

VV-G-1690C  
 January 13, 1982  
 SUPERSEDING  
 VV-G-1690B  
 July 1, 1978

## FEDERAL SPECIFICATION

### GASOLINE, AUTOMOTIVE, LEADED OR UNLEADED

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal Agencies.

#### 1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers commercial leaded or unleaded gasoline for use in automotive spark-ignition engines under all climatic conditions (see 6.1).

#### 1.2 Classification.

1.2.1 Grades. The leaded and unleaded automotive gasolines shall each be of three grades as follows. The major differences among these grades are in the antiknock index levels.

<u>Grade</u>	<u>Antiknock index</u>
Limited	See table III
Regular	See table III
Premium	See table III

1.2.2 Classes. Each grade is divided into five volatility classes, as follows, to provide for local and seasonal climatic conditions (see 3.5 and tables I and IV):

<u>Class</u>	<u>Condition of use: ambient temperature</u>
A	Very hot
B	Hot
C	Warm
D	Mild
E	Cold

#### 2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

VV-G-1690C

Federal Standard:

FED. TEST METHOD STD. 791 - Lubricants, Liquid Fuels and Related Products  
Methods of Testing

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Commercial Item Descriptions as outlined under General Information in the Index of Federal Specifications, Standards and Commercial Item Description. The Index, which includes cumulative bi-monthly supplements as issued is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal specifications and Commercial Item Descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers, in Boston; Philadelphia; New York; Washington, DC; Atlanta, Chicago; Kansas City MO; Houston; Forth Worth; Denver; San Francisco; Los Angeles; and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Commercial Item Descriptions, and the Index of Federal Specifications and Standards, and Commercial Item Descriptions from established distribution points in their agencies.)

Military Standards:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.  
MIL-STD-290 - Packaging, Packing, and Marking of Petroleum and Related Products.

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

American Society for Testing and Materials (ASTM) Standards:

D 86 - Distillation of Petroleum Products.  
D 130 - Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test.  
D 270 - Sampling Petroleum and Petroleum Products.  
D 323 - Vapor Pressure of Petroleum Products (Reid Method).  
D 381 - Existent Gum in Fuels by Jet Evaporation.  
D 525 - Oxidation Stability of Gasoline (Induction Period Method).

VV-G-1690C

- D 1266 - Sulfur in Petroleum Products (Lamp Method)
- D 1319 - Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption.
- D 2533 - Vapor-Liquid Ratio of Gasoline.
- D 2547 - Lead in Gasoline, Volumetric Chromate Method.
- D 2551 - Vapor Pressure of Petroleum Products (Micromethod).
- D 2599 - Lead in Gasoline by X-Ray Spectrometry.
- D 2622 - Sulfur in Petroleum Products (X-ray Spectrographic Method)
- D 2699 - Knock Characteristics of Motor Fuels by the Research Method.
- D 2700 - Knock Characteristics of Motor and Aviation Fuels by the Motor Method.
- D 2709 - Water and Sediment in Distillate Fuels by Centrifuge.
- D 2885 - Research and Motor Method Octane Ratings Using On-Line Analyzers.
- D 3116 - Trace Amounts of Lead in Gasoline.
- D 3229 - Low Levels of Lead in Gasoline by X-Ray Spectrometry.
- D 3231 - Phosphorus in Gasoline.
- D 3237 - Lead in Gasoline by Atomic Absorption Spectrometry.
- D 3606 - Benzene & Toluene in Finished Motor and Aviation Gasoline by Gas Chromatography.

(The test methods listed above are included in Parts 23, 24, 25, or 47 of the Annual Book of ASTM Standards. The methods can also be purchased separately. Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

### 3. REQUIREMENTS

3.1 Materials. The gasolines shall be volatile hydrocarbon fuels.

3.2 Legal requirements. Gasolines furnished under this specification must meet all applicable legal requirements.

3.3 Additives. Both leaded and unleaded gasolines may contain antioxidants, metal deactivators, and corrosion inhibitors. Leaded gasoline may, in addition, contain lead antiknock compounds, manganese antiknock compounds, phosphorus-containing deposit modifiers, and dyes.

3.3.1 Antiknock compounds. The lead antiknock compound present in the finished gasolines shall not exceed the limits specified in table II. The antiknock compounds or mixtures shall contain appropriate quantities of scavenger compound as required in blending automotive gasolines.

