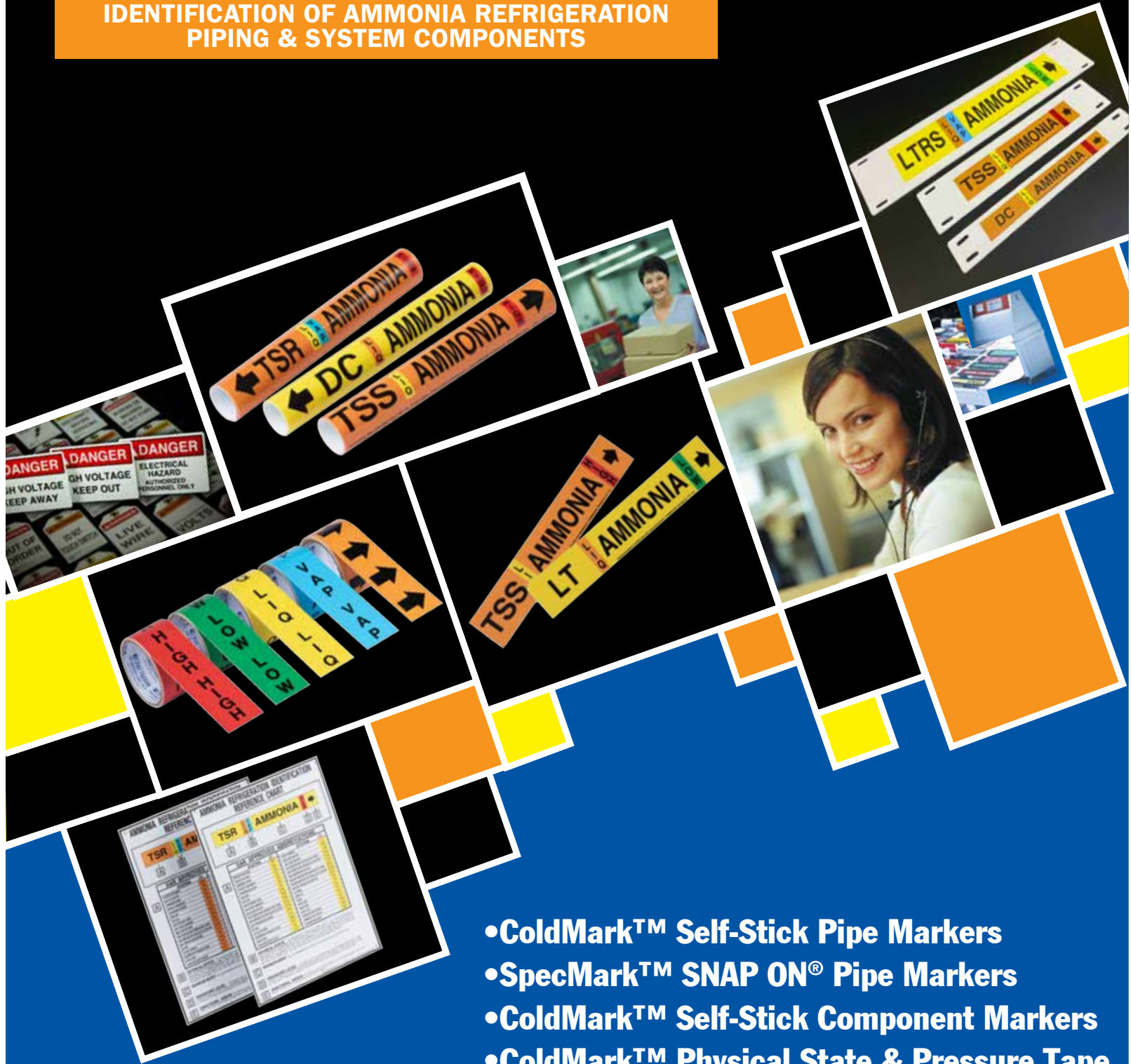


CRAFTMARK

PIPE MARKERS SINCE 1959

AMMONIA REFRIGERATION SPECIFICATION CATALOG

IIAR REVISED BULLETIN #114
IDENTIFICATION OF AMMONIA REFRIGERATION
PIPING & SYSTEM COMPONENTS



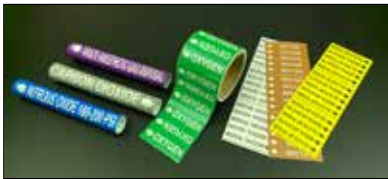
- ColdMark™ Self-Stick Pipe Markers
- SpecMark™ SNAP ON® Pipe Markers
- ColdMark™ Self-Stick Component Markers
- ColdMark™ Physical State & Pressure Tape
- IIAR Marking System Reference Charts
- Safety Signs & Tags

Thanks for your business. For over 60 years Craftmark has been providing durable printed products to companies The World Over...

- Products to Meet ASME, CGA, IIAR, GHS, NFPA, ISO
- Thousands of Items to Choose From
- In stock Items Ready to Ship
- Trained -inhouse customer support
- Custom Products
- Emergency Service



PIPE & VALVE MARKERS & TAGS



MEDICAL GAS PIPE MARKERS



AMMONIA REFRIGERATION PIPE MARKERS



FIBER OPTIC CABLE MARKERS, TAGS & SIGNS



MARINE ISO / IMO MARKERS, TAGS & SIGNS



ELECTRICAL SYSTEMS MARKERS, TAGS & SIGNS



FIRE PROTECTION PIPE MARKERS, TAGS & SIGNS



SAFETY SIGNS, TAGS AND MARKERS

CRAFTMARK is a world leader in Durable Pipe Identification Products.

Hazardous as well as non-hazardous materials flow through unimaginable lengths of piping the world over. This piping –specifically that which is found in *Industrial, Commercial & Institutional* facilities around the globe contain hazards, which must be labeled to warn employees, contractors and emergency personnel as to the materials these pipes carry.

