

Standards of Practice

Respiratory Protection: Appendix C

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DEFINITION OF TERMS

ACGIH

American Conference of Governmental Industrial Hygienists.

Action Level

The concentration for a specific substance, calculated as an eight (8) hour time-weighted average, that initiates certain required activities such as exposure monitoring and medical surveillance. Typically, it is one-half that of the PEL for that substance.

Air-Purifying Element

The air-purifying filters, cartridges or canisters used with an Air-Purify Respirator. These Air-Purify Elements are not suitable for oxygen-deficient atmospheres.

Air-Purifying Respirator

A respirator with an air-purifying filter, cartridge or canister that removes specific air contaminants by passing ambient air through the air-purifying element (29 CFR 1910.134(b)). This means that the respirator purifies the air as the worker breathes.

American Conference of Governmental Industrial Hygienists (ACGIH)

The voluntary organization of professional industrial hygiene personnel in government 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.

American National Standards Institute (ANSI)

A voluntary membership organization that develops consensus standards nationally for a wide variety of devices and procedures.

ANSI

American National Standards Institute.

Atmosphere-Supplying Respirator

A respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units (29 CFR 1910.134(b)). This means that the respirator supplies a worker clean air from an uncontaminated source.

C

Ceiling, as defined by the ACGIH. (see Ceiling)

Canister or Cartridge

A container with a filter, sorbent, catalyst, or combination of these items that removes specific contaminants from the air passed through the container (29 CFR 1910.134(b)).

Ceiling (C or TLV-C)

The maximum concentration of a contaminant that should not be exceeded, even for an instant.

CFR

Federal Code of Regulations

Demand Respirator

An atmosphere-supplying respirator that admits breathing air to the face piece only when a negative pressure is created inside the face piece by inhalation (29 CFR 1910.134(b)).

Dew Point

The temperature at which the air is saturated with moisture.

Emergency Situation

Any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant (29 CFR 1910.134(b)).

Employee

An individual employed at OSU who may be exposed to hazardous materials in the course of his or her work duties.

Employee Exposure

Exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection (29 CFR 1910.134(b)).

End-Of-Service-Life Indicator (ESLI)

A system that warns the respirator user of the approach of the end of adequate respiratory protection; for example, that the sorbent is approaching saturation or is no longer effective (29 CFR 1910.134(b)).

Escape-Only Respirator

A respirator intended to be used only for emergency exit (29 CFR 1910.134(b)).

Filter or Air-Purifying Element

A component used in respirators to remove solid or liquid aerosols from the inspired air (29 CFR 1910.134(b)).

Filtering Face piece (Dust Mask)

A negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filter medium (29 CFR 1910.134(b)). Sometime, this mask is referred to as a "Paper Mask."

Fit Factor

A quantitative estimate of the fit of a particular respirator to a specific individual. It typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn (29 CFR 1910.134(b)).

Fit Test

The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative Fit Test QLFT and Quantitative Fit Test QNFT (29 CFR 1910.134(b)). A Fit Test is performed annually, and is not to be confused with the positive and negative User Seal Check that is performed every time the mask is donned.

Gas

A fluid such as air that does not have a defined volume or shape but tends to expand infinitely. In other words, a gas is a chemical substance that resembles air. Some examples are oxygen, nitrogen and carbon dioxide.

Helmet

A rigid respiratory inlet covering that also provides head protection against impact and penetration (29 CFR 1910.134(b)).

High-Efficiency Particulate Air (HEPA) Filter

A filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100 and P100 filters (29 CFR 1910.134(b)).

Hood

A respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso (29 CFR 1910.134(b)).

IDLH

Immediately Dangerous to Life or Health

Immediately Dangerous to Life or Health (IDLH)

An atmosphere that poses an immediate threat to life and would cause irreversible adverse health effects or would impair an individual's ability to escape from a dangerous atmosphere (29 CFR 1910.134(b)). It is the maximum concentration from which one could escape within 30 minutes without a respirator and without experiencing any escape-impairing (e.g., severe eye irritation) or irreversible health effects.

Inhalation

The breathing in of an airborne substance that may be in the form of gases, fumes, mists, vapors or dusts.

Interior Structural Firefighting

The physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures that are involved in a fire situation beyond the incipient stage. (See 29 CFR 1910.155.)

Loose-Fitting Face piece

A respiratory inlet covering that is designed to form a partial seal with the face (29 CFR 1910.134(b)).

M³

Cubic meter

Mists

Liquids that have been atomized into the air and that have formed minute particles. In other words, they are very fine particles of liquid suspended in the air. For example, spray painting forms mists in the air.

Negative Pressure Respirator (Tight Fitting)

A respirator in which the air pressure inside the face piece is negative during inhalation with respect to the ambient air pressure outside the respirator (29 CFR 1910.134(b)).

NIOSH

National Institute for Occupational Safety and Health. NIOSH is a federal agency that has various responsibilities, which include training occupational health and safety professionals, conducting research on health and safety concerns, and testing and certifying respirators for work place use.

