

Pipe Identification Guide

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ASME (ANSI) Standard A13.1-2007

The ASME (ANSI) Standard for pipe identification is a widely used guideline in determining pipe identification requirements. The purpose of the standard is to:

- “assist in identification of hazardous materials conveyed in piping systems and their hazards when released into the environment.”
- “Pipes are defined as conduits for the transport of gases, liquids, semi-liquids or fine particulate dust.”



Text Standards:

ASME (ANSI) Size Recommendations

The legend (name of pipe content) and directional flow arrow is the primary means of identifying pipe content. A13.1-2007 standard makes recommendations as to the size of letter height and length of color field for various pipe diameters.

Outside Diameter of Pipe or Covering	Length of Color Field	Size of Letters
3/4" to 1-1/4"	5"	1/2"
1-1/2" to 2"	8"	3/4"
2-1/2" to 6"	12"	1-1/4"
8" to 10"	24"	2-1/2"
Over 10"	32"	3-1/2"

* For pipes less than 3/4" dia. use a permanently legible tag.

Color Standards:

ASME (ANSI) Color Recommendations

Unmarked pipes mean danger – to both life and property. Numerous injuries have occurred through ignorance of pipe contents, particularly when outside agencies are called in under emergency conditions.

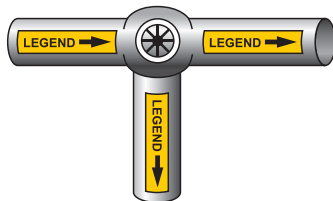
Pipe Classification	Color Scheme
Fire Quenching Fluids	White On Red
Toxic & Corrosive Fluids	Black On Orange
Flammable Fluids	Black On Yellow
Combustible Fluids	White On Brown
Potable, Cooling, Boiler Feed, and Other Water	White On Green
Compressed Air	White On Blue

*White on brown available upon request.

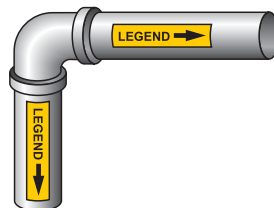
Marker Placement Standards:

ASME (ANSI) A13.1-2007 Standard

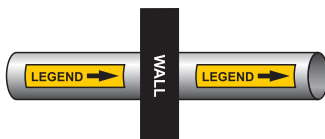
Visibility “Markers shall be located so that they are readily visible to plant personnel from the point of normal approach.” Brady Pipe Markers instantly tell you all you need to know about pipe contents, direction of flow and whether hazardous or safe.



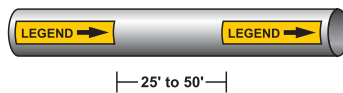
Adjacent to all valves and flanges.



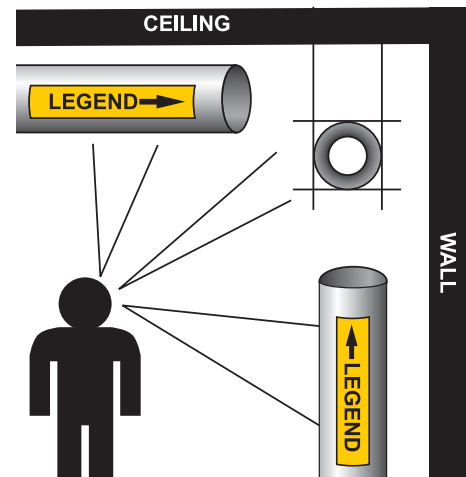
Adjacent to changes in direction.



At both sides of floor or wall penetrations.



Every 25' to 50' intervals on straight runs.



Placement of the marker may be above or below the centerline of the pipe depending on the normal approach of personnel.

Pipe Marker Material Descriptions

Characteristic	HARSH ENVIRONMENT Mechanically Applied		General Purpose Self-Sticking		
	B-689 Wrap-Around Polyester	B-681/B-883 High Performance High Visibility	B-915 BradySnap-On™ and Strap-On Vinyl	B-946 Self-Sticking Vinyl	B-736 Self-Sticking Plastic Film
Plant Environment					
Indoor	Good	Good	Good	Good	Good
Avg. Outdoor Durability (yrs.)	5-8 years	5-8 years	5-8 years	3-5 years	2-3 years
Surface Abrasion Resistance	Good	Good	Not Recommended	Not Recommended	Not Recommended
Temperatures					
Min. Installation Temperature	40°F, 5°C	—	—	0°F, -18°C	50°F, 10°C
Upper Temperature Limit	248°F, 120°C	230°F, 110°C	180°F, 82°C	180°F, 82°C	212°F, 100°C
Lower Temperature Limit	-40°F, -40°C	-40°F, -40°C	-40°F, -40°C	-40°F, -40°C	-40°F, -40°C
Pipe Surface					
Dirty, Dusty	Good	Good	Good	Not Recommended	Not Recommended
Rough	Good	Good	Good	Good	Not Recommended
Insulated	Good	Good	Good	Good	Good
Wet	Good	Good	Good	Not Recommended	Not Recommended
Greasy, Oily	Good	Good	Good	Not Recommended	Not Recommended
Chemical Resistance					
Organic Solvents (MEK, Acetone, Toluene)	Not Recommended	Not Recommended	Not Recommended	Not Recommended	Not Recommended
Acids (Sulfuric, HCL, Acetic)	Good	Good	Not Recommended	Not Recommended	Good
Alkalis (Sodium Hydroxide)	Good	Good	Not Recommended	Not Recommended	Not Recommended
Alcohols (Methanol, Isopropanol)	Good	Good	Good	Good	Good
Grease/Oils (SAE 20, ASTM #3)	Good	Good	Good	Good	Good
Special Properties					
Low PVC - Pipe contact point	Yes	Yes	No	No	No
Low PVC - Whole marker	No	Yes	No	No	No
Low Halogen - Pipe contact point	Yes	Yes	No	No	No
Low Halogen - Whole marker	No	Yes	No	No	No
Meets ASME (ANSI) A13.1	Yes	Yes	Yes	Yes	Yes