CRAFTMARK is the industry **EXPERT** in providing Pipe Marking products that meet or exceed the various specifications that exists around the globe.

Around the globe there are various Pipe Marking specifications that are all aimed at the same end result- *Safety*. Whether its ASME/ANSI, GHS/CLP, European Standard, Australian Standard, British Standard, ISO 14726 , CGA/NFPA, IIAR Bulletin #114-Craftmark Pipe Markers has products to meet or exceed these standards. Whether they are localized marking standards to more broad standards such as ASME or GHS- **CRAFTMARK** is the source for durable marking products.

CRAFTMARK is an innovator with fully staffed Research, Product Development and Testing .

Our Pipe Marking products are developed, designed and tested to assure product durability. Products are tested to ASTM standards for outdoor durability including UV, condensation and salt water. In addition High temperature/ High Performance products are tested for chemical and heat resistance. We have been called upon on a number of instances to develop hybrid markers, which envelop several specifications and meet varying environmental conditions.





IIAR BULLETIN #114

INTERNATIONAL INSTITUTE OF AMMONIA REFRIGERATION

Bulletin 114: Guideline for Identification of Ammonia Refrigeration Piping and System Components

Bulletin 114 developed and published in 1991 as means to establish uniformity among ammonia refrigeration users in identifying refrigerant piping. The basis for the development of the guidelines was ANSI Standard A13.1-1981 “ Scheme for Identification of Piping Systems.” This standard was further revised in 2007 and included a change from yellow background to orange background for toxic and corrosive fluids. Bulletin 114 updates the IIAR standard to reflect ASME changes and provide better consistency with general industry standards.

- The use of color to identify fluid characteristics is suggested and adopted by this bulletin in an effort to bring consistency to the industry and aid in training and safety efforts.
- The suggested color scheme outlined in not intended to replace existing color schemes that have been established by facilities.

SCOPE

The scope of Bulletin 114 is to establish guidelines for identifying piping in a closed-circuit ammonia refrigeration system as well as related refrigeration system components.

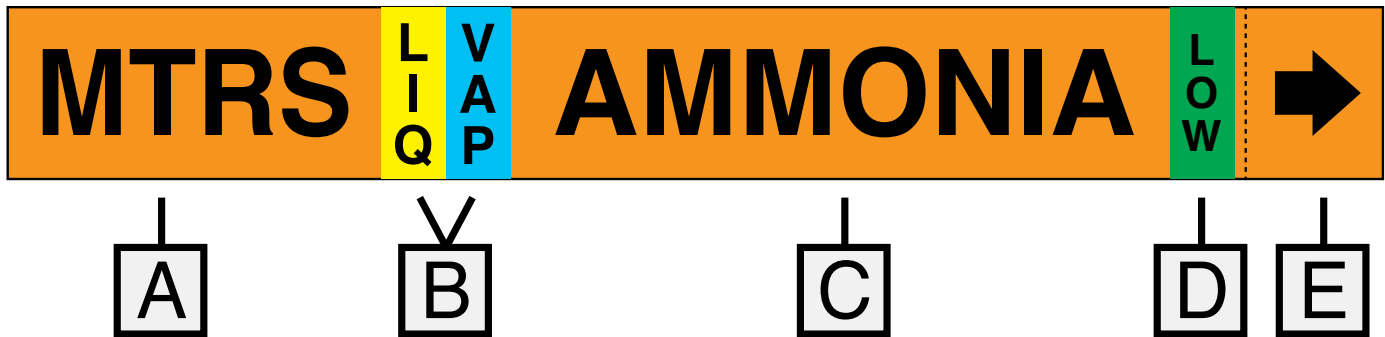
- All piping mains, headers and branches should be identified as to the physical state of the refrigerant i.e. vapor, liquid, etc., the relative pressure level and direction of flow.
- All refrigerant system components should also be uniformly identified. System components include compressors and compressor units, condensers, receivers, thermosyphon vessels, recirculators, intercoolers, accumulators, transfer vessels, oil pots, evaporators, heat exchangers and any other component of the refrigeration system containing refrigerant that is not inclusive to the refrigeration lines comprising the piping system.

Ammonia Refrigeration Pipe Identification

Pipe markers in accordance with IIAR Bulletin #114, are designed to identify the refrigerant contained within that piping segment including the physical state, relative pressure level and direction of flow.

Each marker will be considered to have five sections:

- A** Ammonia piping abbreviation section (black letters on an orange background)
- B** Physical state section: LIQ (black letters on yellow band) and/or VAP (black letters on a baby blue band)
- C** Ammonia section: word AMMONIA (black letters on an orange background)
- D** Pressure section: <70 psig will be considered low pressure and will be denoted by the word LOW printed in black letters on a green band, >70 psig will be considered high pressure and will be denoted by the word HIGH printed in black letters on a red band.
- E** Directional flow arrows may be printed on the marker body (scored for use in either direction). In the case of the vinyl “snap-on” type of marker, the arrows and legend will be printed universally, meaning that regardless of the position of the marker the arrows will point in the correct flow direction. Arrow shall be printed black on an orange background.



