

SANTA CLARA FIRE DEPARTMENT

FIRE AND LIFE SAFETY STANDARD #2

CHEMICAL IDENTIFICATION

SCOPE. The Santa Clara Fire Department Fire and Life Safety Standard #2, Chemical Identification is a compilation of recognized standards of good practice for chemical identification.

PURPOSE. The purpose of this standard is to provide a reasonable means of identifying chemicals for employees as well as emergency responders in businesses that store, handle and/or use hazardous materials. This standard was developed to aid businesses that store, handle and/or use hazardous materials to properly identify chemical hazards. These guidelines are not meant to be a substitute for maintaining identification and hazard labels on original containers.

SECTION 1 - GENERAL MARKING.

- S1.1.** Lettering shall be of a size such that the label can easily be read from a reasonable distance.
- S1.2.** The label shall be made of a durable material such that it is not de-faced during normal operations.
- S1.3.** The lettering shall be highly contrasting to the background.

SECTION 2 - DRUM OR CONTAINER STORAGE AREAS.

- S2.1.** Entrances to storage areas shall be labeled with the hazard class of chemicals in the area. If the storage area contains more than one hazard class, the label shall read:
"HAZARDOUS MATERIALS STORAGE AREA"
- S2.2.** After segregation of chemicals by hazard class or individual hazard, a sign shall be placed on a wall or fence so that it will clearly identify the hazard class for the material in the area.
- S2.3.** The sign shall show the generic name of the chemical, the approximate percentage of concentration and the hazard class. For example, if the chemical is sulfuric acid, the label shall read:
SULFURIC ACID, 98%
CORROSSIVE
- S2.4.** If the chemical is hydrogen peroxide, the label shall read:

HYDROGEN PEROXIDE, 30%
OXIDIZER

- S2.5.** Containers, which contain compatible materials in the same hazard class, can be grouped together and labeled with the appropriate hazard class. For example, areas that contain containers of different compatible flammable liquids shall be labeled as follows:

DANGER – FLAMMABLE LIQUIDS

SECTION 3 - HAZARDOUS WASTE STORAGE AREAS

- S3.1.** Entrances to hazardous waste storage areas shall be labeled as follows:
HAZARDOUS WASTE STORAGE AREA

- S3.2.** Hazardous waste containers shall be segregated by hazard class and stored separately. The label shall have the additional words, “HAZARDOUS WASTE”. For example, if the material is waste sulfuric acid, the label on the wall or fence shall read:

HAZARDOUS WASTE
SULFURIC ACID
CORROSIVE

SECTION 4 - OUTSIDE STORAGE BUILDINGS

- S4.1.** Label entrance door. If the door side of the building is not the most visible to emergency responders, then the most visible side shall also be labeled. The label shall show the hazard class of the materials stored. For example, if the building contains a variety of oxidizers (sodium hypochlorite, hydrogen peroxide, etc.), the label on the door shall read:

OXIDIZER STORAGE

- S4.2.** If the building contains corrosives, the label on the door shall read:
CORROSIVE STORAGE

- S4.3.** If flammable liquids, the label shall read:
DANGER – FLAMMABLE LIQUIDS

SECTION 5 - COMPRESSED GASES AND LIQUEFIED GASES

- S5.1.** Gases shall be labeled on the cylinder body with the generic chemical name of the gas and the percentage, or parts per million (PPM) if a mixture. The label should be visible from the front side of the cylinder. Control valves, at the point of use, shall be labeled in the same manner. For example, a cylinder of arsine gas:

ARSINE
PPM in nitrogen

- S5.2.** Gas cabinets used for storing gases shall also be identified with the same information as on the cylinder. If the cabinet contains highly toxic gases, the cabinet label shall include the words, "DANGER – POISON GAS".
- S5.3.** Dewars containing liquefied cryogenic gases shall be labeled with the generic chemical name of the gas and the word, "CRYOGENIC".
- S5.4.** All gas lines, including compressed air, shall be labeled with the name of the gas at twenty (20) foot intervals, or parts thereof, and indicate the direction of flow. Labeling shall appear at wall and floor penetrations.
- S5.5.** Emergency control valves shall be prominently labeled.

SECTION 6 - SAFETY CANS

- S6.1.** Safety cans containing raw materials shall be labeled with the generic chemical name of the liquid in the can. Safety cans containing mixed flammable liquid waste shall be labeled, "FLAMMABLE WASTE".

