalangle | DBA3 | 56227 | angle-measured, arrow, up, left |
| angmsdac | \sphericalangle | DBA4 | 56228 | angle-measured, arrow, down, right |
| angmsdad | \sphericalangle | DBA5 | 56229 | angle-measured, arrow, down, left |
| angmsdae | \sphericalangle | DBA6 | 56230 | angle-measured, arrow, right, up |
| angmsdaf | \sphericalangle | DBA7 | 56231 | angle-measured, arrow, left, up |
| angmsdag | \sphericalangle | DBA8 | 56232 | angle-measured, arrow, right, down |
| angmsdah | \sphericalangle | DBA9 | 56233 | angle-measured, arrow, left, down |
| angrtvb | \sphericalangle | DBAA | 56234 | right angle-measured |
| angrtvbd | \sphericalangle | DBAB | 56235 | right angle-measured, dot |
| bbrk | \lfloor | 2F32 | 12082 | bottom square bracket |
| bbrktbrk | \lrcorner | DBAC | 56236 | bottom above top square bracket |
| bemptyv | \emptyset | EEC4 | 61124 | reversed circle, slash |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------------------------------|
| beth | ב | E141 | 57665 | /beth - beth, Hebrew |
| boxbox | ☐☐ | DBAD | 56237 | two joined squares |
| bprime | ⋅ | 222B | 8747 | /backprime - reverse prime |
| bsemi | ⋮ | DBAE | 56238 | reverse semi-colon |
| cemptyv | ⊘ | DBAF | 56239 | circle, slash, small circle above |
| cirE | ⊘ | DBB0 | 56240 | circle, two horizontal stroked to the right |
| circscir | ⊘ | DBB1 | 56241 | circle, small circle to the right |
| comp | ℈ | EE69 | 61033 | /complement - complement sign |
| daleth | ד | E143 | 57667 | /daleth - daleth, Hebrew |
| demptyv | ⊘ | DBB2 | 56242 | circle, slash, bar above |
| ell | ℓ | EF69 | 61289 | /ell - cursive small l |
| empty | ∅ | 22A7 | 8871 | /emptyset - zero, slash |
| emptyv | ⊘ | EF61 | 61281 | /varnothing - circle, slash |
| gimel | ג | E142 | 57666 | /gimel - gimel, Hebrew |
| iota | ι | EBD0 | 60368 | inverted iota |
| image | ℑ | 22A9 | 8873 | /Im - imaginary |
| imath | ı | 00F5 | 245 | /imath - small i, no dot |
| jmath | ȷ | 00E5 | 229 | /jmath - small j, no dot |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|-------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------|-------------------------------------|
| laemptyv |  | D843 | 55363 | circle, slash, left arrow above |
| lltri |  | DBB3 | 56243 | lower left triangle |
| lrtri |  | DBB4 | 56244 | lower right triangle |
| mho |  | 227C | 8828 | /mho - conductance |
| nang |  | DBB5 | 56245 | not, vert, angle |
| nexist |  | EE71 | 61041 | /nexists - negated exists |
| oS |  | 7653 | 30291 | /circledS - capital S in circle |
| plank |  | EE2F | 60975 | /hbar - Planck's over 2pi |
| plankv |  | EF68 | 61288 | /hslash - variant Planck's over 2pi |
| raemptyv |  | DBB6 | 56246 | circle, slash, right arrow above |
| range |  | DBB7 | 56247 | reverse angle, equal |
| real |  | 22A8 | 8872 | /Re - real |
| tbrk |  | 2F31 | 12081 | top square bracket |
| trapezium |  | DBB8 | 56248 | trapezium |
| ultri |  | DBB9 | 56249 | upper left triangle |
| urtri |  | DBBA | 56250 | upper right triangle |
| vzigzag |  | DBBB | 56251 | vertical zig-zag line |
| weierp |  | 22A6 | 8870 | /wp - Weierstrass p |

5.2.2 Binary and Large Operators

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------------------------|
| ac | \approx | EBC6 | 60358 | most positive |
| acE | $\approx\approx$ | DBBC | 56252 | most positive, two lines below |
| amalg | \amalg | 21AD | 8621 | /amalg B: amalgamation or coproduct |
| barvee | $\bar{\vee}$ | EBB9 | 60345 | bar, vee |
| barwed | $\bar{\wedge}$ | EECA | 61130 | /barwedge B: logical and, bar above |
| Barwed | $\overline{\wedge}$ | EEDA | 61146 | /doublebarwedge B: log and, dbl bar above |
| bsolb | \boxminus | DBBD | 56253 | reverse solidus in square |
| Cap | \cap | EE62 | 61026 | /Cap /doublecap B: dbl intersection |
| capand | \cap | DBBE | 56254 | intersection, and |
| capbrcup | $\cap \cup$ | DBBF | 56255 | intersection, bar, union |
| capcap | \cap | DBC0 | 56256 | intersection, intersection, joined |
| capcup | $\cap \cup$ | DBC1 | 56257 | intersection above union |
| capdot | \cap | DB30 | 56112 | intersection, with dot |
| caps | \cap | DBC2 | 56258 | intersection, serifs |
| ccaps | \cap | DBC3 | 56259 | closed intersection, serifs |
| ccups | \cup | DBC4 | 56260 | closed union, serifs |
| ccupssm | $\cap \cup$ | DBC5 | 56261 | closed union, serifs, smash product |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------------------|
| coprod | \amalg | 22B7 | 8887 | /coprod L: coproduct operator |
| Cup | \cup | EE63 | 61027 | /Cup /doublecup B: dbl union |
| cupbrcap | $\cup \cap$ | DBC6 | 56262 | union, bar, intersection |
| cupcap | $\cup \cap$ | EBDA | 60378 | union above intersection |
| cupcup | $\cup \cup$ | DBC7 | 56263 | union, union, joined |
| cupdot | $\cup \cdot$ | EB32 | 60210 | union, with dot |
| cupor | $\cup \vee$ | DBC8 | 56264 | union, or |
| cups | \cup | DBC9 | 56265 | union, serifs |
| cuvee | \curlyvee | EEEE | 61162 | /curlyvee B: curly logical or |
| cuwed | \curlywedge | EEE9 | 61161 | /curlywedge B: curly logical and |
| dagger | \dagger | EF30 | 61232 | /dagger B: dagger relation |
| Dagger | \ddagger | EF31 | 61233 | /ddagger B: double dagger relation |
| diam | \diamond | 21AF | 8623 | /diamond B: open diamond |
| divonx | $\div \times$ | EE3F | 60991 | /divideontimes B: division on times |
| eplus | $\equiv \pm$ | DBCA | 56266 | equal, plus |
| hercon | \dagger | DBC B | 56267 | hermitian conjugate matrix |
| intcal | \amalg | EEA1 | 61089 | /intercal B: intercal |
| iproduct | \lrcorner | DBCC | 56268 | /intprod |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|----------------------------------------|
| loplus | ⊕ | DBCD | 56269 | plus sign in left half circle |
| lotimes | ⊗ | DBCE | 56270 | multiply sign in left half circle |
| lthree | ⋈ | EED8 | 61144 | /leftthreetimes B: |
| ltimes | ⊗ | EED6 | 61142 | /ltimes B: times sign, left closed |
| midast | * | EE7D | 61053 | /ast B: asterisk |
| minusb | ⊖ | 2230 | 8752 | /boxminus B: minus sign in box |
| minusd | ⋅ | EE3B | 60987 | /dotminus B: minus sign, dot above |
| minusdu | ⋅ | DBCF | 56271 | minus sign, dot below |
| ncap | ∩ | DBD0 | 56272 | bar, intersection |
| ncup | ∪ | DBD1 | 56273 | bar, union |
| oast | ⊛ | 2178 | 8568 | /circledast B: asterisk in circle |
| ocir | ⊙ | 22F5 | 8949 | /circledcirc B: small circle in circle |
| odash | ⊖ | 2177 | 8567 | /circleddash B: hyphen in circle |
| odiv | ⊘ | DBD2 | 56274 | divide in circle |
| odot | ⊙ | 22BD | 8893 | /odot B: middle dot in circle |
| odsold | ⊚ | DBD3 | 56275 | dot, solidus, dot in circle |
| ofcir | ⦿ | DB3A | 56122 | filled circle in circle |
| ogt | ⦶ | DBD4 | 56276 | greater-than in circle |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------------------|
| ohbar | ⊖ | DBD5 | 56277 | circle with horizontal bar |
| olcir | ⊙ | 217D | 8573 | large circle in circle |
| olt | ⊗ | DBD6 | 56278 | less-than in circle |
| omid | ⓪ | EEC3 | 61123 | vertical bar in circle |
| ominus | ⊖ | 2274 | 8820 | /ominus B: minus sign in circle |
| opar | Ⓜ | DBD7 | 56279 | parallel in circle |
| operp | ⊥ | DBD8 | 56280 | perpendicular in circle |
| oplus | ⊕ | 2273 | 8819 | /oplus B: plus sign in circle |
| osol | ⊘ | 2276 | 8822 | /oslash B: solidus in circle |
| otimes | ⊗ | 2275 | 8821 | /otimes B: multiply sign in circle |
| Otimes | ⊗ | DBD9 | 56281 | multiply sign in double circle |
| otimesas | ⊗̂ | DBDA | 56282 | multiply sign in circle, circumflex accent |
| ovbar | ⓪ | EEC3 | 61123 | circle with vertical bar |
| plusacr | ⊕̂ | DBDB | 56283 | plus, circumflex accent above |
| plusb | ⊕ | 222F | 8751 | /boxplus B: plus sign in box |
| pluscir | ⊕̆ | DBDC | 56284 | plus, small circle above |
| plusdo | ⊕̇ | EE2B | 60971 | /dotplus B: plus sign, dot above |
| plusdu | ⊕̈ | DBDD | 56285 | plus sign, dot below |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|----------------------------------------|
| pluse | \pm | DBDE | 56286 | plus, equals |
| plussim | \sim | DBDF | 56287 | plus, similar below |
| plustwo | \pm | DBE0 | 56288 | plus, two; Nim-addition |
| prod | Π | EF7B | 61307 | /prod L: product operator |
| race | \S | DBE1 | 56289 | reverse most positive, line below |
| roplus | \oplus | DBE2 | 56290 | plus sign in right half circle |
| rotimes | \otimes | DBE3 | 56291 | multiply sign in right half circle |
| rthree | \times | EED9 | 61145 | /rightthreetimes B: |
| rtimes | \times | EED7 | 61143 | /rtimes B: times sign, right closed |
| sdot | \cdot | EEB4 | 61108 | /cdot B: small middle dot |
| sdotb | \boxdot | 2232 | 8754 | /dotsquare /boxdot B: small dot in box |
| setmn | \setminus | 005C | 92 | /setminus B: reverse solidus |
| simplus | \sim | DBE4 | 56292 | plus, similar above |
| smashp | \otimes | DBE5 | 56293 | smash product |
| solb | \boxplus | DBE6 | 56294 | solidus in square |
| sqcap | \sqcap | 22AE | 8878 | /sqcap B: square intersection |
| sqcaps | \sqcap | DBE7 | 56295 | square intersection, serifs |
| sqcup | \sqcup | 22AD | 8877 | /sqcup B: square union |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------------|
| sqcup | \sqcup | DBE8 | 56296 | square union, serifs |
| ssetmn | \setminus | EE3C | 60988 | /smallsetminus B: sm reverse solidus |
| sstarf | ★ | 226D | 8813 | /star B: small star, filled |
| subdot | $\subset\!\cdot$ | EB33 | 60211 | subset, with dot |
| sum | Σ | EF7A | 61306 | /sum L: summation operator |
| supdot | $\supset\!\cdot$ | DBE9 | 56297 | superset, with dot |
| timesb | \boxtimes | 2231 | 8753 | /boxtimes B: multiply sign in box |
| timesbar | \times | DBEA | 56298 | multiply sign, bar below |
| timesd | \times | DBEB | 56299 | times, dot |
| tridot | $\triangle\!\cdot$ | DBEC | 56300 | dot in triangle |
| triminus | \triangle | DBED | 56301 | minus in triangle |
| triplus | \triangle | DBEE | 56302 | plus in triangle |
| trisb | \triangle | DBEF | 56303 | triangle, serifs at bottom |
| tritime | \triangle | DBF0 | 56304 | multiply in triangle |
| uplus | \uplus | 22AB | 8875 | /uplus B: plus sign in union |
| veebar | \veebar | EEDB | 61147 | /veebar B: logical or, bar below |
| wedbar | \wedge | DBF1 | 56305 | wedge, bar below |
| wreath | \wr | 227D | 8829 | /wr B: wreath product |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------------|
| xcap | \cap | EE56 | 61014 | /bigcap L: intersection operator |
| xcirc | \bigcirc | 227E | 8830 | /bigcirc B: large circle |
| xcup | \cup | EE57 | 61015 | /bigcup L: union operator |
| xdtri | ∇ | 2226 | 8742 | /bigtriangledown B: big dn tri, open |
| xodot | \odot | 22EC | 8940 | /bigodot L: circle dot operator |
| xoplus | \oplus | 22EA | 8938 | /bigoplus L: circle plus operator |
| xotime | \otimes | 22EB | 8939 | /bigotimes L: circle times operator |
| xsqcup | \sqcup | 22B6 | 8886 | /bigsqcup L: square union operator |
| xuplus | \uplus | 22AF | 8879 | /biguplus L: |
| xutri | \triangle | 2224 | 8740 | /bigtriangleup B: big up tri, open |
| xvee | \vee | EFB7 | 61367 | /bigvee L: logical and operator |
| xwedge | \wedge | EFB6 | 61366 | /bigwedge L: logical or operator |

