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Recent Changes to Refrigerant Management Requirements

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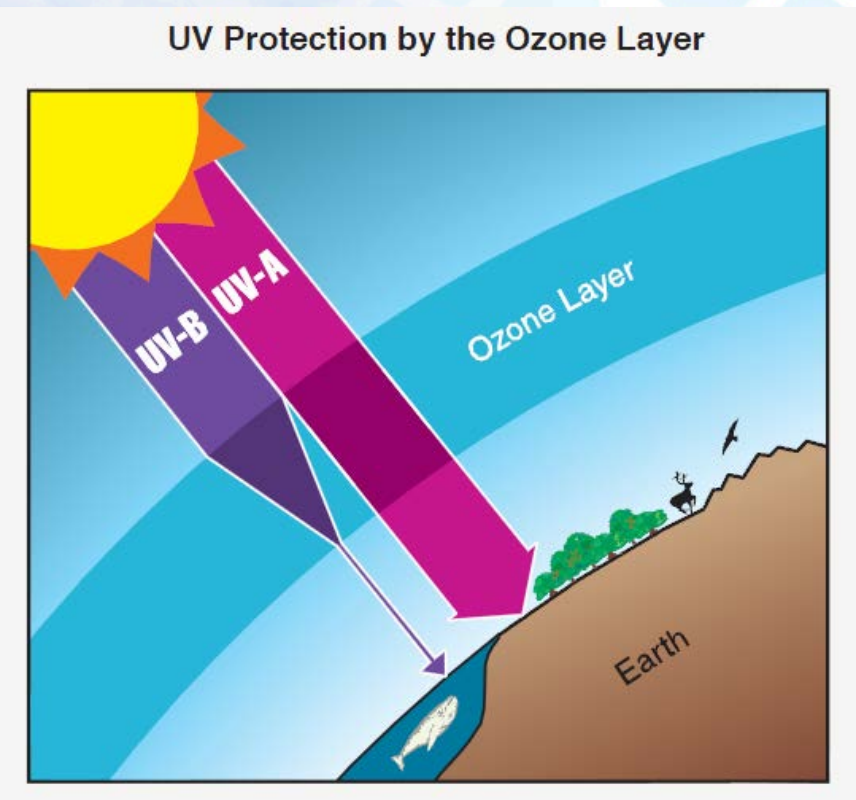


Agenda

- > Background on Ozone
- > Ozone Depleting Substance Regulations
- > Recent Changes to Refrigerant Management Requirements

Why is O₃ Depletion of Concern?

- > “Good up high, bad nearby”
- > Stratospheric ozone
 - ❖ Absorbs harmful UV-B radiation
 - ❖ Key role in temperature structure of the Earth’s atmosphere



Introduction to Ozone Depleting Substance (ODS) Regulations

- > International treaties
- > U.S. statute and regulations
 - ❖ Clean Air Act provisions
 - ❖ Title 40 Code of Federal Regulations (CFR) Part 82



Refrigerants (Two Types)

> Type 1 - ODS

❖ Class I

- ◆ Not produced anymore
- ◆ Inhalers, space shuttle
- ◆ Over 50 Class I Controlled Substances, i.e. R11
 - Appendix A to 40 CFR Part 82 Subpart A

❖ Class II

- ◆ Production will stop in 2020
- ◆ Home A/C units, refrigerators
- ◆ 38 Class II Controlled Substances, i.e. R22, R123
 - Appendix B to 40 CFR Part 82 Subpart A

> Type 2 - Substitutes

❖ Non-exempt

- ◆ R134a

❖ Exempt

- ◆ CO₂, N₂, H₂O



Equipment Containing Refrigerant





PART 70 PERMIT TO OPERATE

Title VI – 40 CFR Part 82 Protection of Stratospheric Ozone

- 1) ~~The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:~~
 - a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to §82.106.
 - b) The placement of the required warning statement must comply with the requirements pursuant to §82.108.
 - c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110.
 - d) No person may modify, remove, or interfere with the required warning statement except as described in §82.112.
- 2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
 - a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
 - b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
 - c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
 - d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166. ("MVAC-like" appliance as defined at §82.152).
 - e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.156.
 - f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.
- 3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR Part 82, Subpart A, Production and Consumption Controls.
- 4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of

40 CFR Part 82 Protection of Stratospheric Ozone

- > Referenced in operating permits
 - ❖ Semi-annual deviation reporting
 - ❖ Annual compliance certification
 - ❖ Common ODS related noncompliance
 - ◆ Not using a certified technician
 - ◆ Leak rate calculation missing or not updated
 - ◆ Proper disposal records missing
- > If not mentioned in an operating permit, still required to comply

New 2016 ODS Regulations

- > Rule represents overhaul of 40 CFR 82, Subpart F
 - > Revisions proposed on 11/09/2015 (80 FR 69457)
 - ◆ Replaced 12/15/2010 proposal
 - > Finalized on 11/18/2016 (81 FR 82272)
- > Staggered compliance dates of 01/01/2017, 01/01/2018, & 01/01/2019

Article provided at:

<http://www.trinityconsultants.com/news/federal/epa-releases-advance-copy-of-final-protection-of-stratospheric-ozone-rule>

