

# MON MACT

## Storage Tank & Transfer Racks

Presenter: James Leonard

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## MON – Storage Tanks

- Outline
  1. Vessels that are not storage tanks
  2. Clearly define MON “Storage Tanks”
  3. Define: Group 1 Storage Tanks  
Group 2 Storage Tanks
  4. Group 1 Control Options

## Vessels that ARE NOT MON Storage Tanks

- \*Bottoms Receivers – collect continuous distillation bottoms before storage, or before further downstream processing.
- \*Surge Control Tank – vessels immediately preceding continuous reactors, air oxidation reactors, or distillation operations, used to store, mix or manage flow rates (e.g., day tanks).

\* If the Group 1 storage tank maximum true vapor pressure and capacity (10,000 gal) thresholds are met, these non-storage tanks must meet Table 4 emission limits and work practice standards (ref. 63.2450(r)). Note also that the impurity exclusion in the storage tank definition does not apply.

## Vessels that ARE NOT MON Storage Tanks (cont'd)

- Process Tanks – tanks or vessels within a process that are used to collect material from a feed stock storage tank or the process equipment, before the material is transferred to other equipment within the process or product storage tank. Process tanks do not accumulate product process multiple batches. It's emissions: “are related to the characteristics of the batch cycle”. (Surge control vessels and bottoms receivers are not process tanks.)
- Tanks that contain zero HAP or HAP(s) only as impurities.
- Wastewater Storage Tanks – tanks must contain “wastewater” to meet this exclusion.
- Pressure Vessels – designed to operate in excess of 204.9 kilopascals and without emissions to atmosphere and with a design pressure above 204.9 kilopascals.
- Permanently mounted vessels on: trucks, railcars, barges, or ships.

## What IS a MON “Storage Tank”?

- A tank or vessel that:
  - 1) Stores liquids that contain organic HAP and/or hydrogen halide and halogen HAP, and
  - 2) Is assigned to an MCPU according to procedures listed in 63.2435(d).
- Remember – If HAP is present only as an impurity, it isn't a MON tank! So...What is an “impurity”?
- HON defines an “impurity” as follows:
  - The HAP(s) must not serve a “useful purpose” (e.g., a reactant, azeotroph breaker, drying agent...); it is produced coincidentally, or present in the raw material. (Ref. 63.101 Impurity definition)

## Is my Tank Group 1 or Group 2?

- Group 1, if:
  - A. It is at an existing source with:
    1. A capacity of  $\geq 10,000$  gallons, and
    2. HAP contents exert a “maximum true vapor pressure” of 6.9 kilopascals or 1.0 psia  
Maximum true vapor pressure – partial pressure exerted by all HAPs, at the highest monthly average tank/liquid temperature or the highest average monthly temperature, as reported by the National Weather Service (if not a temperature controlled tank).
  - B. At a new source with:
    1. A capacity of  $\geq 10,000$  gallons, and
    2. Contents exert a “maximum true vapor pressure” of 0.69 kilopascals or 0.1 psia
- Group 2, if: — Not a Group 1 storage tank.

## Storage Tank Control Options

(Ref. 63.2470 & Table 4 of Subpart FFFF)

- A. If a Group 1 Storage Tank, you have these options:
- Closed vent system & control device (except for flare)
    - Reduce HAP emissions by ≥95% wt% or
    - Reduce organic HAP or TOC concentration to ≤20 ppmv and HCL, HF, Cl<sub>2</sub> to ≤20 ppmv.
  - Flare that complies with Subpart A, 63.111(b) and Subpart SS except for 63.2470(c) exception. (Ref. 63.2450(e).
  - Vent to a fuel gas system, pursuant to Subpart SS, 63.982(d) & 63.984 & Recordkeeping and reporting in 63.998 & 63.999.
  - Vapor balancing, in accordance with GGG-Pharma MACT, i.e., 63.1253(f) with the following exceptions:
    - Must meet 95% reduction vs. 90% in GGG.
    - Cleaning & reloading facilities must comply with 63.2445 – 63.2550.
    - You may set pressure relief devices at less than 2.5 PSI, if you provide proof that those settings prevent breathing losses, in your Notification of Compliance Status.