5.2.3 Relations

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|----------------------------------|
| ape | \approx | EE78 | 61048 | /approxeq R: approximate, equals |
| apE | \approx | DBF2 | 56306 | approximately equal or equal to |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-----------------------------------|
| apid | ≈ | EB24 | 60196 | approximately identical to |
| asymp | ∞ | 2264 | 8804 | /asymp R: asymptotically equal to |
| Barv | ⏊ | DBF3 | 56307 | vert, dbl bar (over) |
| bcong | ≡ | 21CB | 8651 | /backcong R: reverse congruent |
| bepsi | ∞ | 22B9 | 8889 | /backepsilon R: such that |
| bowtie | ⋈ | 226C | 8812 | /bowtie R: |
| bsim | ≈ | 22BE | 8894 | /backsim R: reverse similar |
| bsime | ≈ | EEFD | 61181 | /backsimeq R: reverse similar, eq |
| bsolhsub | ⊂ | DBF4 | 56308 | reverse solidus, subset |
| bump | ≈ | EE42 | 60994 | /Bumpeq R: bumpy equals |
| bumpe | ≈ | EE79 | 61049 | /bumpeq R: bumpy equals, equals |
| bumpE | ≈ | DBF5 | 56309 | bump, equals |
| cire | ⊙ | 21A9 | 8617 | /circeq R: circle, equals |
| Colon | :: | EF6E | 61294 | /Colon, two colons |
| colone | ∴ | 2254 | 8788 | /coloneq R: colon, equals |
| Colone | ∴ | DBF6 | 56310 | double colon, equals |
| congdot | ≡ | DBF7 | 56311 | congruent, dot |
| csub | ⊂ | DBF8 | 56312 | subset, closed |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------------------------|
| csube | \sqsubset | DBF9 | 56313 | subset, closed, equals |
| csup | \sqsupset | DBFA | 56314 | superset, closed |
| csupe | \sqsupseteq | DBFB | 56315 | superset, closed, equals |
| cuepr | \curvearrowright | 2154 | 8532 | /curlyeqprec R: curly eq, precedes |
| cuesc | \curvearrowleft | 2155 | 8533 | /curlyeqsucc R: curly eq, succeeds |
| dashv | \dashv | EF37 | 61239 | /dashv R: dash, vertical |
| Dashv | \vDash | EF39 | 61241 | dbl dash, vertical |
| easter | \equiv^* | DBFC | 56316 | equal, asterisk above |
| ecir | \equiv° | 21AA | 8618 | /eqcirc R: circle on equals sign |
| ecolon | $\equiv:$ | 2255 | 8789 | /eqcolon R: equals, colon |
| eDDot | $\equiv:::$ | DBFD | 56317 | /ddotseq R: equal with four dots |
| eDot | $\equiv\cdot$ | 21A8 | 8616 | /doteqdot /Doteq R: eq, even dots |
| efDot | $\equiv\cdot\cdot$ | 2262 | 8802 | /fallingdotseq R: eq, falling dots |
| eg | \geq | DBFE | 56318 | equal-or-greater |
| egs | \gtrsim | 2161 | 8545 | /eqslantgtr R: equal-or-gtr, slanted |
| egsdot | $\gtrsim\cdot$ | D921 | 55585 | equal-or-greater, slanted, dot inside |
| el | \leq | D922 | 55586 | equal-or-less |
| els | \lesssim | 2160 | 8544 | /eqslantless R: eq-or-less, slanted |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-----------------------------------------------|
| elsdot | \approx | D923 | 55587 | equal-or-less, slanted, dot inside |
| equest | $\approx?$ | EF74 | 61300 | /questeq R: equal with questionmark |
| equivDD | \equiv | D924 | 55588 | equivalent, four dots above |
| erDot | $\approx\cdot$ | 2263 | 8803 | /risingdotseq R: eq, rising dots |
| esdot | $\approx\cdot$ | EF73 | 61299 | /doteq R: equals, single dot above |
| esim | $\approx\sim$ | EE68 | 61032 | /esim R: equals, similar |
| Esim | $\approx\sim$ | D925 | 55589 | equal, similar |
| fork | \pitchfork | 21AC | 8620 | /pitchfork R: pitchfork |
| forkv | \pitchfork | DB2E | 56110 | fork, variant |
| frown | \frown | EFC0 | 61376 | /frown R: down curve |
| gap | \gtrapprox | 2164 | 8548 | /gtrapprox R: greater, approximate |
| gE | \gtrsim | 2171 | 8561 | /geqq R: greater, double equals |
| gel | $\gtrsim\lessgtr$ | 214F | 8527 | /gtreqless R: greater, equals, less |
| gEl | $\gtrsim\lessgtr$ | 2175 | 8565 | /gtreqqlless R: gt, dbl equals, less |
| ges | \gtrsim | 2173 | 8563 | /geqslant R: gt-or-equal, slanted |
| gescc | \gtrsim | D926 | 55590 | greater than, closed by curve, equal, slanted |
| gesdot | \gtrsim | D927 | 55591 | greater-than-or-equal, slanted, dot inside |
| gesdoto | \gtrsim | D928 | 55592 | greater-than-or-equal, slanted, dot above |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|------------------------------------------------|
| gesdotol | ⋈ | D929 | 55593 | greater-than-or-equal, slanted, dot above left |
| gesl | ⋈ | D92A | 55594 | greater, equal, slanted, less |
| gesles | ⋈ | D92B | 55595 | greater, equal, slanted, less, equal, slanted |
| Gg | ⋈ | 2147 | 8519 | /ggg /Gg /gggr R: triple gr-than |
| gl | ⋈ | EE6D | 61037 | /gtrless R: greater, less |
| gla | ⋈ | D92C | 55596 | greater, less, apart |
| glE | ⋈ | D92D | 55597 | greater, less, equal |
| glj | ⋈ | D92E | 55598 | greater, less, overlapping |
| gsim | ⋈ | EE6F | 61039 | /gtrsim R: greater, similar |
| gsime | ⋈ | D92F | 55599 | greater, similar, equal |
| gsiml | ⋈ | D930 | 55600 | greater, similar, less |
| Gt | ⋈ | EF43 | 61251 | /gg R: dbl greater-than sign |
| gtcc | ⋈ | D931 | 55601 | greater than, closed by curve |
| gtcir | ⋈ | D932 | 55602 | greater than, circle inside |
| gtdot | ⋈ | 2141 | 8513 | /gtrdot R: greater than, with dot |
| gtquest | ⋈ | D933 | 55603 | greater than, questionmark above |
| gtrarr | ⋈ | D934 | 55604 | greater than, right arrow |
| homtht | ⋈ | EBC7 | 60359 | homothetic |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|-------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------|-----------------------------------------------|
| lap |  | 2163 | 8547 | /lessapprox R: less, approximate |
| lat |  | D935 | 55605 | larger than |
| late |  | D936 | 55606 | larger than or equal |
| lates |  | D937 | 55607 | larger than or equal, slanted |
| lE |  | 2170 | 8560 | /leqq R: less, double equals |
| leg |  | 214E | 8526 | /lesseqgtr R: less, eq, greater |
| lEg |  | 2174 | 8564 | /lesseqgtr R: less, dbl eq, greater |
| les |  | 2172 | 8562 | /leqslant R: less-than-or-eq, slant |
| lescc |  | D938 | 55608 | less than, closed by curve, equal, slanted |
