

What colors are used to mark what hazards?

The answer... for your use, or just g-whiz info.

Workplace hazards need to be marked to alert employees to the dangers that exist in a facility or area. Depending on the specific workplace situation, different regulations could apply. The Occupational Safety and Health Administration (OSHA) requirements are often non-specific with regard to size, color and wording of markings. To provide uniformity among organizations and industry, the American National Standards Institute (ANSI) has designed color schemes and sizes for marking hazards

The color code identifies the type of hazard, which helps the employee identify the level of severity. It is meant to reduce the possibility of injuries. OSHA outlines the color code for marking physical hazards in 29 CFR 1910.144. In areas where OSHA does not cite specific requirements, the ANSI standard is followed. The following chart represents the color codes of both ANSI (Z535.1-1998) and OSHA.

COLOR	MEANING	APPLICATION
RED	Danger	Safety cans, signs.
	Stop	Emergency stop bar or button on machinery. Identification of fire equipment.
FLUORESCENT ORANGE, ORANGE-RED	Biosafety	Labels and containers for blood and infectious waste. (Warning labels must be fluorescent orange or orange-red with the biosafety symbol in a contrasting color.)
YELLOW	Caution	Tripping, falling and striking hazards. "Flammable, Keep Fire Away" labels on cabinets. Safety cans, containers for explosives, corrosives or unstable materials.
ORANGE	Warning	Parts of machinery or energized equipment that may cut, crush or otherwise injure. Inside of transmission guards for pulleys, gears, etc.
GREEN	Safety	Location of first aid equipment. Location of safety equipment; respirators, safety showers, etc.
BLUE	Information	Signs, bulletin boards. Specific railroad warnings against starting,

		using or moving equipment being repaired.
BLACK, WHITE, YELLOW OR COMBINATION OF BLACK WITH WHITE OR YELLOW	Boundaries	Traffic or housekeeping markings. Stairways, directions and borders.
MAGENTA OR PURPLE ON YELLOW	Radiation Caution	X-ray, alpha, beta, gamma, neutron and proton radiation.

Marking Physical Hazards

Several regulations refer to markings depending on the situation. The following are common situations where tapes and labels are needed. State and local codes may require more specific markings.

Compressed Gas Cylinders (29 CFR 1910.253). The contents of the cylinder-either the chemical or trade name-must be labeled, stenciled or stamped on the shoulder of the cylinder.

Confined Spaces (29 CFR 1910.146). A workplace containing confined spaces must be identified by danger signs or other effective means of identifying the existing confined spaces, their locations and the dangers they pose.

Exits (29 CFR 1910.37). Signs must identify exit locations. "EXIT" with an arrow showing the direction of the nearest exit must be placed in locations where an exit is not immediately observable. Doors and passageways that are not exits must also be marked.

Eyewash/Shower Stations (ANSI Z358.2-1998). The locations of eyewashes and showers must be identified.

Hazardous Chemicals (29 CFR 1910.1200). Appropriate labels and warnings on chemical containers in the workplace are required.

Hazardous Waste (40 CFR Part 262). Facilities accumulating hazardous waste on site must label containers as "Hazardous Waste" and include the accumulation start date. Containers that

are transported must be labeled in accordance with the Department of Transportation.

High Voltage (29 CFR 1910.305). Outside covers for pull and junction boxes must be permanently marked "High Voltage."

Ladders (29 CFR 1910.25). Defective ladders that have been taken out of service need to be marked, "Dangerous-Do Not Use."

Lockout/Tagout (29 CFR 1910.147). Lockout and tagout devices need to be standardized within a facility in terms of size, color, shape, print and format. Tagout devices also need to warn against hazardous conditions if equipment is energized. Appropriate legends on the tagout devices include: Do Not Start, Do Not Open, Do Not Operate, Do Not Close, and Do Not Energize.

Machine Guarding-Radial Saws (29 CFR 1910.213). The direction of rotation must be marked on the hood. Additionally, a permanent label, at least 1 1/2 inches by 3/4 inch is placed at the rear of the guard that reads "Danger: Do not rip or plough from this end."

Permanent Aisles and Passageways (29 CFR 1910.176). Sufficient clearances need to be allowed for mechanical equipment handling, loading docks and doorways. To keep areas clear, such passageways must be clearly marked. Striped or solid floor tapes are commonly used to mark off such areas. The color of tape used depends on degree of hazard.

Pipe Markings (A13.1-1981). ANSI requires that pipes be marked with a legend indicating the name of the contents and arrows showing the direction of flow of the material. A color is used in combination with the legend to identify the characteristic hazards of the contents. The label needs to be applied close to valves, flanges, branches, changes in direction, and wherever pipes pass through walls. Following is the classification of materials and designated colors.

Inherently Hazardous Materials

- *Flammable or explosive
- *Chemically active or toxic
- *Extreme temperatures

*Radioactive (Yellow and purple are acceptable if already installed or until existing supplies are depleted.)

Color field: yellow. **Lettering:** black.

Material of Inherently Low Hazard

Materials that are not hazardous by nature and are at or near ambient temperature and pressure.

*Liquid or liquid mixtures.

Color field: green. **Lettering:** white.

*Gas or gaseous mixtures.

Color field: blue. **Lettering:** white.

Fire-Quenching Materials

*Water

*Foam

*CO₂

*Halon

Color field: red. **Lettering:** white.

Portable Fire Extinguishers (29 CFR 1910.157). Fire extinguishers need to be mounted and identified so they are readily accessible to employees. No specific markings are required. Local fire codes may be more detailed.

Radiation Hazards. Radiation areas and containers of radioactive material are posted or labeled with signs bearing the radiation caution symbol. These sign or labels require specific wording depending on the situation. (See 29 CFR 1910.96.)

Respirator Storage (29 CFR 1910.134). Storage compartments for respirators at workstations and for emergency use must be clearly identified.

Storage Rooms for Flammable and Combustible Materials (29 CFR 1910.106). An aisle at least three feet wide must be marked in every inside storage room.

Other Commonly Asked Questions

Q. *What is the difference between OSHA and ANSI requirements for marking hazards?*

A. OSHA outlines markings for Danger and Caution hazards in 29 CFR 1910.144. ANSI also defines Danger and Caution, but further describes Warning and other color designations in Z35.1-1998.

Q. *Which pipes need to be marked?*

A. According to ANSI A13.1-1981, pipe systems include pipes of any kind. They are defined as conduits for transporting gases, liquids, semiliquids or fine particle dust.

Q. *Are arrows required in addition to marking pipes?*

A. Yes, ANSI A13.1-1981 states that arrows shall be used to show the direction of flow.

Sources for More Information

29 CFR 1910.144, Safety Color Code for Marking Physical Hazards.

29 CFR 1910.145, Specifications for Accident Prevention Signs.

ANSI Z35.1-1979, Safety Color Code for Marking Physical Hazards.

ANSI Z535.1-1998, Safety Color Code.

ANSI Z535.2-1998, Environmental and Facility Safety Signs.