

R22 Replacement Refrigerant Guide

LOW TEMP. REFRIGERATION

REFRIGERANT	GWP	COMPOSITION	OIL COMPATIBILITY	GLIDE (°C)	COOLING CAPACITY (VS R-22)	DISCHARGE TEMPERATURE	COP (EFFICIENCY)	EXPANSION VALVE ADJUSTMENTS	WORKING PRESSURE (VS R-22)	COMPRESSOR STRESS	LEAK DETECTION CONSIDERATIONS	ENVIRONMENTAL CONSIDERATIONS	OIL RETURN EFFICIENCY WITH MO?	ENERGY EFFICIENCY	RETROFIT DIFFICULTY
R407C	1774	R-32 (23%), R-125 (25%), R-134a (52%)	POE only	≈7°C	95-98%	Higher than R-22	Slightly lower than R-22	Yes, required	Higher	Higher than R-22	More prone to leaks (higher pressure)	Lower than R-22	✗ (MO incompatible)	✓ Good	Requires full POE oil change
R407F	1825	R-32 (30%), R-125 (30%), R-134a (40%)	POE only	≈6°C	97-99%	Lower than R-22	Close to R-22	Yes, required	Higher	Lower than R-22	More prone to leaks (higher pressure)	Lower than R-22	✗ (MO incompatible)	✓ Best POE option	Requires full POE oil change
R407A	2107	R-32 (20%), R-125 (40%), R-134a (40%)	POE only	≈4°C	90-95%	Higher than R-22	Slightly lower than R-22	Yes, required	Higher	Higher than R-22	More prone to leaks (higher pressure)	Lower than R-22	✗ (MO incompatible)	✓ Good	Requires full POE oil change
R427A	2138	R-32 (15%), R-125 (25%), R-134a (60%)	POE only	≈4°C	95-97%	Lower than R-22	Close to R-22	Yes, required	Similar	Lower than R-22	Same as R-22	Lower than R-22	✗ (MO incompatible)	✓ Good	Requires full POE oil change
R438A	2265	R-125 (45%), R-134a (44.2%), R-32 (8.5%), R-600 (3%), R-227ea (0.3%)	MO, AB, POE (best oil return efficiency)	≈6°C	98-99%	Similar to R-22	Closest to R-22	Rarely needed	Similar	Similar to R-22	Same as R-22	Lower than R-22 but still high	✓ Best with MO	✓ Closest to R-22	Easy
R417A	2346	R-125 (46.6%), R-134a (50%), R-600 (3.4%)	MO, AB, POE (better with AB/POE)	≈5°C	90-95%	Lower than R-22	Lower than R-22	May need TXV tuning	Slightly lower	Lower than R-22	Same as R-22	High GWP	⚠ May need AB/POE	✗ Lower than R-22	Easiest
R422D	2729	R-125 (65.1%), R-134a (31.5%), R-600 (3.4%)	MO, AB, POE	≈3°C	95-97%	Lower than R-22	Slightly lower than R-22	Minor (possible fine-tuning)	Similar	Lower than R-22	Same as R-22	High GWP	✓	✓ Slightly lower	Easy

