

Oxidation States

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Ex) NaCl: Na = +1; Cl = -1
Ex) CF₄: C = +4; F = -1
Ex) CO₂: C = +4; O = -2

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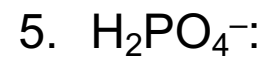
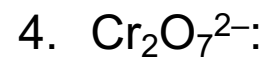
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So sulfur has an oxidation number of $+6$.

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1. CO_3^{2-} : Each oxygen has an oxidation number of -2 .
Because the total charge is $2-$, and 3 O^{2-} atoms have $6-$, C must be $4+$.
Carbon has an oxidation number of $+4$.
2. CN^- :
3. CrO_4^{2-} :
4. $\text{Cr}_2\text{O}_7^{2-}$:
5. H_2PO_4^- :

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Because the total charge is -1 , and 1 N^{3-} atom has $3-$, C must be $2+$.
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Carbon has an oxidation number of $+2$.
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Chromium has an oxidation number of $+6$.
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Because the total charge is $2-$, and 7 O^{2-} atoms have $14-$, 2 Cr^{n+} atoms must be $6+$.
Chromium has an oxidation number of $+6$.
5. H_2PO_4^- : Each hydrogen has an oxidation number of $+1$.
Each oxygen has an oxidation number of -2 .
Because the total charge is $1-$, and 4 O^{2-} and 2 H^+ atoms have $6-$, P must be $5+$.
Phosphorus has an oxidation number of $+5$.