

APPENDIX I Glossary

ACGIH - The American Conference of Governmental Industrial Hygienists is a voluntary membership organization of professional industrial hygiene personnel in governmental or educational institutions. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

ACUTE - Severe, often dangerous, conditions in which relatively rapid changes occur.

ACUTE EXPOSURE - An intense exposure over a relatively short period of time.

AEROSOL - Liquid droplets or solid particles dispersed in air that are of fine enough size (less than 100 micrometers) to remain dispersed for a period of time.

ALIPHATIC - Open-chain carbon compounds and those cyclic carbon compounds that behave, chemically, like an open-chain compound. Examples include methane and ethane.

ANSI - The American National Standards Institute is a voluntary membership organization (run with private funding) that develops consensus standards nationally for a wide variety of devices and procedures.

AROMATIC - Relates to the structural characteristics of the chemical and not to the odor of the chemical. Many aromatic compounds contain one or more six-carbon rings. Examples include benzene, toluene, naphthalene, and xylene.

ASPHYXIANT - A chemical (gas or vapor) that can cause death or unconsciousness by suffocation. Simple asphyxiants, such as nitrogen, either use up or displace oxygen in the air. They become especially dangerous in confined or enclosed spaces. Chemical asphyxiants, such as carbon monoxide and hydrogen sulfide, interfere with the body's ability to absorb or transport oxygen to the tissues.

BOILING POINT - The temperature at which the vapor pressure of a liquid equals atmospheric pressure or at which the liquid changes to a vapor. The boiling point is usually expressed in degrees Fahrenheit. If a flammable material has a low boiling point, it indicates a special fire hazard.

"C" OR CEILING - A description usually seen in connection with a published exposure limit. It refers to the concentration that should not be exceeded, even for an instant. It may be written as TLV-C or Threshold Limit Value - Ceiling. (See also Threshold Limit Value)

CANCER - A malignant tumor characterized by proliferation (rapid growth) of abnormal cells.

CARCINOGEN - A cancer-producing substance or physical agent in animals or humans. A chemical is considered a **carcinogen** or **potential carcinogen** if it is so identified in any of the following:

- National Toxicology Program, "Annual Report of Carcinogens" (latest edition)
- International Agency for Research on Cancer, "Monographs" (latest edition)
- OSHA, 29 CFR 1910, Subpart Z, Toxic and Hazardous Substances

The official versions of all REM forms and documents are the versions at the REM website. Always check there -- being at www.purdue.edu/REM -- to make sure that you have the official version of any form or other document.

C.A.S. NUMBER - Chemical Abstracts Service; a Columbus, Ohio organization which indexes information published in "Chemical Abstracts" by the American Chemical Society and provides index guides by which information about particular substances may be located in the "Abstracts" when needed. "C.A.S. Numbers" identify specific chemicals.

CFR - Code of Federal Regulations

CHEMICAL - Any element, chemical compound or mixture of elements and/or compounds.

CHEMICAL FAMILY - A group of single elements or compounds with a common general name. Example: acetone, methyl ethyl ketone (MEK), and methyl isobutyl ketone (MIBK) are of the "ketone" family; acrolein, furfural and acetaldehyde are of the "aldehyde" family.

CHEMICAL HYGIENE OFFICER - An employee who is designated by the employer and who is qualified by training or experience to provide technical guidance in the development and implementation of the provisions of the Chemical Hygiene Plan.

CHEMICAL HYGIENE PLAN - A written program developed and implemented by the employer which sets forth procedures, equipment, personal protective equipment, and work practices that (1) are capable of protecting employees from the health hazards presented by hazardous chemicals used in that particular workplace and (2) meets the requirements of OSHA regulation 29 CFR 1910.1450.

CHEMICAL MANUFACTURER - An employer in SIC Codes 20 through 39 with a workplace where chemicals are produced for user or distribution.

CHEMICAL NAME - The scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature or a name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.

CHEMICAL REACTION - A change in the arrangement of atoms or molecules to yield substances of different composition and properties. (See Reactivity)

CHRONIC - Persistent, prolonged or repeated conditions.

CHRONIC EXPOSURE - A prolonged exposure occurring over a period of days, weeks, or years.