3.3.2 Other additives. Additives other than those specified above, such as detergents, dispersants, solvent oils, etc., will be permitted in procurement of gasoline provided prior examinations have verified the absence of their potential deleterious effects. Permission for their use must be obtained from the US Army Mobility Equipment Research and Development Command, ATTN: DEDME-GL, Fort Belvoir, VA 22060. This request shall be accompanied by a report showing the chemical properties of the additive, laboratory engine performance tests and controlled fleet tests using fuels containing the maximum recommended concentration of the additive. Such additives must be compatible with any of the materials included in this specification and must not appreciably affect the specified chemical or physical properties.

VV-G-1690C

3.4 Physical and chemical requirements. The physical and chemical requirements of the gasoline shall be as specified in tables I, II, and III.

TABLE I. Volatility classes.

Characteristic	Requirement <u>1/</u>				
	Class A	Class B	Class C	Class D	Class E
Distillation					
10% evap., °C max	70	65	60	55	50
50% evap., °C min	77	77	77	77	77
50% evap., °C max	121	118	116	113	110
90% evap., °C max	190	190	185	185	185
End point, °C max <u>2/</u>	225	225	225	225	225
Residue, percent max	2	2	2	2	2
Reid vapor pressure (RVP), kPa, max <u>3/</u>	62	69	79	93	103
Temperature, °C min at V/L ratio = 20 <u>4/</u>	60	56	51	47	41

1/ Values given pertain to product at point of acceptance.

2/ End point includes additive residue if present.

3/ RVP values are given for each gasoline class but they are not limiting. The limiting criteria for controlling overall hot fuel handling (vapor lock, etc.) is the temperature at which the V/L = 20. If a given maximum RVP gasoline must be supplied in an area to meet state/local law, all of the volatility specifications except the temperature at V/L = 20 which apply to the class of gasoline corresponding to that RVP are deemed to apply.

4/ At 760 mm. Hg. pressure (101.3 kPa).

TABLE II. Chemical requirements.

Property	Value
Unwashed gum, mg/100 mL, max	10 <sup>1/</sup>
Existent gum, mg/100 mL, max	5
Sulfur, % mass, max:	
Leaded gasoline	0.15
Unleaded gasoline	0.10
Corrosiveness to copper, 3 h @ 50°C, max	1
Lead Content, g/L (g/gal), max:	
Leaded	1.1 (4.2)
Unleaded	0.013 (0.05) <sup>2/</sup>
Oxidation stability, minutes, min	240
Water & sediment, % vol, max	0.01
Aromatics, % vol, max	55 <sup>3/</sup>
Benzene, % vol	Report
Phosphorous, g/L (g/gal), max	0.0013 (0.005) <sup>4/</sup>

<sup>1/</sup> Where the unwashed gum exceeds 10 mg/100 mL, the contractor shall be responsible

for identifying the material(s) contributing to this value prior to product approval. When those materials (contributing to unwashed gum values in excess of 10 mg/100 mL) originate primarily from gasoline components, the product shall be considered as suspect and therefore unsatisfactory until additional bench tests have been conducted.

<sup>2/</sup> The intentional addition of lead compounds is not permitted.

<sup>3/</sup> This maximum value shall be applicable to the limited and regular unleaded grades only, with no limitation for the premium grade.

<sup>4/</sup> This requirement shall be applicable to the unleaded grades of gasoline.

VV-G-1690C

TABLE III. Antiknock quality requirements <sup>1/</sup>.

Gasoline Grade: State Group	Antiknock Index (R+M)/2 <sup>2/</sup> Minimum	
	Leaded	Unleaded
<u>Limited Grade:</u>		
#1 (plus Alaska & Hawaii)	87.0	85.0
#2	86.3	84.3
#3	85.5	83.5
#4	84.8	82.8
#5	84.0	82.0
#6	82.5	80.5
<u>Regular Grade:</u>		
#1 (plus Alaska & Hawaii)	89.0	87.0 <sup>3/</sup>
#2	88.5	86.3
#3	87.5	85.5
#4	87.5	84.8
#5	87.0	84.0
#6	86.0	82.5
<u>Premium Grade:</u>		
#1 (plus Alaska & Hawaii)	93.0	90.0
#2	92.5	89.5
#3	91.5	88.5
#4	91.5	88.5
#5	91.0	88.0
#6	90.0	87.0

<sup>1/</sup> See figure 1:<sup>2/</sup> The antiknock index is the average of the Research Octane Number (R) and the Motor Octane Number (M).<sup>3/</sup> Minimum Motor Octane Number must be 82.

