

Gallium LED Lights

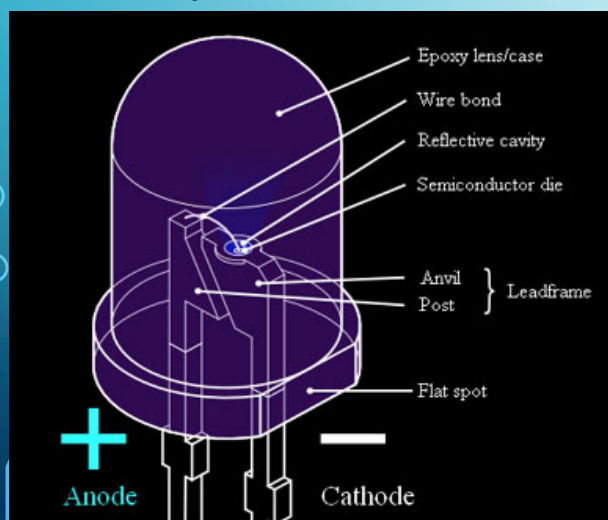
K. Winter 2013

LEDs, light emitting diodes, are light sources that are energy efficient and can be made in a variety of colors.



Gallium is a main component in many LED lights, with different gallium compounds producing different colored light when exposed to an electric current.

Compound	Light Color
Gallium Arsenide (GaAs)	Red
Gallium Nitride (GaN)	Bright Blue
Gallium(III) Phosphide	Green
Aluminum Gallium Indium Phosphide (AlGaInP)	Orange
Gallium Arsenide Phosphide (GaAsP)	Yellow



<http://www.edisontechcenter.org/lighting/LED/LEDdiagram300.jpg>



<http://www.flashlightsorient.com/9-led-flashlights-c-1.html>

LED lights are commonly used in television screens, flashlights, and Christmas lights.



<http://ftechblog.com/comparison-between-lcd-and-led-tv/>

Gallium is isolated for use in these compounds by removing it from bauxite as a trace element.



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Bauxite (Al_2O_3 + trace impurities)

Separation of
elements



<http://en.wikipedia.org/wiki/Aluminum>

Pure Aluminum

+



<http://en.wikipedia.org/wiki/Gallium>

Pure Gallium

+ other trace minerals and Oxygen

American Bauxite
Company

BAUXITE, SALINE CO., ARK.

JOHN T. FULLER, Superintendent

Bauxite is approximately 50 ppm Gallium. This means the bauxite mines in appropriately named Bauxite, Arkansas contain about 2 million kg of gallium!



<http://hacknmod.com/hack/diy-how-to-install-and-wire-led-lights/>