SECTION 7 - OPEN TANKS, VATS, BATHS

- S7.1.** Open tanks, vats and baths shall be identified with a label on the tank or on a wall directly behind the tank. The label shall show the generic chemical name(s), the percentage of concentration and the hazard class. For example:

NICKEL SULFATE	GOLD CYANIDE, 0.5%	COPPER SOLUTION
SULFURIC ACID	POISON	SULFURIC ACID
CORROSIVE		CORROSIVE

- S7.2.** The label need not show the percent concentration for baths or tanks of less than five-(5) gallon in capacity.
- S7.3.** Common or trade names may be added for convenience, but they do not satisfy the labeling requirement.
- S7.4.** Rinse-dragout baths, tanks or vats shall be labeled as follows:
RINSE WATER

SECTION 8 - FUME HOODS AND LAMINAR FLOW WORK STATIONS

- S8.1.** In addition to individual bath labels, each workstation/hood shall be labeled with the appropriate chemical name and hazard class. For example, the label shall read:

HYDROFLUORIC ACID
CORROSIVE

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SECTION 9 - INSIDE CHEMICAL STORAGE AND HANDLING ROOMS

- S9.1.** All entrance doors shall be labeled with the hazard class(es) of chemicals stored. If a mixture of compatible flammable liquids is being stored, the label shall read:

DANGER – FLAMMABLE LIQUIDS

SECTION 10 - RACK STORAGE

- S10.1.** Rack shelves shall be labeled with the generic chemical name of the chemical and the hazard class.

SECTION 11 - ABOVEGROUND STORAGE TANKS

- S11.1.** Aboveground storage tanks shall be labeled with the chemical name and the hazard class. If the material is isopropyl alcohol, the label should read:

ISOPROPYL ALCOHOL
FLAMMABLE

- S11.2.** If the chemical is sodium hydroxide, the label should read:

SODIUM HYDROXIDE
CORROSIVE

SECTION 12 - SPECIFIC MARKINGS

- S12.1.** Containers containing liquid oxygen:

LIQUEFIED OXYGEN
OXIDIZER

- S12.2.** For storage areas containing liquid oxygen, the storage site placard should read:

LIQUEFIED OXYGEN
NO SMOKING OR OPEN FLAME WITHIN 25 FEET

- S12.3.** Containers containing liquid hydrogen:

LIQUEFIED HYDROGEN
FLAMMABLE GAS

- S12.4.** For storage areas containing liquid hydrogen, the storage site placard should read:

LIQUEFIED HYDROGEN
NO SMOKING OR OPEN FLAME WITHIN 50 FEET

- S12.5.** Containers and storage areas for spontaneously flammable materials shall be labeled as follows:
SPONTANEOUSLY FLAMMABLE MATERIAL

SECTION 13 - SAFETY STORAGE CABINETS

- S13.1.** Safety storage cabinets shall have red lettering on a contrasting background.
- S13.2.** Flammable liquid storage cabinets shall be labeled as follows:
FLAMMABLE – KEEP FIRE AWAY
- S13.3.** Storage cabinets for other hazardous materials (corrosives, poisons, etc.) shall be labeled with the hazard class of the stored chemicals. For corrosives, the label should read:
CORROSIVE – KEEP FIRE AWAY

SECTION 14 - EQUIPMENT/APPARATUS

- S14.1.** Piping and Chemical Staging Areas. Piping leading to and from equipment and apparatus shall be labeled at twenty (20) foot intervals, or parts thereof, to meet the intent of this standard. Labeling shall appear at wall and floor penetrations. Labeling shall include raw materials, water, waste and gas exhaust lines. Workstations, where chemicals are staged for the equipment, shall also be labeled to meet the intent of this standard.

SECTION 15 - UNITED STATES DEPARTMENT OF TRANSPORTATION (DOT)

- S15.1.** The DOT chemical identification numbering system, used to identify chemicals in transit, is not an approved substitute for the generic chemical name of a material. The DOT number, commonly referred to as the 4-digit UN or NA number, may be used to supplement this standard.

SECTION 16 – NFPA 704: IDENTIFICATION OF THE HAZARDS OF MATERIALS FOR EMERGENCY RESPONSE

- S16.1.** NFPA 704 may be used to supplement this standard and may be required. When NFPA 704 is used, it is required to be used in association with labeling that complies with this standard.