3.5 Volatility. The volatility classes of gasoline as defined in table I shall be supplied according to the requirements of table IV. When alternate classes are permitted, the contractor may provide either class. Adjustments in altitude and climatic conditions have been considered in preparing this distribution schedule to minimize operational problems arising from hot fuel handling and cold starting. The limiting guide temperatures, minimum tenth percentile and maximum nintieth percentile, utilized for determining the volatility class distribution are shown below:

Class	Daily Low Temperature	Daily High Temperature
A	Higher than 16°C	Higher than or equal to 43°C
B	Higher than 10°C	Lower than 43°C
C	Higher than 4°C	Lower than 36°C
D	Higher than -7°C	Lower than 29°C
E	Lower than or equal to -7°C	Lower than 21°C



VV-G-1690C

TABLE IV. Geographical and seasonal distribution of classes 1/.

State	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Alabama	D	D	D/C	C	C/B	B	B	B	B/C	C	C/D	D
Alaska	E	E	E	E/D	D	D	D	D	D/E	E	E	E
Arizona	D/C	C	C/B	B	B/A	A	A	A	A	A/B	B/C	C/D
Arkansas	D	D	D/C	C	C/B	B	B	B	B/C	C	C/D	D
California: 2/												
North Coast	D	D	D	D/C	C	C	C	C	C	C	C/D	D
South Coast	D	D	D/C	C	C	C/B	B	B	B	B/C	C	C/D
Southeast	D/C	G	C/B	B	B/A	A	A	A	A	A/B	B/C	D
Interior	D	D	D/C	C/B	B	B/A	A	A	A/B	B/C	C/D	D
Colorado	D	D	D/C	C	C/B	B	B	B	B/C	C	C/D	E
Connecticut	E	E	E/D	D	D/C	C	C	C	C	C/D	D	D/E
Delaware	E	E/D	D	D/C	C	C	C	C	C	C/D	D	D/E
Dist of Columbia	E	E/D	D	D/C	C	C	C	C	C	C/D	C	C/D
Florida	D/C	C	C	C	C	C	C	C	C	C	C/D	D
Georgia	D	D	D/C	C	C/B	B	B	B	B/C	C	C	C
Hawaii	C	C	C	C	C	C	C	C	C	C	C	C
Hawaii	C	C	C	C	C	C	C	C	C	C	C	C
Idaho	E	E/D	D	D/C	C/B	B	B	B	B	B/C	C/D	D/E
Illinois:												
N 40° Lat.	E	E	E/D	D/C	C	C	C	C	C	C/D	D	D/E
S 40° Lat.	E	E/D	D	D/C	C/B	B	B	B	B/C	C	C/D	D/E
Indiana	E	E	E/D	D/C	C	C	C	C	C	C/D	D	D/E
Iowa	E	E	E/D	D/C	C	C	C	C	C	C/D	D	D/E
Kansas	E	E	E/D	D/C	C	C	C	C	C	C/D	D	D/E
Kentucky	E/D	D	D/C	C	C/B	B	B	B	B/C	C	C/D	D
Kentucky	E	E/D	D/C	C	C	C	C	C	C	C	C/D	D/E
Louisiana	D	D	D/C	C	C/B	B	B	B	B/C	C	C/D	D
Maine	E	E	E/D	D	D/C	C	C	C	C	C/D	D/E	E

TABLE IV. Geographical and seasonal distribution of classes 1/ (Con't).