SYSTEM ABBREVIATIONS			
IIAR ABBREV.	SYSTEM	IIAR ABBREV.	SYSTEM
BD	BOOSTER DISCHARGE	LT	LIQUID TRANSFER
BS	BOOSTER SUCTION	LSS	LOW STAGE SUCTION
CD	CONDENSER DRAIN	LTRL	LOW TEMPERATURE RECIRCULATED LIQUID
DC	DEFROST CONDENSATE	LTRS	LOW TEMPERATURE RECIRCULATED SUCTION
ES	ECONOMIZER SUCTION	LTS	LOW TEMPERATURE SUCTION
EQ	EQUALIZER	MTRL	MEDIUM TEMPERATURE RECIRCULATED LIQUID
FG	FOUL GAS	MTRS	MEDIUM TEMPERATURE RECIRCULATED SUCTION
HPL	HIGH PRESSURE LIQUID	MTS	MEDIUM TEMPERATURE SUCTION
HSD	HIGH STAGE DISCHARGE	OD	OIL DRAIN
HSS	HIGH STAGE SUCTION	PO	PUMP OUT
HTRL	HIGH TEMPERATURE RECIRCULATED LIQUID	PU	PURGE
HTRS	HIGH TEMPERATURE RECIRCULATED SUCTION	PL	PURGE LINE
HTS	HIGH TEMPERATURE SUCTION	RV	RELIEF VENT
HG	HOT GAS	RV	RELIEF VENT
HGD	HOT GAS DEFROST	TSR	THERMOSYPHON RETURN
IPL	INTERMEDIATE PRESSURE LIQUID	TSS	THERMOSYPHON SUPPLY
LD	LIQUID DRAIN	TSV	THERMOSYPHON VENT
LIC	LIQUID INJECTION COOLING		

MARKER MATERIAL REQUIREMENTS



- Pipe markers may be of the self-adhesive, snap on or strap on type.
- Pipe surfaces should be prepared. Thoroughly degrease, clean and dry pipe surface prior to installation of a self-stick marker so as to avoid the trapping of moisture which can cause corrosion on uninsulated piping systems.
- Choose the type of marker system that best suits the area of use.
- Markers should resist fading from both indoor, outdoor ultraviolet (UV), or infra-red radiation.
- Marker must be suitable for application to insulated or non-insulated piping.
- Self-stick markers must have adhesive backing that shall adhere in all temperature ranges served by the refrigeration system and retains its adhesive qualities when applied to outdoor piping.

IIAR Bulletin #114 Section 4.1.8 Pipe Marker Dimensions and Lettering Size

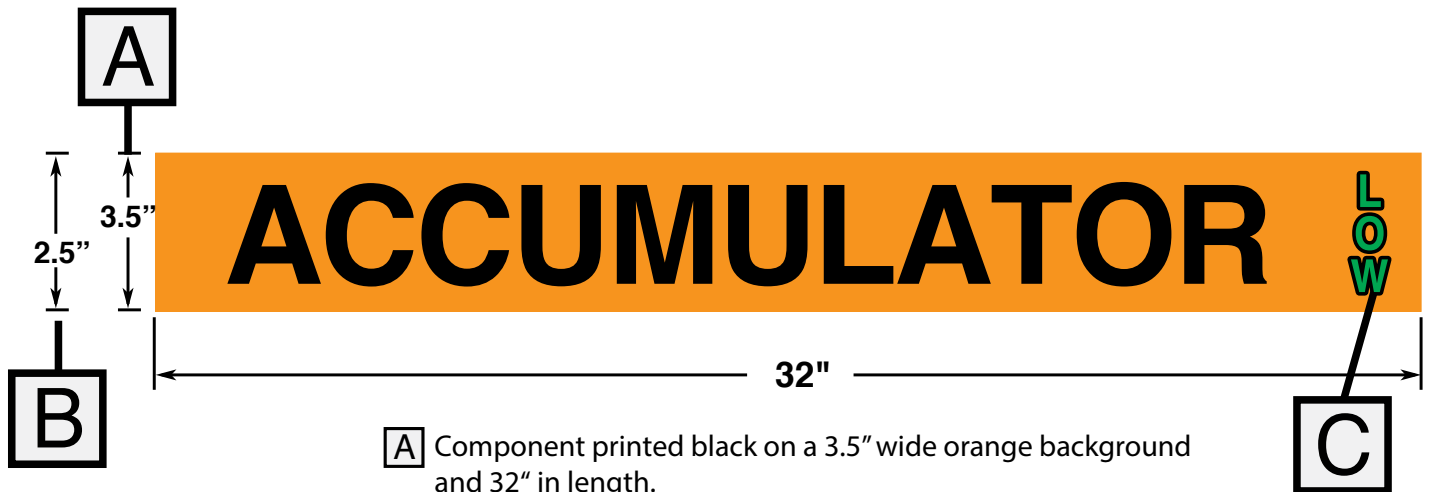
Diameter (O.D.) Range	Marker Width	Marker Length	Letter Size	Physical State	Pressure Level
Up to 1.25"	1"	8"	.5"	.5"	.5"
> 1.25" - 2"	1.5"	8"	.75"	.75"	.75"
> 2" - 7"	2.5"	12"	1.25"	1"	1"
> 7" - 10"	3.5"	24"	2.5"	1.5"	1.5"
> 10"	4.5"	32"	3.5"	2"	2"

COMPONENT MARKERS



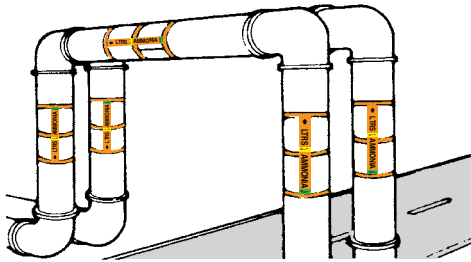
Component markers will bear the name of the equipment they identify, e.g., RECEIVER, ACCUMULATOR, RECIRCULATOR, etc. In addition, component markers will be provided with a pressure level designation.

- Components markers will have black letters on an orange background.
- Pressure level will be indicated by the word HIGH in red letters or the word LOW in green letters printed on the far-right hand side of orange marker background.
- Self-stick markers will be in accordance with material guidelines of the Ammonia markers.
- Component markers shall be 3.5" wide x up to 32" long to accommodate the name of the component.
- Lettering on component markers will be 2.5" tall.

