Table 1 to Subpart Ja of Part 60—
Molar Exhaust Volumes and
Molar Heat Content of Fuel Gas
Constituents

<table>
<thead>
<tr>
<th>Constituent</th>
<th>MEV^a</th>
<th>MHC^b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane (CH₄)</td>
<td>7.29</td>
<td>842</td>
</tr>
<tr>
<td>Ethane (C₂H₆)</td>
<td>12.96</td>
<td>1,475</td>
</tr>
<tr>
<td>Hydrogen (H₂)</td>
<td>1.61</td>
<td>269</td>
</tr>
<tr>
<td>Ethene (C₂H₄)</td>
<td>11.34</td>
<td>1,335</td>
</tr>
<tr>
<td>Propane (C₃H₈)</td>
<td>18.62</td>
<td>2,100</td>
</tr>
<tr>
<td>Propene (C₃H₆)</td>
<td>17.02</td>
<td>1,947</td>
</tr>
<tr>
<td>Butane (C₄H₁₀)</td>
<td>24.30</td>
<td>2,717</td>
</tr>
<tr>
<td>Butene (C₄H₈)</td>
<td>22.69</td>
<td>2,558</td>
</tr>
<tr>
<td>Inerts</td>
<td>0.85</td>
<td>0</td>
</tr>
</tbody>
</table>

^a MEV = molar exhaust volume, dry standard cubic feet per gram-mole (dscf/g-mol) at standard conditions of 68 °F and 1 atmosphere.

^b MHC = molar heat content (higher heating value basis), Btu per gram-mole (Btu/g-mol).

§ 60.111 Definitions.

(a) Storage vessel means any tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(1) Pressure vessels which are designed to operate in excess of 15 pounds per square inch gauge without emissions to the atmosphere except under emergency conditions,

(2) Subsurface caverns or porous rock reservoirs, or

(3) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(b) Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Nos. 2 through 6 fuel oils as specified in ASTM D396-78, 89, 90, 92, 96, or 98, gas turbine fuel oils Nos. 2–GT through 4–GT as specified in ASTM D2880-78 or 96, or diesel fuel oils Nos. 2–D and 4–D as specified in ASTM D975-78, 96, or 98a. (These three methods are incorporated by reference—see §60.17.)

(c) Petroleum refinery means each facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, extracting, or reforming of unfinished petroleum derivatives.

(d) Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(e) Hydrocarbon means any organic compound consisting predominantly of carbon and hydrogen.

(f) Condensate means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(g) Custody transfer means the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.
Drilling and production facility means all drilling and servicing equipment, wells, flow lines, separators, equipment, gathering lines, and auxiliary nontransportation-related equipment used in the production of petroleum but does not include natural gasoline plants.


Floating roof means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the petroleum liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

Vapor recovery system means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

Reid vapor pressure is the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids, except liquefied petroleum gases, as determined by ASTM D323–82 or 94 (incorporated by reference—see § 60.17).

Monitoring of operations.

(a) Except as provided in paragraph (d) of this section, the owner or operator subject to this subpart shall maintain a record of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period.

(b) Available data on the typical Reid vapor pressure and the maximum expected storage temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(c) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa (2.0 psia) or whose physical properties preclude determination by the recommended method is to be determined from available data and recorded if the estimated true vapor pressure is greater than 6.9 kPa (1.0 psia).

(d) The following are exempt from the requirements of this section:

(1) Each owner or operator of each affected facility which stores petroleum liquids with a Reid vapor pressure of less than 6.9 kPa (1.0 psia) provided the maximum true vapor pressure does not exceed 6.9 kPa (1.0 psia).

(2) Each owner or operator of each affected facility equipped with a vapor recovery and return or disposal system in accordance with the requirements of § 60.112.

Standard for volatile organic compounds (VOC).

(a) The owner or operator of any storage vessel to which this subpart applies shall store petroleum liquids as follows:

(1) If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 78 mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(2) If the true vapor pressure of the petroleum liquid as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.