



VERMONT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

- VOSHA ENFORCEMENT
- PROJECT WORKSAFE BUSINESS ASSISTANCE



CHEMICAL HAZARDS AND TOXIC SUBSTANCES

- IN ORDER TO ENSURE CHEMICAL SAFETY IN THE WORKPLACE, INFORMATION ABOUT THE IDENTITIES AND HAZARDS OF THE CHEMICALS MUST BE AVAILABLE AND UNDERSTANDABLE TO WORKERS. OSHA'S HAZARD COMMUNICATION STANDARD (HCS) REQUIRES THE DEVELOPMENT AND DISSEMINATION OF SUCH INFORMATION:
- EMPLOYERS ARE REQUIRED TO IDENTIFY AND EVALUATE THE RESPIRATORY HAZARD(S) IN THEIR WORKPLACES. VARIOUS TYPES OF OCCUPATIONAL EXPOSURE LIMITS (OELS) HAVE BEEN ESTABLISHED BY A NUMBER OF ORGANIZATIONS, AND ARE LISTED ON MANY OF OSHA'S SAFETY AND HEALTH WEBPAGES ON CHEMICAL HAZARDS AND TOXIC SUBSTANCES.

TOXIC AND HAZARDOUS SUBSTANCES

STANDARD NUMBER: 1910.1200

TITLE: HAZARD COMMUNICATION.

- 1910.1200(B)(2)
- THIS SECTION APPLIES TO **ANY CHEMICAL** WHICH IS KNOWN TO BE PRESENT IN THE WORKPLACE IN SUCH A MANNER THAT EMPLOYEES MAY BE EXPOSED UNDER NORMAL CONDITIONS OF USE OR IN A FORESEEABLE EMERGENCY.
- 1910.1200(B)(1)
- THIS SECTION REQUIRES CHEMICAL MANUFACTURERS OR IMPORTERS TO **CLASSIFY THE HAZARDS** OF CHEMICALS WHICH THEY PRODUCE OR IMPORT, AND ALL EMPLOYERS TO PROVIDE INFORMATION TO THEIR EMPLOYEES ABOUT THE HAZARDOUS CHEMICALS TO WHICH THEY ARE EXPOSED

DEFINITIONS

- **CHEMICAL NAME** MEANS 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 THAT WILL CLEARLY IDENTIFY THE CHEMICAL FOR THE PURPOSE OF CONDUCTING A HAZARD CLASSIFICATION.
- **HAZARDOUS CHEMICAL** MEANS ANY CHEMICAL WHICH IS CLASSIFIED AS A PHYSICAL HAZARD OR A HEALTH HAZARD, A SIMPLE ASPHYXIAN, COMBUSTIBLE DUST, PYROPHORIC GAS, OR HAZARD NOT OTHERWISE CLASSIFIED.

HEALTH HAZARD MEANS

- A CHEMICAL WHICH IS CLASSIFIED AS POSING ONE OF THE FOLLOWING HAZARDOUS EFFECTS: ACUTE TOXICITY (ANY ROUTE OF EXPOSURE); SKIN CORROSION OR IRRITATION; SERIOUS EYE DAMAGE OR EYE IRRITATION; RESPIRATORY OR SKIN SENSITIZATION; GERM CELL MUTAGENICITY; CARCINOGENICITY; REPRODUCTIVE TOXICITY; SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE); OR ASPIRATION HAZARD. THE CRITERIA FOR DETERMINING WHETHER A CHEMICAL IS CLASSIFIED AS A HEALTH HAZARD ARE DETAILED IN APPENDIX A TO §1910.1200; HEALTH HAZARD CRITERIA.

PRODUCT IDENTIFIER

- MEANS THE NAME OR NUMBER USED FOR A HAZARDOUS CHEMICAL ON A LABEL OR IN THE SDS. IT PROVIDES A UNIQUE MEANS BY WHICH THE USER CAN IDENTIFY THE CHEMICAL. THE PRODUCT IDENTIFIER USED SHALL PERMIT CROSS-REFERENCES TO BE MADE AMONG THE LIST OF HAZARDOUS CHEMICALS REQUIRED IN THE WRITTEN HAZARD COMMUNICATION PROGRAM, THE LABEL AND THE SDS.

RECORD KEEPING

- 1910.1200(E)(1)(I)
- A LIST OF THE HAZARDOUS CHEMICALS KNOWN TO BE PRESENT USING A PRODUCT IDENTIFIER THAT IS REFERENCED ON THE APPROPRIATE SAFETY DATA SHEET (THE LIST MAY BE COMPILED FOR THE WORKPLACE AS A WHOLE OR FOR INDIVIDUAL WORK AREAS)

APPENDIX A TO §1910.1200—HEALTH HAZARD CRITERIA (MANDATORY)

- A.O.1.1 THE TERM "HAZARD CLASSIFICATION" IS USED TO INDICATE THAT ONLY THE INTRINSIC HAZARDOUS PROPERTIES OF CHEMICALS ARE CONSIDERED. HAZARD CLASSIFICATION INCORPORATES THREE STEPS:
 - (A) IDENTIFICATION OF RELEVANT DATA REGARDING THE HAZARDS OF A CHEMICAL;
 - (B) SUBSEQUENT REVIEW OF THOSE DATA TO ASCERTAIN THE HAZARDS ASSOCIATED WITH THE CHEMICAL;
 - (C) DETERMINATION OF WHETHER THE CHEMICAL WILL BE CLASSIFIED AS HAZARDOUS AND THE DEGREE OF HAZARD.