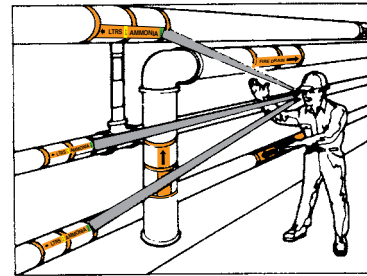


- A** Component printed black on a 3.5" wide orange background and 32" in length.
- B** Lettering to be 2.50" high
- C** Pressure level LOW (<70 psig or less) in Green
HIGH (>70 psig) in Red

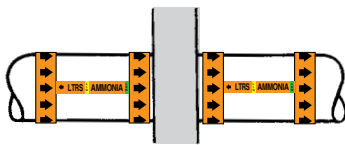
FOR PROPER PLACEMENT OF PIPE MARKERS, ETC., USE THE SIMPLIFIED LOCATION AND USAGE Guidelines BELOW



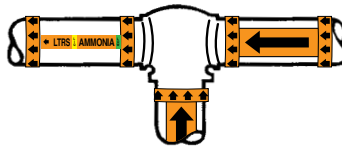
Where pipe lines pass over or under a road or waterway, apply a CRAFTMARK marker and arrow marker on both sides of road or waterway.



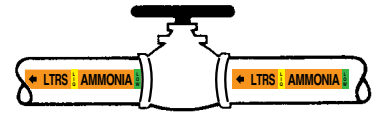
If pipelines are above or below normal line of vision, place CRAFTMARK markers below or above horizontal centerline of pipe as shown.



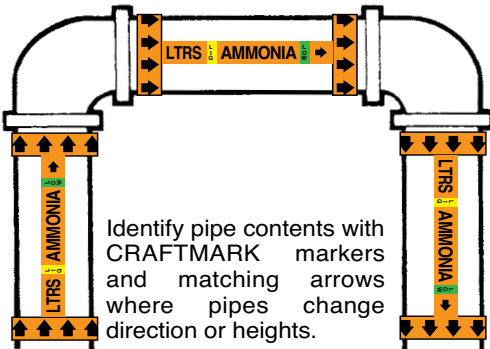
Where pipelines pass through a wall, apply a CRAFTMARK marker and arrow on the pipe both entering and exiting a wall.



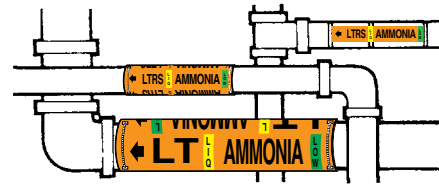
Place a CRAFTMARK marker and arrow marker on each riser and T-joint with arrows pointing away from legend.



Apply a CRAFTMARK marker and arrow marker either entering or exiting a valve to show contents and direction flow.



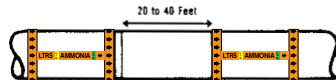
Identify pipe contents with CRAFTMARK markers and matching arrows where pipes change direction or heights.



Indicate pipe content flow direction with arrows of matching style, color and material to the pipe marker used. Place so that arrow points away from the



360° color coding is provided by color banding the circumference of your pipes. Arrow tapes give location and color code from all vantage points.



Apply CRAFTMARK markers and arrows every 20 to 40 feet along continuous lines, or at frequent intervals as needed on straight pipe runs.



Place CRAFTMARK markers within six feet of the entrance or exit to a vessel or tank and at entrances to manifolding.

INDEX



**ColdMark™ Self-Stick
Pipe Markers Pg.10**



**SpecMark™ Snap On™
Pipe Markers Pg.12**



**ColdMark™ Component
Markers Pg.14**



**ColdMark™ State & Pressure
Roll Tape Pg.14**



**IIAR Ammonia Refrigeration
Reference Charts Pg.15**



**Fiberglass Carriers/
Banding Pg.16**








DESCRIPTION: Durable, low temp self-stick, 4 mil vinyl with durable UV screen inks.

USE: To Identify Ammonia Refrigeration Piping.

COMPLIANCE: Complies with International Institute of Ammonia Refrigeration (IIAR) Recommended Guidelines Bulletin #114

Craftmark's ColdMark™ IIAR Ammonia Refrigeration System self-stick pipe markers meet all of the requirements of IIAR Bulletin #114 . These bright, durable, aggressive markers are designed for use on Ammonia Refrigeration piping and apply to clean, dry, oil free piping down to 32°F (0°C).

Markers feature thick 4 mil vinyl with an ultra-aggressive adhesive that is formulated to be applied at low temps.

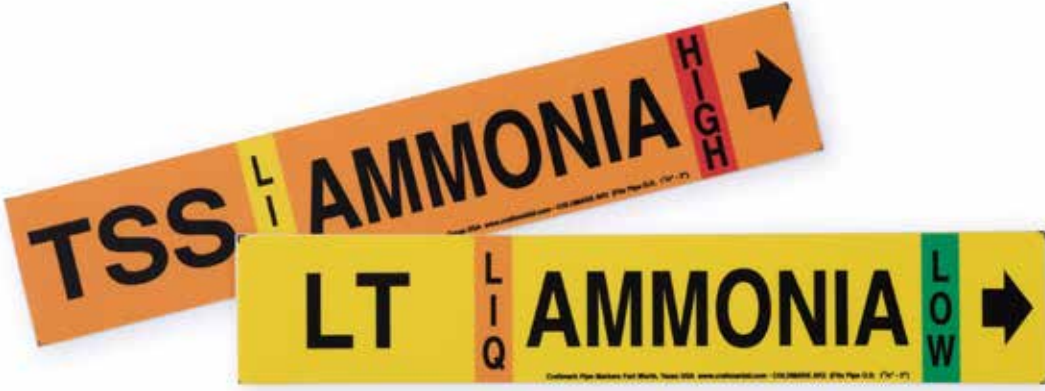
ColdMark™ STYLE	FITS PIPE SIZE	MARKER SIZE	LETTER SIZE
AR1 	.75"-1.25"	1"x8"	.50"
AR2 	1.25"-2"	1.5"x8"	.75"
AR3 	2"-7"	2.5"x12"	1.25"
AR4 	7"-10"	3.5"x24"	2.5"
AR5 	Over 10"	4.5"x32"	3.5"

FEATURES:

- Indoor / Outdoor premium grade vinyl.
- Crystal clear lamination protects printing from abrasion.
- Applies to pipe and insulation as low as 32°F (0°C)
- Meets IIAR Bulletin #114 100%
- Arrows can be aimed either way.
- Sizes to fit .75"-10"+
- Custom Available at **NO ADDITIONAL COST!**
- Available in orange & yellow to meet your current system specs.

