SME Book Publishing Style and Editorial Guide

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INTRODUCTION

A FEW WORDS ABOUT WRITING STYLE

Aim at clear, concise expression with a variety of word use and sentence structure. Although your sentences should vary in structure and length, lean toward short, simple constructions and avoid rambling complexity. Except for the necessary scientific and engineering terms, choose shorter, simpler, more concrete words that are easily visualized and avoid or minimize abstract or ponderous terms. Avoid "killing" the verb: write *applying the approach* instead of *the application of this approach*. Introduce more active voice into your text (which shortens and tightens it at the same time) by writing *the scientists performed the experiment* instead of *the experiment was performed by the scientists.*

REFERENCE MATERIALS

- Style points and book publishing guidelines—*The ACS Style Guide* (2nd ed.), *Chicago Manual of Style* (15th ed.), and *Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers* (7th ed.)
- General spelling and word usage—*Merriam-Webster's Unabridged Dictionary* (MW)
- Technical spelling and some word usage (MW generally takes precedence)—*Dictionary of Mining, Mineral, and Related Terms* (2nd ed.)
- Also refer to the Editor's Appendix for more information.

AUTHOR GUIDELINES
for Style and Design

ABBREVIATIONS AND ACRONYMS

It is important to be consistent in abbreviating or spelling out terms throughout your manuscript and to consider the needs of your audience or readers in deciding whether to abbreviate or not. If you use numerous abbreviations/ acronyms, include a glossary.

Use abbreviations for units of time and measurement: *1,367 W/m^2*. *(See also* "Numbers" and "Appendix B.")

Spell out units of measurement when not accompanied by numerals: *several millimeters.* Abbreviate *days (d), seconds (s), minutes (min), hours (h),* and *years (yr)* only in combination with other abbreviated units of measure *(24 h/d, 4 m/s, 300 d/yr).* Otherwise, spell out *(6 minutes, 24 hours, 3 days, 14 seconds).*

An acronym is an abbreviation that can be pronounced like a word *(AMAX, OPEC).* Some acronyms are so common that they are no longer capitalized (e.g., laser, radar, sonar, scuba).

An abbreviation that reads as a series of letters *(BBC, DNA)* is referred to as an *initialism.* Acronyms/ abbreviations may be used in contexts where the meaning is common knowledge and clear to readers:

AIDS	DNA	NASA	TV
ASCII	DVD	pH	U.K.
CEO	HIV	pKa *(or* pKa)	U.S.
CD-ROM	HVAC	RNA	VHS

If the acronym is less familiar and occurs more than once in a chapter or paper, it must be introduced at first occurrence. Use the acronym alone for all other occurrences in the chapter or paper.

> Rare earth elements (REEs) were originally produced in minor amounts from granitic pegmatite. Extraction from a potentially economic REE resource is strongly dependant on its REE mineralogy.

…in Figures/Tables

Because tables and figures stand alone (apart from text) it is a good idea to introduce or spell out abbreviations/ acronyms as necessary in each figure and table. Unit-of-measure abbreviations may be used in figures and tables even when they are not used with a numeral. (See "Appendix B.")

…of Foreign Terms

When an abbreviation is from a foreign language (and the letters represent the foreign language but don't directly translate to English), use the following style:

- International Bureau of Weights and Measures (BIPM, Bureau International des Poids et Mesures)
- General Conference on Weights and Measures (CGPM, Conférence Générale des Poids et Mesures)

ABSTRACTS

Use italics type for the body of an abstract. Treat the abstract and body of chapter as two entities; therefore, introduce acronyms in abstracts and reintroduce acronyms in body text. Use acronyms sparingly and only if the acronym is used more than once in the abstract.

ACADEMIC/PROFESSIONAL TITLES

Academic and professional titles such as *doctor* or *professor* and their abbreviations (e.g., Ph.D., P.E.) are not used unless they refer to a medical doctor (M.D.). *(See also* "Names")

ACKNOWLEDGMENTS

An acknowledgments section may be included as part of the front matter of a stand-alone publication or just prior to the reference list in a paper to be published in a compiled book. Acknowledgments serve to recognize the reviews, comments, and other assistance of those who helped you prepare your manuscript.

When wording the acknowledgments section, do not include academic titles, professional designations, or forms of address *(Mr., Mrs., Ms.).* Use *Dr.* only when indicating a medical doctor.

Note the U.S. spelling of *Acknowledgments* (not *Acknowledgements).*

See also "Front Matter" and "Names."

ALPHABETIZATION

Use word-by-word alphabetization for reference lists and glossaries. For reference lists, also see "Alphabetization" in the Editor's Appendix.

AM AND PM

See "Time of Day."

APPENDICES

It is often helpful to include detailed background or technical information, derivations, equations, or data in one or more appendices. For example, large, detailed tables are often included in an appendix rather than in the body of the publication. The same is true for long lists of names and addresses.

If you have more than one appendix, use letters in the titles *(Appendix A, B, C,* etc.) and include the letter of the appendix in captions for figures and tables *(Figure A.1, Table B.3,* and so forth). If you have only one appendix, no letter designation needs to be assigned. Refer to an unnumbered appendix in text with a lowercase "a" (e.g., "the appendix").

BACK MATTER

The back matter of a publication can include any or all of the following: reference list, bibliography, glossary, appendices, and index. The references usually appear immediately after the body or text of a publication, and the index is at the very end. *(See also* "Front Matter.")

BETWEEN AND AMONG

Between is used for two terms: *between two beds.*

Among is used for three or more terms: *among three choices.*

BIBLIOGRAPHY

A bibliography differs from a reference list in that it contains a list of literature related to your subject but not necessarily cited in your publication. Some modern bibliographies have titles such as "For Further Information" or "Selected Reading." Arrange the bibliographic entries alphabetically. *(See also* "Alphabetization" in the Editor's Appendix.)

BRACKETS

Use brackets to enclose editorial comments, explanations, and additions to direct quotes that are not what the person actually said or wrote:

> "This procedure represents a real breakthrough [in mining exploration]," Brown said.

Use brackets for parenthetical material inside parentheses *(see also* "Parentheses"):

> Overseas mining exploration is not part of this year's urban planning (though he recommended development of their overseas program for next year in his report [Smith 1992]).

BRITISH/CANADIAN/AUSTRALIAN SPELLINGS

Use U.S. spellings, not British, Canadian, or Australian (e.g., color, *not* colour). Retain British/Canadian/ Australian spellings only for names of companies, organizations, societies, etc., and for published titles of publications.

BULLETED LISTS

Bulleted lists can highlight important items, draw attention to main points, or list information so readers can find it easily. If you have a single item to highlight, indent it and omit the bullet.

When items in lists are referred to elsewhere in text, numbered or lettered lists are preferable to bullets, for reference purposes. Numbered lists are also used for procedural steps *(see also* "Numbered Lists").

Following are guidelines for including bulleted lists in your manuscript:

- Bulleted lists should be parallel in construction. The items should consistently begin with nouns or verbs, but not both. Items should be complete sentences, or phrases, but not both.
- Use colons after independent clauses that introduce lists. Do not use colons after verbs or prepositions that introduce lists.
- Separate items by commas unless internal commas are required, in which case all items should be separated with semicolons.
- Items that are subordinate to bulleted material can be set off with en dashes:
  - Make sure you have at least two items at all levels.
  - Indent all items as in this example.
- All bullet items begin with a capital letter.
- Omit periods at the ends of bulleted items unless they are complete sentences.

CAPITALIZATION

...of Book Elements

- Within text, capitalize the names of book elements when they refer to a specific titled and numbered part: *Figure 1, Table 2, Chapter 5, Appendix A, Section 4.2.*
- Use lowercase when book elements appear without a number: the preface, the contents, the introduction, the references, the appendix.
- Do *not* capitalize the word *page* with a number: *on page 3.*
- Capitalize names of sections cited within chapters and add quotation marks. *(See also* "Citing Sections Within Chapters.")

...of *Earth*

Generally use lowercase for *earth* when used with *the* and capitalize when referred to by name: *the earth, to Earth, on Earth, unlike Earth.*

...*in* Figures and Tables

Use sentence-style capitalization for figure captions and table heads. The words *FIGURE* and *TABLE* are in all capitals in figure captions and table heads only. Labels and axes wording for figures, and row headings in tables take headline-style capitalization. Column headings in tables take headline-style capitalization.

...of Geologic Time

- The words *age*, *eon*, *epoch*, and *era* are all lowercase (e.g., Permian age).
- The words *early*, *late*, and *middle* are usually capitalized, with exceptions:
  - Early Cambrian *(but* early Middle Cambrian)
  - Late Quaternary *(but* in late Pleistocene times)
  - Middle Cambrian

...of Geographic Areas

- The regions of the United States are capitalized when they appear by themselves: *the East, the Southwest, the North,* and *the South*.
- General areas of the country or of a state are generally not capitalized: *the eastern United States and northern New Mexico*, but *Southern California.*
- The words *formation, group, series, member, limestone, sandstone,* and *shale* are capitalized when preceded by a definite name; for example, *Mansfield Formation, Spar Mountain Member,* and *Salem Limestone.* When these terms are used more generically, they are lowercased; for example, *the Salem limestones* or *the sandstone from the Spar Mountain Member.* Other examples of upper- and lowercase usage are given below.

  Examples:

arc	Kootenay arc; Asturian arc
arch	Cincinnati arch
Area	Danner Area; San Francisco Area, *but* San Francisco Bay area
aquifer	Upper Klamath aquifer; Mississippi River alluvial aquifer
anticline	Ventura anticline
antiform	Narcea antiform
Basin	Danner Basin, *but* Danner River basin
belt	North Carlin belt
City	New York City, *but* city of New York
Complex	Rarney Ridge Complex, *but* the complex
deposit	Danner deposit
District	Danner District, *but* Danner and Sykes districts
Formation	Morrison Formation
Group	Danner Group
Margin	Chukchi Margin *but* the margin
Massif	Iberian Massif
Member	Niobrara Member
ore body	Danner ore body
orogen, orogeny	Variscan orogen; Acadian orogeny
process	Danner process
Province	Danner Province, *but* Danner and Sykes provinces
Reef	Merensky Reef
region	Danner region
Reservoir	Chatfield Reservoir, *but* Chatfield and Cherry Creek reservoirs
Rise	Chukchi Rise, *but* the rise
River	Danner River, *but* Danner and Sykes rivers; the river Thames
salt formation	Danner salt formation
seam	Pittsburgh seam
Series	Grenville Series, Holocene Series
Shelf	Lennard shelf
State	Danner State, *but* the state of Danner; New England states

Subgroup	Danner Subgroup
Supergroup	Dykwa Supergroup
syncline	Rainbow Basin syncline
Township	Danner Township
trend	North Carlin trend
tuff; Tuff	generally lowercase (glassy tuff; tuff of Stony Point); capitalize for specific names (Stony Point Tuff; Campanian Tuff, Neapolitan Yellow Tuff)
Trough	Puget Trough, *but* the trough
uplift	Ozark uplift
Valley	the Nile Valley, *but* the Nile River valley
vein	Delta vein
vein system	Danner vein system
zone	Lower zone, Upper zone, Critical zone

...of Head Levels

The following rules apply to head levels, titles, figure text, and table column heads:

- Capitalize all nouns, pronouns, verbs, adjectives, adverbs, and subordinate conjunctions regardless of number of letters.
- Capitalize first and last words of a heading, regardless of part of speech.
- Capitalize main words in a unit modifier: High-Temperature System, Cross-Linked Polymer.
- Do not capitalize coordinating conjunctions (and, but, or, nor, yet, so), articles (a, an, the), or prepositions less than five characters (After, Between, Versus, Through, with, from) unless they're the first or last word in the heading.
- Capitalize particles that are part of phrasal verbs (e.g., Build Up, Hand Out, Set Up) and phrasal adjectives (e.g., In-Plane Atoms).
- Lowercase *to* and *as* in any context, for simplicity's sake.

...of Mine Names

Generally, the words *mine, shaft, pit, preparation plant,* or *quarry,* or the words of a particular type of mine such as *diamond mine* are lowercase, unless words reflect the actual name of that particular mine. Most actual mine names do not use the word *mine* but a derivative such as *Mining* or *Mines.*

Ajax operation	Cane Creek potash mine	Madge quarry
Clara plant	Clara mine	Lucky Boy mine shaft
Clara Mining Company	MPI Mines Ltd.	Anaconda pit

...of Proper Names

Capitalize proper names of programs, groups, organizations, companies, titles (when they *precede* a name), specific geographic areas or features, and ethnic groups:

the U.S. Bureau of Mines	Lake Powell
the Colorado River	the Colorado and Platte rivers
the Southwest *(but* southwestern)	Southern California
Black, Hispanic, Asian, or Caucasian Americans	President Lincoln *(but* president of the company)

...of Taxonomic Names

In scientific writing about botanical and zoological divisions, capitalize the names of all those higher than species: genera, families, orders, classes, and phyla. Use italics for genera, species, and varieties.

Spell out and capitalize the genus at first mention: *Escherichia coli.* Abbreviate the genus after the first mention: *E. coli.*

...of Titles

State is capitalized when used with the entire official name *(the State of Colorado),* but not in general *(the authority for enforcing this regulation resides with the states).* Titles and names of groups are lowercased when they do not precede or are not part of proper names:

the president of the country *(but* President Lincoln)
the division, branch, section, or group and their managers
the chair of the committee *(but* Chairman Smith)

...of Trade Names

Trade names are usually capitalized. It is not necessary to include a trademark (™) symbol or other symbol (e.g., ®) if the term is capitalized.

CENTURY

Spell out particular centuries from first through ninth; use numerals for 10th and up: *ninth century, 21st century*.

CHEMICAL COMPOUNDS/MOLECULAR FORMULAS

It is not necessary to spell out single elements from the periodic table (e.g., Au, Ag, S, Mo). But do spell out compounds (e.g., NaCN, NaOH, $CaCO_3$) on first mention. It is acceptable to use the abbreviation thereafter, even when it is not accompanied by a numeral (e.g., chlorine and/or Cl_2):

- When first mention appears with numerical units, introduce parenthetically after the compound: *...assaying 30% P_2O_5 (phosphorus pentoxide).*
- When first mention is introduced without numerals, spell out the compound with the abbreviation following in parentheses: *...with calcium fluoride (CaF_2).*

Chemical and molecular terms are usually not hyphenated even when they are used as modifiers (e.g., carbon dioxide levels, hydrogen ion activity). Prefixes in chemical terms are hyphenated (e.g., L(+)-2, 3-butanediol and *trans*-glycol.)

