

SUBCHAPTER C—AIR PROGRAMS (CONTINUED)

PART 86—CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGH-WAY VEHICLES AND ENGINES

Sec.

86.1 Reference materials.

Subpart A—General Provisions for Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, Light-Duty Trucks and Heavy-Duty Engines, and for 1985 and Later Model Year New Gasoline Fueled, Natural Gas-Fueled, Liquefied Petroleum Gas-Fueled and Methanol-Fueled Heavy-Duty Vehicles

86.000-2 Definitions.

86.000-3 Abbreviations.

86.000-7 Maintenance of records; submittal of information; right of entry.

86.000-8 Emission standards for 2000 and later model year light-duty vehicles.

86.000-9 Emission standards for 2000 and later model year light-duty trucks.

86.000-15 NO_x and particulate averaging, trading, and banking for heavy-duty engines.

86.000-16 Prohibition of defeat devices.

86.000-21 Application for certification.

86.000-23 Required data.

86.000-24 Test vehicles and engines.

86.000-25 Maintenance.

86.000-26 Mileage and service accumulation; emission measurements.

86.000-28 Compliance with emission standards.

86.001-1 General applicability.

86.001-2 Definitions.

86.001-9 Emission standards for 2001 and later model year light-duty trucks.

86.001-21 Application for certification.

86.001-22 Approval of application for certification; test fleet selections; determinations of parameters subject to adjustment for certification and Selective Enforcement Audit, adequacy of limits, and physically adjustable ranges.

86.001-23 Required data.

86.001-24 Test vehicles and engines.

86.001-25 Maintenance.

86.001-26 Mileage and service accumulation; emission measurements.

86.001-28 Compliance with emission standards.

86.001-30 Certification.

86.001-35 Labeling.

86.004-2 Definitions.

86.004-9 Emission standards for 2004 and later model year light-duty trucks.

86.004-11 Emission standards for 2004 and later model year diesel heavy-duty engines and vehicles.

86.004-15 NO_x plus NMHC and particulate averaging, trading, and banking for heavy-duty engines.

86.004-16 Prohibition of defeat devices.

86.004-21 Application for certification.

86.004-25 Maintenance.

86.004-26 Mileage and service accumulation; emission measurements.

86.004-28 Compliance with emission standards.

86.004-30 Certification.

86.004-38 Maintenance instructions.

86.004-40 Heavy-duty engine rebuilding practices.

86.005-1 General applicability.

86.005-10 Emission standards for 2005 and later model year Otto-cycle heavy-duty engines and vehicles.

86.005-17 On-board diagnostics.

86.007-11 Emission standards and supplemental requirements for 2007 and later model year diesel heavy-duty engines and vehicles.

86.007-15 NO_x and particulate averaging, trading, and banking for heavy-duty engines.

86.007-21 Application for certification.

86.007-23 Required data.

86.007-25 Maintenance.

86.007-35 Labeling.

86.007-38 Maintenance instructions.

86.008-10 Emission standards for 2008 and later model year Otto-cycle heavy-duty engines and vehicles.

86.078-3 Abbreviations.

86.078-6 Hearings on certification.

86.079-31 Separate certification.

86.079-32 Addition of a vehicle or engine after certification.

86.079-33 Changes to a vehicle or engine covered by certification.

86.079-36 Submission of vehicle identification numbers.

86.079-39 Submission of maintenance instructions.

86.080-12 Alternative certification procedures.

86.082-2 Definitions.

86.082-34 Alternative procedure for notification of additions and changes.

86.084-2 Definitions.

86.084-4 Section numbering; construction.

86.084-40 Automatic expiration of reporting and recordkeeping requirements.

86.085-1 General applicability.

86.085-2 Definitions.

86.085-13 Alternative Durability Program.

86.085-20 Incomplete vehicles, classification.

86.085-37 Production vehicles and engines.

86.087-2 Definitions.

