

EPA 608: The Rules, the Levels, and the Exam

YES Electric • Arc Workforce Academy HVAC Apprenticeship

Draft 1 (October 2026). This lesson is under review. Videos are made by other companies, not YES Electric; follow this lesson and your journeyman where they differ. Boxes marked "Shop photo coming" will get real photos from our shop in a later version.

Unit 5 • Refrigerants, EPA 608 & Charging • Appendix A Comp 13 • RTI: EPA 608 Prep & Certification (20 hr, ESCO exam) — GATED MILESTONE Class time: this lesson anchors the 20-hr RTI block (≈3 classroom sessions + exam)

1. What you'll be able to do

- Pass the **ESCO EPA 608 Universal exam** (Core + Types I, II, III) — the program's gated milestone: no refrigerant handling competencies sign without it, and the wage Period 3 bump requires it.
- State the law's spine: **knowingly venting refrigerant is a federal violation** (CAA §608) — and the short list of what ISN'T venting (de minimis releases during good-faith recovery, hose purges, leak-detection trace).
- Apply the **required recovery levels** by appliance type and the recovery-device rules.
- Know the leak-rate thresholds and record rules that touch larger appliances — and the practical residential translations.
- Speak the vocabulary precisely: **recover / recycle / reclaim** (they are NOT synonyms — exam loves this).

This is the most exam-shaped lesson in the program. We teach to mastery, not just to pass — but make no mistake, we also teach to PASS: Universal, first attempt.

2. Tools & materials

- ESCO study manuals (program-issued — the official prep text for our exam provider)
- The ACST + HVAC School prep video series mapped below (homework spine)
- Practice exam bank (ESCO online + our drill decks)
- Recovery rig for the demonstration tie-ins (the doing is 5.3)

3. Watch first (this IS the homework calendar)

Session	Video set	Length	Covers
Week 1	EPA 608 Core Prep P1 + P2 (HVAC School) + Core Review (ACST)	36 min	Ozone/climate science, law, safety, cylinders, the three R's
Week 2	Type 1 Prep + Type 2 Prep (HVAC School)	31 min	Small appliances; high-pressure appliances (our world)
Week 3	Type 3 Prep (HVAC School) + Fined \$37,500 for Venting? (ACST)	16 min	Low-pressure chillers; enforcement reality
Context	EPA 608 Changes w/ Jeremy Arling (HVAC School podcast)	29:42	The rules as living law (HFC-era updates)

