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Ozone Depleting Substances (ODS) Rule Updates

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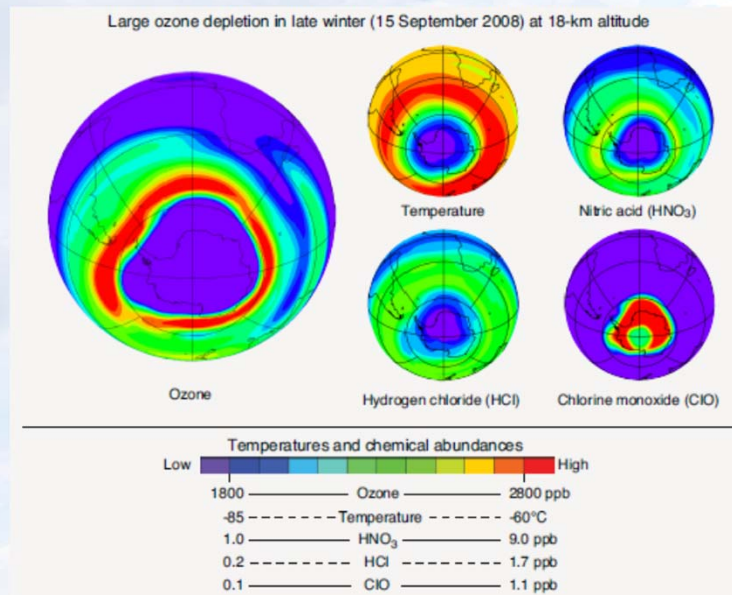
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Ozone Depleting Substance (ODS) Rule Updates

The “Ozone Hole”



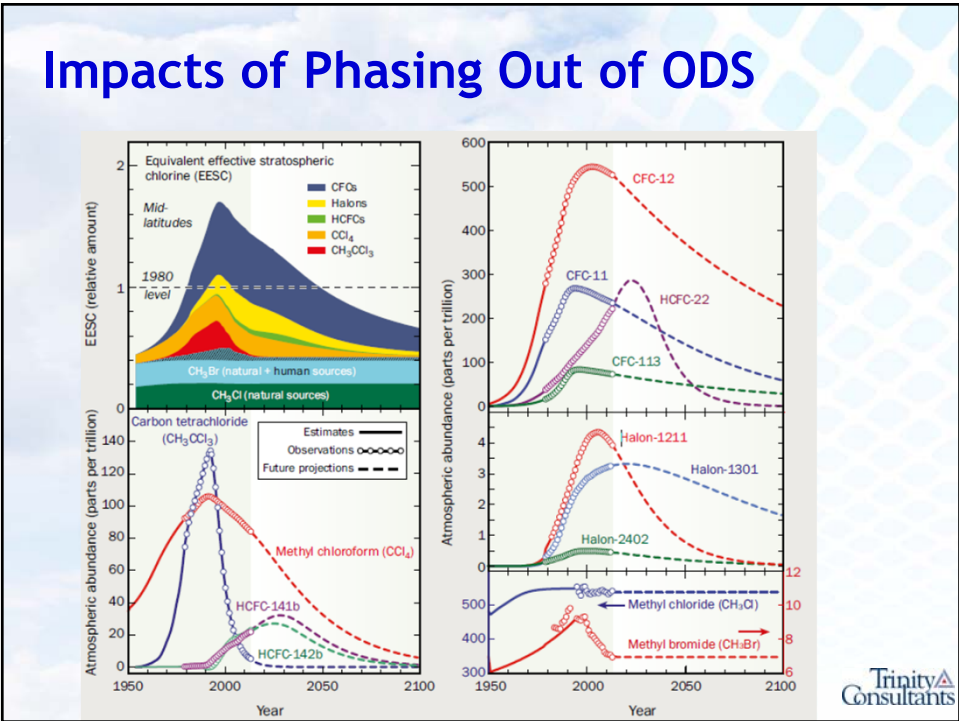
ODS Regulations

- > International Treaties
 - ❖ Vienna Convention - 1985
 - ❖ Montreal Protocol - 1987
 - ◆ Numerous Amendments - 1990 through 2016
- > U.S. statute and regulations
 - ❖ Clean Air Act
 - ❖ Title 40 Code of Federal Regulations (CFR) Part 82

40 CFR 82



Impacts of Phasing Out of ODS



Regulatory Updates - 11/18/2016

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 1/1/2017, 1/1/2018, & 1/1/2019