Use a small times dot (·) and no space on either side for chemical compounds (e.g., $CuSO_4 \cdot 5H_2O$). Do not use a large times dot (•).

CITING SECTIONS WITHIN CHAPTERS

Use quotation marks for enclosing titles of specific headings within chapter text:

A complete description is given in the “Materials and Resources” section.

but

The preface [introduction, glossary, appendix] describes...

COLONS

Colons formally introduce a list or series, a question, or an amplification. Colons also separate the parts of a ratio.

We tested three types of rock: granite, gypsum, and slate.
We added enough water to obtain a 3:1 dilution.

Colons usually do not follow such terms as *that is, namely,* or *such as.* When a verb or preposition precedes a list *(includes, to, with, between,* etc.), you can omit the colon. When a noun *(the following)* precedes the list, the noun usually takes a colon.

COMMAS

The *Chicago Manual of Style* (15th ed.) is an excellent guide to using commas. Common sense can also be a reliable guide; if you think your readers need to pause, offer them a well-placed comma. *(See also "e.g.* and i.e.," "Months and Years," and "States and Provinces.")

- Use the serial comma before conjunctions (e.g., igneous, sedimentary, and metamorphic rocks).
- Separate the parts of a compound sentence (unless it is very short) that are linked by a coordinating conjunction—*and, but, or,* or *nor*—when each part has its own subject and verb (e.g., The subsystem will be delivered in two weeks, and we will modify it for deposition work.).
- Set off nonrestrictive or nonessential (parenthetical) words, phrases, and clauses from the rest of the sentence; in other words, the commas signal that the information between them is something extra—and not essential to the meaning of the sentence (e.g., The subsystem, which takes a day or two to install, will be delivered in two weeks.).
- Do not use commas to separate compound subjects (more than one subject) from a single verb or compound verbs from a single subject:

  Theorists and nonspecialists alike agree on the importance of this discovery.
  The researchers rolled out the metal sheet and formed it into coils.

- Commas are not necessary when words, phrases, or clauses are restrictive or essential to the meaning of a sentence:

  Only the sensors that were attached to the outer edge failed.
  The system will work efficiently if it includes storage.

- Do not use commas as decimal points (European convention); use periods.

COMPANY NAMES

In running text, give company names in full at first mention (e.g., spell out *Company* and *Corporation),* although tags such as *Inc.* and *PLC* (which are rarely spelled out) may be omitted unless relevant to the context. It is not necessary to include company locations.

Change company names that are all caps to initial caps (e.g., change from *the RAND Corporation* to *the Rand Corporation).*

Retain midcaps in company names: *HarperCollins, SmithKline.*

CONVERSION TO SI UNITS

See "Metric and Customary Units."

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COUNTRIES

Pay particular attention to names of countries and the time frame to which they are referenced because many have undergone name changes in recent years (e.g., the Congo is now Zaire; Czechoslovakia is now divided into two countries: the Czech Republic and Slovakia). Use *the former U.S.S.R.* when referring to the former country and

Russia when referring to the present-day country. Use *U.K.* and *U.S.* as adjectives and *United Kingdom* and *United States* as nouns. Use *USA* only in postal addresses.

CURRENCY

Use the dollar sign for costs under $1 million: *$0.25; $0.08–$0.10;* and *$200,000.* For millions and billions of dollars: *$3.5 million, $1.5–$2.0 million,* and *$2 billion.* Repeat dollar signs in ranges: *$1.5–$2.0 million.*

If distinction from U.S. dollars is necessary, use the following symbols for currencies from selected countries:

US$100 (United States) A$100 (Australian) Can$100 (Canadian)

DASHES

Em Dashes

An em dash (—) is longer than both an en dash (–) and a hyphen (-). Em dashes may be used to amplify or explain an element or to set off words that would otherwise be misunderstood:

> Demand depends on the necessity for this vital construction material—steel and its alloys.
> All three parameters—height, weight, and length —were measured.

En Dashes

An en dash (–) is slightly longer than a hyphen (-). Use the en dash in the following situations:

- Between spans of three or more numbers: *6–8 cm, 12–24 hours*
- Between ranges of months, years, or pages: *March –April, 1960–1968, pp. 43–56*
- Between mixture components (en dash or slash): metal–ligand mixture or metal/ligand mixture; gas–liquid interface or gas/liquid interface
- For single bonds: C–H distances, C–C bond
- To mean the equivalent of *and, to,* or *versus* in two-word concepts where both words are of equal weight:

acid–base titration	carbon–oxygen bond	cost–benefit analysis
dose–response relationship	log–normal function	metal–metal bonding
oxidation–reduction potential	metal–ligand complex	mineral–water system
Gaudin–Schumann equation	Eh–pH curve	pulp–froth interface

DATA IN TABLES

Place a zero to the left of the decimal for any number less than 1 in both text and tables. Align columns of data vertically on the decimals. When the units of measurement differ in a column of data, though, this alignment isn't necessary. For clarity, if your table includes cells that are empty or contain dashes, consider adding a footnote(s) to explain what the cells or dashes represent. *(See also* "Numbers" and "Tables.")

DATES

Spell out full dates in running text: *January 1, 2002.* Months and years may be abbreviated in tables to save space.

DEGREE SYMBOL

The degree symbol is printed between the number and the symbol for the temperature scale, without spaces (e.g., 36°C and 85°F). In a range, only the degree symbol is repeated (e.g., 32°–36°C). Note that kelvins are expressed as K without a degree symbol (e.g., 85 K).

DOLLARS

See "Currency."

DUE TO AND BECAUSE OF

Due to is an adjective phrase that must modify a noun, not a verb. *Because of* is an adverb phrase that modifies a verb, not a noun.

Examples:

> The response is due to hemimicelle formation (modifies the noun *response); not* The response is because of hemimicelle formation.
>
> The plant closed because of declining metal prices (modifies the verb *closed); not* The plant closed due to declining metal prices.

E.G. AND I.E.

Avoid *e.g.* (which means *for example)* and *i.e.* (which means *that is)* in running text. Use the spelled-out forms in running text. Place commas after *e.g.* and *i.e.* and use only in parenthetical material (e.g., *like this).*

Do not use *etc.* at the end of a list that is introduced by *e.g.*

ELLIPSES

When you want to leave out part of quoted material, you can use ellipsis marks (three dots) to indicate the omission:

> Thus, if some particles were retained in an oil-layer…[the process] was spoken of as *bulk-oil flotation.*

Retain a period at the end of a sentence, even after adding three ellipsis dots. When you add a word (or words) to a quote for clarity, enclose that addition in brackets to show that it isn't part of the original quote.

See also "Quotations."

EM/EN DASH

See "Dashes."

EPA AND USEPA

In general, use the acronym *USEPA,* not *EPA,* for the U.S. Environmental Protection Agency. Alphabetize under *U* in a reference list.

EQUATIONS

Authors are responsible for verifying the accuracy of equations before submitting their manuscript to SME. Please adhere to the following conventions when preparing your document:

- All terms should be defined by use of a "where" list. Variables must be defined in the where list at least once in the chapter but do not need to be redefined in each subsequent where list unless the meaning has changed from one equation to another.
- Enumerate equations by chapter (e.g., 3.5) or sequentially if there are no chapter numbers (e.g. 1, 2, 3, etc.). Only equations referenced elsewhere in text need to be numbered (it is acceptable, however, if all are numbered). Center the equations, and right -justify the equation numbers (see Example 1).

- Variables that are italicized in an equation should be italicized in text as well. Do not use italic type for Greek variables.
- Use regular type for acronyms used as variables (e.g., DOF for degrees of freedom); numbers are typically not italicized.
- Where lists may be in paragraph or list format (see Examples 1 and 2, respectively). Indent and align the equal signs in list format.
- When words/phrases are used in equations, use lowercase (see Example 1).
- When referring to equations in text, capitalize the word *Equation* and include the number without parentheses (e.g., as written in Equation 3.5).
- Do not use punctuation (e.g., comma, period, semicolon) at ends of equations.

Example 1:

$$\text{ratio of reduction } (R_r) = F/P \qquad \text{(EQ 5.6)}$$

where F is the feed and P is the product.

Example 2:

Calculate an initial sample size using the following equation:

$$n = (Z_{\alpha})^2 (s)^2 / (B)^2 \qquad \text{(EQ 5.7)}$$

where

n = uncorrected sample size estimate
Z = standard normal coefficient
s = standard deviation
B = desired precision level expressed as half the maximum acceptable confidence interval width

ET AL.

Use *et al.* in parenthetical references citations for three or more authors *(Smith et al. 2005).* It is also acceptable to use *Smith et al. 2005* or *Smith and others (2005)* or *Smith and colleagues (2005)* in running text.

Do not use a comma before *et al.* when it follows a single item (e.g., Smith et al. 2004); Use a comma before et al. when it follows two or more names (e.g., Smith, Jones, Franklin, et al. 2004).

ETC.

It is acceptable to use *etc.* in parenthetical material, but change to *and so forth* in running text. Do not use *etc.* at the end of a list that is introduced by *e.g.*

FEWER AND LESS

A general rule for deciding when to use *fewer* and when to use *less* is that *fewer* describes people and things that can be counted *(fewer researchers are studying this; we are conducting fewer experiments)* and *less* describes things that are expressed in amounts or as mass *(less material was covered in this conference; we added less phosphorus to the film).* "Fewer in number; less in amount" is a good memory device.

FIGURES

Provide a clear printout of each figure (even if you supply an electronic file) on a separate page with the accompanying figure caption. *(See also* "Graphics Preparation.") If taken from a copyrighted source, include the

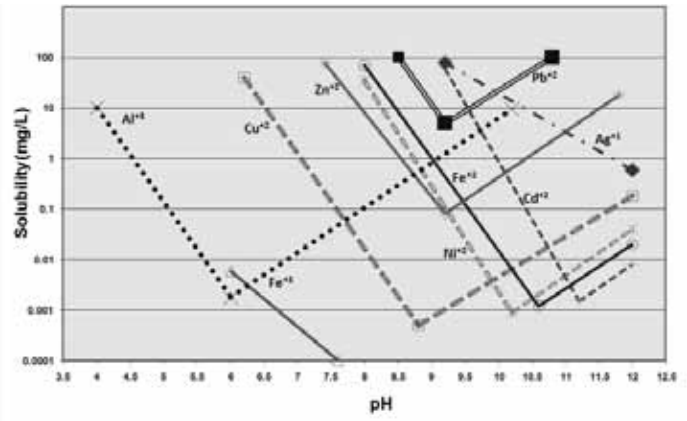
source of each figure on a separate line above the caption. Number figures by chapter; for example, the second figure to appear in Chapter 3 would be numbered *Figure 3.2.* For papers that will be included in a proceedings, number as *Figure 1, Figure 2,* and so forth. Be sure all figures are referenced in the text.

Figure captions (except for the word *Figure* itself) take sentence-style capitalization (except for capitalized acronyms and proper names). There is no punctuation at the end of a caption, unless the caption has more than one sentence (in that case, punctuate the caption like running text).

Within the figure, the terms and other elements take headline-style capitalization. Units of measure are in Roman following a comma, not in parentheses.

Figures should be consistent (size and format), legible, and understandable, and all the terms in them should be clear and correspond to terms in the text. For example, if text measurements are in nanometers, the scales in the figures that illustrate the text should also be in nanometers.

Example:



Source: Adapted from Stumm and Morgan 1995.

FIGURE 3.2 Metal hydroxide solubility versus pH

FOOTNOTES

In SME publications, footnotes contain detailed explanatory or supplementary information and references contain citations of other works. Footnotes are marked with asterisks, daggers, double daggers, section symbols, and so on (* † ‡ §, ** †† ‡‡ §§, etc.), both in text and at the bottom of the page, rather than with numbers. Footnote symbols are printed outside most punctuation marks but inside dashes:

> The experiment took place in February.*
> We discussed these three necessities for writing†—time, ownership, and response.

FOREIGN WORDS, PHRASES, AND ABBREVIATIONS

Use italics for less-common foreign words *(carpe diem, chacun à son gout, fait accompli).* Do not use italics type for common foreign words (a priori, e.g., et al., i.e., in vitro, in situ). *See also* "Abbreviations and Acronyms."

FRACTIONS

Simple fractions can be written out and hyphenated in text (e.g., one-tenth, one-half, three-fourths). Complex fractions can be printed with numerals separated by a solidus (e.g., 1/64 and 24/32). *See also* "Equations."

FRONT MATTER

Front matter for a book typically includes the following (in this order):

- Title page, which includes the names of all authors and authors' affiliations, including city/state location
- Table of contents (but there is no need to include page numbers as they will be generated automatically at the end of a book's production)
- Foreword, which is typically written by a prominent person (not the author)
- Preface, which generally includes reasons for undertaking the work, methods of research, and history of the work
- Acknowledgments—if lengthy, a separate acknowledgments section, which identifies those individuals the authors wish to acknowledge, should be included; if the acknowledgment is not lengthy, it can be part of the preface.

GENDER-NEUTRAL LANGUAGE

Authors who try to avoid gender connotations often ask, "How can I include females in my writing without endlessly repeating *he or she* or using such unpronounceable constructions as *s/he?"*

Some good solutions are to use a neutral noun rather than a pronoun *(researcher, employee, staff member, worker),* or a third-person plural pronoun *(they, them),* or to rewrite the sentence in another way to eliminate the need for a third-person singular pronoun such as *he* or *him.* These forms are not universally accepted as neutral pronouns.

GEOGRAPHIC AREAS/GEOLOGIC NAMES

See "Capitalization...of Geographic Areas."

GLOSSARY

Glossaries define special or technical terms, and abbreviations or acronyms. Include them in publications that contain many terms requiring definition. Glossaries usually are placed at the end of a document.

GRAPHICS PREPARATION

There are many acceptable graphic formats that can be pasted into your Word document. Word may convert or modify your figures to fit their file structure. Please check that the PDF you submit properly displays all detail of your images. Problems are commonly caused by patterned fills or missing fonts.

Color and Shaded Graphics (3-D charts, shaded graphics, etc.)

Color will be retained in PDFs and eBooks, but it is printed in black (grayscale) in most books. The color red, for example, provides good contrast onscreen but converts to medium gray when printed in black, often blending into the image. Always print your figures using a black and white printer (or settings) to see how color will appear in the printed book.

Line Art Images (charts, CAD drawings, illustrations, etc.)