| lesdot |  | D939 | 55609 | less-than-or-equal, slanted, dot inside |
| lesdoto |  | D93A | 55610 | less-than-or-equal, slanted, dot above |
| lesdotor |  | D93B | 55611 | less-than-or-equal, slanted, dot above right |
| lesg |  | D93C | 55612 | less, equal, slanted, greater |
| lesges |  | D93D | 55613 | less, equal, slanted, greater, equal, slanted |
| lg |  | EE6C | 61036 | /lessgtr R: less, greater |
| lgE |  | D93E | 55614 | less, greater, equal |
| lI |  | 2146 | 8518 | /lI /lII /lIII R: triple less-than |
| lsim |  | EE6E | 61038 | /lesssim R: less, similar |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------------------|
| lsime | ℓ | D93F | 55615 | less, similar, equal |
| lsimg | ℓ | D940 | 55616 | less, similar, greater |
| Lt | ≪ | EF42 | 61250 | /ll R: double less-than sign |
| ltcc | △ | D941 | 55617 | less than, closed by curve |
| ltcir | ⊖ | D942 | 55618 | less than, circle inside |
| ltdot | ⋅ | 2140 | 8512 | /lessdot R: less than, with dot |
| ltlarr | ↵ | D943 | 55619 | less than, left arrow |
| ltquest | ⋈ | D944 | 55620 | less than, questionmark above |
| ltrie | ⊲ | EEEE | 61163 | /triangleleft R: left triangle, eq |
| mcomma | ⋈ | D945 | 55621 | minus, comma above |
| mDDot | ⋈ | EE64 | 61028 | minus with four dots, geometric properties |
| mid | ∣ | EF46 | 61254 | /mid R: |
| mlcp | ⊕ | D946 | 55622 | /mlcp |
| models | ⋈ | 22AC | 8876 | /models R: |
| mstpos | ℓ | D947 | 55623 | most positive |
| pr | ⋈ | 2150 | 8528 | /prec R: precedes |
| Pr | ⋈ | D849 | 55369 | dbl precedes |
| prap | ℓ | 21A3 | 8611 | /precapprox R: precedes, approximate |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------------|
| prcue | ⋈ | 2152 | 8530 | /preccurlyeq R: precedes, curly eq |
| pre | ⋈ | 2265 | 8805 | /preceq R: precedes, equals |
| prE | ⋈ | D84A | 55370 | precedes, dbl equals |
| prsim | ⋈ | 21A1 | 8609 | /precsim R: precedes, similar |
| prurel | ⋈ | EBC8 | 60360 | element precedes under relation |
| ratio | ∴ | EE34 | 60980 | /ratio |
| rtrie | ▷ | EEEE | 61164 | /trianglerighteq R: right tri, eq |
| rtriltri | ▷ | D948 | 55624 | right triangle above left triangle |
| sc | ⋈ | 2151 | 8529 | /succ R: succeeds |
| Sc | ⋈ | D949 | 55625 | dbl succeeds |
| scap | ⋈ | 21A4 | 8612 | /succapprox R: succeeds, approximate |
| sccue | ⋈ | 2153 | 8531 | /succcurlyeq R: succeeds, curly eq |
| sce | ⋈ | 2266 | 8806 | /succeq R: succeeds, equals |
| scE | ⋈ | D94A | 55626 | succeeds, dbl equals |
| scsim | ⋈ | 21A2 | 8610 | /succsim R: succeeds, similar |
| sdote | ⋈ | D94B | 55627 | equal, dot below |
| sfrown | ⋈ | 21A6 | 8614 | /smallfrown R: small down curve |
| simg | ⋈ | D94C | 55628 | similar, greater |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------------|
| simgE | ≧ | D94D | 55629 | similar, greater, equal |
| siml | ≦ | D94E | 55630 | similar, less |
| simlE | ≧ | D94F | 55631 | similar, less, equal |
| smid | - | 21A7 | 8615 | /shortmid R: |
| smile | ⤿ | 226F | 8815 | /smile R: up curve |
| smt | ≪ | D950 | 55632 | smaller than |
| smtE | ≧ | D951 | 55633 | smaller than or equal |
| smtes | ≧ | D952 | 55634 | smaller than or equal, slanted |
| spar | ≡ | 2176 | 8566 | /shortparallel R: short parallel |
| sqsub | ⊆ | EE52 | 61010 | /sqsubset R: square subset |
| sqsube | ⊆ | 22B0 | 8880 | /sqsubseteq R: square subset, equals |
| sqsup | ⊇ | EE53 | 61011 | /sqsupset R: square superset |
| sqsupe | ⊇ | 22B1 | 8881 | /sqsupseteq R: square superset, eq |
| ssmile | ⤿ | 21A5 | 8613 | /smallsmile R: small up curve |
| Sub | ⊆ | 215E | 8542 | /Subset R: double subset |
| subE | ≡ | 215C | 8540 | /subseteqq R: subset, dbl equals |
| subedot | ⊆ | D953 | 55635 | subset, equals, dot |
| submult | ⊆ | D954 | 55636 | subset, multiply |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------------------|
| subplus | ⊕ | D955 | 55637 | subset, plus |
| subrarr | ↪ | D956 | 55638 | subset, right arrow |
| subsim | ≈ | D957 | 55639 | subset, similar |
| subsub | ⊆ | D958 | 55640 | subset above subset |
| subsup | ⊇ | D959 | 55641 | subset above superset |
| Sup | ⊃ | 215F | 8543 | /Supset R: dbl superset |
| supdsub | ⊃⊂ | D95A | 55642 | superset, subset, dash joining them |
| supE | ⊇⊇ | 215D | 8541 | /supseteqq R: superset, dbl equals |
| supedot | ⊇̇ | D95B | 55643 | superset, equals, dot |
| suphsol | ⊇/ | D95C | 55644 | superset, solidus |
| suphsub | ⊇⊂ | D95D | 55645 | superset, subset |
| suplarr | ↵ | D95E | 55646 | superset, left arrow |
| supmult | ⊇× | D95F | 55647 | superset, multiply |
| supplus | ⊇⊕ | D960 | 55648 | superset, plus |
| supsim | ⊇≈ | D961 | 55649 | superset, similar |
| supsub | ⊇⊆ | D962 | 55650 | superset above subset |
| supsup | ⊇⊇ | D963 | 55651 | superset above superset |
| thkap | ≈̃ | 2278 | 8824 | /thickapprox R: thick approximate |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------------------------|
| thksim | ~ | 2277 | 8823 | /thicksim R: thick similar |
| topfork | ⌢ | D964 | 55652 | fork with top |
| trie | △ <u> </u> | 21AB | 8619 | /triangleq R: triangle, equals |
| twixt | ⌘ | EE30 | 60976 | /between R: between |
| vBar | ± | D965 | 55653 | vert, dbl bar (under) |
| Vbar | ⏟ | DB34 | 56116 | dbl vert, bar (under) |
| vBarv | ±̄ | D966 | 55654 | dbl bar, vert over and under |
| vdash | ⊢ | EF36 | 61238 | /vdash R: vertical, dash |
| vDash | ⊣ | EF38 | 61240 | /vDash R: vertical, dbl dash |
| Vdash | ⏊ | 2143 | 8515 | /Vdash R: dbl vertical, dash |
| VDash | ⏊ | D967 | 55655 | dbl vert, dbl dash |
| Vdashl | ⏊ | D968 | 55656 | vertical, dash (long) |
| vltri | ◁ | EEB3 | 61107 | /vartriangleleft R: l tri, open, var |
| vprop | ∝ | EF71 | 61297 | /varpropto R: proportional, variant |
| vrtri | ▷ | EEB2 | 61106 | /vartriangleright R: r tri, open, var |
| Vvdash | ⏊ | 216F | 8559 | /Vvdash R: triple vertical, dash |

