

🕒 **What are Toxic Effects?** This term refers to the health effects that occur due to exposure to a toxic substance; also known as a poisonous effect on the body.

🕒 **What is Selective Toxicity?** “Selective toxicity” means that a chemical will produce injury to one kind of living matter without harming another form of life, even though the two may exist close together.

🕒 **How Does Toxicity Develop?** Before toxicity can develop, a substance must come into contact with a body surface such as skin, eye or mucosa of the digestive or respiratory tract. The dose of the chemical, or the amount one comes into contact with, is important when discussing how “toxic” a substance can be.

🕒 **What is a dose?** The dose is the actual amount of a chemical that enters the body. The dose received may be due to either acute (short) or chronic (long-term) exposure. An acute exposure occurs over a very short period of time, usually 24 hours. Chronic exposures occur over long periods of time such as weeks, months, or years. The amount of exposure and the type of toxin will determine the toxic effect.

🕒 **What is dose-response?** Dose-response is a relationship between exposure and health effect, that can be established by measuring the response relative to an increasing dose. This relationship is important in determining the toxicity of a particular substance. It relies on the concept that a dose, or a time of exposure (to a chemical, drug, or toxic substance), will cause an effect (response) on the exposed organism. Usually, the larger or more intense the dose, the greater the response, or the effect. This is the meaning behind the statement “the dose makes the poison.”

is aconitine, a highly toxic diterpenoid alkaloid. Ingestion of a few grams of roots may result in death occurring from ventricular arrhythmias, which are most likely to occur within the first 24 hours.

## I. Animal Toxins

These toxins can result from venomous or poisonous animal releases. Venomous animals are usually defined as those that are capable of producing a poison in a highly developed gland or group of cells, and can deliver that toxin through biting or stinging. Poisonous animals are generally regarded as those whose tissues, either in part or in their whole, are toxic. Batrachotoxins are extremely potent cardiotoxic and neurotoxic steroidal alkaloids found in skin secretions from certain species of frogs (poison dart frogs). The most toxic frog is very likely the golden poison frog, *Phyllobates terribilis*.

## J. Subcategories of Toxic Substance Classifications

All of these substances may also be further classified according to their:

- ☞ Effect on target organs (liver, kidney, hematopoietic system),
- ☞ Use (pesticide, solvent, food additive),
- ☞ Source of the agent (animal and plant toxins),
- ☞ Effects (cancer mutation, liver injury),
- ☞ Physical state (gas, dust, liquid),
- ☞ Labeling requirements (explosive, flammable, oxidizer),
- ☞ Chemistry (aromatic amine, halogenated hydrocarbon), or
- ☞ Poisoning potential (extremely toxic, very toxic, slightly toxic)

## K. General Classifications of Interest to Communities

🌐 Air pollutants