



Provisional Guidance for Chemistry Notation Using UEB with Nemeth

Approved June 2020

The BANA Chemistry Committee developed this provisional guidance for transcribing chemistry using Nemeth in UEB contexts. This document is a revision of the previously published provisional guidance and will be obsolete after the updated Chemistry Code is published.

These guidelines are to be applied in addition to those presented in the most recent edition of *Guidance for Transcription Using the Nemeth Code within UEB Contexts*.

As with all BANA publications, this material is intended to be used in its entirety. These materials may be duplicated, but not altered.

BACKGROUND

The *Braille Code for Chemical Notation* is based on *The Nemeth Braille Code for Mathematics and Scientific Notation*. Specific provisions for using braille symbols for the construction of chemical notation such as bonds, electron dots, ring structures, and arrows, are outlined in the *Braille Code for Chemical Notation*. If tactile illustrations are used, *Guidelines and Standards for Tactile Graphics* must be followed in preparing the tactile graphics. When transcribing chemistry, biology, and physics texts, to assure proper formation of chemical symbols and structures, refer to the most recent edition of the codes and guidelines as well as any BANA "Guidance" documentation regarding their use in conjunction with UEB.

FRONT MATTER

Special Symbols Page

Chemistry Code symbols used in the volume must appear on the Special Symbols page. Place the symbols under the subheading "Chemistry Symbols" and list them in braille order according to the rules of UEB.

Example 1

Chemistry Symbols

____ Horizontal single bond (including indicators). Dots 25 may be repeated in order to accommodate labels or other symbols.

H_2O H_2O H_2O H_2O H_2O
 H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O
 H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O
 H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O
 H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O
 H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O
 H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O
 H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O H_2O

Transcriber's Notes Page

Use of the Nemeth Code and the Chemistry Code as well as the Guidance documents must be cited on the Transcriber's Notes page as follows. "Mathematical content is transcribed according to *The Nemeth Braille Code for Mathematics and Science Notation, 1972 Revision, 2007-2015 Updates*, including the *Guidance for Transcription Using the Nemeth Code within UEB Contexts* (Approved April 2018). Chemical symbols are transcribed according to the *Braille Code for Chemical Notation, 1997*, including the *Provisional Guidance for Chemistry Notation Using Nemeth in UEB Contexts*." If diagrams are included in the transcription, also include the following statement. "Tactile graphics are presented according to the *Guidelines and Standards for Tactile Graphics, 2010*." And, if a Graphic Symbols page is included, "Graphic symbols used throughout this volume are shown on the Graphic Symbols page, braille page t_."

Example 5

The molecular formula for water is H₂O.

⠠⠏⠗⠨⠒⠠⠕⠗⠑⠗⠑⠒⠠⠕⠗⠑⠗⠑⠒

Example 6

CH₄ + 2O₂ → CO₂ + 2H₂O

⠠⠒⠠⠕⠗⠑⠗⠑⠒⠠⠕⠗⠑⠗⠑⠒⠠⠕⠗⠑⠗⠑⠒

Example 7

Fe(II) and Fe^{II} are other ways to notate the ferrous ion Fe²⁺.

⠠⠒⠠⠕⠗⠑⠗⠑⠒⠠⠕⠗⠑⠗⠑⠒⠠⠕⠗⠑⠗⠑⠒

Switching Rules for Chemical Words

Within narrative, names of chemical compounds may be transcribed in UEB unless symbols associated with the word require a switch according to the *Guidance for Transcription Using the Nemeth Code within UEB Contexts*.

The presence of a grouping symbol associated with a chemical word does not require a switch to Nemeth Code.

Example 8

copper(II) oxide

⠠⠒⠠⠕⠗⠑⠗⠑⠒⠠⠕⠗⠑⠗⠑⠒

A hyphenated expression requires a switch to Nemeth Code if it contains a character or symbol from the Nemeth Code.

Example 9

GDP is a guanosine 5'-diphosphate sodium salt.

