

**TT-X-916b****JULY 7, 1961****SUPERSEDING****Int. Fed. Spec. TT-X-00916a (CAS-FSS)****July 15, 1958 and****Fed. Spec. TT-X-916****March 10, 1948****FEDERAL SPECIFICATION****XYLENE (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 AND CLASSIFICATION**

**1.1 Scope.** This specification covers xylene for use in organic coating and rotogravure ink.

**1.2 Classification.**

**1.2.1 Type and grades.** This specification covers one type and two grades of xylene.

Grade A—Ten degree xylene

Grade B—Industrial grade xylene

**2. APPLICABLE SPECIFICATIONS, STANDARDS, AND OTHER PUBLICATIONS**

**2.1 Specifications and standards.** The following specifications and standards, of the issues in effect on date of invitation for bids, form a part of this specification:

**Federal Specifications:**

**TT-P-143—Paint, Varnish, Lacquer, and Related Materials; General Specification for Packaging, Packing, and Marking.**

**Federal Standards:**

**Fed. Std. No. 102—Preservation, Packaging, and Packing Levels.**

**Fed. Test Method Std. No. 141—Paint, Varnish, Lacquer, and Related Materials: Methods of Inspection, Sampling and Testing.**

**Fed. Test Method Std. No. 791—Lubricants, Liquid Fuels and Related Products: Methods of Tests.**

**Fed. Std. No. 123—Marking for Domestic Shipment (Civilian Agencies).**

(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, Standards, and Handbooks 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 25, D. C.

(Single copies of this specification and other product specifications required by activities outside the Federal Government for bidding purposes are available without charge at the General Services Administration Regional Offices in Boston, New York, Atlanta, Chicago, Kansas City, Mo., Dallas, Denver, San Francisco, Los Angeles, Seattle, and Washington, D. C.

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**Military Standard:**

**MIL-STD-129—Marking for Shipment and Storage.**

(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 publication forms a part of this specification. Unless otherwise indicated, the issue in effect on date of invitation for bids shall apply.

**TF-X-916b.****Code of Federal Regulations:****Interstate Commerce Commission Rules and Regulations for the Transportation of Explosives and Other Dangerous Articles.**

(The Interstate Commerce Commission Regulations are a part of the Code of Federal Regulations (Revised 1956) available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Orders for the above publication should cite "49 CFR 71-90 (Rev. 1956).")

**3. REQUIREMENTS:**

**3.1 Quantitative requirements.** The xylene shall meet the requirements specified in table I.

**TABLE I.—Quantitative requirements**

Characteristics	Requirements			
	Grade A		Grade B	
	Minimum	Maximum	Minimum	Maximum
Specific gravity at 15.56°/15.56°C. ....	0.860	0.870	0.850	0.870
Distillation:				
Initial boiling point at 760 mm. pressure .....	135°C.	....	123°C.	....
Distillate below 130°C. (percent by volume) .....	....	....	....	5
Distillate below 145°C. (percent by volume) .....	....	....	90	....
Dry point at 760 mm. pressure .....	....	145°C.	....	155°C.
Flash point (tag closed cup) .....	80°F.	....	75°F.	....

**3.2 Qualitative requirements.**

**3.2.1 Appearance.** The xylene shall be clear and free from sediment and suspended matter when examined by transmitted light.

**3.2.2 Color.** The xylene shall be no darker than a solution of 0.0030 gram of reagent-grade potassium dichromate in 1 liter of distilled water.

**3.2.3 Odor.** The xylene shall have the characteristic odor of xylene and shall leave no residual odor after evaporation from filter paper.

**3.2.4 Color of acid wash.** The color of the acid layer shall be no darker than reference color standard No. 6 in case of grade A xylene and reference color standard No. 10 in case of grade B xylene, when tested as described in paragraph 4.3.1.