If you are unable to import an original graphic file or convert it to a format that will paste into your Word document, you may need to scan the image.

Scan line art at 800 pixels per inch (dpi) or 354 pixels per cm (dpc) at final size. In general, images will be sized no larger than 4.5 × 3.5 inches unless there is an extraordinary amount of detail in the graphic. These images may be submitted as .eps files.

Photographs (digital and print photographs)

Digital photograph files should be included at 300 dpi or 118 dpc at final size. Digital photos (at 72 dpi) need to be 4× the final output size for good print reproduction.

Print photographs may be scanned at 300 dpi at final size.

GREEK LETTERS

Greek letters are often used in equations. Be sure to distinguish the letters clearly from each other and from regular letters.

When you include Greek letters in a glossary or abbreviations list, alphabetize them according to their place in the Greek alphabet.

HARDNESS

Express measures of hardness using the following formats:

Brinell hardness number: Bhn
Diamond pyramid hardness: Dph
Mohs: 2.5 (not 2½)
Rockwell "C" (or other letters): Rc
Vickers hardness number: Vhn

HEADINGS

Use the following examples for heading levels in the manuscript:

Title: The title of your paper should be bold, initial caps, centered, standing alone on a line with an extra space below:

Geochemical Behavior of Ferric Arsenates

Level 1 Heads: These heads should be bold, all caps, flush left, standing alone on a line with an extra space above and below:

SITE DESCRIPTION

Level 2 Heads: Level 2 heads should be bold, initial caps, flush left, standing alone on a line with an extra space above and below:

Tailings Solids of the Plains

Level 3 Heads: This level head should be bold, italics, initial caps, flush left, standing alone on a line with an extra space above and below:

Alkalinity Consumption

Level 4 Heads: Level 4 heads should be bold, indented, sentence style, and end with a period. The head then leads into the paragraph that follows:

Water coagulation. Comparing the initial aqueous-phase acidity…

Level 5 Heads: Level 5 heads should be bold, italics, indented, sentence style, and end with a period. The head then leads into the paragraph that follows:

Alkaline ionized water. Comparing the final acidity…

HYPHENS

Modern style and usage guidelines have changed some traditional rules for using hyphens. For example, the use of a hyphen between an adverb ending in *-ly* and another word in a unit modifier has been dropped (e.g., heavily skewed results, partially hidden cameras).

...and Ambiguity

SME style favors retaining the hyphen in other unit modifiers (e.g., 5-year plan) unless the unit modifier is so well known that its meaning isn't likely to be misunderstood (e.g., high school students).

Hyphens are indispensable, however, in unit modifiers that are ambiguous or could be misunderstood without the hyphen. Suppose, for example, you were to write six-foot tall person rather than six-foot-tall person. Both phrases indicate that you're talking about a tall person, but one of the phrases confuses you about how many feet he or she has. Therefore, hyphens can still be very helpful (e.g., on-site experiments, rot-producing fungus, fatigue-induced wear).

...and Capitals

When both words of a unit modifier are capitalized, they are not hyphenated: *Bronze Age tools, Vietnam Era veterans, Mining Program objectives.*

...and Compounds

Use hyphens in compounds: *half-life, cross-link, back-reaction.*

...and Double Surnames

Use a hyphen in hyphenated surnames: *Robert Baden-Powell, Joseph-Louis Gay-Lussac, Jackie Joyner-Kersee*

but

Use an en dash between names of equal weight: *Bond–Miller equation.*

...and Foreign Terms Used as Unit Modifiers

Use hyphens for foreign terms used as unit modifiers unless the term is uncommon and therefore in italics: in-situ evaluation in-vivo reactions, ad-hoc committee, *carpe diem* definition.

...and Fractions

Use hyphens in fractions such as *one-half, one-ninth, three-fourths.*

...and Moved Modifiers

When you move a unit modifier so that it follows the noun rather than coming before it, omit the hyphens:

state-of-the-art equipment, *but* equipment that reflects the state of the art
last-minute adjustments, *but* adjustments made at the last minute
on-site experiments, *but* experiments done on site

...and Numbers

When using numbers in unit modifiers, retain all the necessary hyphens:

2-in.-diameter tubes 13-cm-wide substrate 50-Å-thick film

Do not use hyphens in unit modifiers that use symbols as adjectives (–, +, >, etc.):

–100 mesh size fraction, *but* minus-100-mesh size fraction

...and Prefixes

Hyphens do not follow most prefixes (such as *pre-, post-, multi-, sub-).* Use hyphens in the following situations:

- Between a prefix and a proper noun: non-Newtonian, non-SME, post-Vietnam
- Between some repeated consonants: non-native, non-nuclear, sub-bandwidth
- With words of five or more syllables: post-reorganization, post-mineralization

...and Ranges

Hyphens also show ranges, but en dashes, if available, are preferable *(see also* "Dashes"); e.g., 32°–36°C and 3–5 cm.

Suspended hyphens are printed like this: *3- to 5-cm apertures, or 3–5-cm apertures.*

...and Two-Word Compounds

non-radiation-caused effects
non-tumor-bearing organ
pre-steady-state condition

...and Two-Word Verbs

air-dry freeze-dry jump-start vacuum-dry

...and Unit Modifiers

above-average results
time-dependent reaction
high-performance module
free-energy radical
solid-state reaction
first-order reaction
silver-coated electrode
high-temperature dose
least-squares analysis
water-soluble mixture
high-frequency transition
low-pressure density
higher-temperature values
long-chain enzyme
blue-green solution

but

very well studied hypothesis, very high density lipoprotein
Exception: particle size distribution

...and Unit Modifiers of Three or More Words

signal-to-noise ratio root-mean-square analysis high-molecular-weight compound

I.E.

See "E.G. and I.E."

ITALICS

…for Emphasis

Use italics to emphasize a word or phrase that deserves special attention (but sparingly).

…for Foreign Words

Italicize uncommon foreign words and phrases as *supra, infra,* and *inter alia;* however, if the word or phrase is commonly used in the field, omit the italics (ad hoc, a priori, de facto, et al., ibid, in absentia, in situ, per se).

…for Hyphenated Prefixes

Italicize hyphenated prefixes (such as *cis-*, *trans-*, *o-*, *m-*, and *p-)* to chemical formulas: *trans*-1,2-dibenzoylethylene, and *trans*-glycol.

…for Published Documents

Use italics for the titles of brochures, reports, books, and the names of trade journals and magazines. (Note that names of trade journals and magazines will be spelled out in text but abbreviated in reference lists. *See also* the Editor's Appendix.)

Stability in Surface Mining
FY 1999 Annual Report
Gone with the Wind
Applied Physics Letters
Science
Mineral Commodity Summaries

…for Taxonomic Names

Use italics for genera, species, and varieties: *Clostridium thermocellum* and *C. thermocellum.*

…for Words as Words

Use italics when referring to a word as a word or to a phrase as a phrase:

The word *footnote* is often used in place of *reference*.
These labels should have *handle with care* printed on them.

NOTE: Generally, no italics or quotes are used for informal definitions, often expressed by the words *called, so-called, referred to as, also known as, defined as.* See also "Quotation Marks vs. Italics."

JUNIOR/SENIOR

Do not use commas before *Jr., Sr., III,* and so forth (e.g., John Smith Jr.). In reference lists, use the following format:

Smith, A.E., III. 1960.

LISTS

Following are guidelines for including lists in your manuscript *(see also* "Bulleted Lists" and "Numbered Lists"):

- You may use bulleted or numbered lists.
- Use numbered lists for steps or procedures, if you'll be referring to a list element later, or when introducing the number of items in the list. For example: The following *three* items...
- You should include at least two items in a bulleted or numbered list.
- Bulleted and numbered lists are indented to the first tab.
- Lists should be parallel in construction. The items should consistently begin with nouns or verbs, but not both. Items should be complete sentences, or phrases, but not both.
- Use colons after independent clauses that introduce lists. Do not use colons after verbs or prepositions that introduce lists.
- Separate items by commas unless internal commas are required, in which case all items should be separated with semicolons.

Run-in Lists

For short lists, use *(1)* and *(2)* in running text, not *1)* and *2)* (note open and closed parentheses).

Examples:

You are advised to pack (1) warm clothing, (2) food, and (3) shelter items.

Data are available for *three* groups: (1) rocks and minerals; (2) commodities, markets, and uses; and (3) transportation.

When each item is a complete sentence, use either a bulleted or numbered list format.

Lists Punctuated as Sentences

Example:

Reporting for the committee, Smith noted that

1. A fundraising campaign director was being sought;
2. The salary for this director, about $50,000 a year, could be paid; and
3. The fundraising campaign would be launched in the spring of 2005.

MATHEMATICAL SYMBOLS

Print most mathematical symbols used as operation signs with a space on both sides:

$T_{in} - T_{amb}$ $a + b$ $x = y^2$

The exception is the solidus (/): *a/b.*

Do not leave a space between numerals and the symbols for degrees, dollars, cents, and percentages (°, $, ¢, %); e.g., 52%. Don't leave a space between symbols such as >, <, ³, and the numeral unless these are the operation signs in an equation. Do leave a space between numerals and symbols of measurement such as *cm* and *Å: 2.5 cm (see also* "Numbers" for examples).

MESH SIZES

It is acceptable to mix the following usages, but try for consistency within chapters.

minus 10 mesh *or* –10 mesh (note the use of an en dash instead of a hyphen)
plus 10 mesh *or* +10 mesh
–10 mesh fraction *or* minus-10-mesh size fraction
40/60 mesh
325 mesh
80% passing 20 µm
80% passing 325 mesh

Two common mesh scales are the Tyler Standard Scale (Tyler Series) or the U.S. Sieve Series (U.S. Standard Series).

Hyphenate mesh sizes when used as adjectives (e.g., a 325-mesh size, 1,400-mesh screens) except with adjectival forms (e.g., ~325 mesh size, >325 mesh size).

For ranges, an en dash can be used in most cases, but it is preferable to use *to* for adjectival forms: *100–325 mesh, ~100 to 325 mesh; <100 to 325 mesh.*

METRIC AND CUSTOMARY UNITS

SME authors are responsible for converting English units of measurement to SI (International System of Units) values. Unless it is inappropriate (for example, when writing about 1-in. pipe or 2 × 4 lumber), the metric system is the standard for SME publications. (A conversion table is included in Appendix C.)

- Metric is the preferred unit of measure for all SME publications. Customary units can follow metric units in parentheses: *38.1 m (125 ft).*
- Customary units for industry standard measurements (common drill sizes, U.S. Standard fastener sizes, commercial pipe sizes) are acceptable without conversion (e.g., 2 × 4 lumber, 1-in. pipe, half-inch drill).

See Appendix B for SME units-of-measure abbreviations.

MOLECULAR FORMULAS

See "Chemical Compounds/Molecular Formulas."

MONTHS AND YEARS

Spell out the names of months in text when used alone or with a year (e.g., The project will continue until December 2001.). In tables, months may be abbreviated to save space.

When the day is included, put a comma after the year if the sentence continues (e.g., On October 1, 2001, the operation began.).

NAMES

Generally, use initials for the first and middle names of persons, and omit titles and form of address such as *Dr., Professor, Mr., Mrs.,* or *Ms.* Use *Dr.* only when it indicates a medical doctor. *(See also* "Academic/Professional Titles.")

NON-SI UNITS OF MEASURE

See "Metric and Customary Units."

NUMBERED LISTS

Following are guidelines for including numbered lists in your manuscript:

1. Use numbered lists for procedural steps and for items in lists referred to in text by number.
2. Make sure you have two or more items at all levels.
    a. Use lowercase letters to set off subordinate items.
    b. Indent all items.
    c. Omit periods at the ends of items unless they are complete sentences.
3. Use colons after independent clauses that introduce lists.
4. Do not use colons after verbs or prepositions that introduce lists.
5. Separate items by commas unless internal commas are required, in which case all items should be separated with semicolons.

NUMBERS

General Rules

Use numerals with units of time and measurement, like this: *2 days, 3 weeks, 1 month,* and *87 years.* The words *days, weeks,* and *years* are not abbreviated unless used in combination with other units *(4 d/wk, 8 h/d);* the word *month* is never abbreviated.

Abbreviate units of measure when they accompany numerals: *5 mL.* Spell out units of measure that do not follow numerals: *several milligrams, a few milliliters.*

When a sentence starts with a specific quantity, spell out the number as well as the unit of measure: *Fifteen milliliters of chlorine was added to the tube.* Even when a sentence starts with a spelled-out quantity, use numerals when appropriate in the rest of the sentence: *Eight milliliters was added but 5 mL was tested.*

Separate groups of three digits with a comma:

50,182 113,728 2,225,000 8,712

Typically, it isn't necessary to spell out the unit of measure on first use for a technical audience. But if you think a reader might not know the unit, spell it out on first use and use the abbreviation thereafter.

...and En Dashes

When either one or both numbers are negative or include a symbol that modifies the number, use *to* or *through* instead of the en dash:

–20 to +120 K	–145 to –30°C	10 to >600 mL	~50 to 60

Suspended hyphens: 3- to 5-cm apertures or 3–5-cm apertures

...and Fractions

Spell out and hyphenate fractions whose terms are both less than 10 (e.g., one-fifth, one-half, 1/20 of the subjects; 1/12 of the volume). Hyphenate fractions whether used as nouns or adjectives.

...and Hyphens

Hyphenate most units of measure as unit modifiers:

5-mL flask	10-mg sample	two-phase system
100-mm-thick layer	3-year-old child	100-nm-diameter droplet
13-cm-wide substrate	4 L/s *but* 4 seconds	4 h/d *but* 4 hours

a 1- to 2-h sampling time *(or* a 1–2-h sampling time)
a 25–30-mL aliquot *(or* a 25- to 30-mL aliquot)
100-, 200-, and 300-mL aliquots
25- to 50-mg samples *(or* 25–50-mg samples)

Do not hyphenate numbers and units of concentration or temperature:

5 K isotherm	0.1 M NaCL

Do not hyphenate complex numbers or units of measurement:

0.1 mol dm^{-3} solution	1.2×10^{-4} cm^{-1} peak
3 N HCl solution	2 × 4 lumber

Ranges of Numbers

To show ranges, use an en dash or the word *to* when you use *of* or *from* with the range. When you want to express a range *between* some number and another one, always use *and* in the range:

15%–25%	32°–38°C	of 13 to 18 mL	
6–12 cm	10–20 m^2	from 16 to 18 A	between 8 and 12 m

Note that symbols such as ° and %, which are right next to the number, are repeated for both values. Whether you use an en dash or the word *to*, be consistent within your manuscript.