Fiberglass Carriers Available on PG.16





ColdMark™ SELF-STICK STOCK LIST STOCK NUMBERS				FOR PIPE DIAMETERS				
IIAR ABBREV.	SYSTEM	PHYSICAL STATE	PRESSURE LEVEL	.75"-1.25"	>1.25"-2"	>2"-7"	>7"-10"	>10"
				AR1	AR2	AR3	AR4	AR5
BD	BOOSTER DISCHARGE	VAP	LOW	CM1	CM21	CM41	CM61	CM81
BS	BOOSTER SUCTION	VAP	LOW	CM157	CM158	CM159	CM160	CM161
CD	CONDENSER DRAIN	LIQ	HIGH	CM2	CM22	CM42	CM62	CM82
DC	DEFROST CONDENSATE	LIQ	HIGH	CM3	CM23	CM43	CM63	CM83
ES	ECONOMIZER SUCTION	VAP	LOW	CM4	CM24	CM44	CM64	CM84
EQ	EQUALIZER	VAP	HIGH	CM101	CM102	CM108	CM104	CM105
FG	FOUL GAS	VAP	LOW	CM106	CM107	CM45	CM109	CM110
HPL	HIGH PRESSURE LIQUID	LIQ	HIGH	CM7	CM27	CM48	CM67	CM87
HSD	HIGH STAGE DISCHARGE	VAP	HIGH	CM8	CM28	CM49	CM68	CM88
HSS	HIGH STAGE SUCTION	VAP	LOW	CM9	CM29	CM50	CM69	CM89
HTRL	HIGH TEMPERATURE RECIRCULATED LIQUID	LIQ	LOW	CM10	CM30	CM51	CM70	CM90
HTRS	HIGH TEMPERATURE RECIRCULATED SUCTION	LIQ VAP	LOW	CM111	CM31	CM52	CM71	CM91
HTS	HIGH TEMPERATURE SUCTION	VAP	LOW	CM12	CM32	CM113	CM72	CM92
HG	HOT GAS	VAP	HIGH	CM5	CM25	CM46	CM65	CM85
HGD	HOT GAS DEFROST	VAP	HIGH	CM6	CM26	CM47	CM66	CM86
IPL	INTERMEDIATE PRESSURE LIQUID	LIQ	HIGH	CM162	CM163	CM164	CM165	CM166
LD	LIQUID DRAIN	LIQ	LOW	CM111	CM112	CM118	CM114	CM115
LIC	LIQUID INJECTION COOLING	LIQ	HIGH	CM13	CM33	CM54	CM73	CM93
LT	LIQUID TRANSFER	LIQ	LOW	CM116	CM117	CM53	CM119	CM120
LSS	LOW STAGE SUCTION	VAP	LOW	CM14	CM34	CM55	CM74	CM94
LTRL	LOW TEMPERATURE RECIRCULATED LIQUID	LIQ	LOW	CM15	CM35	CM56	CM75	CM95
LTRS	LOW TEMPERATURE RECIRCULATED SUCTION	LIQ VAP	LOW	CM16	CM36	CM57	CM76	CM96
LTS	LOW TEMPERATURE SUCTION	VAP	LOW	CM17	CM37	CM123	CM77	CM97
MTRL	MEDIUM TEMPERATURE RECIRCULATED LIQUID	LIQ	LOW	CM121	CM122	CM128	CM124	CM125
MTRS	MEDIUM TEMPERATURE RECIRCULATED SUCTION	LIQ VAP	LOW	CM126	CM127	CM133	CM129	CM130
MTS	MEDIUM TEMPERATURE SUCTION	VAP	LOW	CM131	CM132	CM138	CM134	CM135
OD	OIL DRAIN	---	---	CM172	CM173	CM174	CM175	CM176
PO	PUMP OUT	LIQ	LOW	CM136	CM137	CM143	CM139	CM140
PU	PURGE	LIQ	HIGH	CM141	CM142	CM58	CM144	CM145
PL	PURGE LINE	VAP	HIGH	CM18	CM38	CM148	CM78	CM98
RV	RELIEF VENT	---	---	CM146	CM147	CM59	CM149	CM150
RV	RELIEF VENT	VAP	HIGH	CM19	CM39	CM60	CM79	CM99
TSR	THERMOSYPHON RETURN	LIQ VAP	HIGH	CM20	CM40	CM151	CM80	CM100
TSS	THERMOSYPHON SUPPLY	LIQ	HIGH	CM152	CM153	CM154	CM155	CM156
TSV	THERMOSYPHON VENT	VAP	HIGH	CM177	CM178	CM179	CM180	CM181

ColdMark™ SELF-STICK PRICING A						
STYLE	FOR PIPE SIZE	MARKER SIZE	LETTER SIZE	1-99	100-249	250-499
AR1	3/4" - 1 1/4"	1" x 8"	.5"	2.15	1.87	1.43
AR2	>1 1/4" - 2"	1.5" x 8"	.75"	2.92	2.48	1.93
AR3	> 2" - 7"	2.5" x 12"	1.25"	3.63	3.58	3.03
AR4	> 7" - 10"	3.5" x 24"	2.5"	4.73	4.57	3.63
AR5	Over 10"	4.5" x 32"	3.5"	6.32	5.77	4.73

Yellow or Orange* Background - When Ordering* Updated Bulletin #114

• SpecMark™ Application Guide

STYLE AA

For Pipe Diameters $\frac{3}{8}$ " to $\frac{11}{16}$ "
4" marker width,
 $\frac{1}{4}$ " letters



