

401 KAR 65:001. Definitions and abbreviations of terms used in 401 KAR Chapter 65.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.10-100, 224. 20-100, 224.20-110, 224.20-120, 42 USC 7410, 40 CFR Part 50, Appendix J, 40 CFR Part 51

STATUTORY AUTHORITY: KRS 224.10-100

NECESSITY AND FUNCTION: KRS 224.10-100 requires the Environmental and Public Protection Cabinet to promulgate regulations for the prevention, abatement, and control of air pollution. This administrative regulation provides for the defining of terms to be used in 401 KAR Chapter 65.

Section 1. General definitions. As used in the Division for Air Quality administrative regulations of 401 KAR Chapter 65, unless the content clearly indicates otherwise in a specific administrative regulation, the following terms shall have the following meanings:

- (1) "Air contaminant" has the meaning given it in KRS 224.01-010(1).
- (2) "Air pollutant" means air contaminant.
- (3) "Air pollution" has the meaning given it in KRS 224.01-010(3).
- (4) "Alternative method" means a method of sampling and analyzing for an air pollutant that is not a reference method or equivalent method, and has been demonstrated to the cabinet's and the U.S. EPA's satisfaction to produce adequate results for its determination of compliance.
- (5) "Ambient air" means that portion of the atmosphere, external to buildings, to which the general public has access.
- (6) "Ambient air quality standard" means a numerical expression of a specified concentration level for a particular air contaminant and the time averaging interval over which that concentration level is measured and is a goal to be achieved in a stated time through the application of appropriate preventive or control measures.
- (7) [Not federally approved]
- (8) [Not federally approved]
- (9) [Not federally approved]
- (10) [Not federally approved]

- (11) [Not federally approved]
- (12) [Not federally approved]
- (13) "Cabinet" has the meaning given it in KRS 224.01-010.
- (14) [Not federally approved]
- (15) [Not federally approved]
- (16) [Not federally approved]
- (17) [Not federally approved]
- (18) [Not federally approved]
- (19) [Not federally approved]
- (20) "Director" means Director of the Division for Air Quality of the Environmental and Public Protection Cabinet.
- (21) "District" has the meaning given it in KRS 224.01-010.
- (22) [Not federally approved]
- (23) [Not federally approved]
- (24) "Equivalent method" means a method of sampling and analyzing for an air pollutant that has been demonstrated to the cabinet's and the U.S. EPA's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.
- (25) "Exempt compound" or "Exempt solvent" means an organic compound listed in the definition of volatile organic compound as not participating in atmospheric photochemical reactions.
- (26) "Extreme nonattainment county" or "extreme nonattainment area" means a county or portion of a county designated extreme nonattainment for the one (1) hour national ambient air quality standard for ozone in 401 KAR 51:010.
- (27) [Not federally approved]

- (28) [Not federally approved]
- (29) [Not federally approved]
- (30) [Not federally approved]
- (31) [Not federally approved]
- (32) [Not federally approved]
- (33) [Not federally approved]
- (34) [Not federally approved]
- (35) [Not federally approved]
- (36) "Hydrocarbon" means an organic compound consisting predominantly of carbon and hydrogen.
- (37) [Not federally approved]
- (38) [Not federally approved]
- (39) [Not federally approved]
- (40) [Not federally approved]
- (41) [Not federally approved]
- (42) [Not federally approved]
- (43) [Not federally approved]
- (44) [Not federally approved]
- (45) [Not federally approved]
- (46) [Not federally approved]
- (47) "Marginal nonattainment county" or "marginal nonattainment area" means a county or portion of a county designated marginal nonattainment for the one (1) hour national ambient air quality standard for ozone in 401 KAR 51:010.
- (48) "µg" means microgram.