- 86.087-38 Maintenance instructions.
- 86.088-2 Definitions.
- 86.088-10 Emission standards for 1988 and 1989 model year gasoline-fueled heavy-duty engines and vehicles.
- 86.090-1 General applicability.
- 86.090-2 Definitions.
- 86.090-3 Abbreviations.
- 86.090-5 General standards; increase in emissions; unsafe conditions.
- 86.090-8 Emission standards for 1990 and later model year light-duty vehicles.
- 86.090-9 Emission standards for 1990 and later model year light-duty trucks.
- 86.090-14 Small-volume manufacturers certification procedures.
- 86.090-21 Application for certification.
- 86.090-22 Approval of application for certification; test fleet selections; determinations of parameters subject to adjustment for certification and Selective Enforcement Audit, adequacy of limits, and physically adjustable ranges.
- 86.090-24 Test vehicles and engines.
- 86.090-25 Maintenance.
- 86.090-26 Mileage and service accumulation; emission requirements.
- 86.090-27 Special test procedures.
- 86.091-2 Definitions.
- 86.091-7 Maintenance of records; submittal of information; right of entry.
- 86.091-9 Emission standards for 1991 and later model year light-duty trucks.
- 86.091-10 Emission standards for 1991 and later model year Otto-cycle heavy-duty engines and vehicles.
- 86.091-11 Emission standards for 1991 and later model year diesel heavy-duty engines.
- 86.091-15 NO_x and particulate averaging, trading, and banking for heavy-duty engines.
- 86.091-21 Application for certification.
- 86.091-23 Required data.
- 86.091-28 Compliance with emission standards.
- 86.091-29 Testing by the Administrator.
- 86.091-30 Certification.
- 86.091-35 Labeling.
- 86.092-1 General applicability.
- 86.092-2 Definitions.
- 86.092-14 Small-volume manufacturers certification procedures.
- 86.092-15 NO_x and particulate averaging, trading, and banking for heavy-duty engines.
- 86.092-23 Required data.
- 86.092-24 Test vehicles and engines.
- 86.092-26 Mileage and service accumulation; emission measurements.
- 86.092-35 Labeling.
- 86.093-2 Definitions.
- 86.093-11 Emission standards for 1993 and later model year diesel heavy-duty engines.
- 86.093-35 Labeling.
- 86.094-1 General applicability.
- 86.094-2 Definitions.
- 86.094-3 Abbreviations.
- 86.094-7 Maintenance of records; submittal of information; right of entry.
- 86.094-8 Emission standards for 1994 and later model year light-duty vehicles.
- 86.094-9 Emission standards for 1994 and later model year light-duty trucks.
- 86.094-11 Emission standards for 1994 and later model year diesel heavy-duty engines and vehicles.
- 86.094-13 Light-duty exhaust durability programs.
- 86.094-14 Small-volume manufacturers certification procedures.
- 86.094-15 NO_x and particulate averaging, trading, and banking for heavy-duty engines.
- 86.094-16 Prohibition of defeat devices.
- 86.094-17 Emission control diagnostic system for 1994 and later light-duty vehicles and light-duty trucks.
- 86.094-21 Application for certification.
- 86.094-22 Approval of application for certification; test fleet selections; determinations of parameters subject to adjustment for certification and Selective Enforcement Audit, adequacy of limits, and physically adjustable ranges.
- 86.094-23 Required data.
- 86.094-24 Test vehicles and engines.
- 86.094-25 Maintenance.
- 86.094-26 Mileage and service accumulation; emission requirements.
- 86.094-28 Compliance with emission standards.
- 86.094-30 Certification.
- 86.094-35 Labeling.
- 86.094-38 Maintenance instructions.
- 86.095-14 Small-volume manufacturers certification procedures.
- 86.095-23 Required data.
- 86.095-24 Test vehicles and engines.
- 86.095-26 Mileage and service accumulation; emission measurements.
- 86.095-30 Certification.
- 86.095-35 Labeling.
- 86.096-2 Definitions.
- 86.096-3 Abbreviations.
- 86.096-7 Maintenance of records; submittal of information; right of entry.
- 86.096-8 Emission standards for 1996 and later model year light-duty vehicles.
- 86.096-9 Emission standards for 1996 and later model year light-duty trucks.
- 86.096-10 Emission standards for 1996 and later model year Otto-cycle heavy-duty engines and vehicles.
- 86.096-11 Emission standards for 1996 and later model year diesel heavy-duty engines and vehicles.
- 86.096-14 Small-volume manufacturer certification procedures.
- 86.096-21 Application for certification.
- 86.096-23 Required data.
- 86.096-24 Test vehicles and engines.

