

| PRESSURE (PSIG)* | | | | | | | | |
|------------------|-------|-------|-------|-------|--------|------------------------|-----------------------|------------------------|
| Sat. Temp (°F) | R-12 | R-22 | R-32 | R-123 | R-134a | R-401A Liquid Pressure | R-401A Vapor Pressure | R-401B Liquid Pressure |
| -50 | 15.4 | 6.1 | 5.2 | 29.2 | 18.7 | 13.5 | 17.9 | 12.2 |
| -45 | 13.3 | 2.7 | 8.0 | 29.0 | 16.9 | 11.1 | 16.0 | 9.6 |
| -40 | 11.0 | 0.6 | 11.0 | 28.9 | 14.8 | 8.4 | 13.8 | 6.7 |
| -35 | 8.4 | 2.6 | 14.4 | 28.7 | 12.5 | 5.3 | 11.4 | 3.4 |
| -30 | 5.5 | 4.9 | 18.2 | 28.4 | 9.8 | 2.0 | 8.7 | 0.1 |
| -25 | 2.4 | 7.4 | 22.3 | 28.1 | 6.9 | 0.8 | 5.6 | 2.0 |
| -20 | 0.5 | 10.2 | 26.8 | 27.8 | 3.7 | 2.9 | 2.2 | 4.1 |
| -15 | 2.4 | 13.2 | 31.7 | 27.4 | 0.0 | 5.1 | 0.7 | 6.5 |
| -10 | 4.5 | 16.5 | 37.1 | 27.0 | 1.9 | 7.5 | 2.8 | 9.1 |
| -5 | 6.7 | 20.1 | 42.9 | 26.5 | 4.1 | 10.1 | 5.0 | 11.9 |
| 0 | 9.1 | 24.0 | 49.3 | 25.9 | 6.5 | 13.0 | 7.4 | 14.9 |
| 5 | 11.7 | 28.3 | 56.1 | 25.3 | 9.1 | 16.1 | 10.1 | 18.2 |
| 10 | 14.6 | 32.8 | 63.5 | 24.6 | 11.9 | 19.5 | 13.0 | 21.8 |
| 15 | 17.7 | 37.8 | 71.4 | 23.8 | 15.0 | 23.1 | 16.2 | 25.7 |
| 20 | 21.0 | 43.1 | 80.0 | 22.9 | 18.4 | 27.1 | 19.6 | 29.9 |
| 25 | 24.6 | 48.8 | 89.2 | 21.9 | 22.1 | 31.4 | 23.4 | 34.4 |
| 30 | 28.4 | 55.0 | 99.1 | 20.8 | 26.1 | 36.0 | 27.4 | 39.3 |
| 35 | 32.5 | 61.5 | 109.7 | 19.5 | 30.4 | 40.9 | 31.8 | 44.5 |
| 40 | 36.9 | 68.6 | 121.0 | 18.2 | 35.0 | 46.2 | 36.5 | 50.1 |
| 45 | 41.6 | 76.1 | 133.0 | 16.6 | 40.1 | 51.8 | 41.6 | 56.0 |
| 50 | 46.6 | 84.1 | 145.9 | 15.0 | 45.4 | 57.9 | 47.0 | 62.4 |
| 55 | 51.9 | 92.6 | 159.5 | 13.2 | 51.2 | 64.3 | 52.8 | 69.2 |
| 60 | 57.6 | 101.6 | 174.1 | 11.2 | 57.4 | 71.2 | 59.0 | 76.5 |
| 65 | 63.7 | 111.3 | 189.5 | 9.0 | 64.0 | 78.5 | 65.7 | 84.2 |
| 70 | 70.1 | 121.4 | 205.8 | 6.6 | 71.1 | 86.3 | 72.8 | 92.3 |
| 75 | 76.8 | 132.2 | 223.2 | 4.0 | 78.7 | 94.5 | 80.3 | 101.0 |
| 80 | 84.0 | 143.6 | 241.5 | 1.2 | 86.7 | 103.2 | 88.4 | 110.2 |
| 85 | 91.6 | 155.7 | 260.9 | 0.9 | 95.2 | 112.4 | 96.9 | 119.9 |
| 90 | 99.6 | 168.4 | 281.3 | 2.5 | 104.3 | 122.2 | 106.0 | 130.1 |
| 95 | 108.0 | 181.8 | 302.9 | 4.2 | 114.0 | 132.5 | 115.6 | 140.9 |
| 100 | 116.9 | 195.9 | 325.7 | 6.1 | 124.2 | 143.3 | 125.8 | 152.3 |
| 105 | 126.3 | 210.8 | 349.7 | 8.1 | 135.0 | 154.8 | 136.5 | 164.3 |
| 110 | 136.1 | 226.4 | 374.9 | 10.3 | 146.4 | 166.8 | 147.8 | 176.9 |
| 115 | 146.4 | 242.8 | 401.4 | 12.6 | 158.4 | 179.4 | 159.8 | 190.1 |
| 120 | 157.3 | 260.0 | 429.3 | 15.1 | 171.2 | 192.7 | 172.4 | 204.1 |
| 125 | 168.6 | 278.0 | 458.7 | 17.7 | 184.6 | 206.6 | 185.7 | 218.6 |
| 130 | 180.5 | 296.9 | 489.5 | 20.6 | 198.7 | 221.2 | 199.7 | 233.9 |
| 135 | 193.0 | 316.7 | 521.8 | 23.6 | 213.6 | 236.5 | 214.5 | 250.0 |
| 140 | 206.0 | 337.4 | 555.8 | 26.8 | 229.2 | 252.5 | 229.9 | 266.7 |
| 145 | 219.7 | 359.0 | 591.4 | 30.2 | 245.7 | 269.3 | 246.2 | 284.3 |
| 150 | 233.9 | 381.7 | 628.8 | 33.8 | 262.9 | 286.8 | 263.2 | 302.6 |