- (50) "min" means minute.
- (53) "MM" means million.
- (54) [Not federally approved]
- (55) "Moderate nonattainment county" or "moderate nonattainment area" means a county or portion of a county designated moderate nonattainment for the one (1) hour national ambient air quality standard for ozone in 401 KAR 51:010.
- (56) "Nitrogen oxides" means all oxides of nitrogen except nitrous oxide, as measured by test methods specified by the cabinet.
- (57) [Not federally approved]
- (58) [Not federally approved]
- (59) [Not federally approved]
- (60) [Not federally approved]
- (61) [Not federally approved]
- (62) "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.
- (63) "Opacity standard" means the maximum allowable opacity for a diesel vehicle during emission standard testing.
- (64) [Not federally approved]
- (65) "Particulate matter" means a material, except uncombined water, that exists in a finely divided form as a liquid or a solid as measured by the appropriate approved test method.
- (66) "Particulate matter emissions" means, except as used in 40 C.F.R. Part 60, all finely divided solid or liquid material, other than uncombined water, emitted to the ambient air as measured by applicable reference methods, or an equivalent or alternative method specified in 40 C.F.R. Chapter 1, or by a test method specified in the approved state implementation plan.
- (67) "Person" is defined in KRS 224.01-010(17).
- (68) "PM .5" means particulate matter with an aerodynamic diameter less than or equal _ to a _

nominal two-and-a-half (2.5) micrometers as measured by a reference method in 40 C.F.R. Part 50, Appendix L, and designated in accordance with 40 C.F.R. Part 53, or by an equivalent method designated in accordance with 40 C.F.R. Part 53.

- (69) "PM₁₀" means particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers as measured by a reference method in 40 C.F.R. Part 50, Appendix J which has been incorporated-by reference in 401 KAR 50:015, and designated in accordance with 40 C.F.R. Part 53, or by an equivalent method designated in accordance with 40 C.F.R. Part 53.
- (70) "PM₁₀ emissions" means finely divided solid or liquid material with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternative method, specified in 40 C.F.R. Chapter I, or by a test method specified in the approved state implementation plan.
- (71) [Not federally approved]
- (72) [Not federally approved]
- (73) [Not federally approved]
- (74) [Not federally approved]
- (75) [Not federally approved]
- (76) [Not federally approved]
- (77) [Not federally approved]
- (78) "Serious nonattainment county" or "serious nonattainment area" means a county or portion of a county designated serious nonattainment for the one (1) hour national ambient air quality standard for ozone in 401 KAR 51:010.
- (79) "Severe nonattainment county" or "severe nonattainment area" means a county or portion of a county designated severe nonattainment for the one (1) hour national ambient air quality standard for ozone in 401 KAR 51:010.
- (80) [Not federally approved]
- (81) [Not federally approved]
- (82) "Standard" means an emission standard, a standard of performance, or an ambient air quality standard promulgated in the administrative regulations of the Division for Air

Quality or the emission control requirements necessary to comply with 401 KAR Chapter 51.

- (83) "Standard conditions" means:
 - (a) For source measurements, means twenty (20) degrees Celsius (sixty- eight (68) degrees Fahrenheit) and a pressure of 760 mm Hg (29.92 in. of Hg);
 - (b) For air quality determinations means twenty-five (25) degrees Celsius (seventy-seven (77) degrees Fahrenheit) and a reference pressure of 760 mm Hg (29.92 in. of Hg).
- (84) "State implementation plan" means the most recently prepared plan or revision required by 42 USC 7410 which has been approved by the U.S. EPA.
- (85) [Not federally approved]
- (86) "Total suspended particulate" or "TSP" means particulate matter as measured by the method T described in 40 C.F.R. Part 50, Appendix B which has been incorporated by reference in 401 KAR 50:015.
- (87) [Not federally approved]
- (88) [Not federally approved]
- (89) "Uncombined water" means water which can be separated from a compound by ordinary physical means and which is not bound to a compound by internal molecular forces.
- (90) "Urban county" means a county which is a part of an urbanized area with a population of greater than 200,000 based upon the 1980 census. If a portion of a county is a part of an urbanized area, then the entire county shall be classified as urban with respect to the administrative regulations of the Division for Air Quality.
- (91) "Urbanized area" means an area defined as such by the U.S. Department of Commerce, Bureau of Census.
- (92) [Not federally approved]
- (93) [Not federally approved]
- (94) "Volatile organic compound" or "VOC" is defined in 40 C.F.R. 51 .100(s).
- (95) "yd" means yard.

Section 2. Abbreviations. The abbreviations used in the administrative regulations of 401 KAR Chapter 65 shall have the following meanings:

AOAC - Association of Official Analytical Chemists.

ANSI - American National Standards Institute.

ASTM - American Society for Testing and Materials.

BOD - Biochemical oxidant demand.