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

New Rule

- > 82.152 - same
- > 82.154 - same
- > 82.155 - Safe disposal of appliances
- > 82.156 - Proper evacuation of refrigerant from appliances; (i) applies until 1/1/2019
- > 82.157 - Appliance maintenance & leak repair (applies starting 1/1/2019)
- > 82.158 - Standards for recovery and/or recycling equipment
- > 82.160 - same
- > 82.161 - same
- > 82.162 - deleted
- > 82.164 - same
- > 82.166 - Reporting & recordkeeping requirements for leak repair (until 1/1/2019)

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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 1/1/2017, 1/1/2018, and 1/1/2019 (leak repair provisions)



Definitions - Refrigerant

- > *Refrigerant* means, for purposes of this subpart, any substance, including blends and mixtures, consisting in part or whole of a class I or class II ozone-depleting substance or substitute that is used for heat transfer purposes and provides a cooling effect.



Definitions - Substitute

- > *Substitute* means any chemical or product, whether existing or new, that is used as a refrigerant to replace a class I or II ozone-depleting substance.
- > Examples include, but are not limited to
 - ❖ hydrofluorocarbons, perfluorocarbons, hydrofluoroolefins, hydrofluoroethers, hydrocarbons, ammonia, carbon dioxide, and blends thereof.

And...

Definitions - Exempt Substitutes

- > As used in this subpart, the term “*exempt substitutes*” refers to certain substitutes when used in certain end-uses that are specified in §82.154(a)(1) as exempt from the venting prohibition and the requirements of this subpart, and the term “*non-exempt substitutes*” refers to all other substitutes and end-uses not so specified in §82.154(a)(1).

What is ODS?

- > Class I - CFCs
 - ❖ Groups 1 through 5 - Title VI of the CAA
 - ❖ Groups 6 and 7: methyl bromide & hydrobromofluorocarbons - EPA's Accelerated Phaseout
 - ❖ Group 8: chlorobromomethane - EPA's Chlorobromomethane Phaseout
- > Class II - HCFCs

See <https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>



What are the Substitutes?

- > 10/11/2016
 - ❖ EPA publishes notice expanding list of substitutes for refrigeration and fire suppression sectors

<https://www.gpo.gov/fdsys/pkg/FR-2016-10-11/pdf/2016-24381.pdf>

See Appendix A: Summary of Decisions for New Acceptable Substitutes



What are the Substitutes?

- > 12/1/2016
 - ❖ EPA publishes final rule listing new substitutes and prohibiting certain high-GWP HFCs as alternatives under SNAP:

<https://www.gpo.gov/fdsys/pkg/FR-2016-12-01/pdf/2016-25167.pdf>

See Tables 2, 3, 4, 7, 8, 10, 12, 14, 16, 18, 21, 22

– GWP, ODP, and VOC Status...

See Tables 5, 6, 9, 11, 13, 17, 20

– Change of Status Decisions

See Table 19

– Change of Status Dates

See Also...

- Acceptable Subject to Use Conditions
- Unacceptable Substitutes



Significant New Alternatives Policy (SNAP) Program

- > <https://www.epa.gov/snap>

Substitutes by Industrial Sector

- [Adhesives, Coatings & Inks](#)
- [Aerosols](#)
- [Cleaning Solvents](#)
- [Fire Suppression and Explosion Protection](#)
- [Foam Blowing Agents](#)
- [Refrigeration & Air Conditioning](#)
- [Sterilants](#)
- [Tobacco Expansion](#)

Submit a Substitute



- [Learn How to Submit](#)
- [Instruction Manual](#)
- [SNAP Application Form](#)
- [TSCA/SNAP Addendum](#)



Extension to Non-ODS Substitutes - 1/1/2017 Effective Date

- > Venting prohibition (has applied to non-exempt substitutes since 2004) [82.154(a)]
- > Restriction on sale of used refrigerant [82.154(d)]
- > Restriction on manufacture and sale of appliances - must be equipped with servicing aperture/process stub [82.154(e)]
- > Newly manufactured or imported recovery/recycling equipment must be certified (82.158)
- > Reclaimer certification requirements (82.164)

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Extension to Non-ODS Substitutes - 1/1/2018 Effective Date

- > Restriction on sale of new refrigerant [82.154(c)(1)]
- > Self-sealing valves required on small (≤ 2 lb) cans of refrigerant for motor vehicle air conditioners (MVACs) [82.154(c)(2)]
- > Evacuation requirements for disposal and/or opening of small (≤ 5 lb) appliances, MVACs, and MVAC-like appliances [82.155 & 82.156(b)-(d)]
- > Evacuation requirements for disposal and/or opening of appliances (except small appliances, MVACs, and MVAC-line appliances) [82.156(a)]
- > Technicians must be certified [82.161(a)]