| PRESSURE (PSIG)* | | | | | | | | |
|------------------|-----------------------|------------------------|-----------------------|------------------------|------------------------|-----------------------|------------------------|-----------------------|
| Sat. Temp (°F) | R-401B Vapor Pressure | R-402A Liquid Pressure | R-402B Vapor Pressure | R-404A Liquid Pressure | R-407A Liquid Pressure | R-407A Vapor Pressure | R-407C Liquid Pressure | R-407C Vapor Pressure |
| -50 | 16.8 | 2.5 | 1.1 | 0.5 | 12.2 | 18.7 | 2.7 | 11.0 |
| -45 | 14.7 | 4.9 | 3.2 | 2.6 | 9.6 | 16.9 | 0.6 | 8.0 |
| -40 | 12.4 | 7.4 | 5.6 | 4.9 | 6.7 | 14.8 | 2.7 | 4.6 |
| -35 | 9.7 | 10.3 | 8.2 | 7.5 | 3.5 | 12.5 | 5.1 | 0.9 |
| -30 | 6.8 | 13.4 | 11.1 | 10.3 | 0.0 | 9.9 | 7.7 | 1.6 |
| -25 | 3.5 | 16.8 | 14.2 | 13.4 | 1.9 | 7.0 | 10.6 | 3.9 |
| -20 | 0.1 | 20.5 | 17.7 | 16.8 | 4.0 | 3.8 | 13.7 | 6.5 |
| -15 | 2.0 | 24.5 | 21.4 | 20.5 | 6.3 | 0.2 | 17.2 | 9.3 |
| -10 | 4.2 | 28.8 | 25.5 | 24.6 | 8.8 | 1.8 | 20.9 | 12.3 |
| -5 | 6.6 | 33.6 | 29.9 | 28.9 | 11.6 | 4.0 | 25.0 | 15.7 |
| 0 | 9.2 | 38.7 | 34.6 | 33.7 | 14.6 | 6.3 | 29.5 | 19.4 |
| 5 | 12.1 | 44.2 | 39.8 | 38.8 | 17.8 | 8.8 | 34.3 | 23.5 |
| 10 | 15.2 | 50.2 | 45.3 | 44.3 | 21.3 | 11.6 | 39.5 | 27.9 |
| 15 | 18.6 | 56.5 | 51.3 | 50.2 | 25.1 | 14.7 | 45.2 | 32.7 |
| 20 | 22.3 | 63.4 | 57.7 | 56.6 | 29.2 | 18.0 | 51.2 | 37.9 |
| 25 | 26.3 | 70.7 | 64.5 | 63.4 | 33.6 | 21.6 | 57.7 | 43.5 |
| 30 | 30.6 | 78.6 | 71.8 | 70.7 | 38.4 | 25.5 | 64.7 | 49.6 |
| 35 | 35.2 | 86.9 | 79.7 | 78.6 | 43.4 | 29.7 | 72.2 | 56.1 |
| 40 | 40.2 | 95.8 | 88.0 | 86.9 | 48.9 | 34.2 | 80.2 | 63.2 |
| 45 | 45.6 | 105.3 | 96.9 | 95.8 | 54.7 | 39.1 | 88.8 | 70.7 |
| 50 | 51.4 | 115.4 | 106.3 | 105.3 | 60.9 | 44.3 | 97.9 | 78.8 |
| 55 | 57.5 | 126.1 | 116.3 | 115.3 | 67.4 | 49.9 | 107.6 | 87.5 |
| 60 | 64.1 | 137.4 | 127.0 | 126.0 | 74.5 | 55.9 | 118.0 | 96.8 |
| 65 | 71.2 | 149.4 | 138.2 | 137.3 | 81.9 | 62.3 | 128.9 | 106.7 |
| 70 | 78.7 | 162.1 | 150.1 | 149.3 | 89.8 | 69.1 | 140.5 | 117.3 |
| 75 | 86.7 | 175.5 | 162.7 | 162.0 | 98.2 | 76.4 | 152.8 | 128.6 |
| 80 | 95.2 | 189.7 | 176.0 | 175.4 | 107.0 | 84.2 | 165.8 | 140.5 |
| 85 | 104.2 | 204.6 | 190.0 | 189.5 | 116.4 | 92.5 | 179.6 | 153.2 |
| 90 | 113.8 | 220.3 | 204.7 | 204.5 | 126.2 | 101.2 | 194.1 | 166.7 |
| 95 | 123.9 | 236.8 | 220.2 | 220.2 | 136.6 | 110.5 | 209.4 | 181.0 |
| 100 | 134.7 | 254.2 | 236.5 | 236.8 | 147.6 | 120.3 | 225.5 | 196.1 |
| 105 | 146.0 | 272.5 | 253.7 | 254.2 | 159.1 | 130.7 | 242.4 | 212.1 |
| 110 | 158.0 | 291.6 | 271.7 | 272.5 | 171.2 | 141.7 | 260.3 | 229.0 |
| 115 | 170.6 | 311.8 | 290.5 | 291.8 | 183.9 | 153.3 | 279.0 | 246.9 |
| 120 | 183.9 | 332.9 | 310.3 | 312.1 | 197.2 | 165.6 | 298.6 | 265.8 |
| 125 | 197.9 | 355.0 | 331.0 | 333.3 | 211.1 | 178.5 | 319.2 | 285.7 |
| 130 | 212.6 | 378.1 | 352.7 | 355.7 | 225.7 | 192.0 | 340.7 | 306.7 |
| 135 | 228.1 | 402.4 | 375.4 | 379.1 | 241.0 | 206.3 | 363.3 | 328.8 |
| 140 | 244.3 | 427.8 | 399.2 | 403.7 | 257.0 | 221.3 | 387.0 | 352.1 |
| 145 | 261.4 | 454.5 | 424.0 | 429.6 | 273.7 | 237.1 | 411.7 | 376.6 |
| 150 | 279.3 | 482.3 | 450.0 | 456.8 | 291.1 | 253.6 | 437.5 | 402.5 |





