

PRECISION REFRIGERANT

Product Overview

What Is Precision Refrigerant?

Precision Refrigerant (PR) is a patented, drop-in refrigerant that reduces compressor energy consumption while maintaining full chemical compliance with AHRI-700 standards. PR enhances the thermophysical and tribological properties of the refrigerant—reducing the compressor’s coefficient of friction and wear rate so the compressor draws less power while producing the same or greater cooling output. The refrigerant’s chemistry, boiling point, and pressure curves remain unchanged. The improvement is purely mechanical: less friction means less electrical energy required to do the same work. PR is protected by U.S. Patent 10,731,064 and has been operating in the field for over 10 years with zero reported system failures.

Proven Results: 10+ Years of Independent Testing

Study / Setting	Key Finding	Why It Matters
ARL Laboratory Test (AHRI 210/240 Standard)	SEER +6%, cooling capacity +7–13% vs. R-134a	Lab baseline; real-world savings are materially higher due to accumulated wear and variable loads.
ARL Multi-Refrigerant Comparison	EER improvements of +9% to +43% across five refrigerant families	Consistent across R-22, R-404A, R-407C, R-438A, and R-427A.
W Hotel Lakeshore, Chicago (200-ton Chiller, 2 Years)	32–43% improvement in kW/ΔT; p < 0.0001	Longest field study with simultaneous control compressor. Savings grew over time.
Large Hotel Complex, Dallas (40-ton Units, 1 Year)	20.7% reduction at pilot; 20.1% sustained at one year	Side-by-side identical units, same space. Savings consistent and durable.
Data Center (22-ton CRAC Units)	22% daily kWh reduction	Verified by a licensed PE/CMVP with 1-minute interval logging and a control unit.
Westin Jersey City (15-ton Rooftop Unit)	32% kWh savings (temperature-normalized)	Cross-validated via two independent methods, both converging at 32%.

Safety & Compatibility

✓ AHRI-700 compliant — chemically identical to standard refrigerant ✓ ASHRAE 97 stability confirmed: decomposition <0.05%, dissolved metals <1 ppm ✓ GWP 11% lower than R-134a (1,151 vs. 1,300)	✓ Compatible with scroll, reciprocating, and screw compressors ✓ Drop-in replacement — no hardware modifications required ✓ 10+ years in the field with zero system failures or warranty issues
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The Bottom Line

Precision Refrigerant reduces the compressor’s friction and mechanical effort so your system draws less power while producing the same cooling—verified in independent labs and real-world installations—without changing your equipment, your maintenance provider, or the refrigerant chemistry your system was designed for. Expect a minimum of 10% energy savings with a median of 20% and upward ranges exceeding 40%. In most cases, the savings pay for the product within one year.