

DuPont Refrigerants

R-22 and R-502 Replacements

PRESSURE-TEMPERATURE GUIDE

Key: **Green (in of Hg) = Vacuum**

Black (psig) = Saturated Vapor (calculate superheat)

Bold (psig) = Saturated Liquid (calculate subcooling)

For 5,000 ft. Elevations: psig + 2.5

| °F | Freon® 22 (R-22) | ISCEON® MO29 (R-422D) | ISCEON® MO79 (R-422A) | Suva® HP80 (R-402A) | Suva® 408A (R-408A) | Suva® 404A (R-404A) | Suva® 507 (R-507) | Suva® 407C (R-407C) | Suva® 410A (R-410A) |
|-----|------------------------|-----------------------------|-----------------------------|---------------------------|---------------------------|---------------------------|-------------------------|---------------------------|---------------------------|
| | -50 | 6.1 | 9.2 | 2.2 | 1.1 | 2.0 | 0.1 | 0.9 | 11.0 |
| -48 | 4.8 | 7.9 | 0.6 | 1.9 | 0.4 | 0.7 | 1.7 | 9.8 | 5.9 |
| -46 | 3.4 | 6.6 | 0.5 | 2.8 | 0.6 | 1.6 | 2.6 | 8.6 | 7.1 |
| -44 | 1.9 | 5.3 | 1.4 | 3.7 | 1.4 | 2.4 | 3.5 | 7.3 | 8.2 |
| -42 | 0.4 | 3.8 | 2.2 | 4.7 | 2.2 | 3.4 | 4.4 | 6.0 | 9.4 |
| -40 | 0.6 | 2.3 | 3.1 | 5.7 | 3.1 | 4.3 | 5.4 | 4.6 | 10.7 |
| -38 | 1.4 | 0.8 | 4.1 | 6.8 | 4.0 | 5.3 | 6.4 | 3.2 | 12.0 |
| -36 | 2.2 | 0.4 | 5.1 | 7.8 | 5.0 | 6.3 | 7.5 | 1.6 | 13.3 |
| -34 | 3.1 | 1.2 | 6.1 | 9.0 | 6.0 | 7.4 | 8.6 | 0.1 | 14.7 |
| -32 | 4.0 | 2.1 | 7.2 | 10.1 | 7.0 | 8.5 | 9.8 | 0.8 | 16.2 |
| -30 | 4.9 | 3.0 | 8.3 | 11.4 | 8.0 | 9.6 | 11.0 | 1.6 | 17.7 |
| -28 | 5.9 | 3.9 | 9.5 | 12.6 | 9.2 | 10.8 | 12.2 | 2.5 | 19.3 |
| -26 | 6.9 | 4.9 | 10.7 | 13.9 | 10.3 | 12.0 | 13.5 | 3.5 | 20.9 |
| -24 | 8.0 | 5.9 | 11.9 | 15.3 | 11.5 | 13.3 | 14.8 | 4.4 | 22.6 |
| -22 | 9.1 | 7.0 | 13.2 | 16.7 | 12.7 | 14.6 | 16.2 | 5.4 | 24.4 |
| -20 | 10.2 | 8.1 | 14.6 | 18.2 | 14.0 | 16.0 | 17.6 | 6.5 | 26.2 |
| -18 | 11.4 | 9.2 | 16.0 | 19.7 | 15.3 | 17.4 | 19.1 | 7.6 | 28.1 |
| -16 | 12.6 | 10.4 | 17.4 | 21.2 | 16.7 | 18.9 | 20.6 | 8.7 | 30.0 |
| -14 | 13.9 | 11.7 | 18.9 | 22.9 | 18.1 | 20.4 | 22.2 | 9.9 | 32.0 |
| -12 | 15.2 | 12.9 | 20.5 | 24.5 | 19.6 | 22.0 | 23.8 | 11.1 | 34.1 |
| -10 | 16.5 | 14.3 | 22.1 | 26.3 | 21.1 | 23.6 | 25.5 | 12.3 | 36.3 |
| -8 | 17.9 | 15.6 | 23.7 | 28.0 | 22.7 | 25.3 | 27.2 | 13.7 | 38.5 |
| -6 | 19.4 | 17.1 | 25.4 | 29.9 | 24.3 | 27.0 | 29.0 | 15.0 | 40.8 |
| -4 | 20.9 | 18.5 | 27.2 | 31.8 | 26.0 | 28.8 | 30.9 | 16.4 | 43.2 |
| -2 | 22.4 | 20.1 | 29.1 | 33.8 | 27.7 | 30.7 | 32.8 | 17.9 | 45.7 |
| 0 | 24.0 | 21.7 | 30.9 | 35.8 | 29.5 | 32.6 | 34.8 | 19.4 | 48.2 |
| 2 | 25.7 | 23.3 | 32.9 | 37.9 | 31.3 | 34.6 | 36.8 | 21.0 | 50.8 |
| 4 | 27.4 | 25.0 | 34.9 | 40.1 | 33.2 | 36.6 | 38.9 | 22.6 | 53.5 |
| 6 | 29.2 | 26.7 | 37.0 | 42.3 | 35.2 | 38.7 | 41.1 | 24.3 | 56.3 |
| 8 | 31.0 | 28.5 | 39.1 | 44.6 | 37.2 | 40.9 | 43.4 | 26.1 | 59.2 |
