

# Magic smoke

Smoke released from an electronic component

An [integrated circuit](#) rendered useless after overheating.

**Magic smoke** (also called **factory smoke**, **mysterious blue smoke**, **blue smoke**, or **magic blue smoke**) refers to smoke produced by malfunctioning electronic circuits. The origins of the magic smoke have become a [running in-joke](#) that started among [electrical engineers](#) and [technicians](#) before it was more recently adopted by computer [programmers](#). The actual origin is the black plastic epoxy material that is used to package most common semiconductor devices such as [transistors](#) and [integrated circuits](#). When it burns, it produces smoke that is blue in color.

## Joke

The magic smoke is observed to come out of [electronic](#) components when overheated, often through exposure to an extreme [electrical current](#) usually caused by the application of excess [voltage](#) through some failure of the circuit. According to the joke, at their factories, manufacturers put a little bit of [magic](#) smoke into every electronic component and it is this smoke which makes the device work. In support of this joke, once the magic smoke has been released, the device lacks its key component and no longer works. The smoke thus can be thought of as an essential part in the device's function. It is also noted that once let out, the magic smoke cannot be put back in.

In some variations of the joke, it is alleged that the major microchip production companies (especially the large [microprocessor](#) manufacturers) are involved in a [conspiracy](#) to keep the true nature of their products under wraps.[1]

This has led to use of the phrases (and variants of) "leaking smoke", "the magic smoke is escaping", or "you let the smoke out!" as a [euphemism](#) for the destruction of a processor, [integrated circuit](#) or other electronic component, by overheating.

When a device is powered on for the first time, it is often called a "[smoke test](#)".

The emblem of the [Debian](#) free software project is a swirl. [Bruce Perens](#) has claimed that the swirl represents magic smoke, although the logo's creator has never offered an official explanation and others have offered competing theories.[2],[3]