5.2.4 Negated Relations

| Entity name | Character- istic glyph | Registered glyph identifier (hexa- decimal) | Registered glyph identifier (decimal) | Short description |
|-------------|------------------------------|---------------------------------------------------------|------------------------------------------------|---------------------------------------|
| gnap | \gtrsim | 21F7 | 8695 | /gnapprox N: greater, not approximate |
| gne | \gtneq | 21E3 | 8675 | /gneq N: greater, not equals |
| gnE | \gtrneq | 21F3 | 8691 | /gneqq N: greater, not dbl equals |
| gnsim | \gtrsim | 21E5 | 8677 | /gnsim N: greater, not similar |
| gvnE | \gtrneq | 21F5 | 8693 | /gvertneqq N: gt, vert, not dbl eq |
| lnap | \lesssim | 21F6 | 8694 | /lnapprox N: less, not approximate |
| lne | \ltneq | 21E2 | 8674 | /lneq N: less, not equals |
| lnE | \lesstreq | 21F2 | 8690 | /lneqq N: less, not double equals |
| lnsim | \lesssim | 21E4 | 8676 | /lnsim N: less, not similar |
| lvnE | \lesstreq | 21F4 | 8692 | /lvertneqq N: less, vert, not dbl eq |
| nap | $\not\approx$ | 21C0 | 8640 | /napprox N: not approximate |
| napE | $\not\approx$ | D969 | 55657 | not approximately equal or equal to |
| napid | $\not\approx$ | D96A | 55658 | not approximately identical to |
| ncong | $\not\cong$ | 21CC | 8652 | /ncong N: not congruent with |
| ncongdot | $\not\cong$ | D96B | 55659 | not congruent, dot |
| nequiv | $\not\equiv$ | EE72 | 61042 | /nequiv N: not identical with |
| nge | \nlessgtr | 21E7 | 8679 | /ngeq N: not greater-than-or-equal |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------------------|
| ngE | ≧ | 21F1 | 8689 | /ngeqq N: not greater, dbl equals |
| nges | ≧̸ | 21E1 | 8673 | /ngeqslant N: not gt-or-eq, slanted |
| nGg | ≧≧≧ | D96C | 55660 | not triple greater than |
| ngsim | ≧̇ | 21DA | 8666 | not greater, similar |
| ngt | ≧̸ | 21CA | 8650 | /ngtr N: not greater than |
| nGt | ≧̸̸ | D96D | 55661 | not, vert. much greater than |
| nGtv | ≧̸̸̸ | D96E | 55662 | not much greater than, variant |
| nle | ≦ | 21E6 | 8678 | /nleq N: not less-than-or-equal |
| nIE | ≦̸ | 21F0 | 8688 | /nleqq N: not less, dbl equals |
| nles | ≦̸ | 21E0 | 8672 | /nleqslant N: not less-or-eq, slant |
| nLI | ≦≦≦ | D96F | 55663 | not triple less than |
| nlsim | ≦̇ | 21D9 | 8665 | not less, similar |
| nlt | ≦̸ | 21C9 | 8649 | /nless N: not less-than |
| nLt | ≦̸̸ | D970 | 55664 | not, vert. much less than |
| nltr | ≦̸ | 21BB | 8635 | /ntriangleleft N: not left triangle |
| nltrie | ≦̸̸ | 21BD | 8637 | /ntrianglelefteq N: not l tri, eq |
| nLtv | ≦̸̸̸ | D971 | 55665 | not much less than, variant |
| nmid | † | EF47 | 61255 | /nmid |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|------------------------------------|
| npar | # | EF49 | 61257 | /nparallel N: not parallel |
| npr | * | 21D0 | 8656 | /nprec N: not precedes |
| nprcue | *̂ | 21D6 | 8662 | not curly precedes, eq |
| npre | *̂ | 21D2 | 8658 | /npreceq N: not precedes, equals |
| nrtri | ▷ | 21BC | 8636 | /ntriangleright N: not rt triangle |
| nrtrie | ▷̂ | 21BE | 8638 | /ntrianglerighteq N: not r tri, eq |
| nsc | *̂ | 21D1 | 8657 | /nsucc N: not succeeds |
| nsccue | *̂ | D972 | 55666 | not succeeds, curly eq |
| nsce | *̂ | 21D3 | 8659 | /nsucceq N: not succeeds, equals |
| nsim | ≈ | 21B0 | 8624 | /nsim N: not similar |
| nsime | ≈̂ | 21BF | 8639 | /nsimeq N: not similar, equals |
| nsmid | ∣ | 21B5 | 8629 | /nshortmid |
| nspar | #̂ | 21B6 | 8630 | /nshortparallel N: not short par |
| nsqsube | ⊆̂ | 21EE | 8686 | not, square subset, equals |
| nsqsupe | ⊇̂ | 21EF | 8687 | not, square superset, equals |
| nsub | ⊆ | D973 | 55667 | not subset |
| nsube | ⊆̂ | D974 | 55668 | /nsubseteq N: not subset, equals |
| nsubE | ⊆̂ | 21C3 | 8643 | /nsubseteqq N: not subset, dbl eq |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------------------|
| nsup | ⊃ | D975 | 55669 | not superset |
| nsupe | ⊃̇ | D976 | 55670 | /nsupseteq N: not superset, equals |
| nsupE | ⊃̇̇ | 21C4 | 8644 | /nsupseteqq N: not superset, dbl eq |
| ntgl | ⋈ | 21E9 | 8681 | not greater, less |
| ntlgl | ⋈̇ | 21E8 | 8680 | not less, greater |
| nvap | ≈ | D977 | 55671 | not, vert, approximate |
| nvdash | ⋈ | 21B7 | 8631 | /nvdash N: not vertical, dash |
| nvDash | ⋈̇ | 21B8 | 8632 | /nvDash N: not vertical, dbl dash |
| nVdash | ⋈̇̇ | 21B9 | 8633 | /nVdash N: not dbl vertical, dash |
| nVDash | ⋈̇̇̇ | 21BA | 8634 | /nVDash N: not dbl vert, dbl dash |
| nvge | ⋈̇ | EE66 | 61030 | not, vert, greater-than-or-equal |
| nvgt | ⋈̇̇ | EF45 | 61253 | not, vert, greater-than |
| nvle | ⋈̇̇̇ | EE65 | 61029 | not, vert, less-than-or-equal |
| nvlt | ⋈̇̇̇̇ | EF44 | 61252 | not, vert, less-than |
| nvlttrie | ⋈̇̇̇̇̇ | D978 | 55672 | not, vert, left triangle, equals |
| nvrttrie | ⋈̇̇̇̇̇̇ | D979 | 55673 | not, vert, right triangle, equals |
| nvsim | ≈̇ | EEFE | 61182 | not, vert, similar |
| parsim | ⋈̇̇̇̇̇̇̇ | D97A | 55674 | parallel, similar |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------------|
| prnap | ⋈ | 21B3 | 8627 | /precnapprox N: precedes, not approx |
| prnE | ⋈# | 21D4 | 8660 | /precneqq N: precedes, not dbl eq |
| prnsim | ⋈ | 21B1 | 8625 | /precnsim N: precedes, not similar |
| rnmid | ↔ | D97B | 55675 | reverse /nmid |
| scnap | ⋈ | 21B4 | 8628 | /succnapprox N: succeeds, not approx |
| scnE | ⋈# | 21D5 | 8661 | /succneqq N: succeeds, not dbl eq |
| scnsim | ⋈ | 21B2 | 8626 | /succnsim N: succeeds, not similar |
| simne | ≈ | EBB7 | 60343 | similar, not equals |
| solbar | ⊢ | EEC8 | 61128 | solidus, bar through |
| subne | ⊆ | 21C5 | 8645 | /subsetneq N: subset, not equals |
| subnE | ⊆# | 21C1 | 8641 | /subsetneqq N: subset, not dbl eq |
| supne | ⊇ | 21C6 | 8646 | /supsetneq N: superset, not equals |
| supnE | ⊇# | 21C2 | 8642 | /supsetneqq N: superset, not dbl eq |
| vnsup | ⊈ | EF5E | 61278 | /nsupset N: not superset, var |
| vnsup | ⊉ | EF5F | 61279 | /nsubset N: not subset, var |
| vsubne | ⊈ | EF55 | 61269 | /varsubsetneq N: subset, not eq, var |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|------------------------------------------|
| vsubnE | ⋈ | 21C7 | 8647 | /varsubsetneqq N: subset not dbl eq, var |
| vsupne | ⋉ | EF54 | 61268 | /varsupsetneq N: superset, not eq, var |
| vsupnE | ⋊ | 21C8 | 8648 | /varsupsetneqq N: super not dbl eq, var |

