

## Appendix B. Glossary

### **Acute exposure**

Contact with a substance that occurs for a limited or short duration.

### **Additive response effect**

A biologic response to exposure to multiple substances that equals the sum of responses of all the individual substances added together.

### **Ambient**

Surrounding (for example, *ambient* air).

### **Analyte**

A chemical for which a sample (such as water, air, or blood) is tested in a laboratory. For example, if the *analyte* is mercury, the laboratory test will determine the amount of mercury in the sample.

### **Antagonistic effect**

A biologic response to exposure to multiple substances that is less than would be expected if the known effects of the individual substances were added together.

### **Background level**

The typical naturally occurring or prevailing concentration of a chemical or radioactive material in a specific environment.

### **Berm**

A sloped wall or embankment (typically constructed of earth, hay bales, or timber framing) used to prevent surface overflow or inflow.

### **Biodegradation**

Decomposition or breakdown of a substance through the action of microorganisms.

### **Biologic monitoring**

Monitoring of hazardous substances in biologic materials (such as blood, hair, urine, or breath) to determine whether exposure has occurred. A blood test for lead is an example of biologic monitoring.

### **Biota**

Plants and animals in an environment.

### **Cancer**

Any one of a group of diseases that occur when cells in the body become abnormal and grow or multiply out of control.

### **Cancer risk**

A theoretical risk of getting cancer if exposed to a substance every day for 70 years (a lifetime exposure). The true risk might be lower.

### **Carcinogen**

A substance that causes cancer.

### **Case-control study of exposure**

A study that compares exposures of people who have a disease or condition (cases) with people who do not have the disease or condition (controls).

**CAS registry number**

A unique number assigned to a substance or mixture by the American Chemical Society Abstracts Service.

**Central nervous system**

The part of the nervous system that consists of the brain and the spinal cord.

**Chronic**

Occurring over a long time period; the opposite of acute.

**Chronic exposure**

Contact with a substance that occurs over a long time period.

**Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)**

*CERCLA*, also known as Superfund, is the federal law that concerns the removal or cleanup of hazardous substances in the environment and at hazardous waste sites.

**Concentration**

The amount of a substance present in a certain environmental (e.g., air, water, and soil) or biologic medium (e.g., leaf, blood, and fat tissue).

**Contaminant**

A substance that is regarded as being foreign to the location where it is found.

**Decommissioning**

The process of removing from service a facility that is no longer needed for its original purpose. *Decommissioning* may involve environmental cleanup of contaminated facilities.

**Dermal**

Referring to the skin. For example, *dermal* absorption means absorption through the skin.

**Dermal contact**

Contact with (touching) the skin.

**Detection limit**

The lowest concentration of a chemical that can reliably be analyzed and distinguished from a zero concentration.

**Disease prevention**

Measures taken to prevent a disease or reduce its severity.

**Disease registry**

A system of ongoing registration of cases of a particular disease or health condition in a defined population or region.

**DOD**

The United States Department of Defense.

**DOE**

The United States Department of Energy.

**Dose (for chemicals)**

The amount of a chemical agent that is taken or absorbed by the body. *Dose* is often expressed as milligrams (amount) of the chemical agent per kilogram (a measure of body weight) per day of contaminated water, food, or soil. An absorbed *dose* is the amount of a substance that actually penetrates the receptor's body.

**Dose (for radioactive chemicals)**

The radiation *dose* is the amount of energy from radiation that is actually absorbed by the body.

**Dose-response relationship**

The relationship between dose of a given substance or radiation and the changes in body function or health (response).

**Environmental feasibility study**

A study to determine the best way to clean up environmental contamination and associated environmental and health impacts.

**Environmental media**

Soil, water, air, biota (plants and animals), or any other parts of the environment.

**Environmental transport**

The mode or mechanism that leads to the movement of chemicals through an environmental medium or across environmental phase boundaries.

**EPA**

The United States Environmental Protection Agency.

**Epidemiology**

The study of the distribution and determinants of disease or health status in a population; the study of the occurrence and causes of health effects in humans.

**Exposure**

Contact with a contaminant or radiation. *Exposure* can be short-term (acute), of intermediate duration, or long-term (chronic).

**Exposure assessment**

The process of determining how people come into contact with a hazardous substance, how often and for how long they are in contact with the substance, and the concentration of the substance at the contact boundaries.

**Exposure pathway**

The route a substance takes from its source (where it began) to the point of exposure at the receptor's location.

**Groundwater**

Water in the soil subsurface.

**Half-life ( $t_{1/2}$ )**

The time to reach half the original amount or concentration of a substance or radiation.

**Hazard**

A source of potential harm from past, current, or future exposures.

**Incidence**

The number of new cases of disease in a defined population over a specific time period.

**Ingestion**

The process of taking food, medicine, or another substance through the mouth and into the gut, where it can be digested. A hazardous substance can enter the body via *ingestion*.

**Inhalation**

The act of breathing. A hazardous substance can enter the body via *inhalation*.

**Intermediate-duration exposure**

Contact with a substance that occurs for a period greater than 14 days and less than a year.

**In vitro**

In an artificial environment outside a living organism or body.

**In vivo**

Within a living organism or body.

**Lowest-observed-adverse-effect level (LOAEL)**

The lowest tested dose of a substance that has been reported to cause harmful (adverse) health effects in people or animals.

**Metabolism**

The conversion or breakdown of a substance from one form to another by a living organism.

**Metabolite**

A product of metabolism.

**mg/cm<sup>2</sup>**

Milligrams per square centimeter (of a surface).

**mg/kg**

Milligrams per kilogram.

**mg/m<sup>3</sup>**

Milligrams per cubic meter.