Scientific Notation

Express multiples of SI (metric) units in powers of 10 with the appropriate prefixes; e.g., mm (millimeters, 10^{-3} m) and mJ (megajoules, 10^6 J).

Use standard scientific notation, whenever it is appropriate, to express very small and very large numbers; e.g., 2.5×10^{-3} and 3.56×10^6.

Avoid using *M* for thousands or *MM* for millions, to prevent confusion with the SI prefix M (mega, or millions).

Spelling Out Numbers

Except with units of time and measurement, spell out numbers lower than 10 in publications *(eight experimental runs* and *three different minerals).*

Spell out all numbers at the beginning of sentences:

Fifteen trials showed almost no deviation in the outcomes.

Thirty-five people attended the seminar.

However, if a sentence begins with a large number that would be awkward to spell out (e.g., 253 tons of ore were mined), it is best to reword the sentence (e.g., Mining yielded 253 tons of ore).

Spell out the first of two adjacent numbers unless the first one requires three or more words:

ten 5-kW sites *but* 135 16-cm plots

Parallel Construction

When a sentence contains one or more numbers greater than nine that are related in kind to a smaller number, use numerals for all of them:

5, 8, and 12 experiments 2nd and 20th examples 5–15 repetitions

...was reduced in 2 pairs, not significantly changed in 11 pairs, and increased in 6 pairs.

If the numbers don't refer to the same or similar things, they don't have to be treated the same way:

We conducted three trial runs at 18°C.

Time and Measure

6 minutes	6 min/d	4 davs	1 billion	180°
25 mL	0.30 g	6 months	$15 million	76°C
50–100 mL	3.5 hours (*not* 3½)	3.7×10^5	400×	<15
50%	the 1990s	8 years	2 million pounds	1960s
4:00 PM	12:15 AM	two-thirds	1/12 the volume	

Usage Other than Time and Measure

Use words for cardinal numbers less than 10; use numerals for 10 and above. Spell out ordinals *first* through *ninth;* use numerals for *10th* or greater:

three flasks, 30 flasks	first century	seven trees, 10 trees
third flask, 12th flask	21st century	sixfold, 10-fold

Use numerals in the following instances: *methods 1 and 2; series 2 and 3; phases 1 and 2; samples 8 and 9.*

PARENTHESES

…in Equations

In equations, use parentheses, brackets, and braces in a repeated progression from parentheses inside to braces outside: {[( )]}

…in Measurements

Use parentheses to enclose English measurements that follow SI or metric measurements: 38.1 m (125 ft).

…in References

When you use parentheses in text, such as for author-date reference callouts, SME style generally places commas after the parentheses, when necessary:

In earlier research (Jones 1989), the integrity of the soil was confirmed.

For more examples of parentheses used in references, also see the Editor's Appendix.

…in Running Text

Use parentheses (or em dashes) to set off explanatory or digressive material that doesn't bear a close logical relationship to the rest of the sentence; when the material is closely related, use commas:

The results of the last experiment (conducted after we moved the apparatus to another laboratory) confirmed Jones's hypothesis.

or

The results of the last experiment—conducted after we moved the apparatus to another laboratory—confirmed Jones's hypothesis.

and

Timed test runs showed that the titanium oxide coating, rather than the emulsion, produced the best results.

When you need to use parentheses within parentheses, use brackets on the inside and parentheses outside *(see also* "Brackets"):

Some controversy has surrounded this method (a number of investigators [e.g., Markowitz 1989] have questioned its safety), so we wrote a new safe operating procedure before beginning.

PARTS/SECTIONS

SME books may be divided into parts (groups of chapters or papers), and individual chapters may be divided into sections.

PERCENT AND PERCENTAGE

Generally, you can determine whether to treat *percent* and *%* as a singular or as a plural by looking at the noun following them:

Six percent of the pipes were rusty. 15%–25% *or* 15% to 25%
More than 10% of that amount was allocated to planning.

Note that *percent* is spelled out as one word when it accompanies a number spelled out at the beginning of a sentence.

Elsewhere in text, and in figures and tables, use a number and the % symbol. When there is no number, use *percentage.*

The maximum glucose yield was 60%.
This table shows the percentages of state and federal sites used for mining.

Use the percent sign (%) in text, tables, and figures: *5% Au* (not *5 percent Au).*

PERMISSION/COPYRIGHT RELEASE REQUIREMENTS

See Appendix A for specific copyright release information.

PHONE NUMBERS

Style phone numbers with hyphens between elements: 800-555-1212, *not* (800) 555-1212 or 800.555.1212

PLURALS

Do not add an "s" to measurement abbreviations to form the plural; they are written like this: *4 in.* and *23 cm.*

Use a lowercase *s* but not an apostrophe to form plurals of acronyms, nonmeasurement abbreviations, and decades: *PUCs, 1990s,* and *GPSs.*

Use the apostrophe for a possessive: *I remember 1985's worst event.*

PREFIXES

Most prefixes are closed (e.g., antiturbidity, multigeneration, nonissue, preplanning, postmining). See also "Hyphens...and Prefixes."

PREPOSITIONS

Use uppercase for prepositions of five or more characters in head levels and figure/table text (e.g., *for, with, from, After, Through, Between).*

QUOTATIONS

Always use some form of direct quotation to denote the exact words of another writer or speaker. Enclose quotes in quotation marks or, if they're longer than two or three text lines, separate the quoted material from the main text with a line space above and below and indent on each side. Indented quotations, or "block quotations," do not take quotation marks except for quoted material within them. Use double quotation marks for quotes inside block quotations.

Reference numbers and author-date citations go outside quotation marks and before the final punctuation in quotes and after the final punctuation in block quotations. *(See also* "Ellipses.")

All quotations must include sources, although it is not necessary to include page numbers for the citations.

Quotation Marks

Use quotation marks to indicate direct quotes and to introduce new words or words you are using differently in your work (e.g., We called our process "a simple plan."). Place quotation marks outside periods and commas, but inside colons and semicolons:

> "Let's meet again in 6 months," the director said, "to discuss our progress."
> She presented a paper titled "Techniques for Estimating Slope Stability."
> He asked me to define "serendipity"; I referred him to the dictionary.

Use single quotation marks for quotes inside quotations.

QUOTATION MARKS vs. ITALICS

Use quotation marks in the following situations:

- When the word doesn't appear anywhere (the dictionary, the literature, etc.; a made-up word)
- When the context clearly indicates that authors know that it means something else, but here they're using it to mean such-and-such.
- For citing names of sections within chapters (see "Citing Sections within Chapters").

Use italics in the following situations:

- For emphasis (use sparingly)
- For foreign words that don't appear in the English dictionary (only on first usage; italics unnecessary on subsequent usages)
- For key terms introduced in a particular context: Glass can be either *flat* or *float.*
- For words introduced as words, often introduced by the expression *the term* or *the word* (e.g., the term *nonplastic* is used...)

NOTE: To introduce new words or terms, generally italics are used, especially if the word or term is formal (as in scientific usage, for example), and quote marks are ised for more informal usage. See also "Italics...for Words as Words."

RATIOS AND MIXTURE NOTATION

Use a colon or slash between *numbers* in a ratio. Use slash or en dash between *words* in a ratio or components of a mixture:

dissolved in 5:1 glycerin/water
dissolved in 5:1 glycerin–water
the metal/ligand (1:1) reaction mixture
the metal–ligand (1:1) reaction mixture the
metal–ligand (1 /1) reaction mixture
the methane/oxygen/argon (1/50/450) matrix
the methane/oxygen/argon (1:50:450) matrix

REFERENCES (IN TEXT)

Do not include references that are not cited in text. Place bibliographic material that has not been cited in the text into a separate "Bibliography" or "Selected Readings" section. Whether a book contains a Bibliography or Selected Readings section will be at the discretion of SME.

Multiple References

Use semicolons between two or more references in a single parenthetical citation: (Smith 1990; Jones 1997; Harley 2004).

Same Author(s), Same Year

Distinguish works by the same author(s) published in the same year with *a, b, c,* etc.; but if the order of authors changes or different authors are listed, then *a, b,* etc., cannot be used.

Undated

Use *n.d.* for undated (no date) references: *...of metallurgical grade (Metorex Limited, n.d.).*

Examples:

One author	in text—(Smith 1990)
	in references—Smith, A.B. 1990.
Two authors	in text—(Smith and Lee 1990)
	in references—Smith, A.B., and Lee, C.D. 1990.
Three or more	in text—(Smith et al. 1990)
	in references—Smith, A.B., Lee, C.D., and Jones, E.F. 1990.
Multiple refs in text	(Smith 1990; Smith and Lee 1990; Smith et al. 1990; Smith 2004a, 2004b)

Do not reorder in-text references (i.e., do not change to alphabetical order). Keep as submitted.

REFERENCE LIST

References cited in text must be included in a reference list at the end of the manuscript. At a minimum, the following information is needed (as applicable):

- Author(s)
- Editor(s), if any
- Year of publication
- Article and/or book title

- Title of trade journal
- Name *and* location of publisher (city/state/country)
- Volume, issue number, and inclusive range of pages, in that order, for trade journal references: e.g., 124(8):18–26.
- Conferences/Meetings (unpublished): date and city/state/country location of conference.
- Conferences/Meetings (published): name and location of publisher.
- Web sites: URL *and* month/year accessed.

When in doubt, imagine yourself trying to look up or obtain a copy of the particular publication you are citing, and provide all the information that the reader will need to track down the publication. See the Editor's Appendix for examples of various reference styles.

SI UNITS (METRIC SYSTEM)

SME follows national policies and those of scientific societies in using the SI (International System of Units) or metric system to express measurements. English units are to be placed in parenthesis following metric units when this is appropriate for a publication's audience. Use English units alone for the standard names of certain items, such as *1-in. pipe* and *2 × 4 lumber*. *(See also* "Metrics and Customary Units.")

SOLIDUS

Also called *slant, slash, shilling mark,* or *virgule,* the solidus has mathematical as well as textual functions.

…in Fractions

Use a solidus to express a quotient in text when you do not need to display an equation:

> These structures yield lifetimes that are related to bulk lifetime by the expression $1/t = 1/t_B + 2S/d$.

…in Text

In text, the solidus can indicate junctions, interfaces, and components:

> The gas/liquid interface (an en dash is also acceptable) 1-butyl acetate/acetic acid/water (3:1:1)

With abbreviated units of measurement, use the solidus to stand for *per* in abbreviated metric units of measure, like this: 2 g/cm^2 and 355 W/m^2.

But use *per* rather than a solidus with spelled-out versions of units of measurement, like this: several cubic feet per second and a few cents per kilowatt-hour.

SOURCE LINES

Be sure to cite the sources of the figures and tables of others that you use in your publication. Add the source line at the end of a figure caption or at the bottom of a table. Any reference included with a figure or table must also be cited in the reference list, although courtesy lines need not be included.

Indicate whether specific wording is requested by the copyright holder. If the copyright holder does require specific wording, use one of the following formats:

Source: United States Geological Survey 2000.
Source: Smith 1990, reproduced with permission from Elsevier.
Source: Data from Smith 2005.
Source: Adapted from Reynolds 2000.
Courtesy of U.S. Bureau of Mines.

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When in doubt, it is always best to request permission. For more specific guidelines regarding materials permissions, refer to Appendix A.

STANDARDS, CITING IN TEXT

When citing standards in text, cite only the organization acronym and the standard number, with no date. (See the Editor's Appendix for sample formats for standards in reference lists.)

...ASTM D3565 or (ASTM D3565), if the text is parenthetical.
...ISO 10545-3 or (ISO 10545-3), if the text is parenthetical.

STATES AND PROVINCES

In running text, spell out names of states and provinces when used alone and with a city name. Put commas around names of states or provinces when they appear with cities:

The researchers went to Alaska to continue their work.
The conference was held in Raleigh, North Carolina, last year.

In tables, figures, and reference lists, use 2-letter U.S. Postal Service abbreviations when states are included after a city name (e.g., AZ, CA, CO, ON, QC).

Use U.S. Postal Service abbreviations for states in full addresses that include streets or post office boxes: *P.O. Box 123, Denver, CO 80101-0101*. Also use state abbreviations in the reference list when giving a city name:

Garnar, T.E. 1994. Zirconium and hafnium minerals. In *Industrial Minerals and Rocks*, 6th ed. Edited by D.D. Carr. Littleton, CO: SME.

U.S. Postal Service Abbreviations

State, Abbreviation		State, Abbreviation		State, Abbreviation	
Alabama	AL	Michigan	MI	Texas	TX
Alaska	AK	Minnesota	MN	Utah	UT
Arizona	AZ	Mississippi	MS	Vermont	VT
Arkansas	AR	Missouri	MO	Virginia	VA
California	CA	Montana	MT	Washington	WA
Colorado	CO	Nebraska	NE	West Virginia	WV
Connecticut	CT	Nevada	NV	Wisconsin	WI
Delaware	DE	New Hampshire	NH	Wyoming	WY
District of Columbia	DC	New Jersey	NJ	**Canadian Province,**	
Florida	FL	New Mexico	NM	Alberta	AB
Georgia	GA	New York	NY	British Columbia	BC
Hawaii	HI	North Carolina	NC	Manitoba	MB
Idaho	ID	North Dakota	ND	New Brunswick	NB
Illinois	IL	Ohio	OH	Newfoundland and Labrador	NL
Indiana	IN	Oklahoma	OK	Northwest Territories	NT
Iowa	IA	Oregon	OR	Nova Scotia	NS
Kansas	KS	Pennsylvania	PA	Nunavut	NU
Kentucky	KY	Puerto Rico	PR	Ontario	ON
Louisiana	LA	Rhode Island	RI	Prince Edward Island	PE
Maine	ME	South Carolina	SC	Quebec	QC
Maryland	MD	South Dakota	SD	Saskatchewan	SK
Massachusetts	MA	Tennessee	TN	Yukon	YT

TABLES

All tables must be included with the text document. Number tables by chapter; e.g., the second table to appear in Chapter 3 would be numbered *Table 3.2.* Include this number designation with the table head. Be sure to reference each table in the text. If taken from a copyrighted source, include the source at the end of the table, before any footnotes. Every table must have a title. Table heads (except for the word *Table* itself) take sentence-style capitalization, except for proper nouns and capitalized abbreviations. There is no punctuation at the end of the title. Refer to Table 1.

Try not to use acronyms in tables (there will be exceptions). Each table stands by itself.

