



Refrigerant Management

Or “What’s My Fine?”

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Refrigerant Management Overview Agenda

- Environmental Impacts of Refrigerants
- The Clean Air Act and Refrigerant Regulations
- Whose fine is it anyway?
- Owner responsibilities and record keeping
- Trane and Refrigerant Management
- Q/A



Ozone Depletion



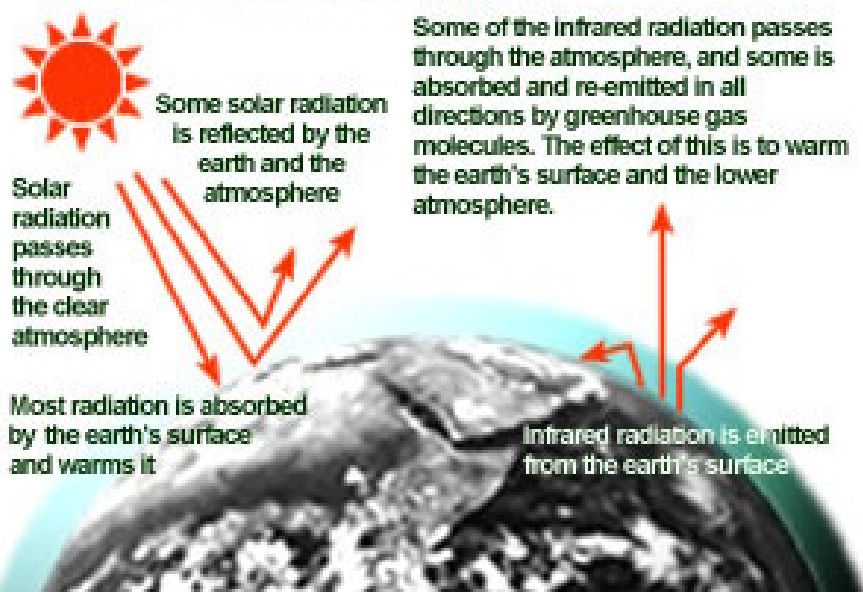
[U.S. EPA: Ozone Depletion](#)

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Global Warming

The Greenhouse Effect

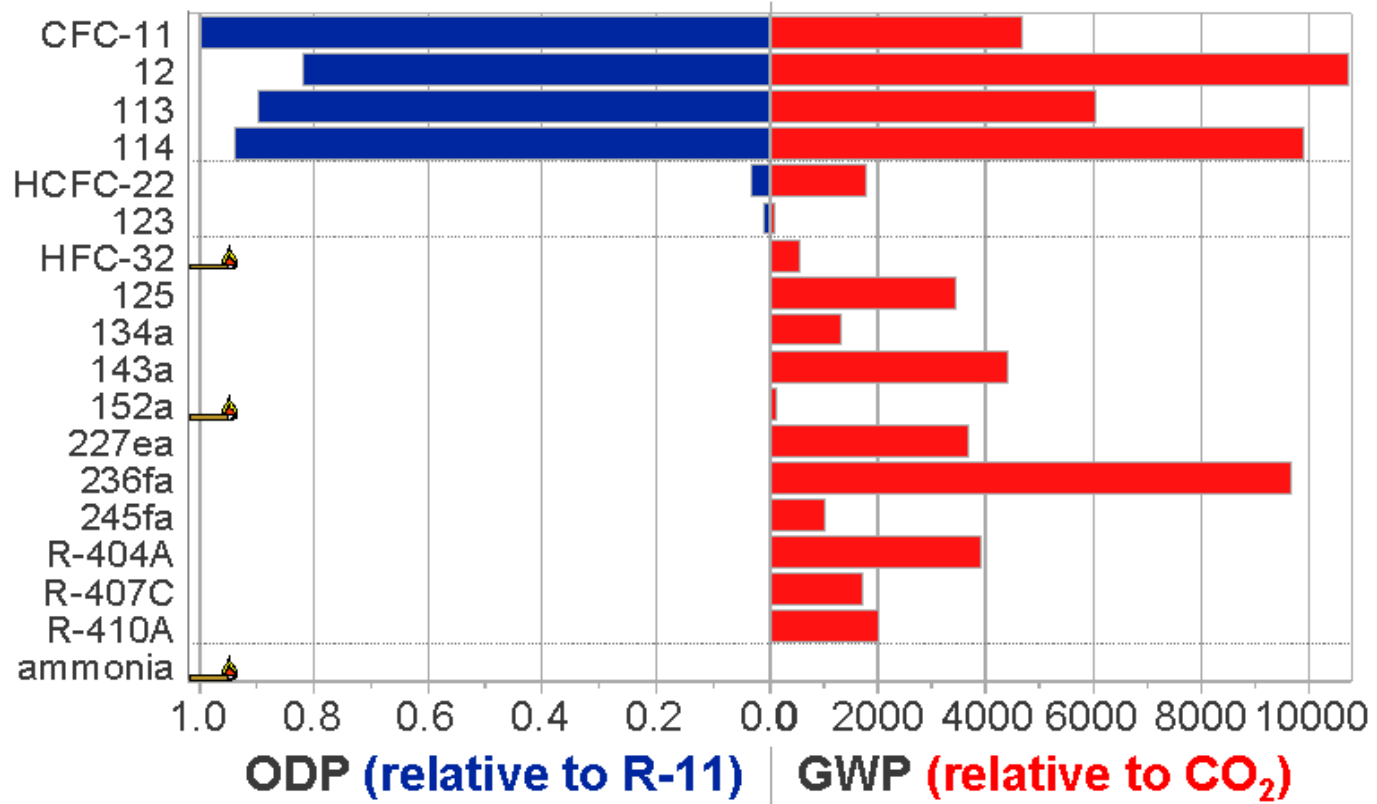


[EPA : Global Warming : Climate](#)