Not Recommended = marker not recommended for environment listed Good = marker suitable for environment listed

Self-Sticking Pipe Markers



Self-Sticking Vinyl Pipe Markers

Factory applied industrial grade adhesives simplify marker installation. Simply peel the release coated paper backing from the marker and press the marker in place. Banding each end of the marker with Arrow Tape is recommended to indicate contents flow direction and to secure markers to the pipe.

- **B-946 Self-Sticking Vinyl**
A premium indoor/outdoor material
- **B-681 Food & Beverage**
Industrial grade self-adhesive protects against bacteria or moisture trapping behind the pipe marker.
- **B-736 Pipe Markers-To-Go**
Economical B-736 material with surface printed plastic for use on smooth, clean, dry pipe surfaces

Mechanically Applied Pipe Markers



BradySnap-On™ and Strap-On Vinyl

Unlike installing self-sticking markers, there's no need to clean pipe surfaces. Installation time is reduced. Markers are simply snapped, strapped or wrapped in place.

- **B-915 BradySnap-On™ and Strap-On Vinyl**
A mechanically applied, surface printed vinyl pipe marker. Snap-ons are used for pipes less than 6" outside diameter. Strap-ons are designed for pipes from 6" and greater



High Performance Pipe Markers

Brady High Performance Markers are designed for use in harsh environments where there's significant exposure to sunlight, heat, and/or chemicals.

- **B-689 High Performance Polyester**
PVF overlaminated polyester with sealed-in graphics. Markers are resistant to abrasion, chemicals, high humidity, and outdoor weathering. Supplied precooled for easy wrap-around installation on pipes up to 7-7/8" in diameter
- **B-681/B-883 High Performance High Visibility**
B-681 labels are factory applied to our B-883 FRP carrier. Directional arrows are applied by the installer. Markers are fastened to the pipe with Stainless Steel Strapping, sold separately



IIAR Pipe Markers

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Did You Know? IIAR Pipe Markers - Ammonia Refrigeration Pipe Markers

The International Institute of Ammonia Refrigeration (IIAR) standardized ammonia pipe labeling when it published its bulletin #114, "Guidelines for Identification of Ammonia Refrigeration Piping and System Components."

Brady offers a variety of ammonia pipe markers that comply with the IIAR's established guidelines, including self-adhesive markers, snap-around marker styles, and pipe markers recommended for harsh environments (both indoors and outside).

IIAR Pipe Marker should have the following sections:



Directional Arrows

Use arrow tape to indicate flow direction

Ammonia Piping Abbreviation

*See below

Physical State

the physical state of the refrigerant located to the left of "Ammonia":

If Liquid – "LIQ"
black or white on orange background

If Vapor – "VAP"
black or white on sky blue background

If Both – "LIQ" "VAP"
both printed in colors above

Marker Body

"Ammonia" - black letters on yellow background

Pressure Level

the pressure level of the refrigerant located to the right of "Ammonia":

If High – "HIGH"
black or white on red background

If Low – "LOW"
black or white on green background

If Both – "LIQ" "VAP"
both printed in colors above

Directional Arrows

Use arrow tape to indicate flow direction

Ammonia Piping Abbreviations:

Abbr.	System
BD	Booster Discharge
CD	Condenser
DC	Defrost Condensate
EQ*	Equalizer
ES	Economizer Suction
HGD	Hot Gas Defrost
HPL	High Pressure Liquid
HSD	High Stage Discharge
HSS	High Stage Suction
HTS*	High Temperature Suction
HTRL	High Temperature Recirculated Liquid
HTRS	High Temperature Recirculated Suction
LTRL	Low Temperature Recirculated Liquid
LTS*	Low Temperature Suction
LTRS	Low Temperature Recirculated Suction
LIC	Liquid Injection Cooling
LSS	Low Stage Suction
PO*	Pump Out
PU*	Purge
RV	Relief Vent
TSR	Thermosyphon Return
TSS	Thermosyphon Supply