STYLE A

For Pipe Diameters $\frac{3}{4}$ " to 1"
8" marker width,
 $\frac{1}{2}$ " letters



STYLE B

For Pipe Diameters $1\frac{1}{8}$ " to $2\frac{3}{8}$ "
8" marker width,
 $\frac{3}{4}$ " letters



STYLE C

For Pipe Diameters $2\frac{1}{2}$ " to $3\frac{1}{4}$ "
12" marker width
 $1\frac{1}{4}$ " letters



STYLE D

For Pipe Diameters $3\frac{3}{8}$ " to $4\frac{1}{2}$ "
12" marker width
 $1\frac{1}{4}$ " letters



STYLE E

For Pipe Diameters $4\frac{5}{8}$ " to $5\frac{7}{8}$ "
12" marker width
 $1\frac{1}{4}$ " letters



STYLE F

For Pipe Diameters 6" to 8"
12" marker width
 $1\frac{1}{4}$ " letters



STYLE G

For Pipe Diameters 8" to 10"
24" marker width
 $2\frac{1}{2}$ " letters
Not 360° Visibility



STYLE H

For Pipe Diameters over 10"
32" marker width
 $3\frac{1}{2}$ " letters
Not 360° Visibility



SpecMark™ Precoiled & Pretensioned Plastic Markers save time and labor cost! Craftmark's IIAR Ammonia Refrigeration markers adhere to the LATEST Specification release from the International Institute of Ammonia Refrigeration Bulletin#114.

- No pipe preparation necessary.
- 360° visibility-Style AA-F
- Installs quickly in New and Existing Facilities
- Can be removed and reused
- Markers come with preprinted arrows
- Sizes G & H supplied with black nylon ties.
- Custom available at No Extra Charge!

SpecMark™ IIAR Pricing				A
STYLE	FITS PIPE OD	1-9	10-49	50-249
AA	.375"-1.688"	2.86	2.64	2.53
A	.75"-1.125"	3.08	2.81	2.64
B	1.125"-2.375"	3.96	3.80	3.47
C	2.5"-3.25"	7.10	6.98	6.05
D	3.375"-4.5"	7.42	7.20	7.05
E	5.625"-5.875"	7.54	7.32	7.21
F	6"-8"	9.52	9.24	8.36
G	8"-10"	11.60	11.55	10.95
H	10"-40"	16.11	15.68	14.90

MARKERS DO NOT COMBINE FOR QTY PRICE BREAKS

Yellow or Orange* Background - When Ordering* Updated Bulletin #114



SpecMark™ SNAP ON® STOCK PART NUMBER LIST				FOR PIPE DIAMETERS								
				.375"-.687"	.75"-1"	1.125"-2.375"	2.5"-3.25"	3.375"-4.5"	5.625"-5.875"	6"-7.875"	8"-9.875"	10" +
IIAR ABBREV.	LEGEND	PHYSICAL STATE	PRESSURE LEVEL	STYLE AA	STYLE A	STYLE B	STYLE C	STYLE D	STYLE E	STYLE F	STYLE G	STYLE H
BD	BOOSTER DISCHARGE	VAP	LOW	18262	18263	18264	18265	18266	18267	18449	18480	18511
BS	BOOSTER SUCTION	VAP	LOW	910027	910028	910029	910030	910031	910032	910033	910034	910035
CD	CONDENSER DRAIN	LIQ	HIGH	18268	18269	18270	18271	18272	18273	18450	18481	18512
DC	DEFROST CONDENSATE	LIQ	HIGH	18274	18275	18276	18277	18278	18279	18451	18482	18513
ES	ECONOMIZER SUCTION	VAP	LOW	18280	18281	18282	18283	18284	18285	18452	18483	18514
EQ	EQUALIZER	VAP	HIGH	18286	18287	18288	18289	18290	18291	18453	18484	18515
FG	FOUL GAS	VAP	LOW	18292	18293	18294	18295	18296	18297	18454	18485	18516
HPL	HIGH PRESSURE LIQUID	LIQ	HIGH	18310	18311	18312	18313	18314	18315	18457	18488	18519
HSD	HIGH STAGE DISCHARGE	VAP	HIGH	18316	18317	18318	18319	18320	18321	18458	18489	18520
HSS	HIGH STAGE SUCTION	VAP	LOW	18322	18323	18324	18325	18326	18327	18459	18490	18521
HTRL	HIGH TEMPERATURE RECIRCULATED LIQUID	LIQ	LOW	18328	18329	18330	18331	18332	18333	18460	18491	18522
HTRS	HIGH TEMPERATURE RECIRCULATED SUCTION	LIQ VAP	LOW	18334	18335	18336	18337	18338	18339	18461	18492	18523
HTS	HIGH TEMPERATURE SUCTION	VAP	LOW	18340	18341	18342	18343	18344	18345	18462	18493	18524
HG	HOT GAS	VAP	HIGH	18292	18299	18300	18301	18302	18303	18455	18486	18517
HGD	HOT GAS DEFROST	VAP	HIGH	18304	18305	18306	18307	18308	18309	18456	18487	18518
IPL	INTERMEDIATE PRESSURE LIQUID	LIQ	HIGH	910000	910001	910002	910003	910004	910005	910006	910007	910008
LD	LIQUID DRAIN	LIQ	LOW	18346	18347	18348	18349	18350	18351	18463	18494	18525
LIC	LIQUID INJECTION COOLING	LIQ	HIGH	18358	18359	18360	18361	18362	18363	18465	18496	18527
LT	LIQUID TRANSFER	LIQ	LOW	18352	18353	18354	18355	18356	18357	18464	18495	18526
LSS	LOW STAGE SUCTION	VAP	LOW	18364	18365	18366	18367	18368	18369	18466	18497	18528
LTRL	LOW TEMPERATURE RECIRCULATED LIQUID	LIQ	LOW	18388	18389	18390	18391	18392	18393	18470	18501	18532
LTRS	LOW TEMPERATURE RECIRCULATED SUCTION	LIQ VAP	LOW	18394	18395	18396	18397	18398	18399	18471	18502	18533
LTS	LOW TEMPERATURE SUCTION	VAP	LOW	18382	18383	18384	18385	18386	18387	18469	18500	18531
MTRL	MEDIUM TEMPERATURE RECIRCULATED LIQUID	LIQ	LOW	18388	18389	18390	18391	18392	18393	18470	18501	18532
MTRS	MEDIUM TEMPERATURE RECIRCULATED SUCTION	LIQ VAP	LOW	18394	18395	18396	18397	18398	18399	18471	18502	18533
MTS	MEDIUM TEMPERATURE SUCTION	VAP	LOW	18400	18401	18402	18403	18404	18405	18472	18503	18534
OD	OIL DRAIN	---	---	910009	910010	910011	910012	910013	910014	910015	910016	910017
PO	PUMP OUT	LIQ	LOW	18406	18407	18408	18409	18410	18411	18473	18504	18535
PU	PURGE	LIQ	HIGH	18412	18413	18414	18515	18416	18417	18474	18505	18536
PL	PURGE LINE	VAP	HIGH	18418	18419	18420	18421	18422	18423	18475	18506	18537
RV	RELIEF VENT	---	---	18424	18425	18426	18427	18428	18429	18476	18507	18538
RV	RELIEF VENT	VAP	HIGH	18430	18431	18432	18433	18434	18435	18477	18508	18539
TSR	THERMOSYPHON RETURN	LIQ VAP	HIGH	18436	18437	18438	18439	18440	18441	18478	18509	18540
TSS	THERMOSYPHON SUPPLY	LIQ	HIGH	18442	18443	18444	18445	18446	18447	18479	18510	18541
TSV	THERMOSYPHON VENT	VAP	HIGH	910018	910019	910020	910021	910022	910023	910024	910025	910026