COMBUSTIBLE LIQUID - Any liquid having a flashpoint at or above 100°F (37.8°C) but below 200°F (93.3°C) except any mixture having components with flashpoints of 200°F or higher, the total volume of which make up 99% or more of the total volume of the mixture.

COMMON NAME - Any designation or identification, such as code name, code number, trade name, brand name, or generic name used to identify a chemical other than by its chemical name.

COMPRESSED GAS - A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70°F (21.1°C), or; a gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130°F (54.4°C)

regardless of the pressure at 70°F (21.1°C), or; a liquid having a vapor pressure exceeding 40 psi at 100°F (37.8°C) as determined by ASTM D-323-72.

CONCENTRATION - The relative amount of a material in a combination with another material. For example, 5 parts (of acetone) per million (of air).

CONTAINER - Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purpose of this document, pipes or piping systems are not considered to be containers.

CORROSIVE - A substance that, according to the DOT, causes visible destruction or permanent changes in human skin tissue at the site of contact or is highly corrosive to steel.

CUBIC METER (m³) - A measure of volume in the metric system.

CUTANEOUS - Pertaining to or affecting the skin.

DECOMPOSITION - The breakdown of a chemical or substance into different parts or simpler compounds. Decomposition can occur due to heat, chemical reaction, decay, etc.

DERMAL - Pertaining to or affecting the skin.

DESIGNATED AREA - An area which has been established and posted with signage for work involving hazards, e.g. "select carcinogens," reproductive toxins, or substances which have a high degree of acute toxicity. A designated area may be the entire laboratory, an area of a laboratory, or a device such as a laboratory hood.

DILUTION VENTILATION - See General Ventilation.

DOT - The United States Department of Transportation is the federal agency that regulates the labeling and transportation of hazardous materials.

DUSTS - Dusts are solid particles generated by handling, crushing, grinding or rapid impact of organic and inorganic materials such as rock, metal, coal, wood, and grain. Dust is a term to describe airborne solid particles that range in size from 0.1 to 25 micrometers.

DYSPNEA - Shortness of breath; difficult or labored breathing.

EMPLOYEE - An individual employed in a laboratory workplace who may be exposed to hazardous chemicals in the course of his or her assignments. The term "employee" includes students, visiting professors and scholars, trainees, and other individuals who are subject to the same exposures or working conditions as employees.

EMPLOYER - The employer, for purposes of this document, means Purdue University.

EPA - U.S. Environmental Protection Agency; federal agency with environmental protection regulatory and enforcement authority. Administers Clean Air Act, Clean Water Act, FIFRA, RCRA, TSCA, and other Federal Environmental Laws.

EPA NUMBER - The number assigned to chemicals regulated by the Environmental Protection Agency (EPA).

EPIDEMIOLOGY - The study of disease in human populations.

ERYTHEMA - A reddening of the skin.

EVAPORATION RATE - The rate at which a material is converted to vapor (evaporates) at a given temperature and pressure when compared to the evaporation rate of a given substance. Health and fire hazard evaluations of materials involve consideration of evaporation rates as one aspect of the evaluation.

EXPLOSIVE - A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to a sudden shock, pressure, or high temperature.

EXPOSURE/EXPOSED - An employee is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, injection or absorption), and includes potential exposure (i.e. accidental or possible).

°F - Degrees, Fahrenheit; a temperature scale.

FLAMMABLE - A chemical that falls into one of the following categories:

- i) **flammable aerosol** - an aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening.
- ii) **flammable gas** - a gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13% by volume or less; or a gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12% by volume, regardless of the lower limit.
- iii) **flammable liquid** - any liquid having a flashpoint below 100°F (37.8°C), except any mixture having components with flashpoints of 100°F (37.8°C) or higher, the total of which make up 99% or more of the total volume of the mixture.
- iv) **flammable solid** - a solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and, when ignited, burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a greater than one-tenth of an inch per second along its major axis.

FLASHPOINT - The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite in the presence of an ignition source or when tested as follows:

- i) Tagliabue Closed Tester (See American National Standard Method of Test for Flashpoint by Tag Closed Tested, Z11.24-1979 (ASTM D-56-79)) for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100°F (37.8°C) or that contain suspended solids and do not have a tendency to form a surface film under test; or,

- ii) Pensky-Martens Closed Tester (See American National Standard Method of Test for Flashpoint by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D-73-79)) for liquids with a viscosity equal to or greater than 45 SUS at 100°F (37.8°C), or that contain suspended solids, or that have a tendency to form a surface film under test; or,
- iii) Setaflash Closed Tester (See American National Standard Method of Test for Flashpoint of Setaflash Closed Tester (ASTM D-3278-78)). Organic peroxides, which undergo auto accelerating thermal decomposition, are excluded from any flashpoint determination methods specified above.