State	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Maryland	E	E/D	D	D/C	C	C	B/C	B/C	C	C/D	D	D/E
Massachusetts	E	E	E/D	D	D/C	C	C	C	C	C/D	D/E	E
Michigan	E	E	E/D	D	D/C	C	C	C	C	C/D	D/E	E
Minnesota	E	E	E/D	D/C	C	C	C	C	C	C/D	D/E	E
Mississippi	D	D	D/C	C	C/B	B	B	B	B/C	C	C/D	D
Missouri	E	E/D	D/C	C	C/B	B	B	B	B/C	C	C/D	D/E
Montana	E	E/D	D	D/C	C	C/B	B	B	B	B/C	C/D	D/E
Nebraska	E	E/D	D/C	C	C/B	B	B	B	B	B/C	C/D	D/E
Nevada:												
N 38° Lat.	E/D	D	D/C	C	C/B	B/A	A	A	A/B	B/C	C/D	D/E
S 38° Lat.	D	D/C	C/B	B	B/A	A	A	A	A	A/B	B/C	C/D
New Hampshire	E	E	E/D	D	D/C	C	C	C	C	C/D	D/E	E
New Jersey	E	E	E/D	D/C	C	C	C	C	C	C/D	D/E	E
New Mexico:												
N 34° Lat.	D	D/C	C	C/B	B/A	A	A	A/B	B	B/C	C/D	D
S 34° Lat.	D/C	C	C/B	B	B/A	A	A	A	A/B	B/C	C	C/D
New York	E	E	E/D	D/C	C	C	C	C	C	C/D	D/E	E
North Carolina	E/D	D	D/C	C	C/B	B	B	B	B/C	C	C/D	D/E
North Dakota	E	E	E/D	D/C	C	C/B	B	B	B/C	C/D	D/E	E
Ohio	E	E	E/D	D/C	C	C	C	C	C	C/D	D	D/E
Oklahoma	D	D	D/C	C	C/B	B	B	B	B	B/C	C/D	D

WV-G-1690C

TABLE IV. Geographical and seasonal distribution of classes 1/ (Con't).

State	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Oregon:												
E 122° Long.	E	E/D	D	D/C	C/B	B	B	B	B	B/C	C/D	D/E
W 122° Long.	E	E	E/D	D	D/C	C	C	C	C	C/D	D/E	E
Pennsylvania	E	E	E/D	D/C	C	C	C	C	C	C/D	D	D/E
Rhode Island	E	E	E/D	D	D/C	C	C	C	C	C/D	D/E	E
South Carolina	D	D	D/C	C	C/B	B	B	B	B/C	C	C/D	D
South Dakota	E	E/D	D	D/C	C	C/B	B	B	B	B/C	C/D	D/E
Tennessee	E/D	D	D/C	C	C	C/B	B	B	B/C	C	C/D	D/E
Texas:												
E 99° Long.	D/C	C	C	C/B	B	B	B	B	B	B/C	C	C/D
W 99° Long.	D/C	C	C/B	B	B/A	A	A	A	A/B	B/C	C	C/D
Utah	E	E/D	D/C	C/B	B/A	A	A	A	A/B	B/C	C/D	D/E
Vermont	E	E	E/D	D	D/C	C	C	C	C	C/D	D/E	E
Virginia	E	E/D	D/C	C	C	C	B/C	B/C	C	C	C/D	D/E
Washington:												
E 122° Long.	E	E	E/D	D/C	C	C/B	B	B	B/C	C/D	D/E	E
W 122° Long.	E	E	E/D	D	D/C	C	C	C	C	C/D	D/E	E
West Virginia	E	E/D	D	D/C	C	C	C	C	C	C	C/D	D/E
Wisconsin	E	E	E/D	D	D/C	C	C	C	C	C/D	D/E	E
Wyoming	E	E/D	D/C	C	C/B	B/A	A	A/B	B	B/C	C/D	D/E

1/ Where two classes are given (i.e., A/B, C/D, etc.), this represents a transitional month in that both classes are permitted.

2/ Details of state division by county as indicated:

- California, North Coast - Alameda, Contra Costa, Del Norte, Humboldt, Lake, Marin, Mendocino, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Trinity
- California, Interior - Alpine, Amador, Butte, Calaveras, Colusa, El Dorado, Fresno, Glenn, Kern (except that portion lying east of the Los Angeles County Aqueduct), Kings, Lassen, Madera, Mariposa, Merced, Modoc, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Sierra, Siskiyou, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba
- California, South Coast - Los Angeles (except that portion north of the San Gabriel Mountain range and east of the Los Angeles County Aqueduct), Orange, San Diego, San Luis Obispo, Santa Barbara, Ventura
- California, Southeast - Imperial, Inyo, Kern (that portion lying east of the Los Angeles County Aqueduct), Los Angeles (that portion north of the San Gabriel Mountain range and east of the Los Angeles County Aqueduct), Mono, Riverside, San Bernardino

VV-G-1690C

3.5.1 Overseas procurement. Unless otherwise specified in the contract or purchase order (see 6.2), gasoline procured overseas shall conform to the requirements of this specification at the time of delivery.