APPENDIX B TO §1910.1200—PHYSICAL CRITERIA (MANDATORY)

- A PYROTECHNIC CHEMICAL IS A CHEMICAL DESIGNED TO PRODUCE AN EFFECT BY HEAT, LIGHT, SOUND, GAS OR SMOKE OR A COMBINATION OF THESE AS THE RESULT OF NON-DETONATIVE SELF-SUSTAINING EXOTHERMIC CHEMICAL REACTIONS.
- AN EXPLOSIVE ITEM IS AN ITEM CONTAINING ONE OR MORE EXPLOSIVE CHEMICALS.
- A PYROTECHNIC ITEM IS AN ITEM CONTAINING ONE OR MORE PYROTECHNIC CHEMICALS.
- AN UNSTABLE EXPLOSIVE IS AN EXPLOSIVE WHICH IS THERMALLY UNSTABLE AND/OR TOO SENSITIVE FOR NORMAL HANDLING, TRANSPORT, OR USE.
- AN INTENTIONAL EXPLOSIVE IS A CHEMICAL OR ITEM WHICH IS MANUFACTURED WITH A VIEW TO PRODUCE A PRACTICAL EXPLOSIVE OR PYROTECHNIC EFFECT.

OCCUPATIONAL EXPOSURE LEVELS (OEL)

- **OSHA SETS ENFORCEABLE PERMISSIBLE EXPOSURE LIMITS (PELS) TO PROTECT WORKERS AGAINST THE HEALTH EFFECTS OF EXPOSURE TO HAZARDOUS SUBSTANCES, INCLUDING LIMITS ON THE AIRBORNE CONCENTRATIONS OF HAZARDOUS CHEMICALS IN THE AIR. MOST OSHA PELS ARE 8-HOUR TIME-WEIGHTED AVERAGES (TWA), ALTHOUGH THERE ARE ALSO CEILING AND PEAK LIMITS, AND MANY CHEMICALS INCLUDE A SKIN DESIGNATION TO WARN AGAINST SKIN CONTACT. APPROXIMATELY 500 PELS HAVE BEEN ESTABLISHED.**

NIOSH RELS

- **NIOSH RELS ARE FEDERAL AGENCY RECOMMENDATIONS ESTABLISHED ACCORDING TO THE LEGISLATIVE MANDATE FOR NIOSH TO RECOMMEND STANDARDS TO OSHA. RELS ARE RECOMMENDED EXPOSURE LIMITS FOR HAZARDOUS SUBSTANCES IN THE WORKPLACE TO PROTECT WORKER HEALTH. IN DEVELOPING RELS AND OTHER RECOMMENDATIONS TO PROTECT WORKER HEALTH, NIOSH EVALUATES ALL AVAILABLE MEDICAL, BIOLOGICAL, ENGINEERING, CHEMICAL, AND TRADE INFORMATION RELEVANT TO THE HAZARD.**

COMMON TERMS ARE USED WHEN DISCUSSING CHEMICAL HAZARDS OR TOXIC SUBSTANCES

- **ACTION LEVEL** AN AIRBORNE LEVEL, TYPICALLY ONE-HALF OF THE PEL DESIGNATED IN OSHA'S SUBSTANCE-SPECIFIC STANDARDS, 29 CFR 1910, SUBPART Z , CALCULATED AS AN EIGHT (8)-HOUR TIME-WEIGHTED AVERAGE, WHICH INITIATES CERTAIN REQUIRED ACTIVITIES SUCH AS EXPOSURE MONITORING AND MEDICAL SURVEILLANCE.
- **CEILING LIMIT** THE EXPOSURE LIMIT A WORKER'S EXPOSURE MAY NEVER EXCEED.
- **SAMPLING AND ANALYTICAL ERROR** A STATISTICAL ESTIMATE OF THE UNCERTAINTY ASSOCIATED WITH A GIVEN EXPOSURE MEASUREMENT.
- **SHORT-TERM EXPOSURE LIMIT (STEL)** THE AVERAGE EXPOSURE TO A CONTAMINANT TO WHICH A WORKER MAY BE EXPOSED DURING A SHORT TIME PERIOD (TYPICALLY 15 – 30 MINUTES).
- **TIME-WEIGHTED AVERAGE (TWA)** THE AVERAGE EXPOSURE TO A CONTAMINANT OVER A GIVEN PERIOD OF TIME, TYPICALLY 8-HOURS.

TRANSITIONING TO SAFER CHEMICALS



THOUGHTFUL CONSIDERATION

- DEVELOPMENT OF THE “LIST” IS VERY DYNAMIC AND WILL VARY AMONG INDUSTRY
- FOLLOWS ON THE ASSUMPTION THEY WILL USE A PRODUCT IDENTIFIER TIED TO THE SDS
- MANY CHEMICAL PRODUCTS CONTAIN 4 OR MORE INGREDIENTS
- SDS REQUIRES LIST ON THE DOCUMENT TO NOTE ALL CHEMS DOWN TO 1%
- IF CARCINOGENS DOWN TO 0.1%