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| **Set 17: Ionic Nomenclature Part I** |

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| **Skill 17.01: Be able to name monatomic cations**  **Skill 17.02: Be able to name monatomic anions**  **Skill 17.03: Be able to name type I ionic compounds**  **Skill 17.04: Be able to name type II ionic compounds** |

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| **Skill 17.01: Be able to name monatomic cations** |

**Skill 17.01 Concepts**

A cation is a positively charged ion

Examples:

Na+, Mg2+

Cations are identified simply by the element’s name

Examples:

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| **Cation** | **Name** |
| Na+ | Sodium |
| Mg2+ | Magnesium |
| K+ | Potassium |

**Skill 17.01 Problem 1**

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| Name the following cations: | | |
| (a) Li+ | (b) Ba2+ | (c) Zn2+ |

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| **Skill 17.02: Be able to name monatomic anions** |

**Skill 17.02 Concepts**

An anion is a negatively charged ion

Examples:

Cl-, O2-

Monatomic anions are named by dropping the ending of the element’s name, then add *-ide*

Examples:

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| **Anion** | **Name** |
| Cl- | Chloride |
| O2- | Oxide |
| S2- | Sulfide |

**Skill 17.02 Problem 1**

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| Name the following anions: | | | |
| (a) N3- | (b) I- | (c) C4- | (d) H- |

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| **Skill 17.03: Be able to name type I ionic compounds** |

**Skill 17.03 Concepts**

A type I ionic compound is a binary ionic compound made from a positive ion (cation) always written first in the formula and a negative (anion). In naming these compounds, the following rules apply:

1. The cation is always named first and the anion second
2. A monatomic cation takes its name of the element. For example, Na+ is called sodium in the names of compounds containing this ion.
3. A monatomic anion is named by taking the root of the element name and adding –*ide*. Thus Cl- ion is called chloride.

**Skill 17.03 Problem 1**

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| Name each of the following binary compounds: |
| 1. NaCl |
| 1. CsF |
| 1. AlCl3 |
| 1. LiH |

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| **Skill 17.04: Be able to name type II ionic compounds** |

**Skil 17.04 Concepts**

A type II ionic compound is one that contains a cation whose charge must be denoted with a roman numerial (I, II, III etc). Such cations include those that can form more than one type of positive ion. For example, Fe2+ and Fe3+ are iron(II) and iron(III) respectively. Elements that form only one cation do not need to be identified by a Roman numeral.

Common metals that DO NOT require a Roman numeral include

* Group 1, which form 1+ions
* Group 2, which form 2+ ions
* Group 3, which form 3+ ions
* Aluminum, which forms 3+
* Zinc, which forms 2+
* Silver, which forms 1+

All other cations must be denoted with a roman numerial

**Skill 17.04 Problem 1**

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| Name each of the following binary compounds: |
| 1. CoBr2 |
| 1. CaCl2 |
| 1. Al2O3 |
| (d) CrCl3 |