IN CASE OF A REFRIGERATION EMERGENCY:

IF you have an emergency with your refrigeration system, **please call Innovative at (540) 941-1999 x 301.** During business hours, one of our trained staff members will handle your problem immediately. If you experience problems *after* hours, our voicemail system will explain what constitutes an emergency and what steps you should take. Please leave an accessible phone number so that Innovative can return your call as quickly as possible. This system works promptly when complete information is given.

Temp °F	lbs/in	Temp °F	lbs/in	Temp °F	lbs/in	Temp	lbs/in
-60	*18.8*	-10	9.0	16	29.4	42	61.6
-55	*16.6*	-9	9.7	17	30.4	43	63.1
-50	*14.3*	-8	10.3	18	31.4	44	64.7
-45	*11.7*	-7	10.9	19	32.5	45	66.3
-40	*8.7*	-6	11.6	20	33.5	46	67.9
-35	*5.4*	-5	12.2	21	34.6	47	69.5
-30	*1.6*	-4	12.9	22	35.7	48	71.1
-29	*0.08*	-3	13.6	23	36.8	49	72.8
-28	*0.00*	-2	14.3	24	37.9	50	74.5
-27	0.4	-1	15.0	25	39.0	55	83.4
-26	0.8	0	15.7	26	40.2	60	92.9
-25	1.3	1	16.5	27	41.4	65	103.1
-24	1.7	2	17.2	28	42.6	70	114.1
-23	2.2	3	18.0	29	43.8	75	125.8
-22	2.6	4	18.8	30	45.0	80	138.3
-21	3.1	5	19.6	31	46.3	85	151.7
-20	3.6	6	20.4	32	47.6	90	165.9
-19	4.1	7	21.2	33	48.9	95	181.1
-18	4.6	8	22.1	34	50.2	100	197.2
-17	5.1	9	22.9	35	51.6	105	214.2
-16	5.6	10	23.8	36	52.9	110	232.2
-15	6.2	11	24.7	37	54.3	115	251.5
-14	6.7	12	25.6	38	55.7	120	271.7
-13	7.3	13	26.5	39	57.2	125	293.1
-12	7.9	14	27.5	40	58.6		
-11	8.5	15	28.4	41	60.1		

R-717 Refrigeration Piping Identification Guide

1. Use arrows to indicate the direction of flow in the pipe.
2. Identify system components with accepted abbreviations, which can be found in the chart to the right. (Abbreviations marked * are not currently recognized in IIAR standards.)
3. Indicate whether the refrigerant is a liquid, vapor, or both. An orange color band indicates a liquid state; a blue color band indicates a vapor state. Use both color bands if both liquid and vapor may be present.
4. Print "AMMONIA" in black letters on orange background.
5. Indicate whether the internal pipe pressure is high or low. A red color band indicates high pressure; a green color band indicates low pressure.

INNOVATIVE REFRIGERATION SYSTEMS, INC

ePSM · eCompliance · eConserve · eService · eIntranet · eTraining

Anhydrous Ammonia Emergency Action Plan

CONTROL THE SCENE!

Keep unnecessary people away, isolate hazardous areas, and deny entry. Stay upwind; keep out of low areas and ventilate closed spaces before entering. Self-contained breathing apparati (SCBA) and structural firefighter's protective clothing will provide limited protection for short-term exposure to these materials. Fully encapsulated protetive clothing should be worn for spills and leaks with no fire. Evacuate the leak or spill area immediately for at least 50 feet in all directions. **CALL CHEMTREC AT 1-800-424-9300 AS SOON AS POSSIBLE**, especially if there are no local hazardous material teams available.

Preparing for an Ammonia Emergency:

1. Learn Ammonia First Aid Procedures!
   - -Mouth/mask resuscitation (Rescue Ventilation)
   - -Cardiopulmonary Resuscitation (CPR)
   - -Treatment for shock
   - -Be prepared. Delay and inexperience may result in more serious injury
2. Make sure your emergency support is knowledgable about CO2 first aid and treatment:
   - -Local Fire/EMS
   - -Emeregency Clinics
   - -Nearby hospitals
3. NEVER wear contact lenses when working with any chemicals.

Liquid Ammonia Exposure: Skin

1. Flood area immediately with large quantities of water for at least 15 minutes.
2. Summon an ambulance.
3. Decontaminate the victim with water before transporting in the close confines of an ambulance.
4. Flood clothing with large quantities of water. CAUTION: skin may be frozen to clothing. Decision to remove clothing should be made by medical personnel only.
5. Advise medical personnel that salves/ointments should not be used.

Liquid Ammonia Exposure: Eyes

1. Flood immediately with water for at least 15 minutes. Eyelid must be held open during washing.
2. Summon an ambulance.
3. Determine if patient is wearing contacts and advise medical personnel.

Overexposure to Ammonia Vapor:

1. Move exposed person to fresh air as quickly and safely as possible. Summon an ambulance.
2. If breathing fails, begin rescue ventilation. If there is no pulse, begin CPR. If patient goes into shock, treat accordingly. Oxygen may be administered by trained persons.

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