ColdMark™ Self-Stick Component Markers



- 32" x 3.50"
- Bold, 2.5" Characters
- Markers bear the name of the equipment that they identify.
- Durable indoor/outdoor self-stick vinyl with ultra low temperature adhesive back.
- Apply to surface temperatures as low as 32°F.
- Custom legends available.
- Choose from 36 stock legends.
- Specify LOW/HIGH pressure if needed.

COMPONENT/ EQUIPMENT	PRESSURE	STOCK NUMBER	COMPONENT/ EQUIPMENT	PRESSURE	STOCK NUMBER
ACCUMULATOR	LOW	CM261	LOW PRESSURE RECEIVER	LOW	CM275
AIR COOLED	HIGH	CM280	LOW TEMPERATURE RECIRCULATOR	LOW	CM290
AIR HANDLING UNIT	HIGH	CM281	OIL POT	LOW	CM291
AIR UNIT	HIGH	CM282	OIL SEPARATOR	HIGH	CM276
BOOSTER COMPRESSOR	HIGH	CM283	PILOT RECEIVER	HIGH	CM292
COMPRESSOR	HIGH	CM263	PROCESSING HOT GAS	HIGH	CM278
CONDENSER	HIGH	CM264	PURGER UNIT	HIGH	CM293
CONTROLLED PRESSURE RECEIVER	LOW	CM284	RECEIVER	HIGH	CM277
EVAPORATIVE CONDENSER	HIGH	CM285	RECIRCULATOR	LOW	CM268
EVAPORATOR	LOW	CM272	REFRIGERANT PUMP	HIGH	CM294
HEAT EXCHANGER	LOW	CM265	REFRIGERATED MAKE-UP AIR UNIT	HIGH	CM295
HIGH PRESSURE RECEIVER	HIGH	CM273	ROOF TOP AIR UNIT	HIGH	CM296
HIGH STAGE COMPRESSOR	HIGH	CM286	SUCTION ACCUMULATOR	LOW	CM279
HIGH TEMPERATURE RECIRCULATOR	HIGH	CM287	SURGE DRUM	LOW	CM297
INTERCOOLER	LOW	CM274	SWING COMPRESSOR	HIGH	CM298
INTERMEDIATE RECIRCULATOR	LOW	CM266	THERMOSYPHON RECEIVER	HIGH	CM269
LIQUID TRANSFER	HIGH	CM288	TRANSFER VESSEL	HIGH	CM270
LOW TEMP RECIRCULATOR	LOW	CM289	WATER COOLED CONDENSER	HIGH	CM299

ColdMark™ Self-Stick State & Pressure Tape

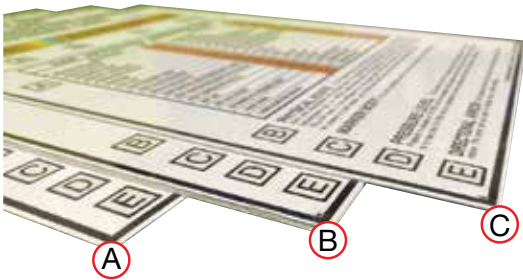
- Self-stick roll form tapes for use with IIAR systems.
- Available in 4 widths.
- 30' rolls.



	BACKGROUND	LETTER	Coldmark™ Self-Stick Component Markers			
LEGEND	COLOR	COLOR	1"	2"	4"	6"
ARROW	ORANGE	BLACK	12518	12523	12532	12541
ARROW	YELLOW	BLACK	12510	4416	12524	92533
VAP	BLUE	BLACK	18487	18488	18489	18490
LIQ	ORANGE	BLACK	18491	18492	18493	18494
LIQ	YELLOW	BLACK	108500	108501	108502	18503
LOW	GREEN	BLACK	18495	18496	18497	18498
HIGH	RED	BLACK	18499	18500	18501	18502
PRICE	PER	ROLL	\$13.00	\$24.00	\$48.00	\$72.00

A reference chart that fully explains the ammonia refrigeration piping and component identification markers, including abbreviation, should be placed in areas that are conspicuous to operating and repair personnel. Regardless of piping color scheme selected, a legend or key to the meaning of the colors should be posted in a conspicuous place. The reference chart, legend, or key should be made of durable material that will remain legible. Replace anytime damage occurs or information is no longer legible.