3.6 Workmanship. The finished gasolines shall be visually free from undissolved water, sediment, and suspended matter and shall be clear and bright at the ambient temperature or 21°C whichever is higher.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the contractor may use his own or any other facilities suitable for the performance of inspection requirements specified herein.

#### 4.2 Lot.

4.2.1 Bulk lot. An indefinite quantity of a homogeneous blend of gasoline of one grade, one class, and one lead level (leaded or unleaded), offered for acceptance in a single, isolated container; or manufactured in a single plant run (not exceeding 24 hours), through the same processing equipment, with no change in the ingredient materials.

4.2.2 Packaged lot. An indefinite number of 55-gallon drums or other unit containers of identical size and type, offered for acceptance and filled with a homogeneous blend of gasoline of one grade, one class, and one lead level (leaded or unleaded), from a single, isolated container; or filled with a homogeneous blend of gasoline of one grade, one class, and one lead level (leaded or unleaded), manufactured in a single plant run (not exceeding 24 hours), through the same processing equipment, with no change in the ingredient materials.

#### 4.3 Sampling.

4.3.1 Sampling for inspection of filled containers. Take a random sample of filled containers from each lot in accordance with MIL-STD-105, at inspection level II and acceptable quality level (AQL) = 2.5 percent defective.

4.3.2 Sampling for tests. Take samples for test in accordance with ASTM D 270.

4.4 Inspection. Perform inspection in accordance with method 9601 of FED. TEST METHOD STD. 791.

4.4.1 Examination of filled containers. Examine samples taken in accordance with 4.3.1 for compliance with MIL-STD-290 with regard to fill, closure, sealing, leakage, packaging, packing, and marking requirements. Reject any container having one or more defects or under the required fill. Reject the lot represented by a sample if the number of defective or underfilled containers exceeds the acceptance number for the appropriate sampling plan of MIL-STD-105.

VV-G-1690C

4.5 Classification of tests. All tests are quality conformance tests.

4.6 Test methods. Perform tests in accordance with table V.

TABLE V. Test methods.

Test	ASTM Method No.
Distillation	D 86
Vapor liquid ratio (V/L) <u>1/</u>	D 2533
Reid vapor pressure	D 323 or D 2551 <u>2/</u>
Existent gum/unwashed gum	D 381
Sulfur	D 1266 or D 2622 <u>3/</u>
Phosphorus	D 3231
Lead content:	
Leaded gasoline	D 2547, or D 2599
Unleaded gasoline	D 3237, <u>4/</u> , D 3116, or D 3229
Corrosiveness	D 130
Oxidation stability	D 525
Water & sediment	D 2709
Hydrocarbon types (aromatics)	D 1319
Benzene content	D 3606
Knock characteristics, research octane method	D 2699 or D 2885
Knock characteristics, motor octane method	D 2700 or D 2885

1/ As an ALTERNATIVE, the temperature at a vapor-liquid ratio of 20:1 may be calculated by the following equation:

$$T_{V/L@20} = 52.47 - 0.33 (RVP) + 0.20 T_{10} + 0.17 T_{50}$$

Where:  $T_{V/L@20}$  = the temperature at a V/L ratio = 20:1

RVP = the Reid Vapor Pressure in kPa

$T_{10}$  = the distillation temperature (°C) at 10% evaporated

$T_{50}$  = the distillation temperature (°C) at 50% evaporated

However, ASTM D 2533 shall be the referee V/L method when calculated values are questionable.

- 2/ ASTM D 2551, Vapor Pressure of Petroleum Products (Micromethod) may be used as an alternative method for determining vapor pressure.
- 3/ ASTM D 2622, Sulfur in Petroleum Products (X-Ray Spectrographic Method) may be used as an alternative method for determining sulfur content.
- 4/ ASTM D 3237, Lead in Gasoline by atomic absorption spectrometry is designated as the referee method, other methods may be used as alternates. D 3237 is the method the Environmental Protection Agency (EPA) has designated for unleaded gasolines.

## 5. PACKAGING

5.1 Packaging, packing, and marking. Unless otherwise specified in the contract (see 6.2), packaging, packing, and marking shall be in accordance with MIL-STD-290.

## 6. NOTES

6.1 Intended use. Gasolines furnished under this specification are intended for immediate use in spark-ignition internal-combustion engines utilized in automotive, marine and stationary equipment. The gasolines are not intended for static storage for extended periods. They should not be stored in stand-by equipment for more than 60 days without replenishment because of auto-oxidation which can result in deterioration of the overall quality of gasoline.