5.2.5 Arrow Relations

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------------|
| anzarr | ↙ | D97C | 55676 | angle with down zig-zag arrow |
| cirmid | ⊙ | D97D | 55677 | circle, mid below |
| cudarrl | ↷ | EBCF | 60367 | left, curved, down arrow |
| cudarr | ↶ | EBCE | 60366 | right, curved, down arrow |
| cularr | ↵ | EEF2 | 61170 | /curvearrowleft A: left curved arrow |
| cularrp | ↷+ | D97E | 55678 | curved left arrow with plus |
| curarr | ↶ | EEF3 | 61171 | /curvearrowright A: rt curved arrow |
| curarrm | ↷- | D9A1 | 55713 | curved right arrow with minus |
| dArr | ⇓ | 2261 | 8801 | /Downarrow A: down dbl arrow |
| Darr | ⇓ | D9A2 | 55714 | down two-headed arrow |
| ddarr | ⇓⇓ | 2243 | 8771 | /downdownarrows A: two down arrows |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------------------------|
| DDottrahd |> | D9A3 | 55715 | right arrow with dotted stem |
| dfisht | ⌋ | D9A4 | 55716 | down fish tail |
| dHar | ⇓ | D9A5 | 55717 | down harpoon-left, down harpoon-right |
| dharl | ⌋ | 2249 | 8777 | /downharpoonleft A: dn harpoon-left |
| dharr | ⌋ | 224B | 8779 | /downharpoonright A: down harpoon-rt |
| duarr | ⇕ | EB2F | 60207 | down arrow, up arrow |
| duhar | ⇓ | D9A6 | 55718 | down harp, up harp |
| dzigrarr | ↗ | EBCB | 60363 | right long zig-zag arrow |
| erarr | ⇨ | D9A7 | 55719 | equal, right arrow below |
| harr | ↔ | EF52 | 61266 | /leftrightarrow A: l&r arrow |
| hArr | ↔ | EF4E | 61262 | /Lefttrightarrow A: l&r dbl arrow |
| harrcir | ↔ | D9A8 | 55720 | left and right arrow with a circle |
| harrw | ↔ | 2252 | 8786 | /leftrightsquigarrow A: l&r arr-wavy |
| hoarr | ↔ | D9A9 | 55721 | horizontal open arrow |
| imof | ◉ | EBC4 | 60356 | image of |
| lAarr | ⇐ | 2244 | 8772 | /Lleftarrow A: left triple arrow |
| Larr | ⇐ | 2246 | 8774 | /twoheadleftarrow A: |
| larrbfs | ◀ | D9AA | 55722 | left arrow-bar, filled square |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------------------------|
| larrfs | ←◻ | D9AB | 55723 | left arrow, filled square |
| larrhk | ↶ | 225B | 8795 | /hookleftarrow A: left arrow-hooked |
| larrlp | ↷ | 224E | 8782 | /looparrowleft A: left arrow-looped |
| larrpl | ←+ | D9AC | 55724 | left arrow, plus |
| larrsim | ↷ | D9AD | 55725 | left arrow, similar |
| larrtl | ↵ | 224C | 8780 | /leftarrowtail A: left arrow-tailed |
| latail | ↵ | D9AE | 55726 | left arrow-tail |
| lAtail | ↵ | D9AF | 55727 | left double arrow-tail |
| lbarr | ←— | D9B0 | 55728 | left broken arrow |
| lBarr | ←— | D9B1 | 55729 | left doubly broken arrow |
| ldca | ↷ | F0BE | 61630 | left down curved arrow |
| ldrdhar | ↷ | D9B2 | 55730 | left harpoon-down over right harpoon-down |
| ldrushar | ↷ | D9B3 | 55731 | left-down-right-up harpoon |
| ldsh | ↙ | 22EE | 8942 | left down angled arrow |
| lfisht | ↵ | D9B4 | 55732 | left fish tail |
| lHar | ↰ | D9B5 | 55733 | left harpoon-up over left harpoon-down |
| lhard | ↵ | 2257 | 8791 | /leftharpoondown A: l harpoon-down |
| lharu | ↰ | 2256 | 8790 | /leftharpoonup A: left harpoon-up |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|----------------------------------------|
| lharul | ⇐ | D9B6 | 55734 | left harpoon-up over long dash |
| llarr | ⇐⇐ | 2240 | 8768 | /leftleftarrows A: two left arrows |
| llhard | ⇓ | D9B7 | 55735 | left harpoon-down below long dash |
| loarr | ↵ | D9B8 | 55736 | left open arrow |
| lrarr | ⇔ | EF51 | 61265 | /leftrightharpoons A: l arr over r arr |
| lrhar | ⇔ | EEF6 | 61174 | /leftrightharpoons A: l harp over r |
| lrhard | ⇓ | D9B9 | 55737 | right harpoon-down below long dash |
| lsh | ↵ | 2250 | 8784 | /Lsh A: |
| lurdshar | ↵↴ | D9BA | 55738 | left-up-right-down harpoon |
| luruhar | ⇐⇓ | D9BB | 55739 | left harpoon-up over right harpoon-up |
| map | ↔ | 226B | 8811 | /mapsto A: |
| Map | ↔ | D9BC | 55740 | twoheaded mapsto |
| midcir | ⊙ | EBDC | 60380 | mid, circle below |
| mumap | ⊖ | 2253 | 8787 | /multimap A: |
| nearhk | ↗ | D9BD | 55741 | NE arrow-hooked |
| nearr | ↗ | EF3E | 61246 | /nearrow A: NE pointing arrow |
| neArr | ↗ | D9BE | 55742 | NE pointing dbl arrow |
| nesear | ↘↗ | D9BF | 55743 | /toea A: NE & SE arrows |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|-------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------|----------------------------------------|
| nharr |  | EEF9 | 61177 | /nleftrightarrow A: not l&r arrow |
| nhArr |  | EEFC | 61180 | /nLeftrightarrow A: not l&r dbl arr |
| nlarr |  | EEF7 | 61175 | /nleftarrow A: not left arrow |
| nlArr |  | EEFA | 61178 | /nLeftarrow A: not implied by |
| nrarr |  | EEF8 | 61176 | /nrightrightarrow A: not right arrow |
| nrArr |  | EEFB | 61179 | /nRightrightarrow A: not implies |
| nrarrc |  | D9C0 | 55744 | not right arrow-curved |
| nrarrw |  | D9C1 | 55745 | not right arrow-wavy |
| nvHarr |  | D9C2 | 55746 | not, vert, left and right double arrow |
| nvlArr |  | D9C3 | 55747 | not, vert, left double arrow |
| nvrArr |  | D9C4 | 55748 | not, vert, right double arrow |
| nwarhk |  | D9C5 | 55749 | NW arrow-hooked |
| nwarr |  | EF3C | 61244 | /nwarrow A: NW pointing arrow |
| nwArr |  | D9C6 | 55750 | NW pointing dbl arrow |
| nwnear |  | D9C7 | 55751 | NW & NE arrows |
| olarr |  | EEF4 | 61172 | /circlearrowleft A: l arr in circle |
| orarr |  | EEF5 | 61173 | /circlearrowright A: r arr in circle |
| origof |  | D9C8 | 55752 | original of |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|-------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------|-------------------------------------------|
| rAarr |  | 2245 | 8773 | /Rightarrow A: right triple arrow |
| Rarr |  | 2247 | 8775 | /twoheadrightarrow A: |
| rarrap |  | D9C9 | 55753 | approximate, right arrow above |
| rarrbfs |  | D9CA | 55754 | right arrow-bar, filled square |
| rarrc |  | D9CB | 55755 | right arrow-curved |
| rarrfs |  | D9CC | 55756 | right arrow, filled square |
| rarrhk |  | 225A | 8794 | /hookrightarrow A: rt arrow-hooked |
| rarrlp |  | 224F | 8783 | /looparrowright A: rt arrow-looped |
| rarrpl |  | D9CD | 55757 | right arrow, plus |
| rarrsim |  | D9CE | 55758 | right arrow, similar |
| rarrtl |  | 224D | 8781 | /rightarrowtail A: rt arrow-tailed |
| Rarrtl |  | D9CF | 55759 | right two-headed arrow with tail |
| rarrw |  | EF53 | 61267 | /rightsquigarrow A: rt arrow-wavy |
| ratail |  | D9D0 | 55760 | right arrow-tail |
| rAtail |  | D9D1 | 55761 | right double arrow-tail |
| rbarr |  | EB30 | 60208 | /bkarow A: right broken arrow |
| rBarr |  | D9D2 | 55762 | /dbkarow A: right doubly broken arrow |
| RBarr |  | D9D3 | 55763 | /drbkarow A: twoheaded right broken arrow |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|-------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------|-------------------------------------------|
| rdca |  | D9D4 | 55764 | right down curved arrow |
| rdldhar |  | D9D5 | 55765 | right harpoon-down over left harpoon-down |
| rdsh |  | 22EF | 8943 | right down angled arrow |
| rfisht |  | D9D6 | 55766 | right fish tail |
| rHar |  | D9D7 | 55767 | right harpoon-up over right harpoon-down |
| rhard |  | 2259 | 8793 | /rightharpoondown A: rt harpoon-down |
| rharu |  | 2258 | 8792 | /rightharpoonup A: rt harpoon-up |
| rharul |  | D9D8 | 55768 | right harpoon-up over long dash |
| rlarr |  | EE50 | 61008 | /rightleftarrows A: r arr over l arr |
| rlhar |  | EF50 | 61264 | /rightleftharpoons A: r harp over l |
| roarr |  | D9D9 | 55769 | right open arrow |
| rrarr |  | 2241 | 8769 | /rightrightarrows A: two rt arrows |
| rsh |  | 2251 | 8785 | /Rsh A: |
| ruluhar |  | D9DA | 55770 | right harpoon-up over left harpoon-up |
| searhk |  | D9DB | 55771 | /hksearrow A: SE arrow-hooked |
| searr |  | EF3D | 61245 | /searrow A: SE pointing arrow |
| seArr |  | D9DC | 55772 | SE pointing dbl arrow |
| seswar |  | D9DD | 55773 | /tosa A: SE & SW arrows |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|-------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------|-------------------------------------------|
| simrarr |  | 2236 | 8758 | similar, right arrow below |
| slarr |  | D9DE | 55774 | short left arrow |
| srarr |  | D9DF | 55775 | short right arrow |
| swarhk |  | D9E0 | 55776 | /hkswarow A: SW arrow-hooked |
| swarr |  | EF3F | 61247 | /swarrow A: SW pointing arrow |
| swArr |  | D9E1 | 55777 | SW pointing dbl arrow |
| swnwar |  | D9E2 | 55778 | SW & NW arrows |
| uArr |  | 2260 | 8800 | /Uparrow A: up dbl arrow |
| Uarr |  | D9E3 | 55779 | up two-headed arrow |
| Uarrocir |  | D9E4 | 55780 | up two-headed arrow above circle |
| udarr |  | EB2E | 60206 | up arrow, down arrow |
| udhar |  | D9E5 | 55781 | up harp, down harp |
| ufisht |  | D9E6 | 55782 | up fish tail |
| uHar |  | D9E7 | 55783 | up harpoon-left, up harpoon-right |
| uharl |  | 2248 | 8776 | /upharpoonleft A: up harpoon-left |
| uharr |  | 224A | 8778 | /upharpoonright /restriction A: up harp-r |
| uuarr |  | 2242 | 8770 | /upuparrows A: two up arrows |
| varr |  | EEB5 | 61109 | /updownarrow A: up&down arrow |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-----------------------------------------|
| vArr | ↕ | EE51 | 61009 | /Updownarrow A: up&down dbl arrow |
| xharr | ↔ | 2267 | 8807 | /longleftrightarrow A: long l&r arr |
| xhArr | ↔ | 2269 | 8809 | /Longleftrightarrow A: long l&r dbl arr |
| xlarr | ← | 225C | 8796 | /longleftarrow A: long left arrow |
| xlArr | ← | 225E | 8798 | /Longleftarrow A: long l dbl arrow |
| xmap | ↪ | D9E8 | 55784 | /longmapsto A: |
| xrarr | → | 225D | 8797 | /longrightarrow A: long right arrow |
| xrArr | ⇒ | 225F | 8799 | /Longrightarrow A: long rt dbl arr |
| zigrarr | ↯ | D9E9 | 55785 | right zig-zag arrow |

5.2.6 Opening and Closing Delimiters

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------|
| dlcorn | └ | 22F3 | 8947 | /lcorner O: lower left corner |
| drcorn | ┘ | 22F4 | 8948 | /rcorner C: lower right corner |
| gtlPar | ⌞ | D9EA | 55786 | dbl left parenthesis, greater |
| langd | ∠ | D9EB | 55787 | left angle, dot |
| lbrke | ⌈ | D9EC | 55788 | left bracket, equal |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|--------------------------------------|
| lbrksld | ⌊ | D9ED | 55789 | left bracket, solidus bottom corner |
| lbrkslu | ⌈ | D9EE | 55790 | left bracket, solidus top corner |
| lceil | ⌈ | EFB0 | 61360 | /lceil O: left ceiling |
| lfloor | ⌋ | EFB2 | 61362 | /lfloor O: left floor |
| lmoust | ⎵ | EEE7 | 61159 | /lmoustache |
| lpart | ⌞ | D9EF | 55791 | O: left parenthesis, lt |
| ltrPar | ⌟ | D9F0 | 55792 | dbl right parenthesis, less |
| rangd | ⋄ | D9F1 | 55793 | right angle, dot |
| rbrke | ⌋ | D9F2 | 55794 | right bracket, equal |
| rbrksld | ⌋ | D9F3 | 55795 | right bracket, solidus bottom corner |
| rbrkslu | ⌌ | D9F4 | 55796 | right bracket, solidus top corner |
| rceil | ⌋ | EFB1 | 61361 | /rceil C: right ceiling |
| rfloor | ⌋ | EFB3 | 61363 | /rfloor C: right floor |
| rmoust | ⎶ | EEE8 | 61160 | /rmoustache |
| rpargt | ⌞ | D9F5 | 55797 | C: right paren, gt |
| ulcorn | ⌞ | 22F1 | 8945 | /ulcorner O: upper left corner |
| urcorn | ⌟ | 22F2 | 8946 | /urcorner C: upper right corner |

5.3 Symbols based on the Latin alphabet

The entities in this subclause are intended to be used as symbols and not for text. Thus they have been limited to the upper- and lower-case letters of the English language. Complete sets, also including additional letters used in other languages, are included in ISO/IEC TR 9573-14.

NOTE 9 These sets are enumerated lists of alphabetic glyphs from a writing system rendered in a particular type style. There are thus no specific glyph identifiers assigned.

