

Experiment 3 - The Penny Push

Materials

- EMG-905, a mineral oil-based ferrofluid with a saturation magnetization of 400 gauss obtained from [Ferrofluidics Corporation](#).
- Strong magnet (cow magnet, bar magnet, or rare earth magnet). [Click here](#) for magnet suppliers.
- Petri dish
- Penny or other small coin

Caution! Caution! Caution! Caution! Caution! Caution! Caution! Caution!

The ferrofluid causes stains and is difficult to remove from skin and fabrics. Keep the fluid off the magnet. It is virtually impossible to remove ferrofluid after direct contact with a strong magnet.

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Procedure

- Pour a small amount of ferrofluid in a Petri dish, so that the bottom of the dish is covered.
- Place a penny in the ferrofluid in the Petri dish. The penny sinks to the bottom.
- Bring a strong magnet up **underneath** the container. The attraction of the ferrofluid for the magnet forces the penny up and out of the ferrofluid. Repeat this demonstration with water replacing the ferrofluid to show that the magnet is not pushing the penny up.



Figure 1 - The strong attraction between the ferrofluid and the magnet will force a penny up and out of the fluid.

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