4. The idea

The law in one breath

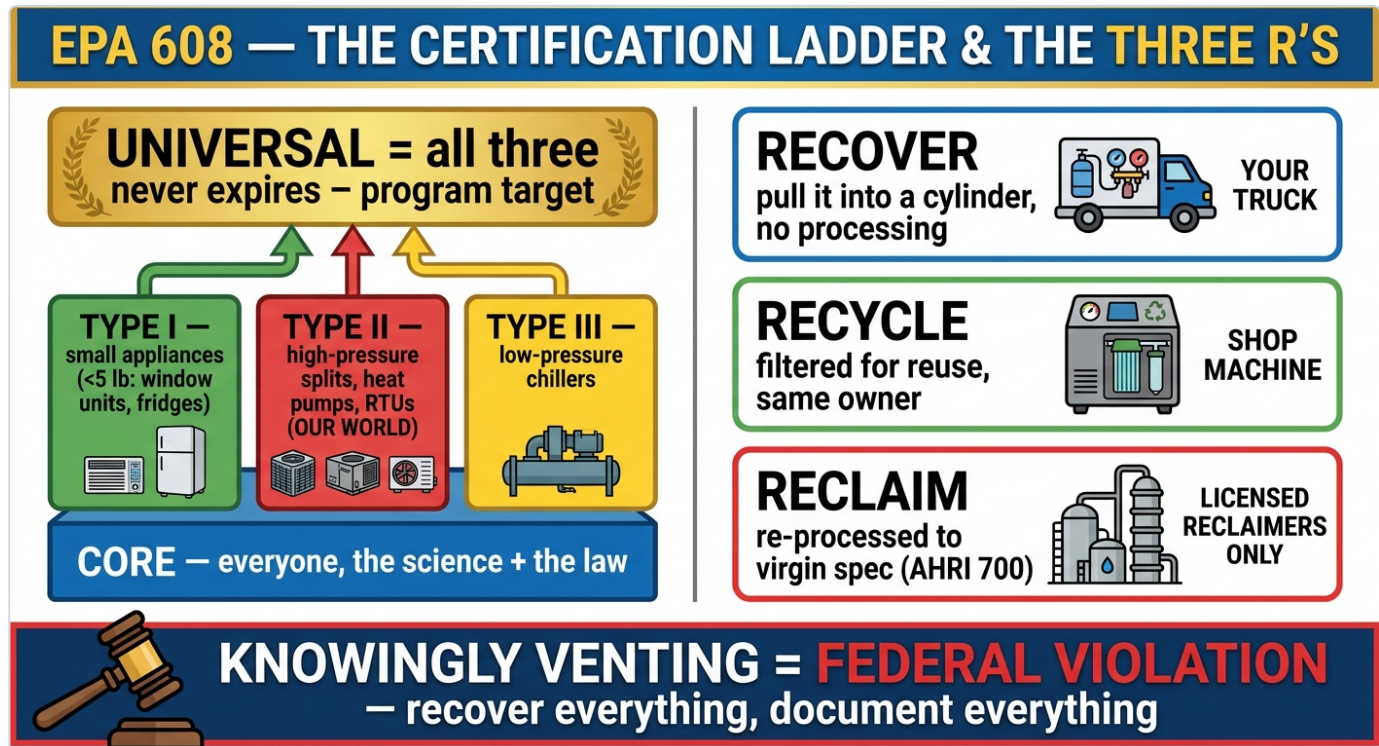
Clean Air Act §608: **no knowing release ("venting") of refrigerants** during service/repair/disposal. Penalties run to ~\$37,500/day flavor numbers (the video's title isn't clickbait). Allowed releases are narrow: **de minimis** escape during good-faith recovery using proper equipment, hose-connection purges, refrigerant used AS the trace gas for leak checking (mixed with nitrogen — 4.5), and a few oddities. Everything else gets recovered. Since the 2020s the rules cover HFCs and the A2Ls too — "it's not an ozone gas" is not an out.

The three R's (exam staple, field reality)

Word	Means	Where it happens
RECOVER	Pull it out of the system into a cylinder — no processing	Your truck, every open-system job (5.3)
RECYCLE	Clean it up (oil/moisture filtration) for reuse, same owner's equipment typically	Shop-grade machines
RECLAIM	Re-process to virgin spec (AHRI 700) + chemical analysis	Licensed reclaimers ONLY — where your recovered bottles go

Field translation: you RECOVER; you ship to a RECLAIMER (supply house take-back); you don't "recycle" between customers with a recovery machine and a smile.

Certification levels & required recovery levels



- **Core** (everyone) + **Type I** (small appliances <5 lb: window units, fridges) + **Type II** (high-pressure: EVERYTHING we do — splits, heat pumps, RTUs) + **Type III** (low-pressure chillers) = **Universal** (all three). Our program target: **Universal**, because the cert never expires and the job market reads it as "complete."
- Required recovery levels (the table you memorize — exam AND practice): Type II appliances ≥200 lb charge: to **specified vacuum levels** per the rule's table (10–15 in Hg vacuum class for most modern equipment using post-1993 machines); **small appliances: 80-90% of charge** depending on compressor state, or 4 in Hg vacuum. The exact table lives in the ESCO manual — we drill it until the rows are reflex.
- **System-dependent reality check:** recovery to vacuum on a system with a dead compressor takes the methods of 5.3 (liquid recovery, push-pull on big charges) — the law sets the floor; the craft gets you there.

