

PROPOSED MACT FOR
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES
40 CFR 63 SUBPART ZZZZ

Proposed MACT Subpart ZZZZ would regulate HAP emissions from stationary reciprocating internal combustion engines (RICE) that are located at plant sites such as power plants, chemical and manufacturing plants, and pipeline compressor stations that are major sources of HAPs.

The proposed rule either sets limits on the amount of air pollution or requires that certain controls be used with a specified standard of performance.

Regulated Pollutants

- Formaldehyde
- CO (as a surrogate to organic HAP)

Affected Sources

- New or reconstructed stationary RICE > 500 bhp
- Existing spark ignition 4 stroke rich burn (4SRB) stationary RICE > 500 bhp

Exclusions

Sources specifically excluded from ZZZZ are:

- Stationary RICE with a name plate rating of 500 bhp or less
- Existing stationary RICE that are not spark ignition 4SRB
- New or reconstructed emergency stationary RICE (initial notification only)
- New or reconstructed limited use (50 hrs or less per year) stationary RICE (initial notification only)
- New or reconstructed stationary RICE that use landfill gas or digester gas as its primary fuel (initial notification only)

Compliance Dates

- New/Reconstructed RICE: date of promulgation or date of startup, whichever is later
- Existing 4SRB: 3 years after promulgation

Control Options/Requirements

- New or reconstructed spark ignition 2 stroke lean burn (2SLB) or 4 stroke lean burn (4SLB), or compression ignition (CI) RICE - Install oxidative catalyst to control carbon monoxide; **or** install controls to meet a specific formaldehyde concentration in the exhaust stack.

- New or reconstructed or existing spark ignition 4 stroke rich burn - install Non Selective Catalytic Reduction (NSCR) system to achieve 75% reduction of formaldehyde; **or** install controls to meet a specific formaldehyde concentration in the exhaust stack as listed below.

Monitoring and Testing

Testing and monitoring to ensure continuous compliance with the emission limitations are required by the proposed standard.

Initial Compliance

New/Reconstructed 2SLB, 4SLB, CI RICE - An initial performance test must be conducted to demonstrate Initial compliance with the CO emission limit.

4SRB - If using NSCR, conduct initial performance test to demonstrate 75% reduction of formaldehyde.

RICE choosing to limit the concentration of formaldehyde in the exhaust must conduct an initial performance test to demonstrate compliance; install continuous monitors for load or fuel flow rate; and petition the Administrator for approval of additional operating limitations or approval of no additional operating limitations.

Continuous Compliance

New/Reconstructed 2SLB or 4SLB RICE - To show compliance with the CO emission reductions, RICE < 5000 bhp must continuously monitor pressure drop across the catalyst and catalyst inlet temperature. RICE 5000 bhp or greater must continuously monitor the CO concentration and either the CO₂ or O₂ concentration simultaneously at the inlet and outlet of the oxidation catalyst emission control device and calculate the percent reduction of CO emission hourly. The reduction in CO emissions must meet the required reduction or more based on a rolling 4-hour average, averaged every hour. You must conduct annual RATA as well as daily and periodic quality checks.

4SRB RICE - If using NSCR, continuously monitor the pressure drop across the catalyst, the catalyst inlet temperature, and the temperature rise across the catalyst, and calculate 4-hour rolling averages. 4SRB RICE greater than or equal to 5000 bhp must also conduct semiannual performance tests.

RICE choosing to limit the concentration of formaldehyde in the exhaust must maintain all monitoring equipment, conduct all monitoring in continuous operation, continuously monitor and record load or fuel flow rate and any other operating limitation parameters approved by the Administrator. In addition, semiannual performance tests are required.

**PROPOSED EMISSION LIMITATIONS
FOR STATIONARY RICE
UNDER MACT ZZZZ**

Any RICE less than 500 bhp	no emission limitations
Existing 2SLB, 4SLB, CI RICE	no emission limitations
Any Emergency RICE	no emission limitations
Any Limited use RICE	no emission limitations
Any Landfill/digester RICE	no emission limitations
Existing/New/Reconstructed 4SRB RICE	Formaldehyde: 75% reduction using NSCR; or 350 ppbvd @15% O ₂
New/Reconstructed 2SLB RICE	CO: 60% reduction using an oxidation catalyst; or Formaldehyde: 17 ppmvd @ 15% O ₂
New/Reconstructed 4SLB RICE	CO: 93% reduction using an oxidation catalyst; or Formaldehyde: 14 ppmvd @ 15% O ₂
New/Reconstructed CI RICE	CO: 70% reduction reduction using an oxidation catalyst; or Formaldehyde: 580 ppbvd @15% O ₂