FORESEEABLE EMERGENCY - Any potential occurrence, such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.

FORMULA - The scientific designation for a material (water is H₂O, sulfuric acid is H₂SO₄, sulfur dioxide is SO₂, etc.)

FUME - Small solid particles that have condensed in the air resulting from the heating of a solid body. Gases and vapors are not fumes, although the terms are often mistakenly used interchangeably.

g - Gram; a metric unit of weight. One U.S. ounce (avoirdupois) is about 28.4 grams.

g/kg - Grams per kilogram; an expression of dose used in oral and dermal toxicology testing to indicate the grams of substance dosed per kilogram of animal body weight. (Also see "kg" (kilogram))

GAS - A form of matter that is neither solid nor liquid. In its normal state (at room temperature and atmospheric pressure) it can expand indefinitely to fill a container completely. A gas can be changed to the liquid or solid state under the right temperature and pressure conditions.

GENERAL VENTILATION - Also known as general exhaust ventilation, this is a system of ventilation consisting of either natural or mechanically induced fresh air movements to mix with and dilute contaminants in the workroom air. This is not the recommended type of ventilation to control contaminants that are highly toxic, when there may be corrosion problems from the contaminant, when the worker is close to where the contaminant is being generated, and where fire or explosion hazards are generated close to sources of ignition. (See Local Exhaust Ventilation)

HAZARD ASSESSMENT - A formal procedure undertaken by the supervisor in which occupational hazards for all employees are described per procedure or task, and by affected body part(s) or organ(s), and which is documented and posted in the workplace with all personal protective equipment requirements.

HAZARD WARNING - Any words, pictures, symbols or combination thereof appearing on a label or other appropriate form of warning which convey the hazards of the chemical(s) in the container(s).

HAZARDOUS MATERIAL - Any material which is a potential/actual physical or health hazard to humans.

HAZARDOUS MATERIAL (DOT) - A substance or material capable of posing an unreasonable risk to health, safety, and property when transported including, but not limited to, compressed gas, combustible liquid, corrosive material, cryogenic liquid, flammable solid, irritating material, material poisonous by inhalation, magnetic material, organic peroxide, oxidizer, poisonous material, pyrophoric liquid, radioactive material, spontaneously combustible material, an water-reactive material.

HAZARDOUS CHEMICAL - A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes or mucous membranes. A chemical is considered **hazardous** if it is listed in any of the following:

- OSHA, 29 CFR 1910, Subpart Z, Toxic and Hazardous Substances
- "Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment," ACGIH (latest edition)
- "The Registry of Toxic Effects of Chemical Substances," NIOSH (latest edition)

IARC - see International Agency for Research on Cancer

IDENTITY - Any chemical or common name which is indicated on the Material Safety Data Sheet (MSDS) for the chemical. The identity used shall permit cross-references to be made among the required list of hazardous chemicals, the label and the MSDS.

IGNITABLE - A solid, liquid or compressed gas waste that has a flashpoint of less than 140°F. Ignitable material may be regulated by the EPA as a hazardous waste as well.

IMMEDIATE USE - The hazardous chemical will be under the control of, and used only by, the person who transfers it from a labeled container and only within the work shift in which it is transferred.

INCOMPATIBLE - The term applies to two substances to indicate that one material cannot be mixed with the other without the possibility of a dangerous reaction.

INGESTION - Taking a substance into the body through the mouth as food, drink, medicine, or unknowingly as on contaminated hands or cigarettes, etc.

INHALATION - The breathing in of an airborne substance that may be in the form of gases, fume mists, vapors, dusts, or aerosols.

INHIBITOR - A substance that is added to another to prevent or slow down an unwanted reaction or change.

INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) - An agency of the World Health Organization (WHO) whose mission is to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control.

IRRITANT - A substance which, by contact in sufficient concentration for a sufficient period of time, will cause an inflammatory response or reaction of the eye, skin, nose or respiratory system. The contact may be a single exposure or multiple exposures. Some primary irritants: chromic acid, nitric acid, sodium hydroxide, calcium chloride, amines, metallic salts, chlorinated hydrocarbons, ketones and alcohols.

