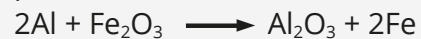


### Thermite Welding



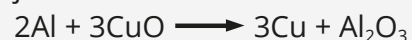
Picture source: [https://c2.staticflickr.com/2/1643/24345430519\\_723fb4a75c\\_b.jpg](https://c2.staticflickr.com/2/1643/24345430519_723fb4a75c_b.jpg)

- ▶ A mixture of (Aluminum) Al and Fe<sub>2</sub>O<sub>3</sub> (Ferric Oxide) reacts to produce molten iron that is used to join railway rails together.



Aluminium being more reactive than Iron displaces Fe in Fe<sub>2</sub>O<sub>3</sub> to form Al<sub>2</sub>O<sub>3</sub>.

- ▶ Similarly a mixture of Al and CuO is used for creating electric joints between Cu and steel.



Aluminum displaces Cu in the CuO.

### Extraction of Metals



Picture source: [https://pixabay.com/static/uploads/photo/2015/01/29/19/04/steel-mill-616536\\_960\\_720.jpg](https://pixabay.com/static/uploads/photo/2015/01/29/19/04/steel-mill-616536_960_720.jpg)

- ▶ Iron is extracted from its ore Ferric Oxide (Fe<sub>2</sub>O<sub>3</sub>) by heating it with carbon in blast furnaces.



Carbon displaces Iron in Fe<sub>2</sub>O<sub>3</sub> to form CO<sub>2</sub>.

- ▶ Heating a mixture of Cr<sub>2</sub>O<sub>3</sub> and finely divided Carbon produces metallic chromium.



Carbon displaces chromium in Cr<sub>2</sub>O<sub>3</sub> to form CO<sub>2</sub> and chromium metal.