Leak rules (the larger-appliance layer)

Appliances ≥50 lb charge carry **annual leak-rate thresholds** (comfort cooling 10%/yr trigger class) requiring repair/retrofit/retirement plans + record-keeping. Residential splits sit under the threshold weight — but the ETHIC scales down: 4.7's verdict discipline (find it, document it, quote it) is the same law's spirit at house scale. Commercial work (Unit 12) re-raises this with teeth.

Record-keeping & the paper trail

Recovery cylinders tracked; reclaim shipments documented; technician certification card ON YOU (photo on phone + wallet card); sales restriction (no refrigerant purchase without cert). Our program log sheets (4.5/4.6) already built the habit — EPA paperwork is the same muscle.

5. Classroom & drill procedure

1. **Three weekly video-and-drill cycles** per the calendar above: watch set → ESCO manual chapter → 25-question drill deck → wrong-answer review aloud (the reasoning, not the letter).
2. **The vocabulary gauntlet:** recover/recycle/reclaim scenario cards ("supply house takes your cylinder" = headed to reclaim; "machine cleans it for the same owner's other RTU" = recycle...). 100% required — this is free exam points.
3. **Recovery-level table drills:** flashcards both directions ("Type II, >200 lb, post-93 machine → ?" and "4 in Hg → which appliance class?").
4. **Mock exam #1** (end of week 2): full-length, timed, Core + I + II. Anyone under 84% gets targeted re-drill (pass is 70% per section; we train to 85+ margin).
5. **Mock exam #2** (week 3) + Type III. Then the REAL ESCO proctored exam.
6. **The demo bridge:** one full recovery on the rig (preview of 5.3) narrated in exam vocabulary — levels, de minimis, cylinder %, the paper trail — so the law and the hands meet before the test.

Checkout = the ESCO Universal certificate. Comp 13 signs alongside 5.3's hands-on recovery. Wage Period 3 gate satisfied. Cert number goes in the apprentice file + RAPIDS record.

6. Field gotchas (the law in the wild)

- **"It's only a pound"** — de minimis covers losses DURING proper recovery, not "small" intentional releases. The distinction is intent + equipment; juries and inspectors read it that way too.
- **Selling/buying refrigerant requires the cert** — your card is also your purchasing license; the supply house WILL ask.
- **Disposal jobs count:** cutting out an old condenser for scrap without recovery is the most-prosecuted residential violation (scrappers get watched). Recover first, tag the unit, THEN cut.
- **A2Ls are covered gases** under the HFC rules — same recovery obligations, A2L-rated machine (5.8).
- **Your cert never expires, but the rules move** — the Arling podcast habit: when EPA updates drop, read them (we'll flag updates in shop meetings; "I certified in 2026" won't excuse a 2030 violation).
- **Document everything you recover** (weight in/out, cylinder ID, destination). The paper trail is your alibi and your professionalism in one.

7. Competency link

- **Comp 13 begins** (signs with 5.3's hands-on); **the gated milestone for all of Comps 13-18** per Appendix A — and the wage Period 3 requirement.
- Universal cert = lifetime credential; the exam vocabulary returns in every commercial lesson (Unit 12).

8. Check yourself

1. What does §608 prohibit, and name three non-venting releases.
2. The three R's — define each and name who's legally allowed to do the third.
3. What does Universal certification cover, and why does the program insist on it over Type II alone?
4. Required recovery for a small appliance with a working compressor? With a dead one?
5. A Type II appliance over 200 lb, modern machine — recover to what?
6. Who can you sell refrigerant to? Who can sell it to YOU?
7. The scrapyard scenario: old condenser, customer says "just haul it." Lawful sequence?
8. Are R-32 and R-454B covered by venting rules? Says who?
9. What records ride with a recovery cylinder?
10. Your buddy purges a hose by cracking it for 10 seconds... then "purges" a whole liquid line "to clear it." Where's the legal line?

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