⠠⠒⠠⠕⠗⠑⠗⠑⠒⠠⠕⠗⠑⠗⠑⠒

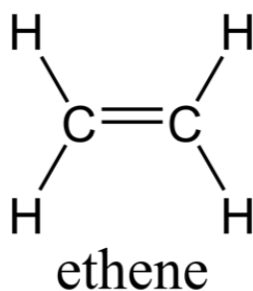
Spatial Diagrams of Molecular Structures

In spatial diagrams of molecular structures containing oblique bonds or chemical arrows other than yields arrows or equilibrium arrows, tactile (raised line) representation is preferred over the use of braille symbols. Follow the directives given in the most recent edition of *Guidelines and Standards for Tactile Graphics* regarding techniques, line styles, spacing, and the creation of a Graphic Symbols page.

When raised lines are used in a molecular diagram, all bonds and arrows in the structure are to be drawn. Element SYMBOLS, electron dots, and math symbols must be depicted as braille symbols. The English-letter indicator is omitted for single-letter SYMBOLS in a tactile graphic.

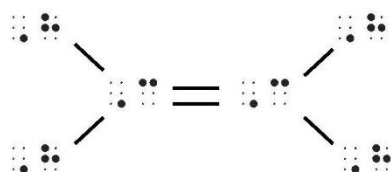
A switch to Nemeth Code is required when the diagram contains math or chemistry symbols. Assuming these examples are displayed to narrative, the left margin is cell 3 according to Nemeth Code rules. Code switch indicators are in cell 1.

Example 23



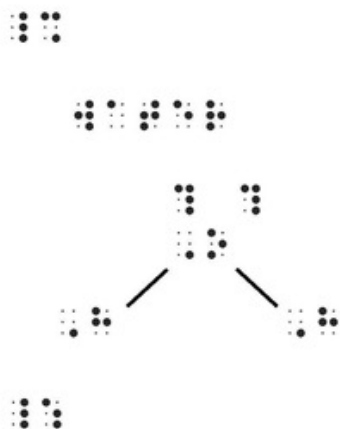
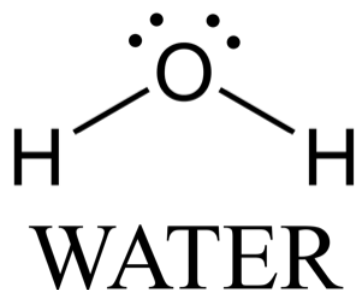
⠠⠠

⠠⠠⠠⠠⠠⠠



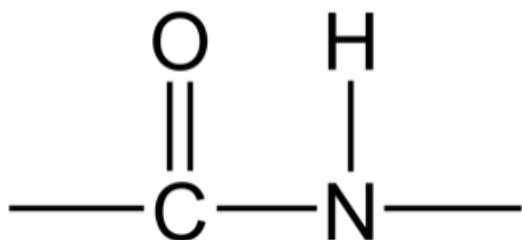
⠠⠠

Example 24

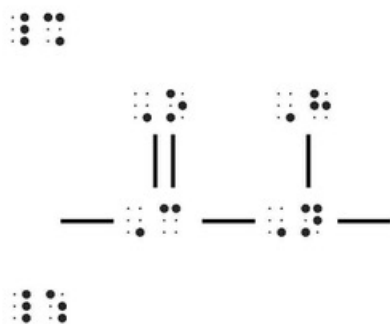


A molecular structure containing only straight vertical or horizontal bonds and only yields or equilibrium arrows may be depicted entirely with braille symbols or as a tactile graphic. Methods must not be combined in the same diagram.

Example 25

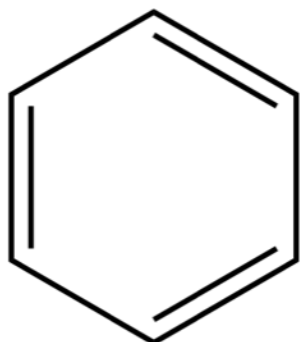


Example 25, ALTERNATE DEPICTION



If the diagram does not contain math or chemistry symbols represented as Braille symbols, a switch to Nemeth Code is not required.

Example 26



benzene

