



PIPE MARKER GUIDELINES

Latest Revision: ANSI/ASME A13.1-2015

Several laws and regulations exist regarding Pipe Markers and Valve Tags. Most prominent of them are the Occupational Safety and Health Act (OSHA Act of 1970) and the Federal Mine Safety and Health Act of 1977. Click [here](#) to shop for pipe markers and valve tags.

ANSI/ASME A13.1 is the pipe identification standard most commonly used in the United States. The standard specifies the primary and secondary means of identifying pipe contents, as well as the size, color and placement of the identification device.

PRIMARY PIPE IDENTIFICATION

The text legend (name of pipe content) and directional arrow remain the primary means of identifying pipe contents. Attaching arrows at one or both ends of the marker indicates flow direction. See the ANSI/ASME size chart and installation guide in the following sections for more details.

SECONDARY PIPE IDENTIFICATION

A secondary means of pipe marker identification is the color code of the marker. The terminology of inherently hazardous or nonhazardous has been removed from the standard, effective since 2007. The combination of Yellow/Black is now assigned to flammable fluids and oxidizing fluids while Green/White pipe markers identify potable, cooling, boiler feed and other water-related substances. These updates mean that legends such as hot water, cold water and steam will now use the color code of Green/White. Emedco still offers many Yellow/Black pipe markers for these contents from many of our top-selling brands as well.

Other significant color changes in 2007 included the addition of Brown/White for combustible fluids and Orange/Black for toxic or corrosive fluids. The fact that the standard has identified specific colors for flammable liquids, combustible fluids and toxic or corrosive fluids means Safety Data Sheets should be consulted before selecting a color. Further, if the pipe being labeled contains multiple hazards -- like flammable and toxic -- determining which poses the greater hazardous risk is vital and should dictate the way in which your pipe is marked. If chilled or heating systems contain toxic treatments, for example, the

color combination should be Orange/Black.

The 2007 standard also identified four additional "defined by user" color combinations for additional customization options on non-standard markers. Those exact colors are the recommended safety colors contained in the ANSI Z535.1-2015 standard.



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PIPE MARKERS OVER THE YEARS

ANSI/ASME A13.1-2015 GUIDELINES

CURRENT

THE OFFICIAL ANSI/ASME A13.1-2015 COLOR GUIDELINES STATES:

"Color should be used to identify the characteristic hazards of the contents. Color should be displayed on, or contiguous to, the piping by any physical means, but its use shall be in combination with the legend."

FLUID SERVICE

COLOR SCHEME

Fire quenching fluids	White on Red
Toxic & corrosive fluids	Black on Orange
Flammable & oxidizing fluids	Black on Yellow
Combustible fluids	White on Brown
Potable, cooling, boiler feed, & other water	White on Green
Compressed Air	White on Blue
Defined by user	White on Purple
	Black on White
	White on Grey
	White on Black

ANSI/ASME A13.1-1996 GUIDELINES

OUTDATED

CLASSIFICATION

SUB CLASSIFICATION

COLOR SCHEME

Inherently Hazardous Materials	<ul style="list-style-type: none"> - Flammable or Explosive - Chemically Active or Toxic - Extreme Temperature/Pressure - Radioactive 	Black on Yellow
Inherently Low Hazard Materials	Liquid or liquid admixture	White on Green
	Gas or gaseous admixture	White on Blue
Fire Quenching Materials	Water, foam, CO2, Halon, etc.	White on Red

PIPE MARKER GUIDELINES

EMEDCO PIPE MARKING SYSTEMS MEET THE ANSI/ASME A13.1 STANDARD

According to the standard, pipe markers should be positioned so that they are readily visible to plant personnel from the point of normal approach. Emedco pipe markers instantly tell you all you need to know about pipe contents, direction of flow and whether they're hazardous or safe.

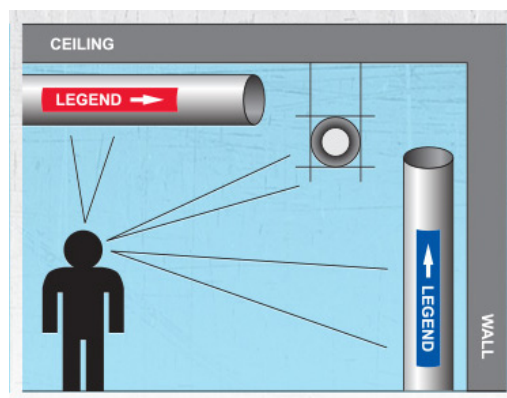
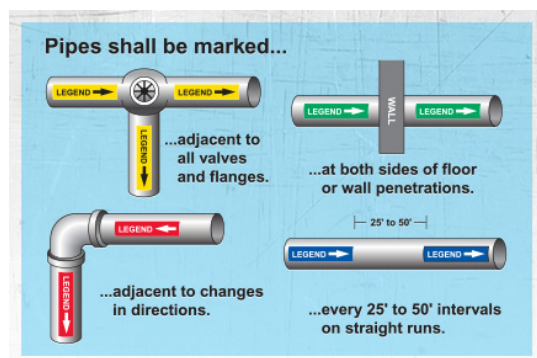
HOW TO PROPERLY LABEL PIPES

1. Obtain a legend list of all pipe contents in your plant.
2. Collect the following data on your piping systems (this may require tracing lines to determine quantities and sizes):

- Pipe contents
- Outside diameter of pipe (including insulation)
- Quantity of markers needed per ASME/ANSI A13.1 or other standards
- Pressure
- Temperature
- To/from information
- Location of specific legends by area (for aid in installation)

*****Note:** You may be able to use blueprints or P&IDs if they are current instead of walking down all of your lines. Emedco also offers Take-Off Services to help you determine your pipe marking needs.