Pressure Temperature Chart

FORANE®
REFRIGERANTS

ARKEMA

Forane® Refrigerant Cylinder Identification

| TYPE | COLOR CODE | SIZE IN LBS. (CONTAINER TYPE) |
|-------------|-----------------|---|
| R-12 CFC | White | 30 (A), 50 (A), 145 (B), 2,000 (E) |
| R-22 HCFC | Light Green | 30 (A), 50 (A), 125 (B), 1,000 (D), 1,750 (E) |
| R-32 HCFC | Grey | 20 (A), 800 (D) |
| R-123 HCFC | Light Blue Grey | 100 (C), 200 (C) |
| R-134a HFC | Light Blue | 30 (A), 125 (B), 1,000 (D), 1,750 (E) |
| R-401A HCFC | Pinkish Red | 20 (A), 30 (A), 125 (B) |
| R-401B HCFC | Mustard | 30 (A), 125 (B) |
| R-402A HCFC | Sand | 20 (A), 27 (A), 110 (B) |
| R-402B HCFC | Olive | 13 (A) |
| R-404A HFC | Orange | 20 (A), 24 (A), 100 (B), 800 (D), 1,300 (E) |
| R-407C HFC | Brown | 25 (A), 115 (B), 950 (D), 1,600 (E) |
| R-409A HCFC | Tan | 20 (A), 30 (A), 125 (B), 1,800 (E) |
| R-410A HFC | Rose | 20 (A), 25 (A), 100 (B), 850 (D), 1,350 (E) |
| R-427A HFC | Green | 20 (A), 25 (A) 110 (B) |
| R-502 CFC | Lavender | 30 (A), 125 (B) |

Container types drawings not to scale.



13/20/24/
25/27/30/
50 lbs.
(A)



100/110/115/
125/145 lbs.
(B)



100/200 lbs.
(C)



800/850/
950/1,000 lbs.
(D)



1,300/1,350/1,400/
1,600/1,750/1,800/
2,000 lbs.
(E)

