

**Melting Point**

1244°C

**Boiling Point**

1962°C

**Density**7.4 g/cm<sup>3</sup>**Appearance****Other Physical Properties**

Manganese conducts electricity and is hard.

**Chemical Properties**

Manganese reacts with air slowly (faster if water is present) and with dilute acids.

**Compounds**

One compound of manganese is manganese dioxide, which is black. Another is potassium permanganate, which is purple.

**Uses**

Manganese is added to iron to make very strong steel alloys (for example, for railroad tracks, safes, and armor plate). Manganese dioxide is used in dry-cell batteries.

**Notes**

THIS SPONGE AND THE MANGANESE-COATED ROCK ON WHICH IT SAT WERE COLLECTED FROM THE ATLANTIC OCEAN.

PHOTO: Islands in the Stream Expedition of 2002, NOAA Office of Ocean Exploration



MANGANESE IS ADDED TO STEEL TO MAKE ALLOYS THAT ARE VERY STRONG. RAILROAD TRACKS, WHICH CARRY VERY HEAVY LOADS, ARE OFTEN MADE FROM THIS TYPE OF STEEL.

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