3. Select color of marker.



CHOOSING THE RIGHT PIPE MARKER

1. SIZE

Emedco pipe marking systems meet ANSI/ASME size recommendations.

The A13.1-2015 standard also makes recommendations as to the size of letter height and length of color field for various pipe diameters. These recommendations are shown in the table below. Emedco markers, when used properly with arrows and banding tape or arrow tape, meet or exceed the standard.

FITS PIPE OUTER DIAMETER	LENGTH OF COLOR FIELD	LETTER HEIGHT
3/4" - 1-1/4" (19mm - 32 mm)	8" (203mm)	1/2" (13mm)
1-1/2" - 2" (38mm - 51mm)	8" (203mm)	3/4" (19mm)
2-1/2" - 6" (64mm - 152mm)	12" (305mm)	1-1/4" (32mm)
8" - 10" (204mm - 254mm)	24" (610mm)	2-1/2" (64mm)
over 10" (over 254mm)	32" (813mm)	3-1/2" (89mm)

Note: For pipes less than 3/4" in diameter, a permanently legible tag is recommended

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CHOOSING THE RIGHT PIPE MARKER

2. COLOR

Emedco pipe marking systems meet ANSI/ASME color recommendations.

Unmarked pipes are dangerous to both life and property. Numerous injuries have occurred due to the ignorance of pipe contents, particularly when outside agencies are involved during emergency scenarios.

Definition of materials (from the official ANSI/ASME A13.1-2015 guidelines):

Fire Quenching: This classification includes water, foam, and CO2 used in sprinkler systems and fire fighting piping systems.

Toxic and Corrosive: This classification includes fluids that are corrosive or toxic, or will produce corrosive or toxic substances when released.

Flammable: This classification includes fluids, which, under ambient or expected operating conditions, are a vapor or produce vapors that can be ignited and continue to burn in air.

Combustible: This classification includes fluids that can burn, but are not flammable.

Oxidizing (new addition for 2015 standards): Oxidizing fluid is any gas or liquid that may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does.

Potable, cooling, boiler feed and other water: Clean water usable for drinking, bathing, washing, can be oxidized and is not harmful or toxic in any way.

Compressed Air: Air kept under a pressure that is greater than atmospheric pressure. Used for domestic and industrial purposes.

FLUID SERVICE	COLOR SCHEME
Fire quenching fluids	White on Red
Toxic & corrosive fluids	Black on Orange
Flammable & oxidizing fluids	Black on Yellow
Combustible fluids	White on Brown
Potable, cooling, boiler feed, & other water	White on Green
Compressed Air	White on Blue
Defined by user	White on Purple
	Black on White
	White on Grey
	White on Black

3. WORDING

Over 150 stock legends available!

Still can't find the wording you need? No problem: We can customize markers to your exact wording.



CHOOSING THE RIGHT PIPE MARKER

4. GHS PICTOGRAMS

Communicate hazard information with your Pipe Markers through GHS Pictograms.

ASME A13.1 2015 incorporated GHS pictograms into the 2015 revision, recommending their use as part of the legend. A corresponding piping label may be provided with pipes connected to containers labeled in accordance with GHS requirements. The corresponding label should contain at least the product name or identifier, the pictogram, the signal word and the physical, health and environmental hazard statement(s).



Health Hazard

- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity



Flame

- Flammables
- Pyrophonics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides



Exclamation Mark

- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritant
- Hazardous to Ozone Layer (Non-Mandatory)



Gas Cylinder

- Gases Under Pressure



Corrosion

- Skin Corrosion / Burns
- Eye Damage
- Corrosive to Metals



Exploding Bomb

- Explosives
- Self-Reactives
- Organic Peroxides



Flame Over Circle

- Oxidizers



Environment Skull

- (Non-Mandatory)
- Eye Damage



Skull & Crossbones

- Acute Toxicity (fatal or toxic)

*The applicable GHS pictogram as illustrated may be included as part of the legend.
GHS pictograms available for select pipe markers only.

For more information on the ANSI/ASME A13.1-2015 Standard, please visit the following the American National Standards Institute online at:

[www.asme.org/products/codes-standards/a131-2015-scheme-identification-piping-systems-\(1\)](http://www.asme.org/products/codes-standards/a131-2015-scheme-identification-piping-systems-(1))

Emedco has served as a trusted source of pipe markers for architects, engineers, contractors and specifiers. Our OSHA-authorized contractor specialists are available to help with all of your project needs. Between their hands-on experience in the field and unparalleled expertise, they will ensure your jobsites

are safe, compliant and on budget. We're proud to carry a wide variety of pipe marking products which are fully compliant with current ANSI standards as well as customizable to meet the specific needs of your projects. Emedco is an industry leader in pipe marking: See why for yourself.

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