**3.2.5 Acidity.** The residue after distillation shall not be acidic when tested as described in 4.3.1.

**3.2.6 Copper corrosion.** The copper strip shall not show iridescence or a gray or black deposit of discoloration, but may show a slight and perfectly uniform tarnish when tested as specified in 4.3.1.

**3.2.7 Sulfur compounds.** The xylene shall be free from hydrogen sulfide and sulfur dioxide.

**4. SAMPLING, INSPECTION, AND TEST PROCEDURES**

**4.1** The supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own or any other inspection facilities and services acceptable to the Government. Inspection records of the examination and tests shall be kept complete and available to the Government as specified in the contract or order. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

**4.2 Sampling and inspection.** Unless otherwise specified, sampling and inspection shall be in accordance with the applicable methods 1011, 1021, and 1031 of Federal Test Method Standard No. 141.

**4.3 Test procedures.** Tests shall be made in accordance with the applicable methods of Federal Test Method Standard No. 141.

4.3.1 The following tests shall be conducted in accordance with Federal Test Method Standard No. 141.

Test	Method
Distillation .....	4303
Flash point .....	4291
Appearance .....	4261
Odor .....	4401
Copper corrosion .....	5102
Specific gravity .....	4153
Color of acid wash .....	5322
Sulfur compounds .....	5311
Color .....	4247
Acidity .....	5254

## 5. PREPARATION FOR DELIVERY

For civil agency procurement the definitions and applications of the levels of packaging and packing shall be in accordance with Federal Standard No. 102.

5.1 Packaging and packing. Xylene shall be packaged in the size container specified (see 6.3). Xylene shall be packaged Level A or C and packed Level A, B, or C, as specified (see 6.3) in accordance with Federal Specification TT-P-143.

5.2 Marking. In addition to any special marking required by the contract or order, marking for shipment shall be in accordance with Federal Specification TT-P-143.

5.2.1 In addition to the above, all containers shall be marked with the following precautionary marking:

**WARNING! Flammable.**

Keep away from heat and open flame.

Keep container closed.

Use with adequate ventilation.

Avoid prolonged breathing of vapor.

Avoid prolonged or repeated contact with skin.

## 6. NOTES

6.1 Scope and intended use of the material. The xylene covered by this specification is intended for use as a thinner or solvent for organic finishes. Grade A or "ten-degree xylene" is a good diluent for nitrocellulose lacquers where higher boiling and slower evaporating thinners than toluene are desired. Grade B or "industrial xylene" is widely used in bronzing liquids and aluminum paints, since it promotes excellent "leafing" and minimizes discoloration of the metallic pigment. Both grades of xylene have high solvent power and produce low viscosity liquids especially when used in asphaltum varnishes or with alkyd type resins. On grinding carbon blacks in varnishes xylene has proven very useful in dispersing the pigment. It is also used in the manufacture of rotogravure inks and for cleaning purposes.

6.2 Xylene should be purchased by volume, the unit being a U. S. gallon of 231 cubic inches at 15.56 C. (60°F.). The volume of deliveries may be determined by dividing the net weight, in pounds, by the weight per gallon. To obtain the weight per gallon, multiply the specific gravity at 15.56°/15.56°C. by 8.33. One gallon of grade A xylene weighs between 7.164 and 7.247 pounds, and a gallon of grade B xylene weighs between 7.081 and 7.247 pounds.

6.3 Ordering data. Procurement documents should specify the following:

- Title, number, and date of this specification.
- Size of container.
- Level of packaging and level of packing required (see 5.1).
- Grade (see 1.2.1).

6.4 Transportation description. Transportation description and minimum weight applicable to this commodity are:

**Rail:**

Xylene (Xylol) (released valuation not exceeding 50 cents per lb.).

Carload minimum weight 30,000 pounds.

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### *Motor:*

Xylene or Xylol (released valuation not exceeding 50 cents per lb.).

Motor volume minimum weight 30,000 pounds.

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