

ANSI / IIAR 2-2008 STANDARD FOR AMMONIA IDENTIFICATION



Complies with The American National Standard for Equipment, Design and Installation of Ammonia Refrigerating Systems

Marking Services Canada (MSC) understands the need for proper marking of piping and equipment in food and beverage facilities. Durable pipe markers and component labels provide long-term protection to workers and plant infrastructure. We work with leading associations and companies to establish marking products and services to uniformly identify ammonia refrigeration piping and components to ensure safe, reliable plant operations.

Bulletin 114: Identification of Ammonia Piping and System Components

The ammonia refrigeration industry has widely adopted recommended practices for pipe marking, to establish uniformity among users in identifying refrigerant piping. The basis of the guidelines was ANSI Standard A13.1-1981 "Scheme for Identification of Piping Systems." This standard was revised in 2007, dictating orange backgrounds, rather than yellow backgrounds, should be used for toxic and corrosive fluids. Bulletin 114, established in accordance with IIAR, has been updated to reflect this standard and provide better consistency with general industry standards.

- The use of color to identify fluid characteristics for ammonia refrigeration piping brings consistency to the industry aiding in training and safety efforts.
- This suggested color theme is not intended to replace existing color schemes that have been established by facilities.

Ammonia Refrigeration Marker Layout

Each marker has five important parts:

1. Ammonia piping abbreviation section
2. Physical State: LIQ (Orange) and/or VAP (Blue)
3. Ammonia: black letters on orange background
4. Pressure Level: LOW (70 PSIG or less) = Green, HIGH (greater than 70 PSIG) = Red
5. Directional arrow (printed on marker) - scored





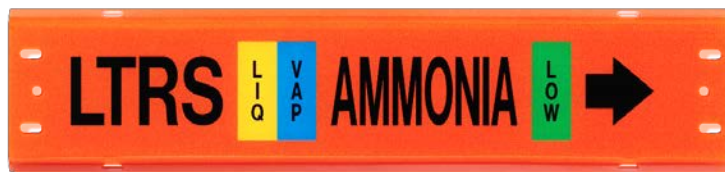
Ammonia Pipe Identification

All piping mains, headers and branches must identify the physical state of the refrigerant (that is, vapor, liquid, etc.), the relative pressure level of the refrigerant, and the direction of flow. The identification system used must either be one established as a standard by a recognized code or standards body, or one described and documented by the facility owner. Bulletin 114 dictates orange labels as standard, however this color is not intended to replace existing color schemes that have been established by facilities.



Choosing the Proper Material

- Pipe markers may be self-adhesive, wrap-around or strap-on type.
- Pipe surfaces should be prepared properly by cleaning and drying the pipe before placing self-adhesive markers as to avoid moisture and corrosion on uninsulated carbon steel pipe.
- Pipe markers to be made of suitable materials for the area of use.
- Markers should resist fading in the presence of indoor lighting or if subjected to infra-red or ultraviolet radiation.
- Markers must be suitable for application to insulated or non-insulated piping.
- MSC highly recommends using a carrier with feet due to temperature of the pipe to ensure the integrity of the marker. These include Hot Gas Discharge (HGD) and Booster Discharge (BD).



Component Markers

- Component Markers are used in identifying the equipment in a refrigeration system.
- Colors for component markers to coincide with the ANSI Z535 Safety Color Chart.





Selecting the Proper Size

| MS-900 SELF-ADHESIVE AMMONIA MARKERS | | | |
|--------------------------------------|------------------|--------------|---------------|
| MSC PART NUMBER | OUTSIDE DIAMETER | MARKER WIDTH | MARKER LENGTH |
| A1 | UP TO 1.25" | 1" | 8" |
| A2 | 1.5" - 2" | 1.5" | 12" |
| A3 | 2.25" - 7" | 2.25" | 16" |
| A4 | 8" - 10" | 4" | 24" |
| A5 | >10" | 4.5" | 32" |

| MS-995/MS-1000 COILED PIPE MARKERS | | | |
|------------------------------------|------------------|--------------|---------------|
| MSC PART NUMBER | OUTSIDE DIAMETER | MARKER WIDTH | MARKER LENGTH |
| AAO | UP TO 1.25" | 5" | 8" |
| ABO | .75" - 2.5" | 9" | 8" |
| ACO | 2" - 2.5" | 12" | 12" |
| ADO | 2.75" - 4.75" | 17" | 12" |
| AEO | 5" - 7.875" | 26" | 12" |

| CARRIER PIPE MARKERS | | | |
|----------------------|------------------|--------------|---------------|
| MSC PART NUMBER | OUTSIDE DIAMETER | MARKER WIDTH | MARKER LENGTH |
| AMAO | UP TO 2" | 2" | 15" |
| AMFO | 2.25" - 7.875" | 2.5" | 16" |
| AMO | >8" | 4.5" | 32" |

| COMPONENT MARKERS | | | |
|-------------------|--|--------------|---------------|
| | | MARKER WIDTH | MARKER LENGTH |
| | | 4" | 32" |

Proper labeling has an impact on the reliable and safe operation of new food and beverage facilities or upgraded existing plants. When you invest in the world-class quality and expertise of MSC's labeling, you gain significant returns on protecting the productivity of your plant for years to come. Contact us today for answers to your material questions. We'll help you choose the right materials and services for all your ammonia refrigeration piping and system component needs.

MSC offers a complete line of identification to meet every labeling challenge with extremely fast fulfillment, industry best quality, and no minimum order requirements. Through our value-added services and high quality products, we significantly raise the level of safety awareness, promote safe work conditions and reduce total "in-place" costs.

For more information on the ANSI/IIAR 2-2008 Standard, please visit the following source:

International Institute of Ammonia Refrigeration – www.iiar.org

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