5.3.1 Fraktur

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-----------------------|
| afr | ɑ | N/A | N/A | /frak a, lower case a |
| Afr | Ɑ | N/A | N/A | /frak A, upper case a |
| bfr | ʙ | N/A | N/A | /frak b, lower case b |
| Bfr | Ɱ | N/A | N/A | /frak B, upper case b |
| cfr | Ꝣ | N/A | N/A | /frak c, lower case c |
| Cfr | Ꝥ | N/A | N/A | /frak C, upper case c |
| dfr | ɖ | N/A | N/A | /frak d, lower case d |
| Dfr | ⱪ | N/A | N/A | /frak D, upper case d |
| efr | ꝥ | N/A | N/A | /frak e, lower case e |
| Efr | Ꝧ | N/A | N/A | /frak E, upper case e |
| ffr | ƒ | N/A | N/A | /frak f, lower case f |
| Ffr | Ꝩ | N/A | N/A | /frak F, upper case f |
| gfr | ɡ | N/A | N/A | /frak g, lower case g |
| Gfr | ⱬ | N/A | N/A | /frak G, upper case g |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-----------------------|
| hfr | h̄ | N/A | N/A | /frak h, lower case h |
| Hfr | ℋ | N/A | N/A | /frak H, upper case h |
| ifr | ī | N/A | N/A | /frak i, lower case i |
| Ifr | ℐ | N/A | N/A | /frak I, upper case i |
| jfr | j̄ | N/A | N/A | /frak j, lower case j |
| Jfr | ℑ | N/A | N/A | /frak J, upper case j |
| kfr | k̄ | N/A | N/A | /frak k, lower case k |
| Kfr | ℔ | N/A | N/A | /frak K, upper case k |
| lfr | l̄ | N/A | N/A | /frak l, lower case l |
| Lfr | ℓ | N/A | N/A | /frak L, upper case l |
| mfr | m̄ | N/A | N/A | /frak m, lower case m |
| Mfr | ℓ̄ | N/A | N/A | /frak M, upper case m |
| nfr | n̄ | N/A | N/A | /frak n, lower case n |
| Nfr | ℕ | N/A | N/A | /frak N, upper case n |
| ofr | ō | N/A | N/A | /frak o, lower case o |
| Ofr | ℔ | N/A | N/A | /frak O, upper case o |
| pfr | p̄ | N/A | N/A | /frak p, lower case p |
| Pfr | ℔̄ | N/A | N/A | /frak P, upper case p |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-----------------------|
| qfr | q | N/A | N/A | /frac q, lower case q |
| Qfr | Q | N/A | N/A | /frac Q, upper case q |
| rfr | r | N/A | N/A | /frac r, lower case r |
| Rfr | R | N/A | N/A | /frac R, upper case r |
| sfr | s | N/A | N/A | /frac s, lower case s |
| Sfr | S | N/A | N/A | /frac S, upper case s |
| tfr | t | N/A | N/A | /frac t, lower case t |
| Tfr | T | N/A | N/A | /frac T, upper case t |
| ufr | u | N/A | N/A | /frac u, lower case u |
| Ufr | U | N/A | N/A | /frac U, upper case u |
| vfr | v | N/A | N/A | /frac v, lower case v |
| Vfr | V | N/A | N/A | /frac V, upper case v |
| wfr | w | N/A | N/A | /frac w, lower case w |
| Wfr | W | N/A | N/A | /frac W, upper case w |
| xfr | x | N/A | N/A | /frac x, lower case x |
| Xfr | X | N/A | N/A | /frac X, upper case x |
| yfr | y | N/A | N/A | /frac y, lower case y |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-----------------------|
| Yfr | Ÿ | N/A | N/A | /frak Y, upper case y |
| zfr | Ʒ | N/A | N/A | /frak z, lower case z |
| Zfr | Ʒ | N/A | N/A | /frak Z, upper case z |

5.3.2 Open Face (Blackboard Bold)

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------|
| Aopf | Ⓐ | N/A | N/A | /Bbb A, open face A |
| Bopf | Ⓑ | N/A | N/A | /Bbb B, open face B |
| Copf | Ⓒ | N/A | N/A | /Bbb C, open face C |
| Dopf | Ⓓ | N/A | N/A | /Bbb D, open face D |
| Eopf | Ⓔ | N/A | N/A | /Bbb E, open face E |
| Fopf | Ⓕ | N/A | N/A | /Bbb F, open face F |
| Gopf | Ⓖ | N/A | N/A | /Bbb G, open face G |
| Hopf | Ⓗ | N/A | N/A | /Bbb H, open face H |
| Iopf | Ⓘ | N/A | N/A | /Bbb I, open face I |
| Jopf | Ⓙ | N/A | N/A | /Bbb J, open face J |
| Kopf | Ⓚ | N/A | N/A | /Bbb K, open face K |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|---------------------|
| Lopf | L | N/A | N/A | /Bbb L, open face L |
| Mopf | M | N/A | N/A | /Bbb M, open face M |
| Nopf | N | N/A | N/A | /Bbb N, open face N |
| Oopf | O | N/A | N/A | /Bbb O, open face O |
| Popf | P | N/A | N/A | /Bbb P, open face P |
| Qopf | Q | N/A | N/A | /Bbb Q, open face Q |
| Ropf | R | N/A | N/A | /Bbb R, open face R |
| Sopf | S | N/A | N/A | /Bbb S, open face S |
| Topf | T | N/A | N/A | /Bbb T, open face T |
| Uopf | U | N/A | N/A | /Bbb U, open face U |
| Vopf | V | N/A | N/A | /Bbb V, open face V |
| Wopf | W | N/A | N/A | /Bbb W, open face W |
| Xopf | X | N/A | N/A | /Bbb X, open face X |
| Yopf | Y | N/A | N/A | /Bbb Y, open face Y |
| Zopf | Z | N/A | N/A | /Bbb Z, open face Z |

5.3.3 Script

| Entity name | Character- istic glyph | Registered glyph identifier (hexa- decimal) | Registered glyph identifier (decimal) | Short description |
|-------------|------------------------------|---------------------------------------------------------|------------------------------------------------|-------------------------|
| ascr | <i>a</i> | N/A | N/A | /scr a, script letter a |
| Ascr | <i>A</i> | N/A | N/A | /scr A, script letter A |
| bscr | <i>b</i> | N/A | N/A | /scr b, script letter b |
| Bscr | <i>B</i> | N/A | N/A | /scr B, script letter B |
| cscr | <i>c</i> | N/A | N/A | /scr c, script letter c |
| Cscr | <i>C</i> | N/A | N/A | /scr C, script letter C |
| dscr | <i>d</i> | N/A | N/A | /scr d, script letter d |
| Dscr | <i>D</i> | N/A | N/A | /scr D, script letter D |
| escr | <i>e</i> | N/A | N/A | /scr e, script letter e |
| Escr | <i>E</i> | N/A | N/A | /scr E, script letter E |
| fscr | <i>f</i> | N/A | N/A | /scr f, script letter f |
| Fscr | <i>F</i> | N/A | N/A | /scr F, script letter F |
| gscr | <i>g</i> | N/A | N/A | /scr g, script letter g |
| Gscr | <i>G</i> | N/A | N/A | /scr G, script letter G |
| hscr | <i>h</i> | N/A | N/A | /scr h, script letter h |
| Hscr | <i>H</i> | N/A | N/A | /scr H, script letter H |
| iscr | <i>i</i> | N/A | N/A | /scr i, script letter i |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------|
| lscr | <i>l</i> | N/A | N/A | /scr l, script letter l |
| jscr | <i>j</i> | N/A | N/A | /scr j, script letter j |
| Jscr | <i>J</i> | N/A | N/A | /scr J, script letter J |
| kscr | <i>k</i> | N/A | N/A | /scr k, script letter k |
| Kscr | <i>K</i> | N/A | N/A | /scr K, script letter K |
| lscr | <i>l</i> | N/A | N/A | /scr l, script letter l |
| Lscr | <i>L</i> | N/A | N/A | /scr L, script letter L |
| mscr | <i>m</i> | N/A | N/A | /scr m, script letter m |
| Mscr | <i>M</i> | N/A | N/A | /scr M, script letter M |
| nscr | <i>n</i> | N/A | N/A | /scr n, script letter n |
| Nscr | <i>N</i> | N/A | N/A | /scr N, script letter N |
| oscr | <i>o</i> | N/A | N/A | /scr o, script letter o |
| Oscr | <i>O</i> | N/A | N/A | /scr O, script letter O |
| pscr | <i>p</i> | N/A | N/A | /scr p, script letter p |
| Pscr | <i>P</i> | N/A | N/A | /scr P, script letter P |
| qscr | <i>q</i> | N/A | N/A | /scr q, script letter q |
| Qscr | <i>Q</i> | N/A | N/A | /scr Q, script letter Q |
| rscr | <i>r</i> | N/A | N/A | /scr r, script letter r |

| Entity name | Characteristic glyph | Registered glyph identifier (hexadecimal) | Registered glyph identifier (decimal) | Short description |
|-------------|----------------------|-------------------------------------------|---------------------------------------|-------------------------|
| Rscr | <i>R</i> | N/A | N/A | /scr R, script letter R |
| sscr | <i>s</i> | N/A | N/A | /scr s, script letter s |
| Sscr | <i>S</i> | N/A | N/A | /scr S, script letter S |
| tscr | <i>t</i> | N/A | N/A | /scr t, script letter t |
| Tscr | <i>T</i> | N/A | N/A | /scr T, script letter T |
| uscr | <i>u</i> | N/A | N/A | /scr u, script letter u |
| Uscr | <i>U</i> | N/A | N/A | /scr U, script letter U |
| vscr | <i>v</i> | N/A | N/A | /scr v, script letter v |
| Vscr | <i>V</i> | N/A | N/A | /scr V, script letter V |
| wscr | <i>w</i> | N/A | N/A | /scr w, script letter w |
| Wscr | <i>W</i> | N/A | N/A | /scr W, script letter W |
| xscr | <i>x</i> | N/A | N/A | /scr x, script letter x |
| Xscr | <i>X</i> | N/A | N/A | /scr X, script letter X |
| yscr | <i>y</i> | N/A | N/A | /scr y, script letter y |
| Yscr | <i>Y</i> | N/A | N/A | /scr Y, script letter Y |
| zscr | <i>z</i> | N/A | N/A | /scr z, script letter z |
| Zscr | <i>Z</i> | N/A | N/A | /scr Z, script letter Z |

