

Nomenclature of Elements having $Z > 100$

Approved by IUPAC 1977

The principles applied in deriving the names were as follows:

- (i) The names should be short, systematic, and obviously related to the atomic numbers of the elements.
- (ii) The names should end *ium* whether the elements is expected to be metal or otherwise.
- (iii) The symbols should consist of three letters to avoid duplicating some of the symbols already used for elements.
- (iv) The symbols should be derived directly from the atomic number and be visually related to the names as far as possible.

The existence of this systematic nomenclature for unknown elements does not deny the right of “discoverers” of new elements to suggest other names to IUPAC after their discovery has been established beyond doubt in the scientific community. Such trivial names have already been accepted for elements 101 (mendelevium), 102 (nobelium), 103 (lawrencium), 104 (rutherfordium), 105 (dubnium), 106 (seaborgium), 107 (borhium), 108 (hassium) and 109 (meitnerium).

The nomenclature rules are:

1. The name is derived directly from the atomic number of the element using the following numerical roots:

| | | | | | | | | | |
|-----|----|----|-----|------|------|-----|------|-----|-----|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| nil | un | bi | tri | quad | pent | hex | sept | oct | enn |

2. The roots are put together in the order of the digits which make up the atomic number and terminated by *ium* to spell out the name. The final *n* of *enn* is elided when it occurs before *nil* and the final *i* of *bi* and *tri* when it occurs before *ium*.
3. The symbol of the elements is composed of the initial letters of the numerical roots which make up the name. (The mixture of Greek and Latin roots is necessary to avoid ambiguities at this point.)

In the following examples, hyphens are inserted to assist comprehension and pronunciation but are not part of the names.

| Atomic number | Name | Symbol | Atomic number | Name | Symbol |
|---------------|----------------|--------|---------------|-----------------|--------|
| 101 | un-nil-unium | Unu | 120 | un-bi-nilium | Ubn |
| 102 | un-nil-bium | Unb | 121 | un-bi-unium | Ubu |
| 103 | un-nil-trium | Unt | 130 | un-tri-nilium | Utn |
| 104 | un-nil-quadium | Unq | 140 | un-quad-nilium | Uqn |
| 105 | un-nil-pentium | Unp | 150 | un-pent-nilium | Upn |
| 106 | un-nil-hexium | Unh | 200 | bi-nil-nilium | Bnn |
| 107 | un-nil-septium | Uns | 201 | bi-nil-unium | Bnu |
| 108 | un-nil-octium | Uno | 202 | bi-nil-bium | Bnb |
| 109 | un-nil-ennium | Une | 300 | tri-nil-nilium | Tnn |
| 110 | un-nil-nilium | Uun | 400 | quad-nil-nilium | Qnn |
| 111 | un-un-unium | Uuu | 500 | pent-nil-nilium | Pnn |
| 112 | un-un-bium | Uub | 900 | en-nil-nilium | Enn |