- 86.096-26 Mileage and service accumulation; emission measurements.
 - 86.096-30 Certification.
 - 86.096-35 Labeling.
 - 86.096-38 Maintenance instructions.
 - 86.097-9 Emission standards for 1997 and later model year light-duty trucks.
 - 86.098-2 Definitions.
 - 86.098-3 Abbreviations.
 - 86.098-7 Maintenance of records; submittal of information; right of entry.
 - 86.098-8 Emission standards for 1998 and later model year light-duty vehicles.
 - 86.098-10 Emission standards for 1998 and later model year Otto-cycle heavy-duty engines and vehicles.
 - 86.098-11 Emission standards for 1998 and later model year diesel heavy-duty engines and vehicles.
 - 86.098-14 Small-volume manufacturers certification procedures.
 - 86.098-15 NO_x and particulate averaging, trading, and banking for heavy-duty engines.
 - 86.098-17 Emission control diagnostic system for 1998 and later light-duty vehicles and light-duty trucks.
 - 86.098-21 Application for certification.
 - 86.098-22 Approval of application for certification; test fleet selections; determinations of parameters subject to adjustment for certification and Selective Enforcement Audit, adequacy of limits, and physically adjustable ranges.
 - 86.098-23 Required data.
 - 86.098-24 Test vehicles and engines.
 - 86.098-25 Maintenance.
 - 86.098-26 Mileage and service accumulation; emission measurements.
 - 86.098-28 Compliance with emission standards.
 - 86.098-30 Certification.
 - 86.098-35 Labeling.
 - 86.099-1 General applicability.
 - 86.099-8 Emission standards for 1999 and later model year light-duty vehicles.
 - 86.099-9 Emission standards for 1999 and later model year light-duty trucks.
 - 86.099-10 Emission standards for 1999 and later model year Otto-cycle heavy-duty engines and vehicles.
 - 86.099-11 Emission standards for 1999 and later model year diesel heavy-duty engines and vehicles.
 - 86.099-17 Emission control diagnostic system for 1999 and later light-duty vehicles and light-duty trucks.
 - 86.099-30 Certification.
- Subpart B—Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles and New Light-Duty Trucks and New Otto-Cycle Complete Heavy-Duty Vehicles; Test Procedures**
- 86.101 General applicability.
 - 86.102 Definitions.
 - 86.103 Abbreviations.
 - 86.104 Section numbering; construction.
 - 86.105 Introduction; structure of subpart.
 - 86.106-00 Equipment required; overview.
 - 86.106-90 Equipment required; overview.
 - 86.106-94 Equipment required; overview.
 - 86.106-96 Equipment required; overview.
 - 86.107-90 Sampling and analytical system; evaporative emissions.
 - 86.107-96 Sampling and analytical systems; evaporative emissions.
 - 86.107-98 Sampling and analytical system.
 - 86.108-00 Dynamometer.
 - 86.108-79 Dynamometer.
 - 86.109-90 Exhaust gas sampling system; Otto-cycle vehicles.
 - 86.109-94 Exhaust gas sampling system; Otto-cycle vehicles not requiring particulate emission measurements.
 - 86.110-90 Exhaust gas sampling system; diesel vehicles.
 - 86.110-94 Exhaust gas sampling system; diesel-cycle vehicles, and Otto-cycle vehicles requiring particulate emissions measurements.
 - 86.111-90 Exhaust gas analytical system.
 - 86.111-94 Exhaust gas analytical system.
 - 86.112-91 Weighing chamber (or room) and microgram balance specifications.
 - 86.113-04 Fuel specifications.
 - 86.113-07 Fuel specifications.
 - 86.113-91 Fuel specifications.
 - 86.113-94 Fuel specifications.
 - 86.114-79 Analytical gases.
 - 86.114-94 Analytical gases.
 - 86.115-00 EPA urban dynamometer driving schedules.
 - 86.115-78 EPA urban dynamometer driving schedule.
 - 86.116-90 Calibrations, frequency and overview.
 - 86.116-94 Calibrations, frequency and overview.
 - 86.117-90 Evaporative emission enclosure calibrations.
 - 86.117-96 Evaporative emission enclosure calibrations.
 - 86.118-00 Dynamometer calibrations.
 - 86.118-78 Dynamometer calibration.
 - 86.119-90 CVS calibration.
 - 86.120-82 Gas meter or flow instrumentation calibration; particulate measurement.
 - 86.120-94 Gas meter or flow instrumentation calibration; particulate, methanol and formaldehyde measurement.
 - 86.121-82 Hydrocarbon analyzer calibration.
 - 86.121-90 Hydrocarbon analyzer calibration.
 - 86.122-78 Carbon monoxide analyzer calibration.
 - 86.123-78 Oxides of nitrogen analyzer calibration.
 - 86.124-78 Carbon dioxide analyzer calibration.
 - 86.125-94 Methane analyzer calibration.
 - 86.126-90 Calibration of other equipment.
 - 86.127-00 Test procedures; overview.
 - 86.127-90 Test procedures; overview.