6 Public text

6.1 Basic mathematical and scientific symbols

6.1.1 General

```

<!-- (C) International Organization for Standardization 1991
      Permission to copy in any form is granted for use with
      conforming SGML systems and applications as defined in
      ISO 8879, provided this notice is included in all copies.
-->
<!-- Character entity set. Typical invocation:
      <!ENTITY % ISOTECH PUBLIC
           "ISO 9573-13:1991//ENTITIES General Technical //EN">
      %ISOTECH;
-->
<!ENTITY acd      SDATA "[acd      ]"--ac current-->
<!ENTITY aleph   SDATA "[aleph   ]"--/aleph aleph, Hebrew-->
<!ENTITY and     SDATA "[and     ]"--/wedge /land B: logical and-->
<!ENTITY And     SDATA "[And     ]"--dbl logical and-->
<!ENTITY andand  SDATA "[andand  ]"--two logical and-->
<!ENTITY andd    SDATA "[andd    ]"--and, horizontal dash-->
<!ENTITY andslope SDATA "[andslope]"--sloping large and-->
<!ENTITY andv    SDATA "[andv    ]"--and with middle stem-->
<!ENTITY angrt   SDATA "[angrt   ]"--right (90 degree) angle-->
<!ENTITY angsph  SDATA "[angsph  ]"--/sphericalangle angle-spherical-->
<!ENTITY angst   SDATA "[angst   ]"--Angstrom capital A, ring-->
<!ENTITY ap      SDATA "[ap      ]"--/approx R: approximate-->
<!ENTITY apacir  SDATA "[apacir  ]"--approximate, circumflex accent-->
<!ENTITY awconint SDATA "[awconint]"--contour integral, anti-clockwise-->
<!ENTITY awint   SDATA "[awint   ]"--anti clock-wise integration-->
<!ENTITY becaus  SDATA "[becaus  ]"--/because R: because-->
<!ENTITY bernou  SDATA "[bernou  ]"--Bernoulli function (script capital B)-->
<!ENTITY bne     SDATA "[bne     ]"--reverse not equal-->
<!ENTITY bnequiv SDATA "[bnequiv]"--reverse not equivalent-->
<!ENTITY bnot    SDATA "[bnot    ]"--reverse not-->
<!ENTITY bNot    SDATA "[bNot    ]"--reverse not with two horizontal strokes-->
<!ENTITY bottom  SDATA "[bottom  ]"--/bot bottom-->
<!ENTITY cap     SDATA "[cap     ]"--/cap B: intersection-->
<!ENTITY Cconint SDATA "[Cconint]"--triple contour integral operator-->
<!ENTITY cirfnint SDATA "[cirfnint]"--circulation function-->
<!ENTITY compfn  SDATA "[compfn  ]"--/circ B: composite function (small circle)-->
<!ENTITY cong    SDATA "[cong    ]"--/cong R: congruent with-->
<!ENTITY conint  SDATA "[conint  ]"--/oint L: contour integral operator-->
<!ENTITY Conint  SDATA "[Conint  ]"--double contour integral operator-->
<!ENTITY ctidot  SDATA "[ctidot  ]"--/cdots, three dots, centered-->
<!ENTITY cup     SDATA "[cup     ]"--/cup B: union or logical sum-->
<!ENTITY cwconint SDATA "[cwconint]"--contour integral, clockwise-->
<!ENTITY cwint   SDATA "[cwint   ]"--clockwise integral-->
<!ENTITY cylcty  SDATA "[cylcty  ]"--cylindricity-->
<!ENTITY disin   SDATA "[disin   ]"--set membership, long horizontal stroke-->
<!ENTITY Dot     SDATA "[Dot     ]"--dieresis or umlaut mark-->
<!ENTITY DotDot  SDATA "[DotDot  ]"--four dots above-->
<!ENTITY dsol    SDATA "[dsol    ]"--solidus, bar above-->
<!ENTITY dtdot   SDATA "[dtdot   ]"--/ddots, three dots, descending-->
<!ENTITY dwangle SDATA "[dwangle ]"--large downward pointing angle-->
<!ENTITY elinters SDATA "[elinters]"--electrical intersection-->
<!ENTITY epar    SDATA "[epar    ]"--parallel, equal; equal or parallel-->
<!ENTITY eparsl  SDATA "[eparsl  ]"--parallel, slanted, equal; homothetically
                        congruent to-->
<!ENTITY equiv   SDATA "[equiv   ]"--/equiv R: identical with-->
<!ENTITY eqvparsl SDATA "[eqvparsl]"--equivalent, equal; congruent and parallel-->

```

<!ENTITY exist SDATA "[exist]"---/exists at least one exists-->
 <!ENTITY fltns SDATA "[fltns]"---flatness-->
 <!ENTITY fnof SDATA "[fnof]"---function of (italic small f)-->
 <!ENTITY forall SDATA "[forall]"---forall for all-->
 <!ENTITY fpartint SDATA "[fpartint]"---finite part integral-->
 <!ENTITY ge SDATA "[ge]"---/geq /ge R: greater-than-or-equal-->
 <!ENTITY hamilt SDATA "[hamilt]"---Hamiltonian (script capital H)-->
 <!ENTITY iff SDATA "[iff]"---/iff if and only if-->
 <!ENTITY iinfin SDATA "[iinfin]"---infinity sign, incomplete-->
 <!ENTITY imped SDATA "[imped]"---impedance-->
 <!ENTITY infin SDATA "[infin]"---/infty infinity-->
 <!ENTITY infintie SDATA "[infintie]"---tie, infinity-->
 <!ENTITY int SDATA "[int]"---/int L: integral operator-->
 <!ENTITY Int SDATA "[Int]"---double integral operator-->
 <!ENTITY intlarhk SDATA "[intlarhk]"---integral, left arrow with hook-->
 <!ENTITY isin SDATA "[isin]"---/in R: set membership-->
 <!ENTITY isindot SDATA "[isindot]"---set membership, dot above-->
 <!ENTITY isinE SDATA "[isinE]"---set membership, two horizontal strokes-->
 <!ENTITY isins SDATA "[isins]"---set membership, vertical bar on horizontal
 stroke-->
 <!ENTITY isinsv SDATA "[isinsv]"---large set membership, vertical bar on
 horizontal stroke-->
 <!ENTITY isinv SDATA "[isinv]"---set membership, variant-->
 <!ENTITY lagran SDATA "[lagran]"---Lagrangian (script capital L)-->
 <!ENTITY lang SDATA "[lang]"---/lang O: left angle bracket-->
 <!ENTITY Lang SDATA "[Lang]"---left angle bracket, double-->
 <!ENTITY lArr SDATA "[lArr]"---/Leftarrow A: is implied by-->
 <!ENTITY lbbrk SDATA "[lbbrk]"---left broken bracket-->
 <!ENTITY le SDATA "[le]"---/leq /le R: less-than-or-equal-->
 <!ENTITY loang SDATA "[loang]"---left open angular bracket-->
 <!ENTITY lobrk SDATA "[lobrk]"---left open bracket-->
 <!ENTITY lopar SDATA "[lopar]"---left open parenthesis-->
 <!ENTITY lowast SDATA "[lowast]"---low asterisk-->
 <!ENTITY minus SDATA "[minus]"---B: minus sign-->
 <!ENTITY mnplus SDATA "[mnplus]"---/mp B: minus-or-plus sign-->
 <!ENTITY nabla SDATA "[nabla]"---/nabla del, Hamilton operator-->
 <!ENTITY ne SDATA "[ne]"---/ne /neq R: not equal-->
 <!ENTITY nedot SDATA "[nedot]"---not equal, dot-->
 <!ENTITY nhpar SDATA "[nhpar]"---not, horizontal, parallel-->
 <!ENTITY ni SDATA "[ni]"---/ni /owns R: contains-->
 <!ENTITY nis SDATA "[nis]"---contains, vertical bar on horizontal stroke-->
 <!ENTITY nisd SDATA "[nisd]"---contains, long horizontal stroke-->
 <!ENTITY niv SDATA "[niv]"---contains, variant-->
 <!ENTITY Not SDATA "[Not]"---not with two horizontal strokes-->
 <!ENTITY notin SDATA "[notin]"---/notin N: negated set membership-->
 <!ENTITY notindot SDATA "[notindot]"---negated set membership, dot above-->
 <!ENTITY notinE SDATA "[notinE]"---negated set membership, two horizontal
 strokes-->
 <!ENTITY notinva SDATA "[notinva]"---negated set membership, variant-->
 <!ENTITY notinvb SDATA "[notinvb]"---negated set membership, variant-->
 <!ENTITY notinvc SDATA "[notinvc]"---negated set membership, variant-->
 <!ENTITY notni SDATA "[notni]"---negated contains-->
 <!ENTITY notniva SDATA "[notniva]"---negated contains, variant-->
 <!ENTITY notnivb SDATA "[notnivb]"---contains, variant-->
 <!ENTITY notnivc SDATA "[notnivc]"---contains, variant-->
 <!ENTITY nparsl SDATA "[nparsl]"---not parallel, slanted-->
 <!ENTITY npart SDATA "[npart]"---not partial differential-->
 <!ENTITY npolint SDATA "[npolint]"---line integration, not including the pole-->
 <!ENTITY nvinfin SDATA "[nvinfin]"---not, vert, infinity-->
 <!ENTITY olcross SDATA "[olcross]"---circle, cross-->
 <!ENTITY or SDATA "[or]"---/vee /lor B: logical or-->
 <!ENTITY Or SDATA "[Or]"---dbl logical or-->

| | | | |
|-------------------|-------|------------|----------------------------------------------------------|
| <!ENTITY ord | SDATA | "[ord |]"--or, horizontal dash--> |
| <!ENTITY order | SDATA | "[order |]"--order of (script small o)--> |
| <!ENTITY oror | SDATA | "[oror |]"--two logical or--> |
| <!ENTITY orslope | SDATA | "[orslope |]"--sloping large or--> |
| <!ENTITY orv | SDATA | "[orv |]"--or with middle stem--> |
| <!ENTITY par | SDATA | "[par |]"--/parallel R: parallel--> |
| <!ENTITY parsl | SDATA | "[parsl |]"--parallel, slanted--> |
| <!ENTITY part | SDATA | "[part |]"--/partial partial differential--> |
| <!ENTITY permil | SDATA | "[permil |]"--per thousand--> |
| <!ENTITY perp | SDATA | "[perp |]"--/perp R: perpendicular--> |
| <!ENTITY pertenk | SDATA | "[perntenk |]"--per 10 thousand--> |
| <!ENTITY phmmat | SDATA | "[phmmat |]"--physics M-matrix (script capital M)--> |
| <!ENTITY pointint | SDATA | "[pointint |]"--integral around a point operator--> |
| <!ENTITY prime | SDATA | "[prime |]"--/prime prime or minute--> |
| <!ENTITY Prime | SDATA | "[Prime |]"--double prime or second--> |
| <!ENTITY profalar | SDATA | "[profalar |]"--all-around profile--> |
| <!ENTITY profline | SDATA | "[profline |]"--profile of a line--> |
| <!ENTITY profsurf | SDATA | "[profsurf |]"--profile of a surface--> |
| <!ENTITY prop | SDATA | "[prop |]"--/propto R: is proportional to--> |
| <!ENTITY qint | SDATA | "[qint |]"--/iiiint quadruple integral operator--> |
| <!ENTITY qprime | SDATA | "[qprime |]"--quadruple prime--> |
| <!ENTITY quatint | SDATA | "[quatint |]"--quaternion integral operator--> |
| <!ENTITY radic | SDATA | "[radic |]"--/surd radical--> |
| <!ENTITY rang | SDATA | "[rang |]"--/rangle C: right angle bracket--> |
| <!ENTITY Rang | SDATA | "[Rang |]"--right angle bracket, double--> |
| <!ENTITY rArr | SDATA | "[rArr |]"--/Rightarrow A: implies--> |
| <!ENTITY rbrbrk | SDATA | "[rbrbrk |]"--right broken bracket--> |
| <!ENTITY roang | SDATA | "[roang |]"--right open angular bracket--> |
| <!ENTITY robrk | SDATA | "[robrk |]"--right open bracket--> |
| <!ENTITY ropar | SDATA | "[ropar |]"--right open parenthesis--> |
| <!ENTITY rppolint | SDATA | "[rppolint |]"--line integration, rectangular path around pole--> |
| <!ENTITY scpolint | SDATA | "[scpolint |]"--line integration, semi-circular path around pole--> |
| <!ENTITY sim | SDATA | "[sim |]"--/sim R: similar--> |
| <!ENTITY simdot | SDATA | "[simdot |]"--similar, dot--> |
| <!ENTITY sime | SDATA | "[sime |]"--/simeq R: similar, equals--> |
| <!ENTITY smeparsl | SDATA | "[smeparsl |]"--similar, parallel, slanted, equal--> |
| <!ENTITY square | SDATA | "[square |]"--/square, square--> |
| <!ENTITY squarf | SDATA | "[squarf |]"--/blacksquare, square, filled--> |
| <!ENTITY strns | SDATA | "[strns |]"--straightness--> |
| <!ENTITY sub | SDATA | "[sub |]"--/subset R: subset or is implied by--> |
| <!ENTITY sube | SDATA | "[sube |]"--/subseteq R: subset, equals--> |
| <!ENTITY sup | SDATA | "[sup |]"--/supset R: superset or implies--> |
| <!ENTITY supe | SDATA | "[supe |]"--/supseteq R: superset, equals--> |
| <!ENTITY tdot | SDATA | "[tdot |]"--three dots above--> |
| <!ENTITY there4 | SDATA | "[there4 |]"--/therefore R: therefore--> |
| <!ENTITY tint | SDATA | "[tint |]"--/iiiint triple integral operator--> |
| <!ENTITY top | SDATA | "[top |]"--/top top--> |
| <!ENTITY topbot | SDATA | "[topbot |]"--top and bottom--> |
| <!ENTITY topcir | SDATA | "[topcir |]"--top, circle below--> |
| <!ENTITY tprime | SDATA | "[tprime |]"--triple prime--> |
| <!ENTITY utdot | SDATA | "[utdot |]"--three dots, ascending--> |
| <!ENTITY uwangle | SDATA | "[uwangle |]"--large upward pointing angle--> |
| <!ENTITY vangrt | SDATA | "[vangrt |]"--right angle, variant--> |
| <!ENTITY veeeq | SDATA | "[veeeq |]"--logical or, equals--> |
| <!ENTITY Verbar | SDATA | "[Verbar |]"--/Vert dbl vertical bar--> |
| <!ENTITY wedgeq | SDATA | "[wedgeq |]"--/wedgeq R: corresponds to (wedge, equals)--> |
| <!ENTITY xnis | SDATA | "[xnis |]"--large contains, vertical bar on horizontal stroke--> |