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Extension to Non-ODS Substitutes - 1/1/2019 Effective Date

- > Leak repair provisions as they apply to appliances with full charge \geq 50 lbs refrigerant (82.157)

Revised Disposal Requirements (1 of 2)

- > 2016 rule
 - ❖ **Relocates** disposal provisions from 82.156(f) & 82.166(i) to 82.155
 - ❖ Adds requirement to obtain **signed statement** in the event that all refrigerant in an appliance has “leaked out” prior to delivery due to unavoidable occurrences
 - ◆ effective date = 1/1/2017 for ODS-containing refrigerants and
 - ◆ effective date = 1/1/2018 for non-exempt substitutes

Revised Disposal Requirements (2 of 2)

- > 2016 rule adds explicit **recordkeeping requirements** for disposal of appliances with full charge > 5 lbs and < 50 lbs [82.156(a)(3)]
 - ❖ Company name
 - ❖ Location of the appliance
 - ❖ Date of recovery
 - ❖ Type of refrigerant recovered for each appliance
 - ❖ The quantity of refrigerant, by type, recovered from all disposed appliances in each calendar month
 - ❖ The quantity of refrigerant, by type, transferred for reclamation and/or destruction
 - ❖ The person to whom it was transferred
 - ❖ The date of transfer
- > **Effective date = 1/1/2018**



Revisions to Leak Repair Provisions - Applicability & Leak Rates

- > **Clarifies** that rule applies to appliances with full charge \geq 50 lbs
- > **Codifies long-standing interpretation** that each independent circuit is considered a separate appliance
- > **Lowers allowable leak (or repair “trigger”) rates** [82.157(c)(2)]
 - ❖ Comfort cooling & other units - 15% to 10%
 - ❖ Commercial refrigeration - 35% to 20%
 - ❖ Industrial process refrigeration - 35% to 30%

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Verification Testing

- > 2016 rule revisions [82.157(e)]
 - ❖ Expands verification testing from industrial process refrigeration (and federally-owned) appliances to all types of appliances
 - ❖ Shortens window for performing follow-up verification test from 30 days to 10 days of initial verification test or of the appliance achieving normal operating characteristics and conditions

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Leak Inspections

- > Establishes proactive leak inspection requirements if exceed allowable leak rates [82.157(g)]
 - ❖ Commercial & industrial process refrigeration \geq 500 lbs - quarterly, until 4 consecutive quarters w/ no leaks above allowable leak rate
 - ❖ All other units \geq 50 lbs - annually, until 1 year w/ no leaks above allowable leak rate
 - ❖ Must be performed by certified technicians
 - ❖ Not required if equipped with automatic leak detection system

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Automatic Leak Detection Systems

- > Can directly detect refrigerant in air, monitor its surrounding in another manner, or monitor appliance conditions [82.157(g)(4)]
- > Must be audited or calibrated annually
- > If detect refrigerant in air:
 - ❖ Appliance must be located indoors
 - ❖ Have 10 ppm accuracy
 - ❖ Have 100 ppm alert level
- > Other systems must alert when lose 50 lbs or 10% of full charge, whichever is less
- > If only used to monitor portion of appliance, then inspections apply to remainder

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Significant Leak Reporting

- > Reporting required for appliances ≥ 50 lbs that leak more than 125% of their full charge in calendar year [82.157(j)]
 - ❖ Calculation = amount added / full charge (do not use standard leak rate calculation methods for this purpose)
 - ❖ Due 3/1 of following year

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Repair Window Extensions (1 of 2)

- > Creates more standard list of available extensions from 30 day repair window across all appliance types [82.157(f)]
 1. Mothballing (no change)
 2. 120 day repair window if industrial process shutdown required (still only applicable to industrial process refrigeration appliances)
 3. Necessary parts are unavailable (expanded to commercial refrigeration, comfort cooling, and other appliances) - up to 30 days from when parts received and no more than 180 days after leak rate exceeded
 4. Located in area subject to radiological contamination or shutdown will cause radiological contamination (extended beyond federally-owned appliances)
 5. Requirements of other Federal, state, or local rules make repair within allowable window impossible

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Repair Window Extensions (2 of 2)

- > Must request approval from EPA for options 3-5 within 30 days of exceeding leak rate
- > Requests considered approved unless EPA notifies otherwise

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Retrofit or Retirement Plans (1 of 2)

- > Adds definitions of retrofit and retire
 - ❖ Retrofit - convert an appliance from one refrigerant to another refrigerant
 - ❖ Retire - removal of refrigerant and the disassembly or impairment of the refrigerant circuit such that the appliance as a whole is rendered unusable by any person in the future
- > Must develop plan within 30 days of exceeding leak rate (or failed follow-up verification test)

