

Johnstone Laboratory Formatting Tips

Field Codes

Field codes can be very helpful when dealing with typographically complex issues that arise in writing chemistry papers. One of the most common is the symbol used to indicate rotoinversion symmetry in crystallography. The “1 bar” or “bar 1” symbol is often rendered as “-1” but should appear as $\bar{1}$. But how to get this symbol? You can place it into the text using the “Insert equation” functionality in MS Word, but this can sometimes cause formatting issues and usually has the number in a different font from the rest of the text. The more streamlined method is to use equation *field codes*.

To insert a field code press CTRL + F9. Note that on many laptop keyboards without dedicated F-keys you have to press CTRL+Fn+F9. Doing so creates the following:

{ }

It just looks like two braces, but note that when you click on it, the whole thing highlights. If you right-click, there is a “Toggle Field Codes” option. We’ll use that later.

You specify that you want to use the “equation functionality” by typing EQ in the braces. You then insert a space and provide the instructions. An exhaustive list of instructions is found at <https://support.office.com/en-us/article/eq-field-27300091-3780-4b88-836f-ae49ecde4692>

The “overstrike” instruction is provided by $\o(a,b)$ where the characters written in positions a and b will be superimposed on each other. Right-clicking on the field code and selecting “toggle field code” will give you the final product.

For example: { EQ \o(9,X)} would give 9X

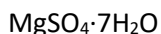
In the example above, if you replace “9” with the digit “1” and “X” with the overline symbol $\bar{}$ (accessible through “Insert > Symbols”) you will have { EQ \o(1, $\bar{}$)}. When toggled, you will get $\bar{1}$.

NOTE: Which symbol you use for the bar depends on the font you are using (glyphs have different dimensions in different fonts). The overline works well for Calibri. In Times New Roman, the instructions above with the overline give $\bar{1}$, which looks a little funny – the bar is too low. In Arial, the overline also gives $\bar{1}$, but the macron works well: { EQ \o(1, $\bar{}$) } gives $\bar{1}$

There are many other ways that you can achieve this result, but this tends to give the cleanest product. As a last word, field codes are a very common feature in Word. They are how it inserts page numbers, dates, EndNote references, etc.

Symbols

Interpunct. For addition compounds, solvates, hydrates, etc. use the interpunct (·), not a bullet point. The interpunct (or “middle dot”) can be found in Insert > Symbol or can be inserted by specifying the Unicode code point. Type the characters U+00B7 and, with the cursor directly after the 7, press ALT+X; you will get ·



Degree. For angular measurements or temperatures on the Celsius and Fahrenheit scales, use the degree symbol (°), not a superscripted “o” or “0.” Unicode: U+00B0. For angular measurements, there is no space following the numerical value. For temperatures, there is a space after the numbers.

She traversed 39° of the arc while maintaining a temperature of 23 °C.

Prime. In term symbols or when specifying substitution, to name two instances, the prime (') is used. It is distinct from an apostrophe. Unicode: U+2032.

N,N'-dimethylformamide

Ordinal Indicator. When discussing a primary, secondary, or tertiary amine, alcohol, etc. The masculine ordinal indicator (°) is used. It is distinct from a superscripted “o” or “0” and is also not a degree sign.

Ethanol is a 1° alcohol.

Nabla. The nabla (or del) symbol (∇) is used to indicate a gradient and is used in discussion of the topology of the electron density. Unicode: U+2207. This is a character that you will not readily find in Insert > Symbol.

The Laplacian of the electron density is abbreviated $\nabla^2\rho$.

Arrows. Equations will most frequently be set separate from the main text and can be formatted with ChemDraw or Equation Editor. In some instances (e.g. dative compounds) an in-line arrow character is needed. The following are helpful ones:

⇌	Equilibrium arrows	Unicode: U+21CC
↔	Resonance arrow	Unicode: U+2194
←	Left-facing arrow	Unicode: U+2190
→	Right-facing arrow	Unicode: U+2192

Double Dagger. Quantities related to transition states are indicated with a superscripted double dagger (‡). This is distinct from an unequal sign. Unicode: U+2021.

The enthalpy of activation is represented with ΔH^\ddagger .

Multiplication Sign. In scientific notation or when specifying centrifugation force, the multiplication sign (×) should be used. It is distinct from a lower-case x. Unicode: U+00D7.

The speed of light is $2.998 \times 10^8 \text{ m s}^{-1}$.

Non-Breaking Spaces and Hyphens

When writing chemistry (or other scientific) papers, you will commonly encounter terms that are separated by a space or hyphen but should not be broken across two lines. One examples is a numerical value and its units. Another is a molecular formula and its stereochemical specification. For instance:

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et 2 cm⁻¹ dolore magna aliqua.

or

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore *cis*-PtCl₂(NH₃)₂ dolore magna aliqua.

Instead of using a regular space (with SPACEBAR) use a non-breaking space with CTRL+SHIFT+SPACEBAR. The same can be done with hyphen to create non-breaking hyphens. In the examples above, this gives:

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et 2 cm⁻¹ dolore magna aliqua.

or

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore *cis*-PtCl₂(NH₃)₂ dolore magna aliqua.