L - Liter; a measure of volume. One quart equals .9 liter.

LC₅₀ - See Lethal Concentration₅₀.

LD₅₀ - See Lethal Dose₅₀.

LABEL - Any written, printed or graphic material displayed on or affixed to containers of chemicals, both hazardous and non-hazardous.

LABORATORY - A facility where the "laboratory use of chemicals" occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis.

LABORATORY SCALE - Work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person. "Laboratory Scale" excludes those workplaces whose function is to produce commercial quantities of materials.

LABORATORY USE OF HAZARDOUS CHEMICALS - Handling or use of such chemicals in which all of the following conditions are met:

1. Chemical manipulations are carried out on a "laboratory scale";
2. Multiple chemical procedures or chemicals are used;
3. The procedures involved are not part of a production process nor in any way simulate a production process; and
4. "Protective laboratory practices and equipment" are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

LEL - See Lower Explosive Limit.

LETHAL CONCENTRATION₅₀ - The concentration of an air contaminant (**LC₅₀**) that will kill 50% of the test animals in a group during a single exposure.

LETHAL DOSE₅₀ - The dose of a substance or chemical (**LD₅₀**) that will kill 50% of the test animals in a group within the first 30 days following exposure.

LFL - See Lower Explosive Limit.

LOCAL EXHAUST VENTILATION (Also known as exhaust ventilation) - A ventilation system that captures and removes the contaminants at the point they are being produced before they escape into the workroom air. The system consists of hoods, ductwork, a fan, and possibly an air-cleaning device. Advantages of local exhaust ventilation over general ventilation include: it removes the contaminant rather than dilutes it, requires less airflow and, thus, is more economical over the long term; and the system can be used to conserve or reclaim valuable materials; however, the system must be properly designed with the correctly shaped and placed hoods, and correctly sized fans and ductwork.

LOWER EXPLOSIVE LIMIT (LEL - Also known as LFL) - The lowest concentration of a substance that will produce a fire or flash when an ignition source (flame, spark, etc.) is present. It is expressed in a percent of vapor or gas in the air by volume. Below the LEL or LFL, the air/contaminant mixture is theoretically too "lean" to burn. (See also UEL)

m³ - See Cubic Meter.

MATERIAL SAFETY DATA SHEET (MSDS) - Written or printed material concerning a hazardous chemical which is prepared in accordance with paragraph (g) of 29 CFR 1910.1200.

MELTING POINT - The temperature at which a solid changes to a liquid. A melting range may be given for mixtures.

mg- See Milligram.

mg/kg - See Milligrams Per Kilogram.

mg/m³ - See Milligrams Per Cubic Meter.

MILLIGRAM (mg) - A unit of weight in the metric system. One thousand milligrams equal one gram.

MILLIGRAMS PER CUBIC METER (mg/m³) - Units used to measure air concentrations of dusts, gases, mists, and fumes.

MILLIGRAMS PER KILOGRAM (mg/kg) - This indicates the dose of a substance given to test animals in toxicity studies. For example, a dose may be 2 milligrams (of substance) per kilogram of body weight (of the experimental animal).

MILLILITER (ml) - A metric unit used to measure volume. One milliliter equals one cubic centimeter. One thousand milliliters equal one liter.

MIST - Small suspended droplets of liquid generated by condensation of liquids from the vapor back to the liquid state or by breaking up a liquid into a dispersed state, such as by splashing. Some examples are paint spray mist in painting operations and the condensation of water to form a fog or rain.

MIXTURE - Any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

ml - See Milliliter.

MSHA - The Mine Safety Health Administration; a federal agency that regulates the mining industry in the safety and health area.

MUTAGEN - Anything that can cause a change (or mutation) in the genetic material of a living cell.

NARCOSIS - Stupor or unconsciousness caused by exposure to a chemical.

NATIONAL TOXICOLOGY PROGRAM (NTP) - A collaborative program including the National Institute of Environmental Health Sciences (NIH/NIEHS), the Centers for Disease Control and Prevention's National Institute for Occupational Safety and Health (CDC/NIOSH), and the Food and Drug Administration's National Center for Toxicological Research (FDA/NCTR). Classifications published by the Report On Carcinogens are used by OSHA regulations as part of the definition of "select carcinogen."