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Retrofit or Retirement Plans (2 of 2)

- > Adds minimum content requirements for retrofit/retirement plans [82.157(h)]
 - ❖ ID/location, existing type and full charge, type and full charge of new refrigerant, itemized procedure for retrofit, disposition plan for recovered refrigerant, disposition plan for retired appliance, schedule (not to exceed 1 year), and signature of authorized company official
 - ❖ All identified leaks must be repaired as part of retrofit

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Retrofit or Retirement Plan Off-Ramps

- > **Consolidates** existing retrofit/retirement plan off-ramp provisions into one option for all appliance types [82.157(h)(5)(ii)]
- > Can request off-ramp if
 - ❖ Establish that appliance no longer exceeds applicable leak rate within 180 days of plan's date, and
 - ❖ Agree to repair all identified leaks within 1 year of plan's date
- > Requests considered approved unless EPA notifies otherwise within 60 days of receipt of requests

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Retrofit or Retirement Plan Extensions

- > **Modifies** available extensions by appliance type [82.157(i)]
 - ❖ All appliances automatically allowed 18 months to retire an appliance if replacement uses exempt substitute
 - ❖ Requests considered approved unless EPA notifies otherwise within 60 days of receipt of requests

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Retrofit or Retirement Plan Extensions

- > **Modifies** available extensions by appliance type [82.157(i)]
 - ❖ Federally owned equipment can extend for 1 year if
 1. federal procurement process complications result in delivery time of > 30 weeks, or
 2. appliance is located in area subject to radiological contamination and creating safe working environment will require > 30 weeks
 - ❖ Industrial process refrigeration can extend if
 1. delay caused by other regulations, or
 2. component for custom built appliance or custom built appliance has delivery time > 30 weeks from order (adds provision to require installation within 120 days of delivery)

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Seasonal Variance Provisions

- > Allows refrigerant addition to be excluded from leak rate calculations if addition is due to seasonal variance [82.157(b)]

Season variance - the removal of refrigerant from an appliance due to a change in ambient conditions caused by a change in season, followed by the subsequent addition of an amount that is \leq the amount of refrigerant removed in the prior change in season, where both the removal and addition of refrigerant occurs within one consecutive 12-month period

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Recordkeeping [82.157(l)]

- > Expanded servicing records (ID/location of appliance, date of service, parts of appliance serviced and type of service made to each part, name of person performing the service, amount and type of refrigerant added to or removed, full charge, leak rate, leak rate method used)
- > Expanded full charge records (full charge, method used, revisions, and date of revisions) for all full charge methods
- > Expanded verification test records (location of repairs tested, date, type, and results)
- > Adds explicit records for mothballing (date and return to service)
- > Adds explicit records for seasonal variance (dates of removal and corresponding addition)

Blue = new

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Recordkeeping [82.157(l)]

- > Adds records of leak inspections (date, method used, leak locations, and certification that all visible parts inspected)
- > Adds records for automatic leak detection systems (installation, annual audit and calibration, and date/location of leaks detected)
- > Purged refrigerant records (when exempting from leak rate calculations)
- > Copies of reports and requests submitted to EPA
- > Copies of retrofit/retirement plans

Blue = new

Effective date = 1/1/2019



Revisions to Leak Repair Provisions - Notifications & Reporting

- > Eliminates one-time notification of acquisition of certified recovery/recycling equipment
(effective date = 1/1/2017)
- > Requires notifications/reports to be submitted electronically to 608reports@epa.gov [82.157(m)]
(effective date = 1/1/2019)



Miscellaneous Changes

- > Adds definition of comfort cooling - appliances used to control heat and/or humidity in occupied facilities
(effective date = 1/1/2017)
- > Modifies definition of disposal to explicitly cover vandalism or intentional cutting of refrigerant lines
(effective date = 1/1/2017)
- > Approved equipment testing organizations must publish online list of certified recovery/recycling equipment
(effective date = 1/1/2017)
- > Technician certification programs, excluding Federally-run programs, must publish online list of technicians they have certified on or after 1/1/2017
(effective date = 1/1/2018)
 - ❖ Must update lists annually
 - ❖ Technicians can opt out being included in such lists



What's Next?

- > Facilities need to evaluate gaps in what they are currently doing for Refrigerant Management and what new processes need to be implemented to comply with the Rule Changes.
 - > Update documents that reference the rules that have changed
 - > Add non-ODS substitutes requirements to your procedures
 - > Review and enhance leak detection and notification recordkeeping



Training and References

- > **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-Requirements-for-Stationary-Systems/>



Questions



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