- 86.127-94 Test procedures; overview.
 86.127-96 Test procedures; overview.
 86.128-00 Transmissions.
 86.128-79 Transmissions.
 86.129-00 Road load power, test weight, and inertia weight class determination.
 86.129-80 Road load power, test weight, and inertia weight class determination.
 86.129-94 Road load power, test weight, inertia weight class determination, and fuel temperature profile.
 86.130-00 Test sequence; general requirements.
 86.130-78 Test sequence; general requirements.
 86.130-96 Test sequence; general requirements.
 86.131-00 Vehicle preparation.
 86.131-90 Vehicle preparation.
 86.131-96 Vehicle preparation.
 86.132-00 Vehicle preconditioning.
 86.132-90 Vehicle preconditioning.
 86.132-96 Vehicle preconditioning.
 86.133-90 Diurnal breathing loss test.
 86.133-96 Diurnal emission test.
 86.134-96 Running loss test.
 86.135-00 Dynamometer procedure.
 86.135-90 Dynamometer procedure.
 86.135-94 Dynamometer procedure.
 86.136-90 Engine starting and restarting.
 86.137-90 Dynamometer test run, gaseous and particulate emissions.
 86.137-94 Dynamometer test run, gaseous and particulate emissions.
 86.137-96 Dynamometer test run, gaseous and particulate emissions.
 86.138-90 Hot-soak test.
 86.138-96 Hot soak test.
 86.139-90 Particulate filter handling and weighing.
 86.140-82 Exhaust sample analysis.
 86.140-90 Exhaust sample analysis.
 86.140-94 Exhaust sample analysis.
 86.142-90 Records required.
 86.143-90 Calculations; evaporative emissions.
 86.143-96 Calculations; evaporative emissions.
 86.144-90 Calculations; exhaust emissions.
 86.144-94 Calculations; exhaust emissions.
 86.145-82 Calculations; particulate emissions.
 86.146-96 Fuel dispensing spitback procedure.
 86.150-98 Refueling test procedure; overview.
 86.151-98 General requirements; refueling test.
 86.152-98 Vehicle preparation; refueling test.
 86.153-98 Vehicle and canister preconditioning; refueling test.
 86.154-98 Measurement procedure; refueling test.
 86.155-98 Records required; refueling test.
 86.156-98 Calculations; refueling test.
 86.157-98 Refueling test procedures for liquefied petroleum gas-fueled vehicles.
 86.158-00 Supplemental Federal Test Procedures; overview.
 86.159-00 Exhaust emission test procedures for US06 emissions.
 86.160-00 Exhaust emission test procedure for SC03 emissions.
 86.161-00 Air conditioning environmental test facility ambient requirements.
 86.162-00 Approval of alternative air conditioning test simulations and descriptions of AC1 and AC2.
 86.162-03 Approval of alternative air conditioning test simulations.
 86.163-00 Spot check correlation procedures for vehicles tested using a simulation of the environmental test cell for air conditioning emission testing.
 86.164-00 Supplemental Federal Test Procedure calculations.
- Subpart C—Emission Regulations for 1994 and Later Model Year Gasoline-Fueled New Light-Duty Vehicles, New Light-Duty Trucks and New Medium-Duty Passenger Vehicles; Cold Temperature Test Procedures**
- 86.201-94 General applicability.
 86.202-94 Definitions.
 86.203-94 Abbreviations.
 86.204-94 Section numbering; construction.
 86.205-94 Introduction; structure of this subpart.
 86.206-94 Equipment required; overview.
 86.207-94 [Reserved]
 86.208-94 Dynamometer.
 86.209-94 Exhaust gas sampling system; gasoline-fueled vehicles.
 86.210-94 [Reserved]
 86.211-94 Exhaust gas analytical system.
 86.212-94 [Reserved]
 86.213-04 Fuel specifications.
 86.213-94 Fuel specifications.
 86.214-94 Analytical gases.
 86.215-94 EPA urban dynamometer driving schedule.
 86.216-94 Calibrations, frequency and overview.
 86.217-94 [Reserved]
 86.218-94 Dynamometer calibration.
 86.219-94 CVS calibration.
 86.220-94 [Reserved]
 86.221-94 Hydrocarbon analyzer calibration.
 86.222-94 Carbon monoxide analyzer calibration.
 86.223-94 Oxides of nitrogen analyzer calibration.
 86.224-94 Carbon dioxide analyzer calibration.
 86.225-94 [Reserved]
 86.226-94 Calibration of other equipment.
 86.227-94 Test procedures; overview.
 86.228-94 Transmissions.
 86.229-94 Road load force, test weight, and inertia weight class determination.
 86.230-94 Test sequence; general requirements.

86.231-94 Vehicle preparation.
 86.232-94 Vehicle preconditioning.
 86.233-94—86.234-94 [Reserved]
 86.235-94 Dynamometer procedure.
 86.236-94 Engine starting and restarting.
 86.237-94 Dynamometer test run, gaseous emissions.
 86.238-94—86.239-94 [Reserved]
 86.240-94 Exhaust sample analysis.
 86.241-94 [Reserved]
 86.242-94 Records required.
 86.243-94 [Reserved]
 86.244-94 Calculations; exhaust emissions.
 86.245-94 [Reserved]
 86.246-94 Intermediate temperature testing.

Subpart D—Emission Regulations for New Gasoline-Fueled and Diesel-Fueled Heavy-Duty Engines; Gaseous Exhaust Test Procedures

86.301-79 Scope; applicability.
 86.302-79 Definitions.
 86.303-79 Abbreviations.
 86.304-79 Section numbering; construction.
 86.305-79 Introduction; structure of subpart.
 86.306-79 Equipment required and specifications; overview.
 86.307-82 Fuel specifications.
 86.308-79 Gas specifications.
 86.309-79 Sampling and analytical system; schematic drawing.
 86.310-79 Sampling and analytical system; component specifications.
 86.311-79 Miscellaneous equipment; specifications.
 86.312-79 Dynamometer and engine equipment specifications.
 86.313-79 Air flow measurement specifications; diesel engines.
 86.314-79 Fuel flow measurement specifications.
 86.315-79 General analyzer specifications.
 86.316-79 Carbon monoxide and carbon dioxide analyzer specifications.
 86.317-79 Hydrocarbon analyzer specifications.
 86.318-79 Oxides of nitrogen analyzer specifications.
 86.319-79 Analyzer checks and calibrations; frequency and overview.
 86.320-79 Analyzer bench check.
 86.321-79 NDIR water rejection ratio check.
 86.322-79 NDIR CO₂ rejection ratio check.
 86.327-79 Quench check; NO_x analyzer.
 86.328-79 Leak checks.
 86.329-79 System response time; check procedure.
 86.330-79 NDIR analyzer calibration.
 86.331-79 Hydrocarbon analyzer calibration.
 86.332-79 Oxides of nitrogen analyzer calibration.
 86.333-79 Dynamometer calibration.
 86.334-79 Test procedure overview.
 86.335-79 Gasoline-fueled engine test cycle.
 86.336-79 Diesel engine test cycle.
 86.337-79 Information.