NFPA - The National Fire Protection Association; a voluntary membership organization whose aims are to promote and improve fire protection and prevention. NFPA has published 16 volumes of codes known as the National Fire Codes. Within these codes is Standard No. 705, "Identification of the Fire Hazards of Materials". This is a system that rates the hazard of a material during a fire. These hazards are divided into health, flammability, and reactivity hazards and appear in a well-known diamond system using from zero through four to indicate severity of the hazard. Zero indicates no special hazard and four indicates severe hazard.

NIOSH - The National Institute for Occupational Safety and Health; a federal agency that among its various responsibilities trains occupational health and safety professionals, conducts research on health and safety concerns, and tests and certifies respirators for workplace use.

NTP - see NATIONAL TOXICOLOGY PROGRAM

ODOR THRESHOLD - The minimum concentration of a substance at which a majority of test subjects can detect and identify the substance's characteristic odor.

ORAL - Having to do with the mouth

ORGANIC PEROXIDE - An organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

OSHA - The Occupational Safety and Health Administration; a federal agency under the Department of Labor that publishes and enforces safety and health regulations for most businesses and industries in the United States.

OXIDATION - The process of combining oxygen with some other substance or a chemical change in which an atom loses electrons.

OXIDIZER - Is a substance that gives up oxygen easily to stimulate combustion of organic material.

OXYGEN DEFICIENCY - An atmosphere having less than the normal percentage of oxygen found in normal air. Normal air contains 21% oxygen at sea level.

PEL - See Permissible Exposure Limit.

PERMISSIBLE EXPOSURE LIMIT (PEL) - An exposure, inhalation or dermal permissible exposure limit specified in 29 CFR Part 1910, subpart Z. PELs may be either a time-weighted average (TWA) exposure limit (8-hour), a 15-minute short-term limit (STEL), or a ceiling (C). The PELs are found in OSHA regulations part 1910, subpart Z. (See also TLV)

PERSONAL PROTECTIVE EQUIPMENT - Any devices or clothing worn by the worker to protect against hazards in the environment. Examples are respirators, gloves, and chemical splash goggles

PHYSICAL HAZARD - A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive), or water-reactive.

POLYMERIZATION - A chemical reaction in which two or more small molecules combine to form larger molecules that contain repeating structural units of the

original molecules. A hazardous polymerization is the above reaction with an uncontrolled release of energy.

PPM - Parts (of vapor or gas) per million (parts of air) by volume.

PRODUCE - To manufacture, process, formulate, or repackage.

PROTECTIVE LABORATORY PRACTICES AND EQUIPMENT - Those laboratory procedures, practices and equipment accepted by the Chemical Hygiene Officer as effective in minimizing the potential for employee exposure to hazardous chemicals.

PUBLISHED EXPOSURE LIMITS - The exposure limits published in "NIOSH Recommendations for Occupational Health Standards" (current edition), or if none is specified, the exposure limits published in the standards specified by the American Conference of Governmental Industrial Hygienists in their publication "Threshold Limit Values and Biological Exposure Indices" (current edition).

PYROPHORIC - A chemical that will spontaneously ignite in the air at a temperature of 130°F (54.4°C) or below.

REACTIVITY - A substance's susceptibility to undergoing a chemical reaction or change that may result in dangerous side effects, such as explosion, burning, and corrosive or toxic emissions. The conditions that cause the reaction, such as heat, other chemicals, and dropping, will usually be specified as "Conditions to Avoid" when a chemical's reactivity is discussed on an MSDS.

REPRODUCTIVE TOXINS - Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

RESPIRATOR - A device which is designed to protect the wearer from inhaling harmful contaminants.

RESPIRATORY HAZARD - A particular concentration of an airborne contaminant that, when it enters the body by way of the respiratory system or by being breathed into the lungs, results in some body function impairment.

RESPONSIBLE PARTY - Someone who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

SELECT CARCINOGENS - Any substance which meets one of the following:

1. It is regulated by OSHA as a carcinogen; or
2. It is listed under the category, "known to be carcinogens," in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or
3. It is listed under Group 1 ("carcinogen to humans") by the International Agency for Research on Cancer Monographs (IARC) (latest editions); or
4. It is listed in either Group 2A or 2B by IARC or under the category, "reasonably anticipated to be carcinogens" by NTP.