Within the table, column heads are capitalized and the rows and other elements take sentence-style capitalization. If a measurement follows introductory text, use a comma followed by the measurement in Roman type (e.g., Output, mg/L). Do not include measurement in parentheses unless parenthetical.

If a "spanner" rule is used above several columns of measurements, no comma necessary after column head text that appears above the spanner rule (see Table 1). In source lines, separate multiple sources by a semicolon.

Example:

TABLE 1 Sentence style, no period at end (in millimeters)*

		Measurement			
Capitalize Text in Column Heads†	**Capitalize Column Head**	**ft²**	**mph (km/h)**	**kPa**	**%**
Sentence style, %	xxx	xxx	xxx (xxx)	xxx	xxx
Text, mph	xxx	xxx	xxx (xxx)	xxx	NA‡
Text, mm	xxx	xxx	xxx (xxx)	xxx	NA

Source: Smith 1991; Jones 1980a, 1980b.
*In table heads, measurements can be in parentheses, no italics (as shown).
†Footnote symbols will be superscripts in the table body. Footnote symbols are not superscripts at bottom of table.
‡NA = not applicable.

TAXONOMIC NAMES

Capitalize the names of botanical and zoological divisions higher than species: genera, families, orders, classes, and phyla. Use italics for genera, species, and varieties: *Clostridium thermocellum* and *Escherichia coli*. Abbreviate the genus after the first mention: *E. coli.*

TEMPERATURE

Use the following styles for temperature:

16°C, 78°F, 55 K (no degree sign for Kelvin units) 16°–32°C 16°, 32°, and 38°C

TIME OF DAY

Use small caps for AM and PM (e.g., 4:30 AM).

TRADE JOURNALS

Abbreviate names of trade journals in reference lists according to abbreviations provided in the Editor's Appendix.

TRADE NAMES

Trade names are usually capitalized (e.g., Kleenex tissue, Gilsonite). Midcaps may be retained (e.g., WordPerfect, IsaMill, HydroFloat). Change all caps to initial caps (e.g., change from VERTIMILL to Vertimill). It is not necessary to include a (™) or other symbol (e.g., ®) if the term is capitalized, nor is it necessary to include manufacturer information.

U.S./UNITED STATES/USA

Spell out *United States* as a noun, use *U.S.* as an adjective, and use *USA* only in postal addresses. The same rule applies for U.K./United Kingdom.

USEPA

See "EPA and USEPA."

U.S.S.R./RUSSIA

See "Countries."

VERSUS

Spell out *versus* in text. Abbreviate *(vs.)* in figures, tables, and within parentheses.

WEB SITE

Web site is two words and *Web* is initial caps when referring to the World Wide Web.

ZEROES

Place a zero before all decimals; e.g., 0.5, 0.125, and 0.00125.

APPENDIX A
COPYRIGHTS AND PERMISSIONS

ASSIGNMENT OF COPYRIGHT

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WHEN TO REQUEST PERMISSION

Authors are responsible for obtaining written permission to use any copyrighted material. This process can take up to 90 days. Written permission for all copyrighted materials must accompany your final chapter.

HOW TO REQUEST PERMISSION

A Web search for the copyright holder is a good place to begin. Most publishers have specific instructions on how to request permission. Specific information is needed (e.g., author, title, year of publication, figure or table number, page number, and how you intend to use it). See the sample "Release of Material for Publication" form. Sending a letter was traditional for years and can still be very effective. It can provide SME with the most rights. However, most publishers now have Web-based request systems and do not accept standard letters. Be aware there are sometimes fees associated with obtaining these permissions. Authors are responsible for any such fees.

SME accepts signed releases as a hard copy of a letter, fax, or e-mail.

COPYRIGHT PERMISSION LOG

You must also include a copyright permission log for every table and figure in your submission regardless of whether they are original or not. See the sample "Copyright Permissions Log."

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Often publishers request that specific wording be used. If so, please indicate this and provide the wording as requested. If no such wording is requested, a standard scholarship form of acknowledgment should be used under the figure or table itself. Sources must be given in the reference list.

Examples:

Source: Author year (art itself taken from source)
Source: Author year, reproduced with permission from Copyright Holder (suitable acknowledgment requested from Copyright Holder)
Source: Data from author year (data only from source)
Source: Adapted from author year (art modified from source)

When permission is granted for material from manufacturers or other sources that would not be included in a reference list, a "courtesy" form of acknowledgment should be used:

Courtesy of U.S. Bureau of Mines.

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[Add Title of Book here]

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Signature, Title, Organization Date

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Signature of Supplier or authorized representative:

Signature: _____

Title: _____ Date: _____

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APPENDIX B
SME ABBREVIATIONS FOR UNITS OF MEASURE

A

absolute ..... abs
acre ..... *spell out*
acre-foot ..... acre-ft
alternating current ..... AC
ampere ..... A
ampere-hour ..... A-h
ampere per meter ..... A/m
ampere per meter squared ..... A/m^2
angstrom unit ..... Å
atomic weight ..... atomic wt
atmosphere ..... atm
average ..... avg.
avoirdupois ..... avdp

B

barrel ..... bbl
Baumé ..... Bé
Becquerel ..... Bq
billion years ..... Ga
board feet
(feet board measure) ..... bd ft
boiling point ..... bp
brake horsepower ..... bhp
brake horsepower-hour ..... bhp-h
British thermal unit ..... Btu
bushel ..... bu

C

calorie ..... cal
candela ..... cd
candle ..... *spell out*
candle-hour ..... candle-h
carat ..... *spell out*
cent ..... ¢
centigram ..... cg
centiliter cL
centimeter ..... cm
centimeter-gram-second ..... cgs
centipoise ..... cP
coefficient ..... coef
cologarithm ..... colog
cosecant ..... csc
cosine ..... cos
cotangent ..... cotan
coulomb C
cubic centimeter ..... cm^3
cubic foot ..... ft^3
cubic feet per minute ..... cfm
cubic feet per second ..... cfs
cubic inch ..... $in.^3$
cubic meter ..... m^3
cubic micron ..... μ^3
cubic millimeter ..... mm^3
cubic yard ..... yd^3
curie Ci

D

dalton ..... Da
day ..... d
deadweight ton ..... dwt
debyes (dipole moment) ..... D
decibel ..... dB
decimeter ..... dm
degree ..... °
degree absolute ..... ° Abs
degree Celsius ..... °C
degree Fahrenheit ..... °F
degree Kelvin ..... K
degree Reaumur ..... °R
diameter ..... diam.
direct current ..... DC
dollar ..... $
dozen ..... doz
dram ..... *spell out*
dyne ..... dyn

E

electromotive force ..... *spell out or* emf *in equations*
electronvolt ..... eV
erg ..... *spell out*

F

farad ..... F
feet board measure
(board feet) ..... bd ft
feet per hour ..... fph
feet per minute ..... fpm
feet per second ..... fps
fluid ..... *spell out*
flywheel horsepower ..... fwhp
foot ..... ft
foot-candle ..... ft-candle
foot-pound ..... ft-lb

G

gallon ..... gal
gallons per minute ..... gpm
gallons per second ..... gps
gigahertz ..... GHz
gigaton ..... Gt
grain ..... gr
gram ..... g
gram atom ..... g-atom
gram calorie ..... g-cal
grams per liter ..... g/L
gravity ..... *spell out or g* (in italics)
greater than ..... >

H

hectare ..... ha
henry ..... H
hertz ..... Hz
horsepower ..... hp
hour ..... h
hundred ..... *spell out or* C
hundredweight (112 lb) ..... cwt
hyperbolic cosine ..... cosh
hyperbolic sine ..... sinh
hyperbolic tangent ..... tanh

I

inch ..... in.
inch-pound ..... in.-lb
indicated horsepower ..... indicated hp
indicated horsepower-
hour ..... indicated hp-h

J

joule ..... J
joule per kilogram ..... J/kg

K

kilocalorie ..... kcal
kilocycles per second ..... kc/s
kilogram ..... kg
kilogram-calorie ..... kg-cal
kilogram-meter ..... kg-m
kilograms per cubic meter ..... kg/m^3
kilogram per mole ..... kg/mol
kilograms per second ..... kg/s *or* kgps
kilohertz ..... kHz
kilohm ..... kΩ
kiloliter ..... kL
kilometer ..... km
kilometers per second .... km/s *or* kmps
kilopond ..... kp
(pond = 980.665 dynes)
kiloton ..... kt
kilotons per year ..... ktpy
kilovolt ..... kV
kilovolt-ampere ..... kVA
kilowatt ..... kW
kilowatt-hour ..... kW·h
1,000 electron volts ..... keV

L

less than ..... <
liter L
logarithm (common) ..... log
logarithm (natural) ..... log *or* ln
long tons (gross tons) ..... *spell out or* lt
long tons per day ..... ltpd
long tons per hour ..... ltph
long tons per month ..... ltpm
long tons per year ..... ltpy
lumen ..... lm
lumen-hour ..... lm-h
lumens per watt ..... lm/W
lux lx

M

megacycle ..... *spell out*
megaelectronvolts ..... MeV
megaton (metric) ..... Mt
megatons per year ..... Mt/yr
megawatt ..... MW
megohm ..... *M*Ω
meter ..... m
meter-kilogram ..... m-kg
meter per second ..... m/s
meter per second squared ..... m/s^2
metric tons..... *spell out or* tonne *or* t
metric tons per day ..... t/d
metric tons per hour ..... t/h
metric tons per month ..... t/m
metric tons per year (annum) ..... t/a
mho ..... *spell out*
microampere ..... µA
microcuries ..... *spell out*
microhm-centimeter ..... microhm-cm
microinch ..... µin.
micromicrofarad ..... µµfarad
micromicron ..... µµ
micron (change to micrometer) ..... µ
micrometer ..... µm
microsecond ..... µs
microvolt ..... µV
microwatt ..... µW
mile ..... mi
miles per hour ..... mph
milliampere ..... mA
millidarcy ..... mD
milligram ..... mg
milliliter ..... mL
millimeter ..... mm
millimicron ..... mµ
million ..... *spell out*
million (mega) electron volts ..... MeV
million (mega) metric tons ..... Mt
million metric tons per year ..... Mt/yr
million years ..... Ma
millisecond ..... ms
minus ..... *(en dash)* –
minute ..... min
minute (angular measure) ..... '
mole ..... mol
moles per cubic meter ..... mol/m^3
molecular weight ..... mol wt
month ..... *spell out*

N

newton ..... N
newton meter ..... N·m
newton per meter ..... N/m

O

ohm ..... Ω
ohm-meter ..... Ω -m
ounce ..... oz
ounce-foot ..... oz-ft
ounce-inch ..... oz-in.

P

parts per billion ..... ppb
parts per million ..... ppm
parts per trillion ..... ppt
pascal ..... Pa
pascal second ..... Pa·s
peck ..... pk
penny (pence) ..... d
pennyweight ..... dwt
per (customary units)* ..... p
per (metric units) ..... /
percent ..... %
picocurie ..... pCi
pint ..... pt
plus ..... +
poise ..... P
pound ..... lb
pound-ft ..... lb-ft
pound-inch ..... lb-in.
pounds per brake horsepower-hour ..... lb per bhp-h
pounds per cubic foot ..... lb per ft^3
pounds per square foot ..... psf
pounds per square inch ..... psi
pounds per square inch absolute ..... psia
pounds per square inch gauge ..... psig
pounds Sterling ..... £

Q

quart ..... qt

R

radian ..... rad
radian per second ..... rad/s
reactive kilovolt-ampere ..... reactive kVA
reactive volt-ampere ..... reactive vA
rem ..... rem
revolutions per minute ..... rpm
revolutions per second ..... rps
rod ..... *spell out*
roentgen ..... R
root mean square ..... rms
Reynolds number ..... Re

S

secant ..... *spell out*
second ..... s
second (angular measure) ..... "
short tons (net tons) ..... st
short tons per day ..... stpd
short tons per hour ..... stph
short tons per month ..... stpm
short tons per year ..... stpy
Siemens ..... S
sievert ..... Sv
sine ..... sin
specific gravity ..... sp gr
specific heat ..... sp ht
square ..... ^{2}
square centimeter ..... cm^2
square foot ..... ft^2
square inch ..... $in.^2$
square kilometer ..... km^2
square meter ..... m^2
square micron ..... μ^2
square millimeter ..... mm^2
square root of mean square ..... rms
square yard ..... yd^2
standard temperature and pressure ..... stp
steradian ..... sr
stere ..... st

T

tangent ..... tan
teraton ..... Tt
tesla ..... T
thousand (metric) ..... *spell out or* k
thousand deadweight tons ..... kdwt
thousand metric tons ..... kt
tonne (metric ton) ..... *spell out or* t
tons per day ..... tpd
tons per hour ..... tph
tons per month ..... tpm
tons per year ..... tpy
tons (metric) per day ..... t/d
tons (metric) per hour ..... t/h
tons (metric) per month ..... t/month
tons (metric) per annum/year ..... t/a

V

Volume ..... vol
volume per volume ..... v/v
volume percent ..... vol %
volt V
volt-ampere ..... VA
volt-coulomb VC

W

watt ..... W
watt-hour ..... W·h
weber ..... Wb
week ..... *spell out*
weight ..... wt
weight percent ..... wt %
weight per weight ..... w/w

Y

yard ..... yd
year ..... yr

*Only used in combination with other units; e.g., mph, ppb

APPENDIX C
CONVERSIONS

The following table provides a selected list of conversion factors that may be most generally used in the minerals industry.