6.1.1 Limited grade leaded gasoline. Limited grade leaded gasoline meets the antiknock requirements of most 1971 and later model equipment that can use leaded gasoline, and pre-1971 equipment with low antiknock requirements or low compression ratios.

6.1.2 Regular grade leaded gasoline. Regular grade leaded gasoline meets the antiknock requirements of most 1970 and prior model equipment designed to operate on leaded gasoline, and most 1971 and later model equipment that can use leaded gasoline and has antiknock requirements which exceed those of limited grade leaded gasoline.

6.1.3 Premium grade leaded gasoline. Premium grade leaded gasoline is intended for equipment that can use leaded gasoline and has very high antiknock requirements which exceed those of regular grade leaded gasoline.

6.1.4 Limited grade unleaded gasoline. Limited grade unleaded gasoline is intended for equipment with low antiknock requirements or low compression ratios.

6.1.5 Regular grade unleaded gasoline. Regular grade unleaded gasoline meets the antiknock requirements of most 1971 and later equipment.

6.1.6 Premium grade unleaded gasoline. Premium grade unleaded gasoline is intended for equipment with high antiknock requirements which exceed those of regular grade unleaded gasoline.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

- (a) Title, number, and date of this specification.
- (b) Grade and class of gasoline required (see 1.2, 3.5, and 3.5.1).
- (c) Lead level required (see table II, and 6.3.1).
- (d) Quantity of gasoline required. The unit of purchase is one US gallon (3.785 liters) at 60°F (15.6°C).
- (e) Type and size of containers required (see 5.1).
- (f) Level of packaging, packing, and type of marking required (see 5.1).

VV-G-1690C

6.3 Definitions. The designations "Limited", "Regular" and "Premium" grades apply only to gasolines furnished under this specification.

6.3.1 Lead antiknock. Unleaded gasoline is defined as gasoline to which the addition of lead antiknock is not permitted. Lead antiknock present shall not exceed that amount which results from contamination when good refinery and distribution practices are followed and shall not exceed 0.013 g/L (0.05 g/gal). Additionally, the phosphorus content of unleaded gasoline shall not exceed 0.0013 g/L (0.005 g/gal).

MILITARY INTERESTS:Custodians

Army - ME  
Navy - YD  
Air Force - 68

Review activities

Army - MD  
Navy - SA, SH, AS  
DLA - PS

User activities

Army - AT, AR  
Navy - MC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:

Army - ME

Project 9130-0106

U.S. GOVERNMENT PRINTING OFFICE : 1982 - 361-705/1335

Orders for this publication are to be placed with General Service Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.

FOLD

---

POSTAGE AND FEES PAID



**OFFICIAL BUSINESS**  
PENALTY FOR PRIVATE USE \$300

Commander  
USA Mobility Equipment R&D Command  
ATTN: DRDME-DS  
Ft. Belvoir, VA 22060

---

FOLD

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL	
<p><b>INSTRUCTIONS:</b> This form is provided to solicit beneficial comments which may improve this document and enhance its use. DoD contractors, government activities, manufacturers, vendors, or other prospective users of the document are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity. A response will be provided to the submitter, when name and address is provided, within 30 days indicating that the 1426 was received and when any appropriate action on it will be completed.</p> <p><b>NOTE:</b> This form shall not be used to submit requests for waivers, deviations or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.</p>	
DOCUMENT IDENTIFIER (Number) AND TITLE	
VV-G-1690C Gasoline, Automotive, Leaded or Unleaded	
NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER	
<input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER	
1. <input type="checkbox"/> HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? <input type="checkbox"/> IS ANY PART OF IT TOO RIGID, RESTRICTIVE, LOOSE OR AMBIGUOUS? PLEASE EXPLAIN BELOW.	
A. GIVE PARAGRAPH NUMBER AND WORDING	
B. RECOMMENDED WORDING CHANGE	
C. REASON FOR RECOMMENDED CHANGE(S)	
2. REMARKS	
SUBMITTED BY (Printed or typed name and address - Optional)	TELEPHONE NO.
	DATE

DD FORM 1426  
1 OCT 76

EDITION OF 1 JAN 72 WILL BE USED UNTIL EXHAUSTED.