*Not currently covered in the IIAR standard



Self-Sticking Pipe Markers

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Semiconductor & Chemical Pipe Markers

- For use on small diameter piping or tubing 3/4" or less
- Meets ASME A13.1 color specifications
- Made from B-946 self-sticking vinyl with permanent adhesive
- Marker size: 1/2" x 2-1/4" and includes 28 markers per card
- Use with 1" arrow tape

Legend	Color	1/2" x 2-1/4"
(Arrow)	Yellow	91883
(Arrow)	Green	91884
(Arrow)	Red	91885
(Arrow)	Blue	91886
(Arrow)	Orange	91887
(Arrow)	White	91888
(Blank)	Yellow	91889
(Blank)	Green	91890
(Blank)	Red	91891
(Blank)	Blue	91892
(Blank)	Orange	91893
(Blank)	White	91894
Acetone	Yellow	91895
Acid	Yellow	91896
Acid Waste	Yellow	91897
Air	Green	91898
Ammonia	Yellow	91899
Argon	Yellow	91900
Argon	Green	91901
Carbon Dioxide	Yellow	91906
Carbon Dioxide	Green	91907
Caustic	Green	91909
Chilled Water	Green	91910

Legend	Color	1/2" x 2-1/4"
Chlorine	Yellow	91911
City Water	Green	91913
Clean Dry Air	Yellow	91914
Clean Dry Air	Green	91915
Cold Water	Green	91916
Compressed Air	Blue	91917
Cooling Water	Green	91918
D.I. Water	Green	91920
Deionized Water	Green	91921
Drain	Yellow	91925
Drain	Green	91926
Exhaust	Yellow	91930
Heating Water	Yellow	91933
Helium	Yellow	91934
Helium	Green	91935
Hot	Yellow	91936
Hot Water	Yellow	91937
Hydrochloric Acid	Yellow	91938
Hydrofluoric Acid	Yellow	91939
Hydrogen	Yellow	91940
Hydrogen Chloride	Yellow	91942
Industrial Water	Green	91943
Isopropyl Alcohol	Yellow	91944

Legend	Color	1/2" x 2-1/4"
Methyl Alcohol	Yellow	91948
Natural Gas	Yellow	91949
Nitrogen	Blue	91997
Nitrogen	Green	91998
Nitrogen Trifluoride	Yellow	91950
Nitrous Oxide	Yellow	91951
Non-Potable Water	Yellow	91953
Oxygen	Yellow	91955
Phosphine	Yellow	91956
Potable Water	Green	91958
Process Cooling Water	Green	91959
Process Vacuum	Green	91961
Return	Yellow	91964
Return	Green	91965
Silane	Yellow	91966
Solvent	Yellow	91967
Spare	Green	91968
Supply	Yellow	91972
Trichlorosilane	Yellow	91974
Vacuum	Green	91977
Vent	Yellow	91978
Vent	Green	91979
Water	Green	91981



Medical Gas Pipe Markers-On-A-Roll

- Designed to wrap completely around 3/4" piping.
- 3" x 3" markers come complete with direction flow arrows with 1/4" high characters.
- Comply with CGA & NFPA Standards.

Catalog #	Legend	Color	Length	Markers/Roll
98499	Cyclopropane	Black on Orange	15'	60
98621	Helium	White on Brown	15'	60
98838	Medical Vacuum	Black on White	15'	60
98844	Oxygen	White on Green	15'	60



Medical Gas Pipe Markers

- B-946 vinyl pipe markers
- Style 3C: for pipes with an 3/4" outside dia. or less consists of three 2-1/4" x 2-3/4" wrap around labels and four sets of arrow tape
- Style 4: for pipes with a 1" to 2-1/2" outside dia. consists of four 1-1/8" x 7" labels per card

Legend	Color	Style 3C	Style 4
Carbon Dioxide	White Gray	87740	90307
Helium	White Brown	87742	-
Medical Air	White Blue	7183-3C	7183-4
Medical Air	Black Yellow	7184-3C	7184-4
Medical Air 50-55 Psi	Black Yellow	86330	86331
Medical Vacuum	White Blue	7185-3C	7185-4
Medical Vacuum	Black White	7186-3C	7186-4
Nitrogen	White Black	87745	90331
Nitrogen 180-200 Psi	White Black	86334	-
Nitrous Oxide	White Blue	87746	90333
Nitrous Oxide 50-55 Psi	White Blue	86332	86333
Oxygen	White Green	7210-3C	7210-4
Oxygen 50-55 Psi	White Green	86328	86329



Medical Gas Marking NFPA Update 99-62:

Gas content and operating pressure of medical gas piping systems shall be readily identifiable by appropriate labeling with the name and pressure of the gas contained. Labels shall appear on the piping at intervals of not more than 20ft (6m). Supplementary color identification shall be in accordance with the Compressed Gas Association pamphlet c-9. For more visit NFPA.org.