Convert From	To	Multiple By
acre	meter squared (m^2)	$4.046856 \times 10^{+3}$
acre-foot	meter cubed (m^3)	$1.233482 \times 10^{+3}$
ampere, U.S. legal 1948	ampere (A)	$1.000008 \times 10^{+00}$
ampere-hour	coulomb (C)	$3.600000^* \times$
angstrom	meter (m)	$1.000000^* \times 10^{-}$
atmosphere (normal)	pascal (Pa)	$1.01325 \times 10^{+5}$
barrel (for petroleum, 42 gal)	meter cubed (m^3) meter cubed	1.589873×10^{-1}
board foot	(m^3) joule (J) joule/kilogram-	2.359737×10^{-3}
British thermal unit (International Table)	kelvin (J/kg·K) watt (W)	$1.055056 \times 10^{+3}$
Btu (International Table) per pound/mass	joule (J)	$2.326000^* \times 10^{+3}$
Btu (International Table) per hour	joule (J)	2.930711×10^{-1}
calorie (International Table)	kilogram (kg)	$4.186800^* \times$
calorie (kilogram, International Table)	second (s)	$4.186800^* \times 10^{+3}$
carat (metric)	pascal (Pa)	$2.000000^* \times 10^{-4}$
day (mean solar)	radian (rad)	$8.640000^* \times 10^{+4}$
decibar	kelvin (K)	$1.000000^* \times 10^{+4}$
degree (angle)	now called Celsius scale	1.745329×10^{-2}
degree (Celsius)	degree Celsius kelvin (K)	$^{t}K = {}^{t}C + 273.15$
degree centigrade	newton (N)	
degree Fahrenheit	joule (J)	$^{t}C = ({}^{t}F - 32)/1.6$
degree Fahrenheit	joule (J)	$^{t}K = ({}^{t}F + 459.67)1.8$
dyne	farad (F)	$1.000000^* \times 10^{-}$
electron volt	meter	1.60219×10^{-19}
erg	meter cubed/second (m^3/s)	$1.000000^* \times 10^{-}$
farad, international U.S.	meter cubed/second (m^3/s)	9.99505×10^{-1}
foot	meter cubed (m^3) meter	$3.048000^* \times 10^{-}$
foot, cubic per minute	squared (m^2) meter/second	4.719474×10^{-4}
foot, cubic per second	(m/s) meter/second (m/s)	2.831685×10^{-2}
foot, cubic	meter/second (m/s) lux (lx)	2.831685×10^{-2}
foot, square	meter/second squared (m/s^2)	$9.290304^* \times 10^{-}$
foot per hour	meter cubed (m^3) liter (L)	8.466667×10^{-5}
foot per minute	meter cubed/second (m^3/s)	$5.080000^* \times 10^{-}$
foot per second	meter cubed/second (m^3/s)	$3.048000^* \times 10^{-}$
footcandle	kilogram (kg)	$1.076391 \times 10^{+1}$
foot per second squared	kilogram/meter cubed (kg/m^3)	$3.048000^* \times 10^{-}$
gallon (U.S. liquid)	henry (H)	3.785412×10^{-03}
gallon (U.S. liquid)	watt (W)	$3.785412 \times 10^{+00}$
gallon (U.S. liquid) per day	second (s)	4.381264×10^{-8}
gallon (U.S. liquid) per minute	meter (m)	6.309020×10^{-5}
gram	meter squared (m^2)	$1.000000^* \times 10^{-}$
gram per cubic centimeter	meter cubed (m^3)	$1.000000^* \times$
henry, international U.S.	meter cubed/second (m^3/s)	$1.000495 \times 10^{+00}$
horsepower (550 ft × lbf per second)	meter/second (m/s) pascal	$7.456999 \times 10^{+2}$
hour (mean solar)	(Pa)	$3.600000 \times 10^{+3}$
inch	pascal (Pa)	$2.540000^* \times 10^{-}$
inch, square		$6.451600^* \times 10^{-}$
inch, cubic		1.638706×10^{-5}
inch, cubic, per minute		2.731177×10^{-7}
inch per second		$2.540000^* \times 10^{-}$
inch of mercury (60°F)		$3.37685 \times 10^{+3}$
inch of water (60°F)		$2.4884 \times 10^{+2}$

(continued next page)

kilocalorie (International Table)	joule (J)	$4.186800^{*} \times 10^{+3}$
kilowatt-hour	joule (J)	$3.600000^{*} \times 10^{+6}$
liter	meter cubed (m^3)	$1.000000^{*} \times 10^{-3}$
microinch	meter (m)	$2.540000^{*} \times 10^{-8}$
micron	meter (m)	$1.000000^{*} \times 10^{-6}$
mile (US statute)	meter (m)	$1.609344^{*} \times 10^{+3}$
mile, square (US statute)	meter squared (m^2)	$2.589988^{+06} \times 10^{+6}$
mile per hour (US statute)	meter/second (m/s)	$4.470400^{*} \times 10^{-1}$
millimeter of mercury (0°C)	pascal (Pa)	$1.333224 \times 10^{+2}$
minute (angle)	radian (rad)	2.908882×10^{-4}
minute (mean solar)	second (s)	$6.000000 \times 10^{+1}$
month (mean calendar)	second (s)	$2.268000 \times 10^{+6}$
ohm, international US	ohm (Ω)	$1.000495 \times 10^{+00}$
ohm-centimeter	ohm-meter (Ωm)	$1.000000^{*} \times 10^{-2}$
ounce-mass (avoirdupois)	kilogram (kg)	2.834952×10^{-2}
ounce-mass (troy or apothecary)	kilogram (kg)	3.110348×10^{-2}
ounce (US fluid)	meter cubed (m^3)	2.957353×10^{-5}
pint (US liquid)	meter cubed (m^3)	4.731765×10^{-4}
pound-force (lbf avoirdupois)	newton (N)	$4.448222 \times 10^{+00}$
pound-force per square inch (psi)	pascal (Pa)	$6.894757 \times 10^{+3}$
pound-mass (lbm avoirdupois)	kilogram (kg) meter	4.535924×10^{-1}
quart (US liquid)	cubed (m^3) radian (rad)	9.463529×10^{-4}
second (angle)	kilogram (kg) kilogram	4.848137×10^{-6}
ton (long, 2,240 lbm)	(kg) kilogram (kg)	$1.016047 \times 10^{+3}$
ton (metric)	kilogram/second (kg/s)	$1.000000^{*} \times 10^{+3}$
ton (short, 2,000 lbm)	kilogram (kg) volt (V)	$9.071847 \times 10^{+2}$
ton (short, mass) per hour	watt (W)	2.519958×10^{-1}
tonne	joule (J)	$1.000000^{*} \times 10^{+3}$
volt (US legal 1948)	meter (m)	$1.000008 \times 10^{+00}$
watt (US legal 1948)	meter squared (m^2)	$1.000017 \times 10^{+00}$
watt-hour	meter cubed (m^3)	$3.600000^{*} \times 10^{+3}$
yard	meter cubed/second (m^3/s)	$9.144000^{*} \times 10^{-1}$
yard, square	second (s)	8.361274×10^{-1}
yard, cubic		7.645549×10^{-1}
yard, cubic per minute		1.274258×10^{-2}
year (calendar)		$3.153600 \times 10^{+7}$

*The conversion factor is exact and all subsequent digits after the 6th decimal place are zero.

EDITOR'S APPENDIX

GENERAL NOTES

This appendix provides information and guidance useful for editing and proofreading SME publications. Authors may also find this section helpful when referencing sources in their manuscripts.

Reference Materials

- Style points and book publishing guidelines—The *ACS Style Guide* (ACS, 2nd ed.), *Chicago Manual of Style* (CMS, 15th ed.), and *Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers* (7th ed.). These style guides may be referenced by section (e.g., CMS 8.07) or page number (e.g., ACS, p. 117) within this appendix for additional guidance.
- General spelling and word usage—*Merriam-Webster 's Unabridged Dictionary* (MW)
- Technical spelling and some word usage (MW generally takes precedence)—*Dictionary of Mining, Mineral, and Related Terms* (2nd ed.)

Publications

In addition to its book titles, SME publishes the following periodicals:

- *Mining Engineering,* a monthly trade magazine
- *Minerals & Metallurgical Processing (MM&P),* a quarterly journal of peer-reviewed technical papers for researchers and operations personnel
- *SME eNewsletter,* the official biweekly newsletter for SME members (available online at www.smenet.org)

THE HISTORY OF SME

Knowing a little about SME's history can be useful when preparing and editing a manuscript, particularly when questions arise about how to cite SME publications over the years. For example, depending on the year of publication, the acronym SME may stand for the former Society of Mining Engineers, or the current Society for Mining, Metallurgy, and Exploration.

The current Society for Mining, Metallurgy, and Exploration, Inc. (SME) is a member society of the American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc. (AIME), which was formed in 1871 by 22 coal mining engineers at a meeting in Wilkes-Barre, Pennsylvania. The original name of the organization was the American Institute of Mining Engineers.

The word Metallurgical was added to the institute name in 1919 to recognize that the American Institute of Metals had become part of the organization the previous year. Petroleum was added in 1956 to recognize the significant growth of the petroleum engineering profession in the organization.

As the institute grew, divisions were formed in response to the increasing trend toward specialization among mineral industry engineers. The SME divisions and their year of formation are the Coal Division (1930), the Industrial Minerals Division (1935), the Mineral Processing Division (1948), the Mining and Exploration Division (1949), and the Environmental Division (1996).

Although it remained a centralized organization, in 1949 AIME recognized the polarization of its activities around the disciplines of its name by forming three branches—Mining, Metals, and Petroleum. Each branch then launched its own monthly magazine. SME's magazine is *Mining Engineering*, which replaced the institute's journal, *Mining & Metallurgy*.

AIME continued to grow and the nature of its activities increased in complexity. In the 1950s, it became apparent

that each of the branches needed greater autonomy, and in 1957, three constituent societies were formed: the Society of Mining Engineers (SME), the Metallurgical Society (TMS), and the Society of Petroleum Engineers (SPE). In 1972, each of the constituent societies assumed responsibility for its own business affairs, which had previously been handled by the centralized AIME business office. On December 1, 1974, the Iron and Steel Society (ISS) became the fourth constituent society of AIME. Its membership comprises the Iron and Steel Division of TMS and related industrial conference committees.

Also in the early 1970s, SME voted to relocate its headquarters to Salt Lake City, Utah, partly because of the geographic concentration of a significant portion of its membership and partly because of the economic stress of continuing to provide full service to its membership from a New York location. The move began in 1973 and was completed in the spring of 1974.

Continued membership growth and a need to establish appreciating assets brought to life the dream of building a permanent headquarters for SME. In 1978, land in the Ken Caryl Ranch Business Center in Jefferson County, Colorado was purchased. The building was completed in the summer of 1979, and SME took occupancy in August of that year.

For business and liability reasons, and after years of study, the AIME bylaws were amended in 1983 to permit separate incorporation of the constituent entities. All four societies elected to pursue this option, and following the approval of proposed articles of incorporation and bylaws by the membership, the societies applied for incorporation in their home states and for federal income tax exemption under Section 501(c)(3) of the Internal Revenue Code. On September 18, 1984, the Society of Mining Engineers (SME), Inc., was established as a Colorado corporation and subsequently granted 501(c)(3) tax exemption status. Governance, operations, and assets were transferred from SME-AIME to SME, Inc., on December 2, 1985.

Therefore, SME publications before 1985 may be hyphenated as SME-AIME, but from 1986 to present they should be SME.

SME Location	Year	AIME Location	Year
New York	Up to 1973	New York	Before 2003
Salt Lake City, Utah	1974 to ~1979	Littleton, Colorado	2003 to August 2011
Littleton, Colorado	August 1979 to August 2011	Englewood, Colorado	August 2011 to present
Englewood, Colorado	August 2011 to present		

For years, explorationists, metallurgists, mineral economists, and other members had expressed concern that the society's name did not truly represent the breadth of interests of the membership. In addition, the name was considered misleading to many potential members, who perceived that they needed to be mining engineers to join. At the annual meeting of members held in Las Vegas, Nevada, on February 26, 1989, the members voted to change the name from the Society of Mining Engineers, Inc., to the Society for Mining, Metallurgy, and Exploration, Inc. The acronym remained the same.

ABBREVIATIONS AND ACRONYMS

General Notes

- Spell out states when used alone and with a city name; use two-letter U.S. Postal Service abbreviations in reference lists (can use two-letter abbreviations to save space in tables and figures when used with a city). (See "States and Provinces" in Author Guidelines.)
- Abbreviate specific volume or editions *(Vol. 1, 6th ed.).* Abbreviate the terms *editor(s) (*e.g., *ed.* and *eds.*)
- AG and SAG: Use AG and SAG only as adjectives; spell out as nouns (autogenous grinding, semiautogenous grinding).

…in Text vs. Figures/Tables

Chapter text is to be treated independently from tables and figures. Regardless of whether an abbreviation has been introduced in a table or figure, it must be separately introduced at first mention in text. In addition,

- Do not introduce an acronym if used only as a reference citation at first mention: ... *in the literature (DOE 1999).*
- If the same acronym is used again in text, introduce it as if first-mention: ... *in the Department of Energy (DOE)....*
- A few acronyms and abbreviations may be used in figures and tables without first being defined: *AG, SAG, O/F, O/S, ROM, U/F, U/S, Tail., Conc.*

ACCESSION DATES

Provide only month and year for accession dates of Internet references (do not include day, even if day is provided): Accessed March 2002.

ACRONYMS

Acronyms may be used for organizations as author when defined in parentheses afterward, and may only be used in publisher names if previously introduced in the citation.

Examples:

USBM (U.S. Bureau of Mines). 2000. *Book Title.* Washington, DC: USBM.
Smith, T.T. 2001. *Book Title.* Washington, D.C.: U.S. Bureau of Mines.

AIME AS PUBLISHER

The spelled-out version of AIME (as publisher) will vary depending on the year of publication, as follows:

1871–1918: American Institute of Mining Engineers
1919–1955: American Institute of Mining and Metallurgical Engineers
1956 to present: American Institute of Mining, Metallurgical, and Petroleum Engineers

ALPHABETIZATION

Alphabetize reference lists according to the following rules:

1. Alphabetize according to the first authors' surnames.
2. When the same first author is common to multiple references:
   a. Group single-author refs first, in chronological order (old to new). Use lowercase letters to distinguish among references having the same year *(a, b, c,* etc.).
   b. Group two-author refs next—by first author, then second author, then in chronological order. Use lowercase letters to distinguish among references having the same year *(a, b, c,* etc.).
   c. Group all authors of three or more by first author, then in chronological order. Use lowercase letters to distinguish among references having the same year *(a, b, c,* etc.). Alphabetization according to article title or book name is not necessary.

   Examples:

   Hamilton, F.J. 1995.
   Hamilton, F.J. 1996a.
   Hamilton, F.J. 1996b.
   Hamilton, F.J., and Salvo, P.A. 1994.
   Rahwan, R.G., and Witiak, D.T., 1982.
   Scarponi, T.M., and Adams, B.A. 1996.

Scarponi, T.M., and Adams, B.A. 2006.
Scarponi, T.M., and Moreno, S.L. 1994.
Tewey, L.P., Rodriguez, R.E., Fortunato, B.D., and Jennes, A.C. 1995a.
Tewey, L.P., Fortunato, B.D., and Jennes, A.C. 1995b.
Tewey, L.P., Rodriguez, R.E., and Smith, A.C. 1995c.
Tewey, L.P., Rodriguez, R.E., Jennes, A.C. 2000.