Odor Threshold

The minimum concentration of a substance in the air at which a majority of test subjects can detect and identify (smell) the substance's characteristic odor.

OSHA

Federal Occupational Safety and Health Administration. OSHA publishes and enforces safety and health regulations for most businesses and industries in the United States.

Oxygen Deficient Atmosphere

An atmosphere with an oxygen content below 19.5% by volume (29 CFR 1910.134(b)). Normal oxygen content in air is about 20.9% by volume at sea level.

Paper Mask

(See [Filtering Face piece](#))

Particulates

Very fine solid particles that are suspended in the air. These are formed from sanding, crushing, grinding, etc. Normally, particulates are greater than 0.3 microns in diameter. Some examples are wood dust, concrete dust and asbestos fibers.

PEL

Permissible Exposure Limit as defined by OSHA.

Permissible Exposure Limit (PEL)

Exposure limit that is published and enforced by OSHA as a legal standard. PEL may be either a time-weighted-average (TWA) exposure limit (8 hours), a 15-minute short-term exposure limit (STEL), or a ceiling (C). The PELs are found in Tables Z-1, Z-2, or Z-3 of 29 CFR 1910.100. This level of exposure is deemed to be the maximum safe concentration, and is often the same value as the TLV.

Personal Protective Equipment

Equipment such as gloves, respirators, clothing and safety glasses that are used to protect the employee from environmental hazards (splashes, airborne contaminants, welding arcs, etc.).

Physician or Other Licensed Health Care Professional (PLHCP)

An individual whose legally permitted scope of practice (i.e., license, registration or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by paragraph (e) of 29 CFR 1910.134(b).

Positive Pressure Respirator

A respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator (29 CFR 1910.134(b)). An SCBA is one type of a positive pressure respirator.

Powered Air-Purifying Respirator (PAPR)

An air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering (29 CFR 1910.134(b)).

PPM

Parts per million

Pressure Demand Respirator

A positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation (29 CFR 1910.134(b)).

Qualitative Fit Test (QLFT)

A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent (29 CFR 1910.134(b)). This Test uses a chemical substance that a person can smell and/or taste if the respirator fit is inadequate.

Quantitative Fit Test (QNFT)

An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator (29 CFR 1910.134(b)). This test uses a machine, such as the PortaCount Plus™, to count the number of particulates that escape into the respirator mask.

Respirator

A device that fits over the mouth and nose to protect the respiratory system from airborne contaminants. There are two types of respirators: air-supplied and air-purifying.

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 bodily function impairment or harm.

Respiratory Inlet Covering

The portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a face piece, helmet, hood, suit or a mouthpiece respirator with nose clamp (29 CFR 1910.134(b)).

Respiratory Protection

The use of respirators to protect an employee's respiratory system, e.g., to protect the employee's health by supplying him or her with non-contaminated air.

Self-Contained Breathing Apparatus (SCBA)

An atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user (29 CFR 1910.134(b)).

Service Life

The period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer (29 CFR 1910.134(b)).

Short Term Exposure Limit (STEL or TLV-STEL)

The maximum concentration to which employees 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.

STEL

Short Term Exposure Limit

Supplied-Air Respirator (SAR) or Airline Respirator

An atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user (29 CFR 1910.134(b)).

Threshold Limit Values

A set of standards for the concentration of airborne contaminants. These values are calculated based on time-weighted averages, i.e., they are based on conditions that employees can be exposed to day after day without adverse effects. These are guidelines, not legal standards, established by the [ACGIH](#).

Tight-Fitting Face piece

A respiratory inlet covering that forms a complete seal with the face (29 CFR 1910.134(b)).

Time Weighted Average (TLV-TWA, Threshold Limit Value-Time Weighted Average)

The time weighted average of airborne chemical concentration for a normal eight-hour work day and a 40-hour work week to which nearly all employees may be repeatedly exposed, day-after-day, without adverse effect. These limits are guidelines, not legal standards, established by the [ACGIH](#).

TLV

Threshold Limit Value as defined by the ACGIH. See [Threshold Limit Values](#).

TLV-C

See [Ceiling](#)

TLV-STEL

See [Short Term Exposure Limit](#)

User Seal Check

An action conducted by the respirator user to determine if the respirator is properly seated to the face (29 CFR 1910.134(b)). There are two Seal Checks: a positive and a negative check. The User Seal Check is done every time a user dons his or her respirator.

Vapors

Liquid or solid chemicals that are in their gaseous state. They are formed when chemicals evaporate. Examples of chemicals that form vapors are paint thinners, gasoline and alcohol.

Volatile

The liquid chemical will readily and easily vaporize into vapors at room temperature.

Appendix A	Appendix B	Appendix C	Appendix D
User Seal Check Instructions (Fit Check)	Fit Test Procedures for Tight-Fitting Respirator Masks	Definition of Terms	OSHA Respirator Medical Evaluation Questionnaire

Revision Log			
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