86.338-79 Exhaust measurement accuracy.
 86.339-79 Pre-test procedures.
 86.340-79 Gasoline-fueled engine dynamometer test run.
 86.341-79 Diesel engine dynamometer test run.
 86.342-79 Post-test procedures.
 86.343-79 Chart reading.
 86.344-79 Humidity calculations.
 86.345-79 Emission calculations.
 86.346-79 Alternative NO_x measurement technique.
 86.347-79 Alternative calculations for diesel engines.
 86.348-79 Alternative to fuel H/C analysis.

Subpart E—Emission Regulations for 1978 and Later New Motorcycles, General Provisions

86.401-90 General applicability.
 86.401-97 General applicability.
 86.401-2006 General applicability.
 86.402-78 Definitions.
 86.402-98 Definitions.
 86.403-78 Abbreviations.
 86.404-78 Section numbering.
 86.405-78 Measurement system.
 86.406-78 Introduction, structure of subpart, further information.
 86.407-78 Certificate of conformity required.
 86.408-78 General standards; increase in emissions; unsafe conditions.
 86.409-78 Defeat devices, prohibition.
 86.410-80 Emission standards for 1980 and later model year motorcycles.
 86.410-90 Emission standards for 1990 and later model year motorcycles.
 86.410-2006 Emission standards for 2006 and later model year motorcycles.
 86.411-78 Maintenance instructions, vehicle purchaser.
 86.412-78 Maintenance instructions, submission to Administrator.
 86.413-78 Labeling.
 86.414-78 Submission of vehicle identification number.
 86.415-78 Production vehicles.
 86.416-80 Application for certification.
 86.417-78 Approval of application for certification.
 86.418-78 Test fleet selection.
 86.419-78 Engine displacement, motorcycle classes.
 86.419-2006 Engine displacement, motorcycle classes.
 86.420-78 Engine families.
 86.421-78 Test fleet.
 86.422-78 Administrator's fleet.
 86.423-78 Test vehicles.
 86.425-78 Test procedures.
 86.426-78 Service accumulation.
 86.427-78 Emission tests.
 86.428-80 Maintenance, scheduled; test vehicles.
 86.429-78 Maintenance, unscheduled; test vehicles.

§ 86.1

- 86.430-78 Vehicle failure.
- 86.431-78 Data submission.
- 86.432-78 Deterioration factor.
- 86.434-78 Testing by the Administrator.
- 86.435-78 Extrapolated emission values.
- 86.436-78 Additional service accumulation.
- 86.437-78 Certification.
- 86.438-78 Amendments to the application.
- 86.439-78 Alternative procedure for notification of additions and changes.
- 86.440-78 Maintenance of records.
- 86.441-78 Right of entry.
- 86.442-78 Denial, revocation, or suspension of certification.
- 86.443-78 Request for hearing.
- 86.444-78 Hearings on certification.
- 86.445-2006 What temporary provisions address hardship due to unusual circumstances?
- 86.446-2006 What are the provisions for extending compliance deadlines for small-volume manufacturers under hardship?
- 86.447-2006 What are the provisions for exempting motorcycles under 50 cc from the requirements of this part if they use engines certified under other programs?
- 86.448-2006 What are the provisions for producing motorcycles under 50 cc with engines already certified under other programs?
- 86.449 Averaging provisions.

Subpart F—Emission Regulations for 1978 and Later New Motorcycles, Test Procedures

- 86.501-78 Applicability.
- 86.502-78 Definitions.
- 86.503-78 Abbreviations.
- 86.504-78 Section numbering.
- 86.505-78 Introduction; structure of subpart.
- 86.505-2004 Introduction; structure of subpart.
- 86.508-78 Dynamometer.
- 86.509-90 Exhaust gas sampling system.
- 86.511-90 Exhaust gas analytical system.
- 86.513-87 Fuel and engine lubricant specifications.
- 86.513-90 Fuel and engine lubricant specifications.
- 86.513-94 Fuel and engine lubricant specifications.
- 86.513-2004 Fuel and engine lubricant specifications.
- 86.514-78 Analytical gases.
- 86.515-78 EPA urban dynamometer driving schedule.
- 86.516-90 Calibrations, frequency and overview.
- 86.518-78 Dynamometer calibration.
- 86.519-78 Constant volume sampler calibration.
- 86.519-90 Constant volume sampler calibration.
- 86.521-90 Hydrocarbon analyzer calibration.
- 86.522-78 Carbon monoxide analyzer calibration.

