

Glossary to Appendix B- Limits to Exposure to Toxic & Hazardous Substances

Appendix B of the Chemical Hygiene Plan is a Microsoft Excel spreadsheet. You may access this file in a couple of different ways:

1. Use the link in the Chemical Hygiene Plan. OR
2. Download [Appendix B](#) from here onto your hard drive and view at your convenience using your Microsoft Excel. If you have a PC, an easy way to save a file is to click using the right mouse button and a drop down menu will give you an option to save the file. If you have a Mac, just hold down the mouse button when you click on the file and you will get the same menu. On a Mac, make sure you save it as Format: 'source', rather than 'text'.

If you have any trouble getting this file, you may contact University Safety and Assurances at 229-6339 or [e-mail](#).

A list of definitions for terms used in Appendix B is included below:

ACGIH TLVs

The American Conference of Governmental Industrial Hygienists (ACGIH) publishes Threshold Limit Values (TLVs). The TLVs are airborne concentrations of substances to which nearly all workers may be repeatedly exposed, day after day, without adverse health effects. The TLVs are recommended guidelines that are revised as new toxicity information becomes available. The air concentrations expressed either as parts per million, or milligrams per cubic meter of air. There are various types of TLVs:

- TWA (Time-Weighted Average): average exposure concentration for a conventional 8-hour workday and 40 hour work week.
- STEL (Short Term Exposure Limit): a 15-minute average exposure concentration which should not result in irritation, chronic or irreversible tissue damage, or narcosis. STEL supplements the TWA.
- C (Ceiling Limit): an exposure concentrations that should not be exceeded during any part of the working exposure.
- Skin: a '+' in the 'Skin' column refers to the potential for significant exposure through the cutaneous route. In these cases, appropriate measures must be taken to prevent skin and eye contact with the chemical.

California List

A '+' in any of the columns under California's Proposition 65 List indicates that the chemical may have adverse effects on the:

- MREP - male reproductive system;
- FREP - female reproductive system; or
- DTOX - fetal development.

Cancer EPA

The Environmental Protection Agency (EPA) has six categories for confirmed and suspected carcinogens:

- Category A - substances that are human carcinogens;
- Category B1 - substances that show limited evidence of carcinogenicity in humans;
- Category B2 - substances that show sufficient evidence of carcinogenicity in animals with inadequate or lacking evidence in humans;
- Category C - substances that show limited evidence of carcinogenicity in animals and inadequate or lack of human data;
- Category D - substances that are not classifiable as a human carcinogen; and
- Category E - substances that show no carcinogenicity for humans.

Cancer CAL 65

California's Proposition 65 List also designates chemicals as carcinogens. Those known to the state to cause cancer are designated in this column with a '+'.

Cancer IARC

The International Agency for Research on Cancer (IARC) has four categories for confirmed and suspected carcinogens:

- Category 1 - substances for which sufficient evidence exists to establish a causal relationship between the chemical and human cancer;
- Category 2A - substances for which there is at least limited evidence of human carcinogenicity;
- Category 2B - substances for which there is sufficient evidence for carcinogenicity in animals but inadequate data for human; and
- Category 3 - substances that cannot be classified as to human carcinogenicity.

Cancer NTP

The National Toxicology Program (NTP) listing of carcinogens contains two categories:

- Category 1 - substances that are known to be human carcinogens; and
- Category 2 - substances that may reasonably be anticipated to be human carcinogens.

Cancer OSHA

An 'X' under the OSHA column denotes an OSHA-regulated carcinogen.

Cancer TLV

A notation under this heading indicates whether a chemical is a confirmed human carcinogen (A1) or a suspected human carcinogen (A2).

CAS #

Chemical Abstracts Service number.

IDLH

A chemical that is Immediately Dangerous to Life and Health, as published by the National Institute for Occupational Safety and Health (NIOSH) as of 3/1/95.

NFPA 704

National Fire Protection Association section # 704. This section defines a system for rating the flammability (Fire/red), toxicity (Health/blue) and reactivity (React/yellow) of various chemicals. Chemical labels with colored diamond areas can be purchased which can be numbered using the NFPA 704 Hazard Rating System, with '0' considered nonhazardous and '4' extremely hazardous. The white section uses letters or symbols to denote special hazards.

ODOR

A chemical's odor threshold - the point or range where most people will detect the odor of a particular chemical.

ORAL RAT

The oral rat LD50 - the dose that's lethal for 50% of a group of test rats through oral administration. The lower the LD50, the more toxic the material. Compounds with an oral rat LD50 of less than 50 mg/kg (highly toxic) will have a 'yes' in this column.

OSHA TLV

The federal Occupational Safety and Health Administration publishes TLVs that, unlike the ACGIH guidelines, are enforceable by law.

RESP

The type of respiratory protection that is necessary to address a spill of a particular compound. Use of a non-disposable negative pressure respirator requires a physical exam and fit test before use. Filter and respirator codes are defined below:

- AM - ammonia filter
- AG - acid gas filter
- DFM - dust fume mist filter
- (F) - full face mask
- HE - high efficiency particulate air (HEPA) filter
- OV - organic vapor filter
- SA - supplied air mask