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ARKEMA

PRESSURE (PSIG)*

| Sat. Temp (°F) | R-408A Liquid Pressure | R-409A Liquid Pressure | R-409A Vapor Pressure | R-410A Liquid Pressure | R-427A Liquid Pressure | R-427A Vapor Pressure | R-502 | R-507A |
|----------------|------------------------|------------------------|-----------------------|------------------------|------------------------|-----------------------|-------|--------|
| -50 | 1.4 | 12.2 | 18.7 | 5.0 | 3.5 | 11.4 | 0.3 | 0.9 |
| -45 | 1.3 | 9.6 | 16.9 | 7.7 | 0.1 | 8.4 | 1.8 | 3.0 |
| -40 | 3.5 | 6.7 | 14.8 | 10.8 | 2.2 | 5.1 | 4.0 | 5.4 |
| -35 | 5.8 | 3.5 | 12.5 | 14.1 | 4.5 | 1.5 | 6.4 | 8.1 |
| -30 | 8.5 | 0.0 | 9.9 | 17.8 | 7.0 | 1.3 | 9.1 | 11.0 |
| -25 | 11.3 | 1.9 | 7.0 | 21.9 | 9.7 | 3.5 | 11.9 | 14.1 |
| -20 | 14.5 | 4.0 | 3.8 | 26.3 | 12.8 | 6.0 | 15.1 | 17.6 |
| -15 | 17.9 | 6.3 | 0.2 | 31.2 | 16.1 | 8.7 | 18.5 | 21.4 |
| -10 | 21.7 | 8.8 | 1.8 | 36.5 | 19.7 | 11.7 | 22.2 | 25.5 |
| -5 | 25.7 | 11.6 | 4.0 | 42.2 | 23.6 | 15.0 | 26.3 | 30.0 |
| 0 | 30.1 | 14.6 | 6.3 | 48.4 | 27.9 | 18.7 | 30.6 | 34.8 |
| 5 | 34.9 | 17.8 | 8.8 | 55.2 | 32.6 | 22.6 | 35.3 | 40.1 |
| 10 | 40.0 | 21.3 | 11.6 | 62.4 | 37.6 | 26.9 | 40.4 | 45.7 |
| 15 | 45.5 | 25.1 | 14.7 | 70.3 | 43.0 | 31.5 | 45.8 | 51.8 |
| 20 | 51.5 | 29.2 | 18.0 | 78.7 | 48.8 | 36.6 | 51.6 | 58.3 |
| 25 | 57.8 | 33.6 | 21.6 | 87.7 | 55.0 | 42.1 | 57.9 | 65.3 |
| 30 | 64.6 | 38.4 | 25.5 | 97.4 | 61.7 | 48.0 | 64.6 | 72.7 |
| 35 | 71.9 | 43.4 | 29.7 | 107.7 | 68.9 | 54.3 | 71.7 | 80.7 |
| 40 | 79.7 | 48.9 | 34.2 | 118.8 | 76.6 | 61.2 | 79.3 | 89.2 |
| 45 | 88.0 | 54.7 | 39.1 | 130.6 | 84.8 | 68.5 | 87.4 | 98.3 |
| 50 | 96.8 | 60.9 | 44.3 | 143.2 | 93.6 | 76.4 | 96.0 | 108.0 |