40 CFR Ch. I (7-1-04 Edition)

- 86.523-78 Oxides of nitrogen analyzer calibration.
- 86.524-78 Carbon dioxide analyzer calibration.
- 86.526-90 Calibration of other equipment.
- 86.527-90 Test procedures, overview.
- 86.528-78 Transmissions.
- 86.529-78 Road load force and inertia weight determination.
- 86.529-98 Road load force and inertia weight determination.
- 86.530-78 Test sequence, general requirements.
- 86.531-78 Vehicle preparation.
- 86.532-78 Vehicle preconditioning.
- 86.535-90 Dynamometer procedure.
- 86.536-78 Engine starting and restarting.
- 86.537-90 Dynamometer test runs.
- 86.540-90 Exhaust sample analysis.
- 86.542-90 Records required.
- 86.544-90 Calculations; exhaust emissions.

AUTHORITY: 42 U.S.C. 7401-7671q.

EFFECTIVE DATE NOTE: The new information collection requirements for part 86 published in the FEDERAL REGISTER at 59 FR 16262, Apr. 6, 1994, which apply to 1998 and later model year vehicles, have not been approved by the Office of Management and Budget (OMB) and are not effective. The Environmental Protection Agency will publish a document once OMB approves the information collection requirements.

EDITORIAL NOTE: Nomenclature changes to part 86 appear at 60 FR 34377, June 30, 1995 and 69 FR 18803, Apr. 9, 2004.

§ 86.1 Reference materials.

(a) The documents in paragraph (b) of this section have been incorporated by reference. The incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at U.S. EPA, OAR, 401 M St., SW., Washington, DC 20460, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(b) The following paragraphs and tables set forth the material that has been incorporated by reference in this part.

(1) *ASTM material*. The following table sets forth material from the American Society for Testing and Materials that has been incorporated by reference. The first column lists the

Environmental Protection Agency

§ 86.1

number and name of the material. The second column lists the section(s) of this part, other than this section, in which the matter is referenced. Copies

of these materials may be obtained from American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

Document number and name	40 CFR part 86 reference
ASTM E29-67 (Reapproved 1980), Standard Recommended Practice for Indicating Which Places of Figures Are To Be Considered Significant in Specified Limiting Values.	86.1105-87.
ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications.	86.609-84; 86.609-96; 86.609-97; 86.609-98; 86.1009-84; 86.1009-96; 86.1442; 86.1708-99; 86.1709-99; 86.1710-99; 86.1728-99.
ASTM D5186-91, Standard Test Method for Determination of Aromatic Content of Diesel Fuels by Supercritical Fluid Chromatography.	86.113-07; 86.1313-91; 86.1313-94; 86.1313-98; 1313-2007.
ASTM D2163-91, Standard Test Method for Analysis of Liquefied Petroleum (LP) Gases and Propane Concentrates by Gas Chromatography.	86.113-94; 86.1213-94; 86.1313-94.
ASTM D1945-91, Standard Test Method for Analysis of Natural Gas By Gas Chromatography.	86.113-94; 86.513-94; 86.1213-94; 86.1313-94.
ASTM E29-93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications.	86.098-15; 86.004-15; 86.007-11; 86.007-15; 86.1803-01; 86.1823-01; 86.1824-01; 86.1825-01; 86.1837-01.
ASTM D2986-95a, (Reapproved 1999) Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test.	86.1310-2007.
ASTM F1471-93, Standard Test Method for Air Cleaning Performance of a High-Efficiency Particulate Air-Filter System.	86.1310-2007.

(2) *SAE material.* The following table sets forth material from the Society of Automotive Engineers that has been incorporated by reference. The first column lists the number and name of the material. The second column lists the section(s) of this part, other than § 86.1, in which the matter is referenced. The second column is presented for information only and may not be all inclusive. Copies of these materials may be obtained from Society of Automotive Engineers International, 400 Commonwealth Dr., Warrendale, PA, 15096-0001.

Document No. and name	40 CFR part 86 reference
SAE J1349, June 1990, Engine Power Test Code—Spark Ignition and Compression Ignition.	86.094-8; 86.096-8
SAE J1850 July 1995, Class B Data Communication Network Interface.	86.099-17; 86.1806-01
SAE J1877, July 1994 Recommended Practice for Bar-Coded Vehicle Identification Number Label.	86.095-35; 86.1806-01
SAE J1892 October 1993, Recommended Practice for Bar-Coded Vehicle Emission Configuration Label.	86.095-35; 86.1806-01
SAE J1939-11, December 1994, Physical Layer-250K bits/s, Shielded Twisted Pair.	86.005-17; 86.1806-05
SAE J1939-13, July 1999, Off-Board Diagnostic Connector.	86.005-17; 86.1806-05