BTU - British Thermal Unit.

⁰C - Degree Celsius (centigrade).

Cal - calorie.

cfm - cubic feet per minute.

CFR - Code of Federal Regulations.

CH₄ - methane.

CO - Carbon monoxide.

CO₂ - Carbon dioxide.

COD - Chemical oxidant demand.

dscf - dry cubic feet at standard conditions.

dscm - dry cubic meter at standard conditions.

⁰F - Degree Fahrenheit.

ft - feet.

g - gram.

gal - gallon.

gr - grain.

hr - hour.

HCL - Hydrochloric acid.

Hg - mercury.

HF - Hydrogen fluoride.

H₂O - water.

H₂S - Hydrogen sulfide.

H₂SO₄ - Sulfuric acid.

in - inch.

J - joule.

KAR - Kentucky Administrative Regulations.

kg - kilogram.

KRS - Kentucky Revised Statutes.

l - liter.

lb - pound.

m - meter.

m³ - cubic meter.

min - minute.

mg - milligram.

MJ - megajoules.

MM - million.

mm - millimeter

mo - month.
 Ng - nanograms.
 N₂ - Nitrogen.
 NO - Nitric oxide.
 NO₂ - Nitrogen dioxide.
 NO_x - Nitrogen oxides.
 oz - ounce.
 O₂ - oxygen.
 O₃ - ozone.
 ppb means parts per billion.
 ppm means parts per million.
 ppm (w/w) means parts per million (weight by weight).
 mg - microgram.
 psia - pounds per square inch absolute.
 psig - pounds per square inch gage.
 S - at standard conditions.
 sec - second.
 SIP - State implementation plan.
 SO₂ - Sulfur dioxide.
 sq - square.
 TAPPI - Technical Association of the Pulp and Paper Industry.
 TSP - Total suspended particulates.
 TSS - Total suspended solids.
 U.S. EPA - United States Environmental Protection Agency.
 UTM - Universal Transverse Mercator.
 VOC - Volatile organic compound.
 yd - yard.

(20 Ky.R. 451; Am. 1601; eff. 11-29-93; 21 Ky.R. 1774; 2149; eff.4-6-95; 1707; 2027; eff. 6-6-96; 25 Ky.R. 1458; 2855; eff. 6-9-99; 27 Ky.R. 2879; eff.8-15-2001.)

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	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg.	OCT 20, 1992	JUN 23, 1994	59 FR 32343
1st Revision	MAY 04, 1995	JUN 13, 1995	60 FR 31087

2nd Revision	JUN 19, 1996	JAN 21, 1997	62 FR 2915
3rd Revision	SEP 05, 2001	SEP 24, 2002	67 FR 59785
4 th Revision	DEC 14, 2006	SEP 13, 2007	72 FR 52282

401 KAR 65:005. Liquefied petroleum gas carburetion systems.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
 Department for Environmental Protection Division for Air Quality

Relates to: KRS Chapters 224,234

Pursuant to: KRS 13.082, 224.033, 224.021, 234.321

Necessity and Function: KRS 234.321 requires the Department for Natural Resources and Environmental Protection to establish emission standards for liquefied petroleum gas carburetion systems. This regulation complies with that requirement.

Section 1. General Provisions.

- (1) Applicability. This regulation is applicable only to motor vehicles utilizing liquefied petroleum gas for fuel which are required to be equipped with carburetion systems approved by the department in order to be eligible for tax exemptions as set forth in KRS 234.321.
- (2) Definitions. As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 234.321.
 - (a) "Exhaust emissions" means substances emitted to the atmosphere from any opening downstream from the exhaust port of a motor vehicle engine.
 - (b) "Light-duty vehicle" means any motor vehicle either designed primarily for transportation of property and rated at 6,000 pounds gross vehicle weight or less or designed primarily for transportation of persons and having a capacity of twelve (12) persons or less.
 - (c) "Heavy-duty vehicle" means any motor vehicle either designed primarily for transportation of property and rated at more than 6,000 pounds gross vehicle weight or designed primarily for transportation of persons and having a capacity of more than twelve (12) person.
 - (d) "Gross vehicle weight" means the manufacturer's gross weight rating.