| 55 | 106.2 | 67.4 | 49.9 | 156.5 | 102.9 | 84.8 | 105.1 | 118.3 |
| 60 | 116.1 | 74.5 | 55.9 | 170.7 | 112.8 | 93.8 | 114.7 | 129.2 |
| 65 | 126.7 | 81.9 | 62.3 | 185.8 | 123.3 | 103.4 | 125.0 | 140.8 |
| 70 | 137.8 | 89.8 | 69.1 | 201.8 | 134.4 | 113.7 | 135.8 | 153.0 |
| 75 | 149.6 | 98.2 | 76.4 | 218.7 | 146.2 | 124.6 | 147.2 | 165.9 |
| 80 | 162.1 | 107.0 | 84.2 | 236.5 | 158.6 | 136.1 | 159.2 | 179.6 |
| 85 | 175.3 | 116.4 | 92.5 | 255.4 | 171.8 | 148.4 | 171.9 | 194.1 |
| 90 | 189.2 | 126.2 | 101.2 | 275.4 | 185.7 | 161.5 | 185.3 | 209.3 |
| 95 | 203.8 | 136.6 | 110.5 | 296.4 | 200.3 | 175.3 | 199.4 | 225.4 |
| 100 | 219.2 | 147.6 | 120.3 | 318.6 | 215.8 | 189.9 | 214.1 | 242.3 |
| 105 | 235.3 | 159.1 | 130.7 | 341.9 | 232.0 | 205.4 | 229.7 | 260.1 |
| 110 | 252.3 | 171.2 | 141.7 | 366.4 | 249.1 | 221.7 | 246.0 | 278.8 |
| 115 | 270.2 | 183.9 | 153.3 | 392.3 | 267.0 | 238.9 | 263.1 | 298.5 |
| 120 | 288.9 | 197.2 | 165.6 | 419.4 | 285.8 | 257.1 | 281.0 | 319.2 |
| 125 | 308.6 | 211.1 | 178.5 | 447.9 | 305.5 | 276.3 | 299.8 | 340.9 |
| 130 | 329.2 | 225.7 | 192.0 | 477.9 | 326.2 | 296.5 | 319.4 | 363.8 |
| 135 | 350.7 | 241.0 | 206.3 | 509.4 | 347.8 | 317.8 | 340.0 | 387.8 |
| 140 | 373.3 | 257.0 | 221.3 | 542.5 | 370.5 | 340.3 | 361.6 | 413.0 |
| 145 | 397.0 | 273.7 | 237.1 | 577.3 | 394.1 | 363.9 | 384.1 | 439.5 |
| 150 | 421.7 | 291.1 | 253.6 | 613.9 | 456.8 | 467.4 | 407.7 | 467.4 |

Green Numerals in bold - Inches Hg Below 1ATM

*This data was generated using the NIST REFPROP Database (Lemmon, E.W., Huber, M.L., McLinden, M.O. NIST Standard Reference Database 23: Reference Fluid Thermodynamic and Transport Properties-REFPROP, Version 9.0, National Institute of Standards and Technology, Standard Reference Data Program, Gaithersburg, 2010)