

THE A2L TRANSITION — WALL CARD

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Why this card exists: The EPA AIM Act phasedown is retiring high-GWP refrigerants. New equipment ships with mildly flammable A2L refrigerants. Same physics. New safety rules. This card is the shop-wall summary.

REFRIGERANT QUICK COMPARISON

Refrigerant	Safety Class	GWP	Status / Where You Meet It
R-410A	A1 — no flame spread	2,088	Phasing down. The installed base you will service for 15+ years.
R-32	A2L — mildly flammable	675	New residential default in many split systems. Single component.
R-454B	A2L — mildly flammable	466	Leading R-410A replacement in new U.S. residential equipment.
R-1234yf	A2L — mildly flammable	4	Automotive standard; appearing in chillers and heat pumps.
R-290 (propane)	A3 — flammable	3	Self-contained refrigeration; strict charge limits. NOT an A2L.

WHAT ACTUALLY CHANGES ON YOUR TRUCK

LEAK DETECTION	A2L-rated detectors with heated-diode or infrared sensors tuned for low-flammability refrigerants. Bubble solution still works. Halide torches do not belong near A2Ls.
RECOVERY & TOOLS	Spark-resistant recovery machines, vacuum pumps, and fans rated for A2L service. Verify the rating plate — "A2L-ready" must be printed, not assumed.
VENTILATION	Ventilate the work area before and during brazing or recovery. A2L refrigerants are heavier than air: they pool low. Keep ignition sources off the floor.
CHARGING	Charge by superheat / subcooling exactly as the book teaches — but weigh in with a scale and confirm against nameplate. Many A2L systems use smaller critical charges.
CYLINDERS	A2L cylinders use left-hand threads and red-band markings. Store upright, secured, below 125°F, away from ignition sources.
SENSORS ON EQUIPMENT	New equipment may include Refrigerant Detection Systems (RDS) that drive the blower on a leak signal. Never bypass an RDS to "finish the call."

ALWAYS

- Verify refrigerant type from the nameplate before connecting.
- Purge hoses; use low-loss fittings on every A2L job.
- Nitrogen-purge while brazing — always, but doubly on A2Ls.
- Keep a fire extinguisher within reach during recovery.
- Hold EPA Section 608 — it is the legal floor for all of this.

NEVER

- Mix refrigerants or "top off" an unknown charge.
- Use an unrated recovery machine on an A2L system.
- Braze on a charged system. Recover first. Every time.
- Vent any refrigerant. The Clean air Act makes it illegal.
- Bypass a Refrigerant Detection System or safety switch.

Pupils before Profits — read the full HVAC Apprentice's Field Guide free at globalsovereignuniversity.org/hvac-trade

Regulations current at printing (2026). Verify EPA rules and state codes before relying on any procedure. EPA Section 608 certification is the foundation of legal refrigerant work.

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