- (3) Vehicle modification to use liquefied petroleum gas:
- (a) In addition to all other standards or requirements imposed, any modification of a motor vehicle which allows that vehicle to use liquefied petroleum gas (LPG) for fuel shall not in its operation and function, or malfunction:
 - 1. Cause any emission into the ambient air of any noxious or toxic matter that would not be emitted in the operation of such motor vehicle or motor vehicle engine operating without such a modification; or
 - 2. Cause any unsafe condition which may endanger the motor vehicle, or its occupants or other persons or property.
 - (b) In cases where a modification of a vehicle has been made which enables gasoline and/or liquefied petroleum gas to be used as fuel, evidence satisfactory to the department must be presented to the department must be presented to the department that the modification will not cause increased emissions by the vehicle when that vehicle is being fueled by gasoline.
 - (c) The reactivity of the exhaust gases must not be increased by any modification to a carburetion system, which modification allows the use of liquefied petroleum gas or fuel.
- (4) Application for approval:
- (a) An application for approval of any carburetion system which uses liquefied petroleum gas may be to the department by any manufacturer.
 - (b) The application shall be in writing, signed by an authorized representative of the manufacturer, and shall include the following:
 - 1. Identification and description of the carburetion systems, vehicles and engines with respect to which approval is required.
 - 2. A complete description of all modifications and additions to the engine or vehicle.
 - 3. Emission data on such vehicles and engines tested in accordance with the applicable exhaust emission test procedures.
 - 4. A description of tests performed to ascertain compliance with the general standards, and the result of such test.
 - 5. A statement listing the name and location of the testing facility, its

qualifications to perform such tests, a certification that such testing facility was at the time the test was performed, approved to conduct such tests by the U.S. Environmental Protection Agency.

6. A statement of recommended maintenance procedures and equipment necessary to assure that the carburetion system, vehicle and engine in operation conform to the requirements of this regulation, and a description of the program for training of personnel for such maintenance.
 7. An agreement that any modifications made to the system in the field will be properly identified and reported to the department. To meet this requirement, the model number shall be permanently marked on the carburetor. An adhesive label listing the information in subparagraphs 8. to 12. of this paragraph shall be furnished for installation on the air cleaner.
 8. Manufacturer's name and address.
 9. Accepted by the Department for Natural Resources and Environmental Protection for use on engine sizes . . . cubic inch to . . . cubic inch.
 10. Spark timing.
 11. Idle speed.
 12. Mixture adjustment (if used).
- (c) If, after a review of the data submitted by the manufacturer, the department determines that a carburetion system to use liquefied petroleum gas conforms to this regulation, it will issue an approval with respect to such system.

Section 2. Standards for Exhaust Emissions. The applicable exhaust emission standards for liquefied petroleum gas carburetion systems are as follows:

- (1) Light-duty vehicles.
 - (a) Hydrocarbons emissions shall not exceed 0.41 grams per vehicle mile.
 - (b) Carbon monoxide emissions shall not exceed 3.4 grams per vehicle mile.
 - (c) Oxides of nitrogen emissions shall not exceed 0.4 grams per vehicle mile.
- (2) Heavy-duty vehicles.

- (a) Hydrocarbons plus oxides of nitrogen (as NO₂) emissions shall not exceed sixteen (16) grams per brake horsepower hour.
- (b) Carbon monoxide emissions shall not exceed forty (40) grams per brake horsepower hour.

Section 3. Test Procedures for Vehicle and Engine Exhaust Emissions.

- (1) The department will approve carburetion systems which a manufacturer has successfully tested at a facility which is determined to be qualified for performing such testing by the U.S. Environmental Protection Agency. All testing procedures shall be conducted in accordance with the procedures established by the department.
- (2) At least one (1) vehicle in each engine displacement class for which the exemption is sought must be tested for emission data. Each manufacturer, however, must accumulate data on a minimum of two (2) vehicles for each carburetor model to qualify for approval.

DISPLACEMENT CLASSES

Class	Engine Displacement
A	Under 140 Cubic Inches
B	140-200 cubic inches
C	200-250 cubic inches
D	250-300 cubic inches
E	300-375 cubic inches
F	Over 375 cubic inches

- (3) Carburetion systems shall be installed in accordance with manufacturer's specifications and instructions in order to qualify for the exemption.

Effective Date: June 6, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg.	JUN 29, 1979	JAN 25, 1980	45 FR 6092