AND/AMPERSAND

For consistency, use the word *and* in references (including publisher names); do not use the ampersand *(&):* John Wiley and Sons.

ASTM, BOOK OF STANDARDS

Example:

ASTM (American Society for Testing and Materials). 2003. Standard specification for agricultural liming materials. In *Annual Book of ASTM Standards—Construction: Cement, Lime, Gypsum.* Vol. 04.01. West Conshohocken, PA: ASTM International.

ASTM INDIVIDUAL STANDARDS

See "Standards" in this appendix for formatting of individual standards.

AUTHOR BYLINES

The format for author bylines may vary from book to book and will be determined by SME. Names and affiliations may be included in the byline, or the name only may appear with affiliations included in footnotes. Affiliations may be included in a separate location at the front or back of the book.

AUTHOR NOT GIVEN

In author-date format when no author (or organization) is named, list the reference alphabetically according to the first word in the title of the book, report, or article.

BOOKS

Examples:

General

Mason, R.L., Guns, R.F., and Hess, J.L. 1989. *Statistical Design and Analysis of Experiments.* New York: John Wiley and Sons.

Book Volume with Separate Title

Cajori, F. 1929. *A History of Mathematical Notations.* Vol. 2, Notation Mainly in Higher Mathematics. Chicago: Open Court.

Chapters in Edited Books

Garnar, T.E. 1994. Zirconium and hafnium minerals. In *Industrial Minerals and Rocks,* 6th ed. Edited by D.D. Carr. Littleton, CO: SME.

Edited Books

Godn, B., and Wilm, C., eds. 1994. *Primary Cereal Processing.* Berlin: Weinheim VCH.

Multivolume Books

Atkinson, W.J. 1989. Diamond exploration philosophy, practice, and promises: A review. In *Proceedings, 4th International Kimberlite Conference.* Vol. 2, Kimberlite and Related Rocks: Their Mantle-Crust Setting, Diamonds, and Diamond Exploration. Edited by J. Ross, A.L. Jaques, J. Ferguson, D.H. Green, S.Y. O'Reilly, R.V. Duncan, and A.J.A. Janse. Geological Society of Australia. Special Publication 14. Oxford: Blackwell Scientific Publications.

Page Numbers in Book

Inclusion of page numbers for books and chapters of book are optional. If included, use the following formats. *Examples:*

Mason, R.L., Guns, R.F., and Hess, J.L. 1989. *Statistical Design and Analysis of Experiments.* New York: John Wiley and Sons. p. 75.

Parfitt, G.D. 1969. *Dispersion of Powders in Liquids.* New York: Elsevier. pp. 81–121.

BULLETINS

Use either form of citation (book-type or trade-journal-type, respectively) as follows.

Examples:

Papke, K.G. 1970. *Montmorillonite, Bentonite and Fuller 's Earth Deposits in Nevada.* Bulletin 76. Reno: Nevada Bureau of Mines and Geology.

Regnier, J. 1960. Cenozoic geology in the vicinity of Carlin, Nevada. *Geolog. Soc. Am. Bull.* 71:1189–1210.

Article in Bulletin

Klinger, F.L. 1985. Iron ore. In *Mineral Facts and Problems.* Bulletin 675. Edited by A.W. Knoerr. Washington, DC: U.S. Bureau of Mines.

CAPITALIZATION

In titles where the style is to use capitalization, capitalize all major words (nouns, verbs, adverbs, pronouns) as well as prepositions of five or more letters: *with, for, from, Through, After, Versus.*

In article subtitles, use a capital letter for the first word after a colon or an em dash: (1) *Diamond exploration: A review;* (2) *Fluorspar in focus—Light at the end of the tunnel.*

CD-ROMs

Examples:

Hicks, R.J. 1996. *Nuclear Medicine, from the Center of Our Universe.* CD-ROM. Victoria, Australia: ICE T Multimedia.

Cashman, K.V. 1999. Volcano. In *World Book Multimedia Encyclopedia,* 2nd ed. CD-ROM. Chicago: World Book.

CITING REFERENCES WITHIN REFERENCES

If, for example, work by John Doe is referenced in George Smith's book, include complete references information for George Smith's book in the reference list, and use the word *see* in text according to the following format: *John Doe 's patent (see Smith 2003) demonstrated...*or *John Doe 1999 (see Smith 2003) demonstrated...*or *(Larson 1989, as cited in Smith 2003).*

COMBINING REFERENCES

If two or more references are the same except for page numbers, combine them into one reference. For a book, delete page numbers unless they can be inclusive in one range of page numbers: *pp. 24–26.* For page numbers in a trade journal or magazine, use commas between page numbers: *142(2):14, 18, 91.*

CONFERENCES AND MEETINGS

There are three types of citations for conferences and meetings: (1) Full citations that resemble a book format; (2) full citations that resemble a trade journal format; and (3) citations pertaining to oral presentations, papers presented at conferences, demonstrations, and meetings wherein there is no publication information.

Examples:

Published Proceedings—Book Format

Azevedo, M.A.D., Drelich, J., and Miller, J.D. 1997. The surface chemistry of pulping and flotation for mixed office wastepaper. In *Proceedings of the 4th Research Forum on Recycling,* San Francisco, CA, June 5–10. Arlington, VA: Recycling Publishers.

NOTE: Meeting location is separated from the name of the proceedings by a comma and is in regular type. Page numbers are optional.

Published Proceedings—Trade Journal–Type Citation

Smith, J., and Jones, B. 2004. Paper 22. *Natl. Meet. —Am. Chem. Soc., Div. Environ. Chem.* 29(2):4–6.

NOTE: Okay if date and/or meeting location not given.

No Publisher Information

Smith, J., and Jones, B. 2004. About mining. Presented at the 105th Mining Society Annual Meeting, San Antonio, TX, May 6–9.

NOTE: Okay if date and/or meeting location not given.

CORPORATE AUTHORS

Example:

Research Triangle Institute. 1985. *Recovery of Minerals from High -Altitude Mines.* Technical progress report. Denver, CO: Mining Company.

DISSERTATIONS OR THESES

Examples:

Gossett, J.M. 1976. The treatment of refuse for increasing anaerobic biodegradability. Ph.D. dissertation, Stanford University, CA.

Anderson, V.R. 1981. Calcareous surface sediments of the U.S. Virgin Platform. M.S. thesis, Duke University, Durham, NC.

NOTES: (1) Other degrees may be used in placed of *Ph.D.* in above example; (2) No need to repeat city name if included in name of university.

DOI NUMBERS

Include a DOI (Digital Object Identifier) at the end of the reference if the journal lists one. A DOI is a permanent identification that, when appended to http://dx.doi.org/ in the address bar of an Internet browser, will lead to the source. Include month/year accessed.

Example:

Kossinets, G., and Watts, D.J. 2009. Origins of homophily in an evolving social network. *Am. J. Sociol.* 115:405-450. Accessed February 2010. doi:10.1086/599247.

EDITION

For a book reference, use a comma before the edition number (e.g., *Title of Book*, 2nd ed.)

ET AL.

List names of all authors in reference list (avoid use of *et al.).*

EUROPEAN UNION (EU) COUNCIL DIRECTIVES

Example:

CEC (Commission of the European Communities). 1999. Council Directive 1999/31/EC of 26 April 1999 on the Landfill of Waste. In *Official Journal of the European Communities*, L-182/1-19, L-2985. Luxembourg: Office for Official Publications of the European Communities.

EU Directive 2002/10/EC. 2003. *Directive of the European Parliament and of the Council of 6 February 2003 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise) (Seventeenth Individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC). In the Official Journal of the European Union, L 042 or 15/02/2003. pp. 0038–0044.*

FOREIGN PUBLICATIONS

Use the following style for foreign publications (CMS 17.177):

Smith, J.S. 1999. *Title of Publication.* [In French.] Location: Publisher.

CODELCO (Corporación Nacional del Cobre de Chile). 2006. Directriz corporative para identificar aspectos ambientales y evaluar el riesgo de sus impactos [Corporate directive for identification of environmental aspects and evaluation of the risk of their impacts]. Código SGASS–90, Versión 1, December.

FORTHCOMING/NO DATE

Use *n.d.* (which means "no date") when the date of publication is not known. Lowercase letters are used so as not to confuse it with author initials.

When a book is under contract to be published but the date of publication is not known, *forthcoming* may be used in place of the date.

Examples:

Irikura, K.K. n.d. *Computational Thermochemistry.* Washington, DC: American Chemical Society. Forthcoming.

Irikura, K.K. Forthcoming. *Computational Thermochemistry*. Washington, DC: American Chemical Society.

or

Irikura, K.K. 2013. *Computational Thermochemistry.* Washington, DC: American Chemical Society (forthcoming).

GUIDEBOOKS

Example:

Hausel, W.D., Gregory, R.W., and Sutherland, W.M. 1995. Lamproites, diamond indicator minerals, and related anomalies in the Green River Basin, Wyoming. In *Resources of Southwestern Wyoming.* Field Conference Guidebook. Edited by R.W. Jones. Casper, WY: Wyoming Geological Association.

INDUSTRIAL MINERALS AND ROCKS (IMAR)

Correct reference information for the various editions of IMAR is as follows:

1937. 1st ed.
1949. 2nd ed.
1960. 3rd ed. Edited by J.L. Gillson. New York: American Institute of Mining, Metallurgical, and Petroleum Engineers.
1975. 4th ed. Edited by S.J. Lefond. New York: American Institute of Mining, Metallurgical, and Petroleum Engineers.
1983. 5th ed. Edited by S.J. Lefond. New York: American Institute of Mining, Metallurgical, and Petroleum Engineers.
1994. 6th ed. Edited by D.D. Carr. Littleton, CO: SME.
2006. 7th ed. Edited by J.E. Kogel, N.C. Trivedi, J.M. Barker, and S.T. Krukowski. Littleton, CO: SME.

NOTE: The 5th and 7th editions contain two volumes.

Example:

Strand, P.R., and Stewart, O.F. 1983. Vermiculite. In *Industrial Minerals and Rocks*, 5th ed., Vol. 2. Edited by S.J. Lefond. New York: American Institute of Mining, Metallurgical, and Petroleum Engineers.

The following is a different book with the same title. Note that AIME-SME is *not* the publisher:

Kuzvart, M. 1984. *Industrial Minerals and Rocks.* Developments in Economic Geology 18. Amsterdam: Elsevier.

INDUSTRIAL MINERALS (TRADE JOURNAL)

Examples:

Crossley, P. 2004. Fluorspar in focus—Light at the end of the tunnel. *Ind. Miner.* 401:27–41.

NOTE: Use this style when volume or issue number is given; either one (or both) is placed in front of the colon.

Crossley, P. 2001. Bauxite in 2001—Getting a grip on supply. *Ind. Miner.* (May): 41–48.

NOTE: Use this style when only the month is given but no issue volume or number.

INFORMATION CIRCULARS

Example:

Caruccio, F.T., and Geidel, G. 1980. *The Geologic Distribution of Pyrite and Calcareous Material and Its Relationship to Overburden Sampling*. Information Circular IC-8863. Washington, DC: U.S. Bureau of Mines. p. 2–12.

INTERNAL COMMUNICATIONS

Example:

Smith, J.Q. February 29, 1988. Internal memorandum. Washington, DC: U.S. Department of Commerce.

JOURNAL ARTICLES

See "Trade Journal Articles."

LAWS, RULES, REGULATIONS (CFRs)

Examples (with various formats):

30 CFR 70. 1994. Mandatory health standards—Underground coal mines. In *Code of Federal Regulations: Title 30, Mineral Resources.* Arlington, VA: U.S. Department of Labor, Mine Safety and Health Administration.

30 CFR 70.1900. Exhaust Gas Monitoring Mandatory Health Standards. Underground coal mines. Subpart T—diesel exhaust gas monitoring. U.S. Department of Labor, Mine Safety and Health Administration, Code of Federal Regulations. Washington, DC: U.S. Government Printing Office, Office of the Federal Register.

40 CFR 86.094-8. Emission standards for 1994 and later model year light-duty vehicles. U.S. Environmental Protection Agency. Code of Federal Regulations. Washington, DC: U.S. Government Printing Office, Office of the Federal Register.

26 Fed. Reg. 645. 1961. Mine Safety and Health Administration: 30 CFR Part 36. Approval requirements for permissible mobile diesel-powered transportation equipment. Code of Federal Regulations. Washington, DC: U.S. Government Printing Office, Office of the Federal Register.

66 Fed. Reg. 5001. 2001. Environmental Protection Agency: 40 CFR Parts 69, 80, and 86. Clean diesel trucks, buses, and fuel: heavy-duty diesel engine and vehicle standards and highway diesel fuel sulfur control requirements; final rule. Code of Federal Regulations. Washington, DC: U.S. Government Printing Office, Office of the Federal Register.

MSHA (Mine Safety and Health Administration). 1979. *Excerpts from Code of Federal Regulations: Title 30, Mineral Resources, Parts 11, 15, 16, 17, 18, 40, 41, 43, 44, 46, 48, 50, 70, 71, 74, 75, 77, 90, 100 and Part 37 of CFR 42, relating to coal mine safety and health, August 1979*. Washington, DC: MSHA.

MSHA (Mine Safety and Health Administration). 1979. *Code of Federal Regulations: Title 30, Mineral Resources, Part 18 of CFR 42, relating to coal mine safety and health, August 1979*. Washington, DC: MSHA.

MINERAL COMMODITY SUMMARIES

The *Mineral Commodity Summaries* were published by USBM prior to 1996 and by USGS from 1996 to present.

Example:

Author, X.X. 1997. Stone. In *Mineral Commodity Summaries 1997.* Reston, VA: U.S. Geological Survey.

MINERALS YEARBOOKS

The *Minerals Yearbooks* were published by USBM before 1996 and by USGS from 1996 to present.

Lyday, P.A. 1988. Iodine. In *Minerals Yearbook 1988.* Vol. 1, Metals and Minerals. Washington, DC: U.S. Bureau of Mines.

Levine, R.M. 1995. The mineral industry of Russia. In *Minerals Yearbook 1995.* Vol. III, Area Reports: International. Reston, VA: U.S. Geological Survey.