**Migration**

Moving from one location to another.

**Minimal risk level (MRL)**

An ATSDR estimate of daily human exposure to a hazardous substance at or below which that substance is unlikely to pose a measurable risk of harmful (adverse), noncancerous effects. *MRLs* are calculated for a route of exposure (inhalation or oral) over a specified time period (acute, intermediate, or chronic). They are not to be used as predictors of harmful (adverse) health effects.

**Morbidity**

The state of being ill or diseased. *Morbidity* is the occurrence of a disease or condition that alters health and quality of life.

**Mortality**

Death.

**Mutagen**

A substance that causes mutations (genetic damage).

**Mutation**

A change (damage) to the DNA, genes, or chromosomes of living organisms.

**National Priorities List for Uncontrolled Hazardous Waste Sites  
(National Priorities List or NPL)**

EPA's list of the most serious uncontrolled or abandoned hazardous waste sites in the United States. The NPL is updated on a regular basis.

**National Toxicology Program (NTP)**

A program of the Department of Health and Human Services. The *NTP* develops and carries out tests to predict whether a chemical will cause harm to humans.

**No-observed-adverse-effect level (NOAEL)**

The highest tested dose of a substance that has been reported to have no harmful (adverse) health effects to people or animals.

**Physiologically based pharmacokinetic model (PBPK model)**

An analytical or numerical model that describes the distribution of chemical in the body. A *PBPK model* describes how the chemical enters the body, its movement throughout the body, its metabolism, and how it leaves the body.

**Pica**

A craving to eat nonfood items, such as dirt, paint chips, and clay. Some children exhibit *pica*-related behavior.

**Plume**

A volume of a substance flowing or diffusing from its source to places farther away from the source. *Plumes* can be described by the volume of air or water they occupy and the direction they move. For example, a *plume* can be a column of smoke from a chimney or the boundary of a contaminated groundwater volume that is migrating along with groundwater.

**Point of exposure**

The location of contact of a receptor with a contaminant.

**Population**

A group or number of people living within a specified area or sharing similar characteristics.

**ppb**

Parts per billion.

**ppm**

Parts per million.

**Prevalence**

The number of existing disease cases in a defined population during a specific time period. (Contrast with incidence.)

**Prevalence survey**

The measure of the current level of disease(s) or symptoms and exposures through a questionnaire that collects self-reported information from a defined population.

**Radioisotope**

An unstable or radioactive isotope (form) of an element that decays spontaneously into a more stable form as it emits radiation.

**Radionuclide**

Any radioactive isotope (form) of any element.

**RCRA Facility Assessment (RFA)**

An assessment required by the Resource Conservation and Recovery Act to identify potential and actual releases of hazardous chemicals.

**Receptor population**

People who could come into contact with specified hazardous substances.

**Reference dose (RfD)**

An EPA estimate, with uncertainty or safety factors built in, of the daily lifetime dose of a substance that is unlikely to cause harm in humans.

**Registry**

A systematic collection of information on persons exposed to a specific substance or having specific diseases.

**Rem (Roentgen equivalent in man)**

The unit of a dose equivalent from ionizing radiation to the human body that is used to measure the amount of radiation to which a person has been exposed.

**Resource Conservation and Recovery Act (1976, 1984) (RCRA)**

This Act regulates management and disposal of hazardous wastes currently generated, treated, stored, disposed of, or distributed.

**Risk**

The probability that an adverse effect will occur.

**Route of exposure**

The pathway that leads to contact of a receptor with a hazardous substance. For example, the three major *routes of exposure* are breathing (inhalation), eating or drinking (ingestion), and contact with the skin (dermal contact).

**Safety factor**

See uncertainty factor.

**Sample**

A portion or piece of a whole. For example, environmental soil, water, or air *samples* are collected to measure contamination in the environment at a specific locations.

**Solvent**

A liquid capable of dissolving or dispersing another substance.

**Source of contamination**

The place of origin of a contaminant.

**Special susceptible populations**

People who might be more sensitive or susceptible to adverse health effects resulting from exposure to hazardous substances. Children, pregnant women, and older people are often considered special populations.

**Superfund**

See Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and Superfund Amendments and Reauthorization Act (SARA).

**Superfund Amendments and Reauthorization Act (SARA)**

In 1986, SARA amended the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and expanded the health-related responsibilities of ATSDR.

**Surface water**

Water on the surface of the earth, such as in lakes, rivers, streams, ponds, and springs.

**Synergistic effect**

A biologic response to multiple substances in which one substance worsens the effect of exposure to another substance. The effect of the substances acting together is greater than the sum of the effects of the substances acting by themselves.

**Teratogen**

A substance that causes defects in development between conception and birth—that is, structural or functional birth defects.

**Toxic agent**

Chemical or physical (for example, radiation, heat, cold, microwaves) agents that, under certain circumstances of exposure, can harm living organisms.

**Tumor**

An abnormal mass of tissue that results from excessive cell division that is uncontrolled and progressive. *Tumors* perform no useful body function; they can be either benign (not cancerous) or malignant (cancerous).

**Uncertainty factor**

A mathematical adjustment made for safety reasons when knowledge is incomplete. For example, *uncertainty factors* are used to account for variations in people's sensitivity, for differences between animals and humans, and for differences between LOAELs and NOAELs.

**Volatile**

According to DTSC Office of Scientific Affairs, a compound with a Henry's Law Constant of  $1 \times 10^{-5}$  or higher and a vapor pressure of 0.001 mm Hg or higher is considered *volatile*.

**Volatile organic compounds (VOCs)**

Organic compounds that evaporate (or volatilize from a solution mixture) readily into the air.