SENSITIZER - A substance that may cause no reaction in a person during initial exposures, but afterwards, further exposures will cause an allergic response to the substance.

SHORT-TERM EXPOSURE LIMIT - Represented as STEL or TLV-STEL, this is the maximum concentration to which workers can be exposed for a short period of time

(15 minutes) for only four times throughout the day with at least one hour between exposures. Also the daily TLV-TWA must not be exceeded.

"SKIN" - This designation sometimes appears alongside a TLV or PEL. It refers to the possibility of absorption of the particular chemical through the skin and eyes; thus, a protection of large surface areas of skin should be considered to prevent skin absorption so that the TLV is not exceeded.

SPECIFIC CHEMICAL IDENTITY - The chemical name, Chemical Abstract Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

SOLVENT - A substance, commonly water, but in industry often an organic compound, which dissolves another substance.

STEL - Short-Term Exposure Limit

SUBSTANCE - A chemical element or compound; can also refer to a mixture.

SUPPORT SERVICES - The non-academic areas of University operations. This includes, but is not limited to, Physical Plant, Printing Services, Residence Halls, Mackey Arena, Purdue University Computing Center, Engineering Computer Network, Purdue Memorial Union, and Individual Department Print Shops.

SYNONYM - Another name by which the same chemical may be known.

SYSTEMIC - Spread throughout the body; affecting many or all body systems or organs; not localized in one spot or area.

TERATOGEN - An agent or substance that may cause physical defects in the developing embryo or fetus when a pregnant female is exposed to that substance.

THRESHOLD LIMIT VALUE (TLV) - Airborne concentration of substances devised by the ACGIH that represents conditions under which it is believed that nearly all workers may be exposed day after day with no adverse effect. TLVs are advisory exposure guidelines, not legal standards, that are based on evidence from industrial experience, animal studies, or human studies when they exist. There are three different types of TLVs: Time-Weighted Average (TLV-TWA), Short-Term Exposure Limit (TLV-STEL), and Ceiling (TLV-C). (See also PEL).

TIME-WEIGHTED AVERAGE - The average time, over a given work period (e.g., 8-hour work day), of a person's exposure to a chemical or agent. The average is determined by sampling for the contaminant throughout the time period.

TLV - See Threshold Limit Value

TOXICITY - A relative property of a material to exert a poisonous effect on humans or animals and a description of the effect and the conditions or concentration under which the effect takes place.

TRADE NAME - The commercial name or trademark by which a chemical is known. One chemical may have a variety of trade names depending upon the manufacturers or distributors involved.

TRADE SECRET - Any confidential formula, pattern, device, information or compilation of information (including chemical name or other unique chemical identifier) that is used in an employer's business and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it.

TWA - See Time-Weighted Average

UEL - See Upper Explosive Limit

UFL - See Upper Explosive Limit

UNSTABLE (REACTIVE) - A chemical which, in the pure state or as a produced or transported, will vigorously polymerize, decompose, condense, or become self-reactive under conditions of shock, pressure, or temperature.

UNIVERSITY - The Purdue University system of campuses for which the main campus has health and safety authority. This includes the main campus, Calumet, Ft. Wayne, and North Central campuses.

UPPER EXPLOSIVE LIMIT (Also known as upper flammable limit) - The highest concentration (expressed in percent of vapor or gas in the air by volume) of a substance that will burn or explode when an ignition source is present. Theoretically, above this limit the mixture is said to be too "rich" to support combustion. The difference between the LEL and the UEL constitutes the flammable range or explosive range of a substance. That is, if the LEL is 1 ppm and the UEL is 5 ppm, then the explosive range of the chemical is 1 ppm to 5 ppm. (Also see LEL)

USE - To package, handle, react, or transfer

VAPOR - The gaseous form of substances which are normally in the liquid or solid state (at normal room temperature and pressure). Vapors evaporate into the air from liquids such as solvents. Solvents with lower boiling points will evaporate faster.

WATER-REACTIVE - A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

WORK AREA - The department or office in which an employee may work. Maintenance, Building Services, Department of Aviation Technology, the Office of the Registrar, and Environmental Control and Abatement are examples of work areas.

WORK LOCATION - The site on campus and/or University property where the actual job occurs.