MONTH/SEASON OF PUBLICATION

Use en dash for span of months: *March –April.* When the volume is listed by name of month or season, place month in parentheses, followed by a colon and a space (CMS 17.164):

Examples:

Min. Metall. Process. (October): 14–25

Min. Metall. Process. (Winter): 10–15

MULTIPLE YEARS CITED

It is occasionally acceptable to cite multiple years of the same book or series with an en dash. This is not a standard practice but may be used as a space-saver.

Example:

Dolley, J.A. 1999–2003.

MULTIVOLUME BOOKS

See "Books" in this appendix.

NEWSPAPERS, ON-LINE ARTICLE

Omit initial *The* in newspaper titles (CMS 17.195).

Example:

Bauman, J. 2001. Chemical warfare has a long and terrifying history. *Deseret News.* February 14. www.deseretnews.com/dn/view/0,1249,250011075,00.html. Accessed November 2004.

NO DATE (n.d.)

See "Forthcoming/No Date" in this appendix.

ON-LINE REFERENCE WORKS

Example:

Encyclopedia Britannica Online. 2004. Choosing a mining method. www.britannica.com/eb/article?eu=119899&tocid=81657&query=mining%20history&ct=. Accessed February 2004.

PATENTS

Do not include *No.* or *#* in front of patent number. It is acceptable if the month/day of patent are not included.

Example:

Schonert, K. 1982. Method of fine and very fine comminution of materials having brittle behavior. U.S. Patent 4,357,287. November 2.

PERSONAL COMMUNICATIONS

Include parenthetically in text only (not reference list), and do NOT include date/year, affiliation, or other extra info. Change the words *written/oral/verbal* to *personal.* Style as follows: *text (J. Smith, personal communication).*

PREPRINTS, SME

Example:

Atkinson, W.J., and Smith, C.B. 1995. Diamond deposits in Australia. SME Preprint No. 95-217. Littleton, CO: SME.

PROCEEDINGS

See "Conferences and Meetings."

PROFESSIONAL PAPERS

Example:

Erickson, G.E. 1981. Geology and origin of the Chilean nitrate deposits. Professional Paper 1188. Reston, VA: U.S. Geological Survey.

PUBLISHER LOCATIONS

The following cities do not need state identifiers in reference lists because of reader familiarity with these locations:

Atlanta	Houston	Philadelphia
Baltimore	Indianapolis	Phoenix
Boston	Las Vegas	Pittsburgh
Chicago	Los Angeles	Salt Lake City
Cincinnati	Miami	San Antonio
Cleveland	Milwaukee	San Diego
Dallas	Minneapolis	San Francisco
Denver	New Orleans	Seattle
Detroit	New York	St. Louis
Honolulu	Oklahoma City	Washington, DC

REPORTS, OPEN-FILE

Example:

Mayes, B.H., and Fripp, B.T. 1991. *Zeolite Minerals in Utah.* Open-File Report 210. Salt Lake City: Utah Geological Survey.

REPORTS, TECHNICAL

Example:

Moudgil, B.M. 1992. *Enhanced Recovery of Coarse Particles During Phosphate Flotation.* Final report to Florida Institute of Phosphate Research. FIPR Publication No. 02-067-099. Gainesville, FL: University of Florida.

REPORTS, UNPUBLISHED

Example:

Smith, B.C. 1992. Metal Recoveries in Mines, Morrison, CO. Unpublished report.

SERIES

Examples:

Chander, S., Wie, J.M., and Fuerstenau, D.W. 1975. *On the Native Floatability and Surface Properties of Naturally Hydrophobic Solids.* AIChE Symposium Series 71, No. 150. New York: American Institute of Chemical Engineers.

NOTE: The volume number is 71; no need to add the word *volume.* Adding the issue number is optional.

Finkelstein, N.P., Allison, S.A., Lovell, V.M., and Stewart, B.V. 1975. Natural and induced hydrophobicity in sulfide mineral systems. In *Advances in Interfacial Phenomena.* Edited by P. Somasundaran and R.B. Grieves. AIChE Symposium Series 71. New York: American Institute of Chemical Engineers.

de la Calle, C., and Suquet, H. 1988. Vermiculite. In *Hydrous Phyllosilicates.* Reviews in Mineralogy Series 19. Washington, DC: Mineralogical Society of America.

NOTE: In 2000 [beginning with Vol. 39], the *Reviews in Mineralogy* book series was renamed *Reviews in Mineralogy and Geochemistry.*

STANDARDS

No accession date is required for these Web sites because the reader is being told where to find the standard and not when the author accessed the site.

Occasionally a standard doesn't have an associated date, which is acceptable (do not add *no date, undated,* or *latest revision).*

Examples:

ANSI S1.11-2004. *Specification of Octave Band Filters.* New York: ANSI. Available from www.ansi.org.

ASTM D 3565-89. 2001. *Standard Test Method for Tableware Pattern Removal by Mechanical Dishwasher Detergents.* West Conshohocken, PA: ASTM International. Available from www.astm.org. [accession date unnecessary]

AS 1038.24-1998. *Coal and Coke—Analysis and Testing: Guide to the Evaluation of Measurements Made by On-Line Coal Analysers*. Sydney, NSW: Standards Australia International.

AS/NZS 4360:2004. *Risk Management.* Sydney, NSW: Standards Australia International; Wellington: Standards New Zealand.

ASTM C 372-94. 2001. *Standard Test Method for Linear Thermal Expansion of Porcelain Enamel and Glaze Frits and Fired Ceramic Whiteware Products by the Dilatometer Method.* West Conshohocken, PA: ASTM International.

NOTE: West Conshohocken, Pa., and Philadelphia, Pa., are both accepted locations for ASTM International.

IEEE 141-1986. *IEEE Recommended Practice for Electric Power Distribution for Industrial Plants.* New York: Institute of Electrical and Electronics Engineers. Available from www.ieee.org.

ISO 10545-3. 1995. *Ceramic Tiles—Part 3: Determination of Water Absorption, Apparent Porosity, Apparent Relative Density and Bulk Density.* Geneva: International Organization for Standardization. Available from www.iso.org. [accession date unnecessary]

or

ISO 10545-4. 2004. *Ceramic Tiles—Part 4: Determination of Modulus of Rupture and Breaking Strength.* Geneva: International Organization for Standardization.

National Instrument NI-43-101. 2005. *Standards of Disclosure for Mineral Projects.* Montreal: Canadian Institute of Mining, Metallurgy and Petroleum.

OSHA (Occupational Health and Safety Administration). 2004. 29 CFR 1910.95. *Standard on Occupational Noise Exposure*. Washington, DC: OSHA.

Statutory Instrument No. 1147. 1989. *Water, England and Wales. The Water Supply (Water Quality) Regulations.* London: Her Majesty Queen Elizabeth II Stationary Office.

TECHNICAL PAPERS/PUBLICATIONS

Examples:

Gaudin, A.M. 1927. Flotation mechanism, a discussion of the functions of flotation reagents. AIME Technical Publication No. 4. New York: American Institute of Mining and Metallurgical Engineers.

NOTE: The spelled-out version of AIME will vary depending on the year of publication. *See also* "AIME as Publisher" in this appendix.

Gaudin, A.M., and Martin, A.S. 1928. Flotation fundamentals, Part III. Technical Paper No. 5. University of Utah and U.S. Bureau of Mines.

THESES

See "Dissertations/Theses" in this appendix.

TRADE JOURNAL ARTICLES

Example:

Malteesh, C., Somasundaran, P., and Gruber, G.A. 1996. Fundamentals of oleic acid adsorption on phosphate flotation feed during anionic conditioning. *Min. Metall. Process.* 13(1):156–158.

See list of trade journal abbreviations at the end of this appendix. See also "DOI Numbers."

TRANSACTIONS (AIME)

Examples:

Gianella, V.P. 1941. Barite deposits in northern Nevada. *Trans. AIME* 144:294–299.

Gaudin, A.M. 1930. Effect of xanthate, copper sulfates and cyanides on flotation of sphalerite. *Trans. AIME, Mill. Methods* 417.

NOTE: Because there are five AIME divisions, *Mill. Methods* may be interchanged with one of the following, depending on the division:

Pet. Dev. Technol.
Coal Div.
Inst. Met. Div.
Iron Steel Div.

TRANSACTIONS (SME)

Example:

Smith, V.P. 1941. Diatomite deposits in California. *Trans. SME* 144:294–299.

TRANSACTIONS (TRANS. IMM, TRANS. B)

Examples:

Coope, B.M. 1982. Industrial minerals—Exploration begins with markets. Section B, Applied Earth Science. *Trans. Inst. Min. Metall.*, Sect. B 91:B8–10.

Zurowski, M. 1972. Barite-fluorite deposits of Lake Ainslie—An appraisal from an economic viewpoint. *Trans. Can. Inst. Min. Metall.* 75:318–321.

UNDATED WORKS

Use *n.d.* (which means *no date)* when the date of publication cannot be ascertained. If the date of publication is a guess, the year can be placed in brackets with a question mark (e.g., Smith, E.G. [1750?]. Title of Book...).

Example:

Metorex Limited. n.d. Vergenoeg Mining (Pty) Limited. www.metorexgroup.com/Vergenoeg.htm. Accessed July 2004.

UNPUBLISHED WORKS

If materials are intended for future publication in a trade journal, see "Forthcoming/No Date" section in this appendix. For unpublished reports, see the "Reports, Unpublished" section in this appendix. For other works not intended for publication, use the following format.

Example:

Smith, R.L. 2004. Colorado School of Mines, Golden, CO. Unpublished work.

URLs

Do not include *http://* in URLs (e.g., www.sme.org not http://www.sme.org), unless the URL does not contain a www indicator, which occurs in rare instances (e.g., http://lcweb2.loc.gov/hlas/journals.html).

VOLUME (NO VOLUME NUMBER)

When a trade journal uses issue numbers only, without volume numbers, a comma follows the journal title and *no.* is included before issue number (CMS 17.165).

Example:

Metall. Methods, no. 24:34–52.

WEB SITE, ORIGINAL CONTENT

Example:

Planet Wheat—Kansas Wheat Commission. 2002a. A short history of bread. www.cyberspaceag.com/breadhistory.html. Accessed March 2002. [Note: When publisher name and location is included, then access dates not needed.]

Trade Journal Abbreviations

Abbreviate names of trade journals in the references list. For those not listed below, refer to www.library.ubc.ca/scieng/coden.html or http://lcweb2.loc.gov/hlas/journals.html. Single-word titles are not abbreviated (e.g., *Science).* Omit internal smaller words (e.g., *the, and, of, in).*

Abstracts	Abstr.	Effective	Eff.	Natural	Nat.
Academic	Acad.	Electroanalytical	Electroanal.	Nature	Nat.
Academy	Acad.	Electrochemical	Electrochem.	New(s)	New(s)
Acta	Acta	Electron	Electron	Newsletter	Newsl.
Advancement	Adv.	Engineer(s)	Eng.	Nonferrous	Nonferr.
Advances	Adv.	Engineering	Eng.	North(ern)	North(ern)
African	Afr.	Environment(al)	Environ.	Papers	Pap.
Agricultural	Agric.	Epidemiology	Epidemiol.	Particle	Part.
Akademie	Akad	European	Eur.	Petrology	Petrol.
American	Am.	Exploration	Explor.	Pharmacology	Pharmacol.
Analysis	Anal.	Extractive	Extr.	Physical	Phys.
Analytical	Anal.	Faraday	Faraday	Physics	Phys.
Annals	Ann.	Fertilizer	Fert.	Pollution	Pollut.
Annual	Annu.	Fluid	Fluid	Powder	Powder
Aquatic	Aquat.	Food	Food	Preparation	Prep.
Archives	Arch.	Gastroenterology	Gastroenterol.	Proceedings	Proc.
Association	Assoc.	Gene	Gene	Process(es)	Process(es)
Australasian	Aust.	General	Gen.	Processing	Process.
Australia	Aust.	Genetic(s)	Genet.	Programs	Programs
Australian	Aust.	Genome	Genome	Progress	Prog.
Biochemistry	Biochem.	Geophysics	Geophys.	Protein	Protein
Bioengineering	Bioeng.	Hazardous	Hazard.	Quantum	Quantum
Biological	Biol.	Health	Health	Quarterly	Q.
Biology	Biol.	Human	Hum.	Quimica	Quim.
Biomechanics	Biomech.	Hydrology	Hydrol.	Record	Rec.
Bioscience	Biosci.	Immunology	Immunol.	Report	Rep.
Biotechnic	Biotech.	Indian	Indian	Research	Res.
Biotechnology	Biotechnol.	Industrial	Ind.	Review(s)	Rev.
British	Br.	Infection	Infect.	Science	Sci.
Bulletin	Bull.	Institute	Inst.	Section	Sect.
Bureau	Bur.	Institution	Inst.	Separation	Sep.
Canada	Can.	Interface	Interface	Series	Ser.
Canadian	Can.	International	Int.	Social	Soc.
Cancer	Cancer	Iron	Iron	Society	Soc.
Ceramic	Ceram.	Japan	Jpn.	South Africa(n)	S. Afr.
Chimica	Chim.	Japanese	Jpn.	South	South
Chimie	Chim.	Journal	J.	Southern	South.
Chinese	Chin.	Laboratory	Lab.	Special	Spec.
Chromatography	Chromatogr.	Letters	Lett.	Specific	Specif.
Climate	Clim.	Magazine	Mag.	Steel	Steel
Clinical	Clin.	Management	Manage.	Studies	Stud.
College	Coll.	Manual	Man.	Study	Study
Colloid(s)	Colloid(s)	Mass	Mass	Substances	Subst.
Condensed	Condens.	Materials	Mater.	Supplement	Suppl.
Conference	Conf.	Matter	Matter	Surface(s)	Surf.
Congress	Cong.	Metal(s)	Met.	System	Syst.
Critical	Crit.	Metallurgical	Metall.	Technical	Tech.
Crystallography	Crystallogr.	Method(s)	Method(s)	Technology	Technol.
Current	Curr.	Microbiology	Microbiol.	Topics	Top.
Development(s)	Dev.	Milling	Mill.	Toxic	Tox.
Developmental	Dev.	Mine	Mine	Toxicology	Toxicol.
Digest	Dig.	Mineral(s)	Miner.	Transactions	Trans.
Disease	Dis.	Mineralogist	Mineral.	Trends	Trends
East	East	Mineralogy	Mineral.	Water	Water
Eastern	East.	Mining	Min.	West	West
Ecology	Ecol.	Modern	Mod.	Western	West.
Economics	Econ.	Molecular	Mol.	World	World
Education(al)	Educ.	National	Natl.	Zoology	Zool.