

Chicago Safety Institute™

The following are types of ACGIH, OSHA, NIOSH and AIHA exposure limits.

ACGIH:

ACGIH exposure limits include three categories of Threshold Limit Values (TLVs). They are as follows:

Time-Weighted Average (TWA) - This exposure limit is based on acceptable contaminant concentrations for a normal, 8-hour workday and a 40-hour workweek.

Short-Term Exposure Limit (STEL) - This is a 15-minute TWA exposure that should not be exceeded at any time during a workday. Exposures above the TWA up to the STEL should not be longer than 15 minutes and should not occur more than four times per day. Additionally, there should be at least 60 minutes between successive exposures in this range.

Ceiling (CEIL) - This refers to concentrations that must not be exceeded during any part of the working exposure. As such, Ceiling TLVs take precedent over all TWAs and STELs.

OSHA:

Permissible Exposure Limit (PEL) - Based on an 8-hour TWA, PELs are exposure levels below which OSHA does not require respiratory protection. When exposures surpass this level, certain respiratory protection requirements must be met.

Short-Term Exposure Limit (STEL) - This is a 15-minute TWA exposure that should not be exceeded at any time during a workday.

Ceiling (CEIL) - Same as ACGIH definition.

29 CFR 1910.1000 Subpart Z and tables therein

NIOSH:

Recommended Exposure Limit (REL) - A TWA concentration for up to a 10-hour workday during a 40-hour workweek.

Short-Term Exposure Limit (STEL) - Same as OSHA definition.

Ceiling (CEIL) - Same as ACGIH definition.

Immediately Dangerous to Life or Health (IDLH) - As its name implies, the IDLH level refers to acute respiratory exposures that pose an immediate threat of loss of life. Exposures at this level may result in irreversible or severe health effects, eye damage, irritation or other conditions that could impair an employee's escape from the hazardous atmosphere.

AIHA:

AIHA exposure limits include the following Workplace Environmental Exposure Levels (WEELs):

Time-Weighted Average (TWA) - Same as ACGIH definition.

Short-Term Exposure Level (STEL) - A 15-minute TWA.

Ceiling (CEIL) - Same as ACGIH definition.