Document No. and name	40 CFR part 86 reference
SAE J1939-21, July 1994, Data Link Layer.	86.005-17; 86.1806-05
SAE J1939-31, December 1997, Network Layer.	86.005-17; 86.1806-05
SAE J1939-71, May 1996, Vehicle Application Layer.	86.005-17; 86.1806-05
SAE J1939-73, February 1996, Application Layer-Diagnostics.	86.005-17; 86.1806-05
SAE J1939-81, July 1997, Recommended Practice for Serial Control and Communications Vehicle Network—Part 81—Network Management.	86.005-17; 86.1806-05
SAE J1962 January 1995, Diagnostic Connector.	86.099-17; 86.1806-01
SAE J1979 July 1996, E/E Diagnostic Test Modes.	86.099-17; 86.1806-01
SAE J2012 July 1996, Recommended Practice for Diagnostic Trouble Code Definitions.	86.099-17; 86.1806-01
SAE Recommended Practice J1151, December 1991, Methane Measurement Using Gas Chromatography, 1994 SAE Handbook—SAE International Cooperative Engineering Program, Volume 1: Materials, Fuels, Emissions, and Noise; Section 13 and page 170 (13.170).	86.111-94; 86.1311-94.
SAE Recommended Practice J1937, November 1989, Engine Testing with Low Temperature Charge Air Cooler Systems in a Dynamometer Test Cell.	86.1330-84; 86.1330-90.

§ 86.1

40 CFR Ch. I (7-1-04 Edition)

Document No. and name	40 CFR part 86 reference
SAE J1850, Class B Data Communication Network Interface. (Revised, May 2001).	86.005-17; 86.1806-04; 86.1806-05
SAE J1930, Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms—Equivalent to ISO/TR 15031-2: April 30, 2002. (Revised, April 2002).	86.005-17; 86.1806-04; 86.1806-05
SAE J1939-11, Physical Layer—250K bits/s, Shielded Twisted Pair. (Revised, October 1999).	86.005-17; 86.1806-04; 86.1806-05
SAE J1939-13, Off-Board Diagnostic Connector. (July 1999).	86.005-17; 86.1806-04; 86.1806-05
SAE J1939-21, Data Link Layer. (Revised, April 2001).	86.005-17; 86.1806-04; 86.1806-05
SAE J1939-31, Network Layer. (Revised, December 1997).	86.005-17; 86.1806-04; 86.1806-05
SAE J1939-71, Vehicle Application Layer—J1939-71 (through 1999). (Revised, August 2002).	86.005-17; 86.1806-04; 86.1806-05
SAE J1939-73, Application Layer-Diagnostics. (Revised, June 2001).	86.005-17; 86.1806-04; 86.1806-05
SAE J1939-81, Recommended Practice for Serial Control and Communications Vehicle Network Part 81—Network Management. (July 1997).	86.005-17; 86.1806-04; —86.1806-05
SAE J1962, Diagnostic Connector—Equivalent to ISO/DIS 15031-3:December 14, 2001. (Revised, April 2002).	86.005-17; 86.1806-04; 86.1806-05
SAE J1978, OBD II Scan Tool—Equivalent to ISO/DIS 15031-4; December 14, 2001. (Revised, April 2002).	86.005-17; 86.1806-04; 86.1806-05
SAE J1979, E/E Diagnostic Test Modes—Equivalent to ISO/DIS 15031-5: April 30, 2002. (Revised, April 2002).	86.099-17; 86.005-17; 86.1806-01; 86.1806-04; 86.1806-05
SAE J2012, Diagnostic Trouble Code Definitions—Equivalent to ISO/DIS 15031-6: April 30, 2002. (Revised, April 2002).	86.005-17; 86.1806-04; 86.1806-05
SAE Recommended Practice J1930 (Revised, May, 1998), Electrical/ Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms.	86.096-38; 86.004-38; 86.007-38; 86.1808-01; 86.1808-07.
SAE Recommended Practice J1979 (Revised, September, 1997), E/E Diagnostic Test Modes.	86.096-38; 86.004-38; 86.007-38; 86.1808-01; 86.1808-07.
SAE Recommended Practice J2284-3 (May, 2001), High Speed CAN (HSC) for Vehicle Applications at 500 KBPS.	86.096-38; 86.004-38; 86.007-38; 86.1808-01; 86.1808-07.

Document No. and name	40 CFR part 86 reference
SAE Recommended Practice J2534 (February, 2002), Recommended Practice for Pass-Thru Vehicle Programming.	86.096-38; 86.004-38; 86.007-38; 86.1808-01; 86.1808-07.

(3) *ANSI material.* The following table sets forth material from the American National Standards Institute that has been incorporated by reference. The first column lists the number and name of the material. The second column lists the section(s) of this part, other than § 86.1, in which the matter is referenced. The second column is presented for information only and may not be all inclusive. Copies of these materials may be obtained from the American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.

