Petrochemical Production Monitoring Checklist

What Must Be Monitored for Each Petrochemical Production Process Unit?

If using a CEMS…
In addition to the monitoring requirements under 40 CFR subpart C for the Tier 3 (for CH4 and N2O emissions) and Tier 4 Calculation Methodologies (for CO2) and the requirements under 40 CFR subpart Y for flares, measure these parameters…

☐ Annual quantity of each type of petrochemical (as defined in rule) produced from each process unit (metric tons)

If NOT using a CEMS…
Measure the applicable parameters monthly (unless otherwise noted) from the list below…

☐ Volume of each gaseous feedstock (standard cubic feet [scf])

☐ Either of the following:
  - Carbon content of each gaseous feedstock (kilograms [kg] carbon [C] per kg of feedstock) and molecular weight of each gaseous feedstock (kg/kg-mole), or
  - Concentrations of each carbon-containing compound in each gaseous feedstock (kg-mole of component per kg-mole of feedstock)

☐ Volume or mass of each liquid feedstock (gallons or kg)

☐ Either of the following:
  - Carbon content of each liquid

☐ Volume of each gaseous product (scf)

☐ Either of the following:
  - Carbon content of each gaseous product, including streams containing CO2 recovered for sale or use in another process (kg C per kg of product) and molecular weight of gaseous product (kg/kg-mole), or
  - Concentrations of each carbon-containing compound in each gaseous product (kg-mole of component per kg-mole of product)

☐ Volume or mass of each liquid product (gallons or kg)

☐ Either of the following:
  - Carbon content of each liquid product
feedstock (kg C per gallon or
gallop or kg of feedstock), or
- Concentrations of each carbon-
containing compound in each
liquid feedstock (kg-
mole/gallon)

☐ Mass of each solid feedstock (kg)

☐ Carbon content of each solid feedstock
(kg C per kg of feedstock)

☐ Annual quantity of each type of
petrochemical produced from each
process unit (metric tons)

☐ Mass of each solid product (kg)

☐ Carbon content of each solid product
(kg C per kg of product)

If you comply with the alternative to sampling and carbon content analysis for a
feedstock or product that is greater than 99.5 percent by volume or mass of a single
compound, monthly carbon content measurements are not necessary for that
particular feedstock or product, but the following must be measured or determined:

☐ The amount of time, and start and end
times, that off-specification product was
produced

☐ If applicable, the date of any process
change that reduced the composition to
less than 99.5 percent

☐ Calculated carbon content of the off-
specification product

☐ Monthly volume or mass of feedstock or
product (scf, gallon, or kg)

If using the optional combustion methodology for ethylene production processes:
In addition to the monitoring requirements under 40 CFR subpart C for the Tier 3
and 4 Calculation Methodologies and under 40 CFR subpart Y for flares, measure
these parameters…

☐ Annual quantity of ethylene produced
from each ethylene process unit (metric
tons)

☐ Annual quantity of each feedstock used
(metric tons)

See also the information sheet for Petrochemical Production (EPA-430-F-09-023R) at:

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