Description

In this article, we describe the scientific conventions and writing styles followed in Chemistry papers.

Beginning a Sentence

Avoid starting a sentence with a symbol or numerical value.

Example

? 0.5 g of NaOH was added to 5 ml of DW, and the solution was heated.

?? After addition of 0.5 g of NaOH to 5 ml of DW, the solution was heated.

Pedagogical Phrases

Avoid including phrases which address the process of learning and not the science of the experiment.

Example

This experiment helped us learn about…

or

The goal of this experiment was to learn about…

Although such sentences are preferred in Original Articles, scientific reports/communication should ideally focus only on the data and results.

Illogical Constructions

Check that a modifier phrase or the pronoun “it” actually refers to the intended subject.

Tip 1!

To avoid dangling modifiers and unclear antecedents, think about the subject.

Example

? Being coated with grease, I cleaned the flask before adding reagents.

Was I coated with grease or the flask?

The flask was coated with grease, and so,

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?? Because the flask was coated with grease, it was cleaned before adding reagents.

Personal Pronouns

Because scientific experiments demonstrate facts that do not depend on the observer, reports should avoid using the first and second person (I/we/our/us).

Example

? I filtered the solution and noticed production of a yellow powder.

?? Filtration of the solution, yielded a yellow powder.

However, when referring to your own results or conclusions, it is better to use the first or second person.

Example

While AB et al. report X value, the authors' data indicates Y value.

or

AB et al. report X value, but our data yield Y value.

Active Voice

When possible, replace passive voice with active voice for clarity.

Example

? Passive: There was some solid that did not dissolve.

?? Active: Some solid did not dissolve.

Personification

Do not personify compounds and equipments.

Example

? The spectrum shows two bands of equal intensity.

?? Two bands of equal intensity appear in the spectrum.

Plural Nouns

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Usage of verbs when mentioning amount of chemical reagent and terms like data (singular: datum)and spectra (spectrum) is often confused.

A quantity used is a singular subject, even when that quantity is in a plural form of units.

Example

? While the solution boiled, 5.0 g of KBr were added.

?? While the solution boiled, 5.0 g of KBr was added.

Verb Tense and “Verbing” a Noun

Usually the journal guidelines specify the tense to be followed in each section of the manuscript.

Tip 2!

Use past tense to describe a procedure:

Hydrochloric acid was added to the flask slowly in order to prevent decomposition of the product.

Use present tense to describe a scientific fact:

Hydrochloric acid is a caustic substance that must be used with caution.

“Verbing” a noun, i.e., turning a noun into a verb makes the sentence unclear and should be avoided.

Example

? X complexes to Y

?? X forms complexes with Y

Abbreviations, Formulae, and Numerals

Define abbreviations for chemical compounds or ligands at the first instance. However, standard organic abbreviations (e.g., Me = methyl, Pr = *iso*-propyl) can be used. Use chemical formulae for standard compounds but not when the name is shorter or more precise.

Example

- *NaOH (aq) for sodium hydroxide*
- *Caffeine for* $C_8H_{10}N_4O_2$

Long compound names can be numbered if repeated many times. The number should be bold or underlined, defined when first presented and appear in parenthesis when used as an adjective.

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Example

Investigations into 8-hydroxyquinoline **(1)** and 4-iodo-8-hydroxyquinoline **(2)** are described. Recrystallization of **1** and **2**…

Use a leading zero for values less than unity and avoid values with many zero (use scientific notation instead) for decimals.

Example

? .15 mm, ?? 0.15 mm

? 0.000024 mM, ?? 2.3×10^{-4} mM

Chemical Names

The names of chemicals are not capitalized, unless they are trade names (e.g., “Tylenol”).

Example

? The reaction of Cobalt (II) was…

?? The reaction of cobalt (II) was…

Terms and Expressions

Use terms like “*synthesizing*” new compounds and “*preparing*” solutions, avoid terms like “products were *created*.” With/Using/By/On—avoid using these interchangeably, as they might be incorrect in some cases

Example

Spectra are measured “*with*/*using*” and not “*on*” a spectrometer.

Tip 3!

Spectrometers, colorimeters, etc. should be referred to as “instruments” not “machines.”

The intransitive verb “*react*” is the most used term in chemistry papers. It should not have an object and should not have a passive voice. Chemical reagents react with each other, they are not reacted.

Example

? A and B were reacted to produce C and D.

?? The reaction of A and B, potassium hydroxide and hydrochloric acid, produced C and D.

A hypothesis can be “*tested*”; however, for most laboratory work, the terms “measured,”

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“investigated,” “determined,” “calculated,” and “obtained” are better.

Example

? The absorbance of the solution was tested using…

?? The absorbance of the solution was measured using…

Reference: www.chemistry.kenyon.edu/getzler/08F-CourseFiles/BriefGuideWritingChemistry

Category

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2. Reporting Research

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