| 10 | 32.8 | 30.4 | 41.4 | 46.9 | 39.3 | 43.1 | 45.7 | 27.9 | 62.2 |
| 12 | 34.8 | 32.3 | 43.6 | 49.4 | 41.4 | 45.4 | 48.0 | 29.8 | 65.2 |
| 14 | 36.8 | 34.3 | 46.0 | 51.9 | 43.6 | 47.8 | 50.5 | 31.7 | 68.4 |
| 16 | 38.8 | 36.4 | 48.4 | 54.5 | 45.9 | 50.2 | 53.0 | 33.7 | 71.6 |
| 18 | 40.9 | 38.5 | 50.9 | 57.1 | 48.2 | 52.7 | 55.6 | 35.7 | 74.9 |
| 20 | 43.1 | 40.7 | 53.5 | 59.8 | 50.7 | 55.3 | 58.2 | 37.9 | 78.4 |
| 22 | 45.3 | 42.9 | 56.1 | 62.6 | 53.1 | 58.0 | 61.0 | 40.1 | 81.9 |
| 24 | 47.6 | 45.2 | 58.8 | 65.5 | 55.7 | 60.7 | 63.8 | 42.3 | 85.5 |
| 26 | 50.0 | 47.6 | 61.6 | 68.5 | 58.3 | 63.5 | 66.7 | 44.7 | 89.2 |
| 28 | 52.4 | 50.1 | 64.5 | 71.5 | 61.0 | 66.4 | 69.6 | 47.1 | 93.1 |
| 30 | 55.0 | 52.6 | 67.5 | 74.7 | 63.7 | 69.3 | 72.7 | 49.6 | 97.0 |
| 32 | 57.5 | 55.2 | 70.5 | 77.9 | 66.6 | 72.4 | 75.8 | 52.1 | 101.1 |
| 34 | 60.2 | 57.9 | 73.6 | 81.2 | 69.5 | 75.5 | 79.0 | 54.8 | 105.2 |
| 36 | 62.9 | 60.6 | 76.8 | 84.6 | 72.5 | 78.7 | 82.3 | 57.5 | 109.5 |
| 38 | 65.7 | 63.5 | 80.1 | 88.1 | 75.6 | 82.0 | 85.7 | 60.3 | 113.9 |
| 40 | 68.6 | 66.4 | 83.5 | 91.6 | 78.7 | 85.4 | 89.2 | 63.2 | 118.4 |
| 42 | 71.5 | 69.4 | 87.0 | 95.3 | 81.9 | 88.8 | 92.7 | 66.1 | 123.0 |
| 44 | 74.5 | 72.5 | 90.5 | 99.0 | 85.3 | 92.4 | 96.4 | 69.2 | 127.7 |
| 46 | 77.6 | 75.6 | 94.2 | 102.9 | 88.7 | 96.0 | 100.1 | 72.3 | 132.6 |
| 48 | 80.8 | 78.9 | 97.9 | 106.8 | 92.2 | 99.8 | 104.0 | 75.5 | 137.5 |
| 50 | 84.1 | 82.2 | 101.8 | 110.9 | 95.7 | 103.6 | 107.9 | 78.8 | 142.6 |
| 52 | 87.4 | 86.1 | 105.8 | 115.1 | 98.8 | 107.5 | 111.8 | 82.2 | 147.8 |
| 54 | 90.8 | 89.8 | 110.0 | 119.4 | 102.0 | 111.3 | 115.7 | 85.6 | 153.1 |
| 56 | 94.4 | 93.6 | 114.3 | 123.9 | 105.3 | 115.2 | 119.6 | 89.1 | 158.5 |
| 58 | 98.0 | 97.4 | 119.0 | 128.6 | 108.7 | 119.1 | 123.5 | 92.6 | 164.0 |
| 60 | 101.6 | 101.4 | 124.0 | 133.5 | 112.1 | 123.0 | 127.4 | 96.1 | 169.6 |
| 62 | 105.4 | 105.4 | 128.4 | 138.6 | 115.6 | 126.0 | 131.3 | 99.6 | 175.3 |
| 64 | 109.3 | 109.3 | 132.9 | 143.8 | 119.1 | 129.0 | 135.2 | 103.1 | 181.1 |
| 66 | 113.2 | 113.2 | 137.5 | 149.1 | 122.5 | 132.0 | 139.1 | 106.6 | 187.0 |
| 68 | 117.3 | 117.3 | 142.3 | 154.5 | 126.0 | 135.0 | 143.1 | 110.1 | 193.0 |
| 70 | 121.4 | 121.4 | 147.1 | 160.0 | 129.5 | 138.0 | 147.0 | 113.6 | 199.1 |
| 72 | 125.7 | 125.7 | 152.1 | 165.6 | 133.0 | 141.0 | 150.9 | 117.1 | 205.3 |
| 74 | 130.0 | 130.0 | 157.2 | 171.3 | 136.5 | 144.0 | 154.8 | 120.6 | 211.6 |
| 76 | 134.5 | 134.5 | 162.3 | 177.1 | 140.0 | 147.0 | 158.7 | 124.1 | 218.0 |
| 78 | 139.0 | 139.0 | 167.6 | 183.0 | 143.5 | 150.0 | 162.6 | 127.6 | 224.5 |
| 80 | 143.6 | 143.6 | 173.0 | 189.0 | 147.0 | 153.0 | 166.5 | 131.1 | 231.1 |
| 82 | 148.4 | 148.4 | 178.6 | 195.1 | 150.5 | 156.0 | 170.4 | 134.6 | 237.8 |