## Storage Tank Control Options (cont'd)

(Ref. 63.2470 & Table 4 of Subpart FFFF)

- B. If maximum true vapor pressure <76.6 kilopascals or 11.1 psia, you have the option of implementing Subpart WW controls (Ref. 63.1062) which includes:
- Internal floating roof tank (Ref. 63.1063 (a)(i)), or
  - External floating roof tank (Ref (63.1063 (a)(ii))
  - "Equivalent requirements" as specified in 63.1064. Requiring written request that explains why the alternative controls HAPs as well as a floating roof tank.
- C. No controls are required during periods of planned routine maintenance (Ref. 93.2470(d)):
- Duration is limited to 240 hr/yr
  - You may request an extension for up to 360 hr/yr.

## MON Transfer Racks

- Outline:
  1. Things that are not "Transfer Racks"
  2. Definition of a "Transfer Rack"
  3. Define:
    - Group 1
    - Group 2
  4. Group 1 "Transfer Rack" Controls

## Things that are NOT MON Transfer Racks

- Racks used solely to unload, tank trucks and rail cars. (Related emissions from unloading are captured by the storage tank standards.)
- Transfer Racks that contain no organic HAPs.
  - Note – There are no exclusions for impurities as there is for storage tanks. You can, however, properly exclude trace HAPs via the 1.5 psia HAP partial pressure criteria in the "Group1 Transfer Rack" definition. (See Slide 12)

## MON Transfer Racks

- Definition of "Transfer Rack":
  - Collection of loading arms and hoses, at a single loading rack.
  - Assigned to an MCPU (pursuant to 63.2435(d))
  - Used to fill tank trucks and/or rail cars with organic liquids that contain one or more organic HAP(s).
  - Each rack includes its associated: pumps, meters, shut-off valves, relief valves, and other piping & valves.

## Is my Rack, Group 1 or Group2?

- Group 1 if:
  1. Loads >0.64 million liters/year (171,711.8 gal/yr) of liquids that contain organic HAP
  2. With a "rack-weighted average partial pressure" (ref. 63.111) ≥1.5 psia. (Uses the: "throughput weighted average of the average maximum true vapor pressure of liquids containing organic HAP.)
- Group 2 if: — Not a "Group1 Transfer Rack"

## MON Transfer Rack Control Options

(Ref. 63.2475 & Table 5 of Subpart FFFF)

1. Group 1 HAP Transfer Racks:
  - A. Closed-vent system and any control device(s) (except for a flare)
    - Reduce organic HAP by  $\geq 98\%$  by weight or
    - Outlet organic HAP concentration or TOC to  $\leq 20$  ppmv
  - B. Use a flare that complies with Subpart A, 63.11(b) and Subpart SS except for 63.2470(c) exception. (Ref. 63.2450(e)).
  - C. Vent to a Fuel Gas System or process, pursuant to Subpart SS, i.e., 63.982(d) & 63.984 & recordkeeping & reporting in 63.998 & 63.999.
    - *Also note, "high throughput transfer rack" definition in Subpart SS, is synonymous with "Group 1 Transfer Rack" in the MON.*
  - D. Use vapor balancing to collect & route HAP vapors to a storage tank.

## MON Transfer Rack Control Options (cont'd)

(Ref. 63.2475 & Table 5 of Subpart FFFF)

2. Halogenated Group 1 Transfer Racks, using combustion devices for HAP control:
  - A. Use halogen reduction devices after the combustion device(s) that:
    - Reduces hydrogen halide & halogen HAP by 99% or
    - Outlet to  $\leq 20$  ppmv, or
  - B. Use halogen controls before the combustion device(s) to reduce emissions of hydrogen halide & halogen HAP to  $\leq 20$  ppmv.
    - *Note – Control standards for halogenated HAPs from transfer racks are similar to the vent standards.*