

TT-L-215D  
 April 6, 1977  
 SUPERSEDING  
 Fed. Spec. TT-L-215C  
 January 18, 1968

FEDERAL SPECIFICATION

LINSEED OIL, RAW (FOR USE IN  
 ORGANIC COATINGS)

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

1. SCOPE

1.1 Scope. This specification covers raw linseed oil for use in paint and related products.

2. APPLICABLE DOCUMENTS

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

Federal Specification:

PPP-P-1892 - Paint, Varnish, Lacquer, and Related Materials; Packaging, Packing, and Marking of.

Federal Standard:

Fed. Test Method Std. No. 141/GEN - Paint, Varnish, Lacquer, and Related Materials; Methods of Inspection, Sampling, and Testing.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative 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 required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

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

Military Standard:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

(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 a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

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American Society for Testing and Materials (ASTM) Standards:

- D 1393 - Flash Point of Drying Oils.
- D 1544 - Color of Transparent Liquids (Gardner Color Scale).
- D 1639 - Acid Value of Organic Coating Materials.
- D 1954 - Foots in Raw Linseed Oil (Volumetric Method).
- D 1959 - Iodine Value of Drying Oils and Fatty Acids.
- D 1960 - Loss on Heating of Drying Oils.
- D 1962 - Saponification Value of Drying Oils, Fatty Acids and Polymerized Fatty Acids.
- D 1963 - Specific Gravity of Drying Oils, Varnishes, Resins, and Related Materials at 25/25°C.
- D 1965 - Unsaponifiable Matter in Drying Oils, Fatty Acids and Polymerized Fatty Acids.
- D 1966 - Foots in Raw Linseed Oil (Gravimetric Method).

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

## 3. REQUIREMENTS

3.1 Quantitative requirements. When tested as specified in 4.3.3, the linseed oil shall meet the requirements in table I.

TABLE I. Quantitative requirements

Characteristics	Requirements	
	Minimum	Maximum
Specific gravity, 25/25°C	0.926	0.931
Acid value	-	4.0
Saponification value	189.0	195.0
Unsaponifiable matter (percent by weight)	-	1.50
Iodine value (Wijs)	177.0	-
Loss on heating at 105 to 110°C (percent by weight)	-	0.2
Color (Gardner)	-	13
Foots, volumetric, heated oil (percent)	-	1.0
Foots, volumetric, chilled oil (percent)	-	4.0
Gravimetric foots (percent)	-	0.25
Flash point (°C)	121	-

3.2 Qualitative requirements.

3.2.1 Appearance. When tested as specified in 4.3.3, the linseed oil shall be clear and transparent and shall contain no insoluble matter or sediment.

## 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 the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.2 Inspection of preparation for delivery. The packaging, packing, and marking shall be inspected in accordance with the requirements of PPP-P-1892.

4.3 Testing of the end item.

4.3.1 Lot. The linseed oil shall be assembled into lots as specified in MIL-STD-105. In MIL-STD-105, the words "essentially the same conditions" shall be interpreted to mean a manufacturer's batch and defined as the end product of all raw materials mixed, blended, or processed in a single operation.

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4.3.2 Sampling of the end item. For the purpose of sampling the lot shall be expressed in units of gallons. Samples from lots shall be taken in accordance with MIL-STD-105 using inspection level S-2 and an acceptable quality level (AQL) of 2.5.

4.3.3 Test methods. All tests shall be conducted in accordance with the methods specified in table II to determine compliance with the requirements of 3.1 and 3.2. All tests reports shall contain the individual values utilized in expressing the final result. Failure to pass any test, or noncompliance with any requirement, shall be cause for rejection of the sample and, therefore, the lot.

TABLE II. Test methods

Test	Methods	
	ASTM Standard	Fed. Test Method Std. No. 141
Specific gravity	D 1963	----
Acid value	D 1639	----
Saponification value	D 1962	----
Unsaponifiable matter	D 1965	----
Iodine value	D 1959	----
Loss on heating	D 1960	----
Color	D 1544	----
Foots	D 1954	----
Gravimetric foots	D 1966	----
Flash point	D 1393	----
Appearance	-----	4261

## 5. PREPARATION FOR DELIVERY

5.1 Packaging, packing, and marking. The linseed oil shall be packaged, packed, and marked in accordance with PPP-P-1892. The level of packaging shall be A, B, or C, and the level of packing shall be A, B, or C, as specified (see 6.2). The linseed oil shall be furnished in 1-pint cans, 1-quart cans, 1-gallon cans, 5-gallon pails, and 55-gallon drums (see 6.2).

## 6. NOTES

6.1 Intended use. This specification covers raw linseed oil for use in paint, varnish, and related products. The oil is obtained from flaxseed which comes from a plant, *linum usitatissimum*.

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) Quantity required and size of container (see 5.1).
- (c) Level of packaging and packing required (see 5.1).

### MILITARY INTERESTS:

DOD has waived coordination on revisions and amendments to this Federal Specification until further notice.

### CIVIL AGENCY COORDINATING ACTIVITIES:

EPA  
NASA - JFK

PREPARING ACTIVITY: GSA - FSS

Orders for this publication are to be placed with General Services 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. Price 25 each.