Changes to Subpart F Sections

Old Rule

- > 82.152 - Definitions
- > 82.154 - Prohibitions
- > 82.156 - Required practices; (i) includes leak repair provisions
- > 82.158 - Standards for recycling & recovery equipment
- > 82.160 - Approved equipment testing organizations
- > 82.161 - Technician certification
- > 82.162 - Certification by owners of recovery & recycling equipment
- > 82.164 - Reclaimer certification
- > 82.166 - Reporting & recordkeeping requirements

Blue = new

Red = revised

Purple = deleted

23 rule changes

New Rule

- > 82.152 - Same as proposed
- > 82.154 - Same as proposed
- > 82.155 - Safe disposal of appliances
- > 82.156 - Proper evacuation of refrigerant from appliances; (i) applies until 01/01/2019
- > 82.157 - Appliance maintenance & leak repair (applies starting 01/01/2019)
- > 82.158 - Standards for recovery and/or recycling equipment
- > 82.160 - Same as proposed
- > 82.161 - Same as proposed
- > 82.162 - Deleted
- > 82.164 - Same as proposed
- > 82.166 - Reporting & recordkeeping requirements for leak repair (until 01/01/2019)

Extension to Non-ODS Substitutes

- > Substitutes are defined as refrigerants, with the following subcategories:
 - ❖ Non-exempt substitutes - subject to all provisions of rule, including sales restrictions, evacuation, recovery/recycling equipment, technician certification, leak repair, and reclamation provisions
 - ❖ Exempt substitutes - exempt from all provisions of rule when used in approved applications
- > Staggered compliance dates of 01/01/2017, 01/01/2018, and 01/01/2019 (leak repair provisions)

Refrigerants (Two Types)

- > Type 1 - ODS
 - ❖ Class I
 - ❖ Class II

- > Type 2 - Substitutes
 - ❖ Non-exempt
 - ❖ Exempt

Exempt Substitutes

Exempt Refrigerants	End-Use and Application								
	Household Ref	Retail Ref Stand-Alone	Vending	Very Low Temp Ref	Heat Transfer	Self-contained Commercial Ice Machines	Water Coolers	IPR/Processing	Room AC Self-Contained
CO ₂ , N ₂ , H ₂ O	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ammonia		✓						✓	
Hydrocarbons, Chlorine								✓	
Propane	✓	✓	✓	✓		✓	✓	✓	✓
Isobutane	✓	✓	✓						
R-441A	✓	✓	✓						✓
Ethane				✓	✓				

Summary of Changes by Effective Date (1 of 3)

Effective Date	Rule Provision/Citation
01/01/2017	Sales restriction on used non-exempt substitutes, 82.154(d)
01/01/2017	Sales restriction on appliances with non-exempt substitutes (servicing aperture/process stub), 82.154(e)
01/01/2017	Certification of new manufactured/imported recovery/recycling equipment for use with non-exempt substitutes, 82.158
01/01/2017	Non-exempt substitute reclaimer certification, 82.164
01/01/2017	Elimination of one-time notification of acquisition of certified recovery/recycling equipment, 82.162 of old rule
01/01/2017	New definition of <i>comfort cooling</i> , 82.152
01/01/2017	Modified definition of <i>disposal</i> to cover vandalism and intentional cutting of refrigerant lines, 82.152
01/01/2017	Approved equipment testing organizations must publish online list of certified recovery/recycling equipment, 82.160(e)(1)

Summary of Changes by Effective Date (2 of 3)

Effective Date	Rule Provision/Citation
01/01/2017	Signed statement requirement in event all ODS-containing refrigerant leaked out prior to delivery of small appliances, MVACs, and MVAC-like appliances for disposal, 82.155
01/01/2018	Signed statement requirement in event all non-exempt substitutes leaked out prior to delivery of small appliances, MVACs, and MVAC-like appliances for disposal, 82.155
01/01/2018	Sales restriction on new non-exempt substitutes, 82.154(c)(1)
01/01/2018	Small (≤ 2 lb) cans of non-exempt substitutes for MVACs must be equipped with self-sealing valves, 82.154(c)(2)
01/01/2018	Technicians must be certified to maintain, service, repair, or dispose* of appliances containing non-exempt substitutes, 82.161(a)
01/01/2018	Approved technician certification programs must publish online list of technicians they have certified on or after 01/01/2017, 82.161(b)(6)

*Consistent with previous rule, technicians do not have to be certified to dispose of small appliances, MVACs, and MVAC-like appliances.

Summary of Changes by Effective Date (3 of 3)

Effective Date	Rule Provision/Citation
01/01/2018	Evacuation requirements for disposal and/or opening of appliances containing non-exempt substitutes, 82.155 & 82.156(a)-(d)
01/01/2018	Recordkeeping requirements for disposal of appliances with full charge > 5 lbs and ≤ 50 lbs, 82.156(a)(3)
01/01/2019	Revised leak rate provisions for appliances with full charge ≥ 50 lbs refrigerant, 82.157

Questions?

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Article provided at:

<http://www.trinityconsultants.com/news/federal/epa-releases-advance-copy-of-final-protection-of-stratospheric-ozone-rule>

Complete summary table in PDF format provided at:

<http://www.trinityconsultants.com/Documents/Summary-of-Key-Revisions-to-Refrigerant-Management->