| 84 | 153.2 | 153.2 | 184.2 | 201.3 | 154.0 | 159.0 | 174.3 | 138.1 | 244.6 |
| 86 | 158.2 | 158.2 | 190.0 | 207.5 | 157.5 | 162.0 | 178.2 | 141.6 | 251.5 |
| 88 | 163.2 | 163.2 | 195.9 | 213.9 | 161.0 | 165.0 | 182.1 | 145.1 | 258.5 |
| 90 | 168.4 | 168.4 | 201.9 | 220.3 | 164.5 | 168.0 | 186.0 | 148.6 | 265.6 |
| 92 | 173.7 | 173.7 | 208.1 | 226.8 | 168.0 | 171.0 | 190.0 | 152.1 | 272.8 |
| 94 | 179.1 | 179.1 | 214.4 | 233.4 | 171.5 | 174.0 | 194.0 | 155.6 | 280.1 |
| 96 | 184.6 | 184.6 | 220.8 | 240.2 | 175.0 | 177.0 | 198.0 | 159.1 | 287.5 |
| 98 | 190.2 | 190.2 | 227.3 | 247.1 | 178.5 | 180.0 | 202.0 | 162.6 | 295.0 |
| 100 | 195.9 | 195.9 | 234.0 | 254.2 | 182.0 | 183.0 | 206.0 | 166.1 | 302.6 |
| 102 | 201.8 | 201.8 | 240.9 | 261.4 | 185.5 | 186.0 | 210.0 | 169.6 | 310.3 |
| 104 | 207.7 | 207.7 | 248.0 | 268.7 | 189.0 | 189.0 | 214.0 | 173.1 | 318.1 |
| 106 | 213.8 | 213.8 | 255.2 | 276.2 | 192.5 | 192.0 | 218.0 | 176.6 | 326.0 |
| 108 | 220.0 | 220.0 | 262.2 | 283.9 | 196.0 | 195.0 | 222.0 | 180.1 | 334.0 |
| 110 | 226.4 | 226.4 | 269.6 | 291.6 | 199.5 | 198.0 | 226.0 | 183.6 | 342.1 |
| 112 | 232.8 | 232.8 | 277.1 | 299.6 | 203.0 | 201.0 | 230.0 | 187.1 | 350.3 |
| 114 | 239.4 | 239.4 | 284.8 | 307.6 | 206.5 | 204.0 | 234.0 | 190.6 | 358.6 |
| 116 | 246.1 | 246.1 | 292.6 | 315.9 | 210.0 | 207.0 | 238.0 | 194.1 | 367.0 |
| 118 | 253.0 | 253.0 | 300.6 | 324.3 | 213.5 | 210.0 | 242.0 | 197.6 | 375.5 |
| 120 | 260.0 | 260.0 | 308.8 | 332.8 | 217.0 | 213.0 | 246.0 | 201.1 | 384.1 |
| 122 | 267.1 | 267.1 | 317.1 | 341.6 | 220.5 | 216.0 | 250.0 | 204.6 | 392.8 |
| 124 | 274.3 | 274.3 | 325.6 | 350.5 | 224.0 | 219.0 | 254.0 | 208.1 | 401.6 |
| 126 | 281.7 | 281.7 | 334.2 | 359.5 | 227.5 | 222.0 | 258.0 | 211.6 | 410.5 |
| 128 | 289.2 | 289.2 | 342.2 | 368.7 | 231.0 | 225.0 | 262.0 | 215.1 | 419.5 |
| 130 | 296.9 | 296.9 | 352.0 | 378.1 | 234.5 | 228.0 | 266.0 | 218.6 | 428.6 |
| 132 | 304.7 | 304.7 | 361.2 | 387.7 | 238.0 | 231.0 | 270.0 | 222.1 | 437.8 |
| 134 | 312.6 | 312.6 | 370.5 | 397.5 | 241.5 | 234.0 | 274.0 | 225.6 | 447.1 |
| 136 | 320.7 | 320.7 | 380.0 | 407.4 | 245.0 | 237.0 | 278.0 | 229.1 | 456.5 |
| 138 | 329.0 | 329.0 | 389.7 | 417.5 | 248.5 | 240.0 | 282.0 | 232.6 | 466.0 |
| 140 | 337.4 | 337.4 | 399.6 | 427.8 | 252.0 | 243.0 | 286.0 | 236.1 | 475.6 |
| 142 | 345.9 | 345.9 | 409.7 | 438.3 | 255.5 | 246.0 | 290.0 | 239.6 | 485.3 |
| 144 | 354.6 | 354.6 | 420.0 | 449.0 | 259.0 | 249.0 | 294.0 | 243.1 | 495.1 |
| 146 | 363.5 | 363.5 | 430.5 | 459.9 | 262.5 | 252.0 | 298.0 | 246.6 | 505.0 |
| 148 | 372.5 | 372.5 | 441.2 | 470.9 | 266.0 | 255.0 | 302.0 | 250.1 | 515.0 |
| 150 | 381.7 | 381.7 | 452.1 | 482.3 | 269.5 | 258.0 | 306.0 | 253.6 | 525.1 |