6.1.2 Greek Symbols

```

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ISO 8879, provided this notice is included in all copies.
-->
<!-- Character entity set. Typical invocation:
<!ENTITY % ISOGRK3 PUBLIC
"ISO 9573-13:1991//ENTITIES Greek Symbols //EN">
%ISOGRK3;
-->
<!ENTITY alpha SDATA "[alpha ]"---/alpha small alpha, Greek-->
<!ENTITY beta SDATA "[beta ]"---/beta small beta, Greek-->
<!ENTITY chi SDATA "[chi ]"---/chi small chi, Greek-->
<!ENTITY delta SDATA "[delta ]"---/delta small delta, Greek-->
<!ENTITY Delta SDATA "[Delta ]"---/Delta capital Delta, Greek-->
<!ENTITY epsi SDATA "[epsi ]"---/straightepsilon, small epsilon, Greek-->
<!ENTITY epsiv SDATA "[epsiv ]"---/varepsilon-->
<!ENTITY eta SDATA "[eta ]"---/eta small eta, Greek-->
<!ENTITY gamma SDATA "[gamma ]"---/gamma small gamma, Greek-->
<!ENTITY Gamma SDATA "[Gamma ]"---/Gamma capital Gamma, Greek-->
<!ENTITY gammad SDATA "[gammad ]"---/digamma-->
<!ENTITY Gammad SDATA "[Gammad ]"---capital digamma-->
<!ENTITY iota SDATA "[iota ]"---/iota small iota, Greek-->
<!ENTITY kappa SDATA "[kappa ]"---/kappa small kappa, Greek-->
<!ENTITY kappav SDATA "[kappav ]"---/varkappa-->
<!ENTITY lambda SDATA "[lambda ]"---/lambda small lambda, Greek-->
<!ENTITY Lambda SDATA "[Lambda ]"---/Lambda capital Lambda, Greek-->
<!ENTITY mu SDATA "[mu ]"---/mu small mu, Greek-->
<!ENTITY nu SDATA "[nu ]"---/nu small nu, Greek-->
<!ENTITY omega SDATA "[omega ]"---/omega small omega, Greek-->
<!ENTITY Omega SDATA "[Omega ]"---/Omega capital Omega, Greek-->
<!ENTITY phi SDATA "[phi ]"---/straightphi - small phi, Greek-->
<!ENTITY Phi SDATA "[Phi ]"---/Phi capital Phi, Greek-->
<!ENTITY phiv SDATA "[phiv ]"---/varphi - curly or open phi-->
<!ENTITY pi SDATA "[pi ]"---/pi small pi, Greek-->
<!ENTITY Pi SDATA "[Pi ]"---/Pi capital Pi, Greek-->
<!ENTITY piv SDATA "[piv ]"---/varpi-->
<!ENTITY psi SDATA "[psi ]"---/psi small psi, Greek-->
<!ENTITY Psi SDATA "[Psi ]"---/Psi capital Psi, Greek-->
<!ENTITY rho SDATA "[rho ]"---/rho small rho, Greek-->
<!ENTITY rhov SDATA "[rhov ]"---/varrho-->
<!ENTITY sigma SDATA "[sigma ]"---/sigma small sigma, Greek-->
<!ENTITY Sigma SDATA "[Sigma ]"---/Sigma capital Sigma, Greek-->
<!ENTITY sigmav SDATA "[sigmav ]"---/varsigma-->
<!ENTITY tau SDATA "[tau ]"---/tau small tau, Greek-->
<!ENTITY theta SDATA "[theta ]"---/theta straight theta, small theta, Greek-->
<!ENTITY Theta SDATA "[Theta ]"---/Theta capital Theta, Greek-->
<!ENTITY thetav SDATA "[thetav ]"---/vartheta - curly or open theta-->
<!ENTITY upsi SDATA "[upsi ]"---/upsilon small upsilon, Greek-->
<!ENTITY Upsi SDATA "[Upsi ]"---/Upsilon capital Upsilon, Greek-->
<!ENTITY xi SDATA "[xi ]"---/xi small xi, Greek-->
<!ENTITY Xi SDATA "[Xi ]"---/Xi capital Xi, Greek-->
<!ENTITY zeta SDATA "[zeta ]"---/zeta small zeta, Greek-->

```

6.1.3 Alternative Greek Symbols

```

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ISO 8879, provided this notice is included in all copies.
-->
<!-- Character entity set. Typical invocation:
<!ENTITY % ISOGRK4 PUBLIC
"ISO 9573-13:1991//ENTITIES Alternative Greek Symbols //EN">
%ISOGRK4;
-->
<!ENTITY b.alpha SDATA "[b.alpha ]"--small alpha, Greek-->
<!ENTITY b.beta SDATA "[b.beta ]"--small beta, Greek-->
<!ENTITY b.chi SDATA "[b.chi ]"--small chi, Greek-->
<!ENTITY b.delta SDATA "[b.delta ]"--small delta, Greek-->
<!ENTITY b.Delta SDATA "[b.Delta ]"--capital Delta, Greek-->
<!ENTITY b.epsi SDATA "[b.epsi ]"--small epsilon, Greek-->
<!ENTITY b.epsiv SDATA "[b.epsiv ]"--variant epsilon-->
<!ENTITY b.eta SDATA "[b.eta ]"--small eta, Greek-->
<!ENTITY b.gamma SDATA "[b.gamma ]"--small gamma, Greek-->
<!ENTITY b.Gamma SDATA "[b.Gamma ]"--capital Gamma, Greek-->
<!ENTITY b.gammad SDATA "[b.gammad]"--digamma-->
<!ENTITY b.Gammad SDATA "[b.Gammad]"--capital digamma-->
<!ENTITY b.iota SDATA "[b.iota ]"--small iota, Greek-->
<!ENTITY b.kappa SDATA "[b.kappa ]"--small kappa, Greek-->
<!ENTITY b.kappav SDATA "[b.kappav]"--variant kappa-->
<!ENTITY b.lambda SDATA "[b.lambda]"--small lambda, Greek-->
<!ENTITY b.Lambda SDATA "[b.Lambda]"--capital Lambda, Greek-->
<!ENTITY b.mu SDATA "[b.mu ]"--small mu, Greek-->
<!ENTITY b.nu SDATA "[b.nu ]"--small nu, Greek-->
<!ENTITY b.omega SDATA "[b.omega ]"--small omega, Greek-->
<!ENTITY b.Omega SDATA "[b.Omega ]"--capital Omega, Greek-->
<!ENTITY b.phi SDATA "[b.phi ]"--straight phi, small phi, Greek-->
<!ENTITY b.Phi SDATA "[b.Phi ]"--capital Phi, Greek-->
<!ENTITY b.phiv SDATA "[b.phiv ]"--variant phi - curly or open phi-->
<!ENTITY b.pi SDATA "[b.pi ]"--small pi, Greek-->
<!ENTITY b.Pi SDATA "[b.Pi ]"--capital Pi, Greek-->
<!ENTITY b.piv SDATA "[b.piv ]"--variant pi-->
<!ENTITY b.psi SDATA "[b.psi ]"--small psi, Greek-->
<!ENTITY b.Psi SDATA "[b.Psi ]"--capital Psi, Greek-->
<!ENTITY b.rho SDATA "[b.rho ]"--small rho, Greek-->
<!ENTITY b.rhov SDATA "[b.rhov ]"--variant rho-->
<!ENTITY b.sigma SDATA "[b.sigma ]"--small sigma, Greek-->
<!ENTITY b.Sigma SDATA "[b.Sigma ]"--capital Sigma, Greek-->
<!ENTITY b.sigmav SDATA "[b.sigmav]"--variant sigma-->
<!ENTITY b.tau SDATA "[b.tau ]"--small tau, Greek-->
<!ENTITY b.theta SDATA "[b.theta ]"--straight theta, small theta, Greek-->
<!ENTITY b.Theta SDATA "[b.Theta ]"--capital Theta, Greek-->
<!ENTITY b.thetav SDATA "[b.thetav]"--variant theta - curly or open theta-->
<!ENTITY b.upsilon SDATA "[b.upsilon ]"--small upsilon, Greek-->
<!ENTITY b.Upsilon SDATA "[b.Upsilon ]"--capital Upsilon, Greek-->
<!ENTITY b.xi SDATA "[b.xi ]"--small xi, Greek-->
<!ENTITY b.Xi SDATA "[b.Xi ]"--capital Xi, Greek-->
<!ENTITY b.zeta SDATA "[b.zeta ]"--small zeta, Greek-->

```