MED. TEMP. REFRIGERATION

REFRIGERANT	GWP	COMPOSITION	OIL COMPATIBILITY	GLIDE (°C)	COOLING CAPACITY (VS R-22)	DISCHARGE TEMPERATURE	COP (EFFICIENCY)	EXPANSION VALVE ADJUSTMENTS	WORKING PRESSURE (VS R-22)	COMPRESSOR STRESS	LEAK DETECTION CONSIDERATIONS	ENVIRONMENTAL CONSIDERATIONS	OIL RETURN EFFICIENCY WITH MO?	ENERGY EFFICIENCY	RETROFIT DIFFICULTY
R407C	1774	R-32 (23%), R-125 (25%), R-134a (52%)	POE only	≈7°C	95-98%	Higher than R-22	Slightly lower than R-22	Yes, required	Higher	Higher than R-22	More prone to leaks (higher pressure)	Lower than R-22	✗ (MO incompatible)	✓ Good	Requires full POE oil change
R407F	1825	R-32 (30%), R-125 (30%), R-134a (40%)	POE only	≈6°C	97-99%	Lower than R-22	Close to R-22	Yes, required	Higher	Lower than R-22	More prone to leaks (higher pressure)	Lower than R-22	✗ (MO incompatible)	✓ Best POE option	Requires full POE oil change
R407A	2107	R-32 (20%), R-125 (40%), R-134a (40%)	POE only	≈4°C	90-95%	Higher than R-22	Slightly lower than R-22	Yes, required	Higher	Higher than R-22	More prone to leaks (higher pressure)	Lower than R-22	✗ (MO incompatible)	✓ Good	Requires full POE oil change
R427A	2138	R-32 (15%), R-125 (25%), R-134a (60%)	POE only	≈4°C	95-97%	Lower than R-22	Close to R-22	Yes, required	Similar	Lower than R-22	Same as R-22	Lower than R-22	✗ (MO incompatible)	✓ Good	Requires full POE oil change
R438A	2265	R-125 (45%), R-134a (44.2%), R-32 (8.5%), R-600 (3%), R-227ea (0.3%)	MO, AB, POE (best oil return efficiency)	≈6°C	98-99%	Similar to R-22	Closest to R-22	Rarely needed	Similar	Similar to R-22	Same as R-22	Lower than R-22 but still high	✓ Best with MO	✓ Closest to R-22	Easy
R417A	2346	R-125 (46.6%), R-134a (50%), R-600 (3.4%)	MO, AB, POE (better with AB/POE)	≈5°C	90-95%	Lower than R-22	Lower than R-22	May need TXV tuning	Slightly lower	Lower than R-22	Same as R-22	High GWP	⚠ May need AB/POE	✗ Lower than R-22	Easiest
R422D	2729	R-125 (65.1%), R-134a (31.5%), R-600 (3.4%)	MO, AB, POE	≈3°C	95-97%	Lower than R-22	Slightly lower than R-22	Minor (possible fine-tuning)	Similar	Lower than R-22	Same as R-22	High GWP	✓	✓ Slightly lower	Easy

AIR-CONDITIONING

REFRIGERANT	GWP	COMPOSITION	OIL COMPATIBILITY	GLIDE (°C)	COOLING CAPACITY (VS R-22)	DISCHARGE TEMPERATURE	COP (EFFICIENCY)	EXPANSION VALVE ADJUSTMENTS	WORKING PRESSURE (VS R-22)	COMPRESSOR STRESS	LEAK DETECTION CONSIDERATIONS	ENVIRONMENTAL CONSIDERATIONS	OIL RETURN EFFICIENCY WITH MO?	ENERGY EFFICIENCY	RETROFIT DIFFICULTY
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R427A	2138	R-32 (15%), R-125 (25%), R-134a (60%)	POE only	≈4°C	95-97%	Lower than R-22	Close to R-22	Yes, required	Similar	Lower than R-22	Same as R-22	Lower than R-22	✗ (MO incompatible)	✓ Good	Requires full POE oil change
R438A	2265	R-125 (45%), R-134a (44.2%), R-32 (8.5%), R-600 (3%), R-227ea (0.3%)	MO, AB, POE (best oil return efficiency)	≈6°C	98-99%	Similar to R-22	Closest to R-22	Rarely needed	Similar	Similar to R-22	Same as R-22	Lower than R-22 but still high	✓ Best with MO	✓ Closest to R-22	Easy
R417A	2346	R-125 (46.6%), R-134a (50%), R-600 (3.4%)	MO, AB, POE (better with AB/POE)	≈5°C	90-95%	Lower than R-22	Lower than R-22	May need TXV tuning	Slightly lower	Lower than R-22	Same as R-22	High GWP	⚠ May need AB/POE	✗ Lower than R-22	Easiest

POE = Polyolester oil

MO = Mineral Oil

AB = Alkylbenzenes



A system containing **R22** cannot be topped up with another refrigerant; a full recharge is required

All information supplied is for guide purposes only ⓘ

There is no single product that can replace R22 in all applications. ⓘ

This guide has been listed by lowest GWP to highest and NOT by performance or preference ⓘ

A-GAS
TOGETHER WE CAN
METRACLARK
Refrigeration & Air-Conditioning Wholesale