Approx Pressure Control Settings - Refrigeration

| Application | Temp Range (°F) | Evap ΔT (°F) | Refrigerant | | | | | | | |
|-------------------------|-----------------|--------------|-------------|----|--------------|----|--------------|----|--------|----|
| | | | R-22 | | ISCEON® MO29 | | ISCEON® MO79 | | R-404A | |
| | | | Out | In | Out | In | Out | In | Out | In |
| Beverage Cooler | 35 to 38 | 15 | 41 | 66 | 42 | 69 | 52 | 82 | 53 | 82 |
| Floral Cooler | | | | | | | | | | |
| Produce Cooler | | | | | | | | | | |
| Smoked Meat Cooler | 32 to 35 | 15 | 38 | 62 | 39 | 64 | 49 | 77 | 49 | 77 |
| Meat Reach Thru | | | | | | | | | | |
| Service Deli | | | | | | | | | | |
| Seafood | 26 to 29 | 15 | 32 | 54 | 33 | 56 | 42 | 69 | 42 | 68 |
| Multi-Deck | | | | | | | | | | |
| Fresh Meat | | | | | | | | | | |
| Frozen Glass Door | -10 to 0 | 10 | 9 | 24 | 9 | 23 | 14 | 32 | 15 | 33 |
| Frozen Glass Walk-In | | | | | | | | | | |
| Frozen Ice Cream | | | | | | | | | | |
| Frozen Food - open type | -30 to -20 | 10 | 0 | 10 | 0 | 10 | 4 | 15 | 4 | 16 |