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Comparing ODP and GWP



based on IPCC, *Climate Change 2001 — The Scientific Basis*, 2001; and WMO, 2002 *Scientific Assessment of Ozone Depletion*, 2003; and J. M. Calm and G. C. Hourahan, "Refrigerant Data Summary," *Engineered Systems*, November 2001

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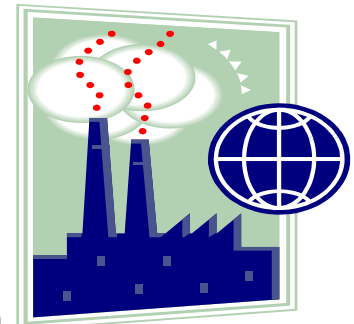
Section 608 of the Clean Air Act

- National Recycling and Emission Reduction Program
- Objectives:
 - Reduce production
 - Reduce use (Class I and Class II)
 - Reduce emissions
 - Promote reclaim and recovery
 - Establish Refrigerant Classifications



The Prohibition on Venting

- Illegal to vent Class I or Class II refrigerant
- Self-effectuating law for HFC's
- Four types of permitted releases
 - De-minimus quantities/good faith attempts
 - Refrigerant emitted during normal operation
 - Releases not used as refrigerants (leak test gases)
 - Small releases resulting from purging hoses or from disconnecting hoses

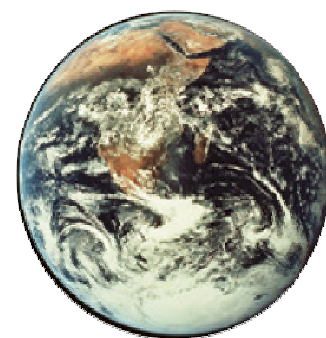


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Service Practices that Reduce Emissions

- Evacuate systems before opening
- Promptly fix all leaks
- Use appropriate equipment to minimize loss
- Safe handling and storage



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Certified Technicians, Equipment and Reclaimers



- Ensure technicians are certified to the proper level
- Keep a current copy of tech certifications on file and available
- Certified recovery/recycling equipment
- Only use approved reclaimers



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Repair of *substantial* leaks



$$\text{Annualized refrigerant leak rate} = \frac{365 \times \text{RC}}{\text{NOD} \times \text{NRC}}$$

NOD = Number of days since the most recent charge

RC = Amount of refrigerant charged into system

NRC = Normal refrigerant capacity of system

Maximum allowable leak rate :

35% Industrial Process & Commercial Refrigeration

15 % All other systems including Comfort Cooling

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Repairing Substantial Leaks

- Owner/operator is responsible for having leaks fixed
- Tech responsible for reporting leaks to owner
- Leaks must be fixed within 30 calendar days of discovery, or...
- Retrofit or replace the equipment within one year if leak cannot be fixed
- Keep copy of the retrofit/retirement plan at the site



Record-keeping Requirements for each appliance

- Keep copies of all service records and invoices
- Records indicating appliance serviced, maintained, repaired, disposed of
- Records indicating amount of refrigerant consumed, recovered, reclaimed or recycled
- Records indicating the type of equipment used to recover or recycle refrigerant



Record-keeping Requirements for each appliance

- Leak rate any time refrigerant was added to the system
- Initial or follow up leak tests (for IP equipment)
- Retirement or replacement plan for IP equipment)
- Records verifying all refrigerant removed from appliance prior to disposal (and who removed it)

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Record-keeping Requirements

- Records indicating any other method used to prevent release of refrigerants
- Records of all refrigerant purchases
- Records indicating purchaser, date of sale and amount of refrigerant sold
- Keep records for three years

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How important is it to be in compliance with these regs?



Who Can Be Liable?

- The owner
- The service contractor
- “Any ‘person’... may be held liable for violations of Section 608...for the purpose of seeking penalties for violations, ‘person’ includes the owner or operator of the facility subject to the Act and the technician who services an appliance...”



What's My Fine?

- Can cost up to \$32,500 per violation per day
- Can run into the MILLIONS of dollars
- Bad publicity is sometimes worse than fines
- Some recent examples

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What does Trane do to help you comply?

- All Techs are Universal
- **National Refrigerant Management Program** Includes:
 - *TRANE Refrigerant Activity Report*
 - *TRANE Refrigerant Management System*
 - *Immediate Refrigerant Reports (locally or nationally)*
 - *Local Experts trained on RM*
- Implemented for OUR compliance, but helps our customers be compliant also!

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Reporting from Trane RMS

- Refrigerant Activity Report Form
- Customer Report
- Questions?
- My contact information: Sandy Hicks
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970 227-3667

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