IIAR REFERENCE CHART



Craftmark offers the IIAR Reference Chart in different materials-

- A** Self-stick vinyl with clear polyester overlam.
- B** Thick .090" fiberglass with clear polyester overlam. Supplied with 4 corner mounting holes.
- C** Sturdy .040" aluminum with clear polyester overlam. Supplied with 4 corner mounting holes.

AMMONIA REFRIGERATION IDENTIFICATION REFERENCE CHART

IIAR APPROVED ABBREVIATIONS			
	SYSTEM	IAR ABBREV.	SYSTEM
A	BOOSTER DISCHARGE	BD	LIQUID TRANSFER
	BOOSTER SUCTION	BS	LOW STAGE SUCTION
	CONDENSER DRAIN	CD	LOW STAGE SUCTION
	DEFROST CONDENSATE	DC	LOW TEMPERATURE RECIRCULATED LIQUID
	ECONOMIZER SUCTION	ES	LOW TEMPERATURE RECIRCULATED SUCTION
	EQUALIZER	EQ	LOW TEMPERATURE SUCTION
	FOUL GAS	FG	MEDIUM TEMPERATURE RECIRCULATED LIQUID
	HIGH PRESSURE LIQUID	HPL	MEDIUM TEMPERATURE RECIRCULATED SUCTION
	HIGH STAGE DISCHARGE	HSD	MEDIUM TEMPERATURE SUCTION
	HIGH STAGE SUCTION	HSS	OIL DRAIN
HIGH TEMPERATURE RECIRCULATED LIQUID	HTRL	PUMP OUT	
HIGH TEMPERATURE RECIRCULATED SUCTION	HTRS	PURGE	
HIGH TEMPERATURE SUCTION	HTS	PURGE LINE	
HOT GAS	HG	RELIEF VENT	
HOT GAS DEFROST	HGD	RELIEF VENT	
INTERMEDIATE PRESSURE LIQUID	IPL	THERMOSYPHON RETURN	
LIQUID DRAIN	LD	THERMOSYPHON SUPPLY	
LIQUID INJECTION COOLING	LIC	THERMOSYPHON VENT	
			LT
			LSS
			LBS
			LTRL
			LTRS
			LTS
			MTRL
			MTRS
			MTS
			OD
			PD
			PU
			PL
			RV
			RV
			TSR
			TSS
			TSV

B PHYSICAL STATE The Physical State of Ammonia is either liquid or vapor. This band indicates by color and abbreviation the physical state. The physical state of refrigerant shall be indicated by the words LIQUID, (abbreviated LIQ), or VAPOR, (abbreviated VAP). If the refrigerant is in the liquid state, LIQ shall be printed on a YELLOW band. If the refrigerant is in the vapor state, VAP shall be printed on a SKY BLUE band. Ammonia may be present in both states, and in that case shall have both color bands and abbreviations present.

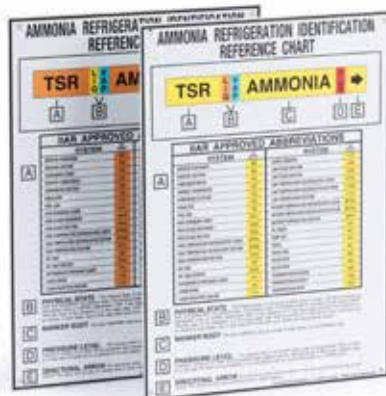
C MARKER BODY The word AMMONIA shall be printed in black letters on the ORANGE body.

D PRESSURE LEVEL The pressure level in the system piping shall be labeled either HIGH or LOW. Pressure in excess of 70 PSIG will be considered high pressure with the HIGH printed on a RED band. Pressure equal to or less than 70 PSIG will be considered low pressure with the word LOW printed on a GREEN band.

E DIRECTIONAL ARROW The directional arrow shall be black in color and proportionate in size to the marker. The arrow can be used to indicate flow in either direction.

CRAFTMARK PIPE MARKER - P.O. WORTH, TX, USA - WWW.CRAFTMARK.COM

CHARTS ALSO AVAILABLE IN YELLOW FORMAT



STYLE	PRICE EACH	STOCK NUMBER
SELF-STICK VINYL	\$9.50	RC100
.090 FIBERGLASS	\$32.00	RC101
.040" ALUMINUM	\$26.00	RC102

FIBERGLASS CARRIERS



Fiberglass Marker Carriers can be used with any of our DuraMark™ self-stick markers. Carriers are fastened to pipes using stainless steel banding sold separately below.

- Solid Fiberglass Carrier.
- Pre-Punched slots for use with stainless steel banding.
- Oil, Water, Chemical & Heat resistant.

PRICE EACH		B
STOCK NUMBER	FOR DURAMARK STYLE	PRICE EACH
FMCA	1 XSM	\$2.50
FMCB	1 SM	\$5.00
FMCC	1	\$7.50
FMCD	1 LG	\$12.90
FMCE	1 XLG	\$24.90

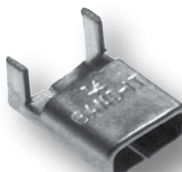
STAINLESS BANDING



Price Per Roll	B
STOCK# C203	
\$44.30 each	

Stainless banding is perfect for all applications where permanent marker installation is required. Roll form banding is cut to length on site and clamped with banding clip using crimping tool.

BANDING CLIPS



Price Per Box	B
STOCK# C253	
\$34.75/Box of 100	

STAINLESS BANDING CRIMPING TOOL



Price Each	B
STOCK# J-020	
\$135.00 each	

SAFETY SIGNS & TAGS



CRAFTMARK

PIPE MARKERS ▲ SINCE 1959



Our full-line catalog is available online or in print. Please contact our customer service department by either calling or by email.

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 1.817.457.8753

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