NATE HVAC Certification Exam

QUICK REFERENCE CHEAT SHEET | NATE Core / Specialty Exams

REFRIGERATION CYCLE

Component	Function	State of Refrigerant
Compressor	Increases pressure and temperature of vapor	Low-pressure vapor IN; High-pressure vapor OUT
Condenser	Rejects heat to outside; cools and condenses refrigerant	High-pressure vapor IN; High-pressure liquid OUT
Metering Device (TXV/orifice)	Reduces pressure; controls flow to evaporator	High-pressure liquid IN; Low-pressure liquid OUT
Evaporator	Absorbs heat from conditioned space; refrigerant evaporates	Low-pressure liquid IN; Low-pressure vapor OUT

REFRIGERANT PRESSURE-TEMPERATURE REFERENCE

Refrigerant	Application	Low Side (68 F sat.)	High Side (130 F sat.)
R-22	Legacy AC and heat pump	68 psig	281 psig
R-410A	Modern AC and heat pump (phased in after 2010)	119 psig	444 psig
R-32	New systems; lower GWP than R-410A	149 psig	~500 psig
R-134a	Auto AC; some chillers	26 psig	185 psig
R-407C	R-22 drop-in replacement	58 psig	260 psig

NATE SPECIALTY AREAS

Specialty	Focus
Air Conditioning Service (AC-SV)	Diagnosing and servicing residential split-system AC
AC Installation (AC-IN)	Installing residential AC systems to manufacturer specs
Heat Pump Service (HP-SV)	Reversing valve, defrost cycle, balance point, auxiliary heat
Gas Heating Service (GH-SV)	Furnace combustion, heat exchanger, gas pressure
Air Distribution (AD)	Duct sizing, static pressure, balancing, CFM measurement
Light Commercial (LC)	Package units, rooftop units, commercial systems

EXAM-DAY TIPS

+ Superheat: temperature of vapor above its boiling point at given pressure -- check at suction line.
+ Subcooling: temperature of liquid below its condensing point -- check at liquid line outlet.
+ Normal superheat: 8-12 F TXV systems; fixed orifice varies by manufacturer (typically 10-18 F).
+ Normal subcooling: 10-15 F -- low subcooling = undercharge or restriction at condenser.
+ EPA Section 608: technicians must be certified to purchase and handle refrigerants -- no venting allowed.
+ Practice 1,000+ questions -> voltexam.com/apps/nate-hvac