

# Burning Magnesium Under Water: Mr. Wizard Strikes Out

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In response to a question from my son, I recently attempted to demonstrate that magnesium will burn under water – just like it says in the textbooks. I used a thin strip of magnesium (one eighth inch width) which ignited readily in air with a sustained flame. When I placed the Mg strip on the surface of the water, it continued burning vigorously, causing some localized boiling of the water. However, when I plunged the magnesium strip completely under water, the water extinguished the flame ... every single time.

Needless to say, the results of this experiment have somewhat tarnished my reputation as Mr. Wizard. I assume that the reason the flame went out was because of heat transfer effects related to dissociating/vaporizing the water (I tried folding and twisting the magnesium into four-ply strips, but that had no effect).

Could someone tell me what I need to do to make this experiment work? Would using thicker magnesium strips help? If so, what size would I need?

Thank you in advance for your help.

FYI, I followed all necessary safety precautions: we used welder's goggles (#10 shade) for eye protection, tongs for handling the magnesium, and the experiment was conducted outdoors with good ventilation and plenty of sand for fire safety.

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- *Follow-Ups:*
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◇ *From:* rekuci
  - ◆ ***Re: Burning Magnesium Under Water: Mr. Wizard Strikes Out***  
◇ *From:* don . shelly

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