Document number and name	40 CFR part 86 reference
ANSI/AGA NGV1-1994, Standard for Compressed Natural Gas Vehicle (NGV) Fueling Connection Devices.	86.001-9; 86.004-9; 86.098-8; 86.099-8; 86.099-9; 86.1810-01

(4) *California regulatory requirements.* The following table sets forth California regulatory requirements that have been incorporated by reference. The first column lists the name and date of the material. The second column lists the sections of the part, other than § 86.1, in which the matter is referenced. The second column is presented for information only and may not be all-inclusive. Copies of these materials may be obtained from U.S. EPA, Office of Air and Radiation, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

Document No. and name	40 CFR part 86 reference
California Regulatory Requirements Applicable to the "LEV II" Program, including: 1. California Exhaust Emission Standards and Test Procedures for 2003 and Subsequent Model Zero-Emission Vehicles and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-duty Truck and Medium-duty Vehicle Classes. August 5, 1999.	86.1806-01; 86.1811-04; 86.1844-01.

Environmental Protection Agency

§ 86.000-2

Document No. and name	40 CFR part 86 reference
2. California Non-Methane Organic Gas Test Procedures. August 5, 1999.	86.1803-01; 86.1810-01; 86.1811-04.
California Regulatory Requirements Applicable to the National Low Emission Vehicle Program, October 1996.	86.113-004; 86.612-97; 86.1012-97; 86.1702-99; 86.1708-99; 86.1709-99; 86.1717-99; 86.1735-99; 86.1771-99; 86.1775-99; 86.1776-99; 86.1777-99; Appendix XVI; Appendix XVII.

national Organization of Standardization that has been incorporated by reference. The first column lists the number and name of the material. The second column lists the section(s) of this part, other than §86.1, in which the matter is referenced. The second column is presented for information only and may not be all inclusive. Copies of these materials may be obtained from the International Organization for Standardization, Case Postale 56, CH-1211 Geneva 20, Switzerland.

(5) *ISO material.* The following table sets forth material from the Inter-

Document No. and name	40 CFR part 86 reference
ISO 9141-2, February 1, 1994, Road vehicles—Diagnostic systems—Part 2: CARB requirements for interchange of digital information.	86.099-17; 86.1806-01; 86.1806-04; 86.005-17; 86.1806-05
ISO 14230-4:2000(E) "Road vehicles—Diagnostic systems—KWP 2000 requirements for Emission-related systems", (June 1, 2000).	86.099-17; 86.1806-01; 86.1806-04; 86.005-17; 86.1806-05
ISO 15765-4.3:2001, December 14, 2001, Road Vehicles—Diagnostics on Controller Area Network (CAN)—Part 4: Requirements for emission-related systems.	86.005-17; 86.1806-04; 86.1806-05

[58 FR 16019, Mar. 24, 1993, as amended at 58 FR 58417, Nov. 1, 1993; 59 FR 48491, 59 FR 48491, Sept. 21, 1994; 59 FR 50073, Sept. 30, 1994; 60 FR 43887, Aug. 23, 1995; 61 FR 54877, Oct. 22, 1996; 62 FR 31232, June 6, 1997; 62 FR 47119, Sept. 5, 1997; 62 FR 54715, Oct. 21, 1997; 63 FR 965, Jan. 7, 1998; 63 FR 70694, Dec. 22, 1998; 64 FR 23920, May 4, 1999; 65 FR 6848, Feb. 10, 2000; 65 FR 59944, Oct. 6, 2000; 66 FR 5159, Jan. 18, 2001; 68 FR 35798, June 17, 2003; 68 FR 35798, June 17, 2003]

Subpart A—General Provisions for Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, Light-Duty Trucks and Heavy-Duty Engines, and for 1985 and Later Model Year New Gasoline Fueled, Natural Gas-Fueled, Liquefied Petroleum Gas-Fueled and Methanol-Fueled Heavy-Duty Vehicles

SOURCE: 42 FR 32907, June 28, 1977, unless otherwise noted.

§ 86.000-2 Definitions.

The definitions of §86.098-2 continue to apply to 1998 and later model year vehicles. The definitions listed in this section apply beginning with the 2000 model year.

AC1 means a test procedure as described in §86.162-00 which simulates testing with air conditioning operating in an environmental test cell by adding

the air conditioning compressor load to the normal dynamometer forces.

AC2 means a test procedure as described in §86.162-00 which simulates testing with air conditioning operating in an environmental test cell by adding a heat load to the passenger compartment.

Alternative fuels means any fuel other than gasoline and diesel fuels, such as methanol, ethanol, and gaseous fuels.

866 Cycle means the test cycle that consists of the last 866 seconds (seconds 505 to 1372) of the EPA Urban Dynamometer Driving Schedule, described in §86.115-00 and listed in appendix I, paragraph (a), of this part.

Environmental test cell means a test cell capable of wind-speed, solar thermal load, ambient temperature, and humidity control or simulation which meets the requirements of §86.161-00 for running emission tests with the air conditioning operating.

Federal Test Procedure, or FTP means the test procedure as described in §86.130-00 (a) through (d) and (f) which is designed to measure urban driving