



Designation: D3852 – 16

Standard Practice for Sampling and Handling Phenol, Cresols, and Cresylic Acid¹

This standard is issued under the fixed designation D3852; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This practice covers procedures for sampling and handling phenol, cresols and cresylic acid in solid and liquid forms, including liquids at elevated temperatures, in a safe manner that represents and preserves quality. In general, this practice also applies to xylenols, and some other alkylated phenolic materials; however, specific information regarding these materials should be sought and used if available.

1.2 Any person sampling or handling these products should consult the applicable Safety Data Sheet (SDS) for specific first aid instructions and information on the proper equipment to have available for use in the event of personal contact or exposure.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* For specific hazard statements, see Sections 3, 4, 5, 6, 7, 8 and an appropriate SDS.

2. Referenced Documents

2.1 *ASTM Standards:*²

E300 Practice for Sampling Industrial Chemicals

2.2 *Other Documents:*

OSHA Regulations, 29 CFR paragraphs 1910.1000 and 1910.1200³

U.S. DOT Regulations, 49 CFR Transportation, Subchapter C, Parts 171 – 180³

¹ This practice is under the jurisdiction of ASTM Committee D16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Subcommittee D16.08 on Handling and Sampling Aromatic and Cyclic Hydrocarbons.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.

NFPA No. 704-1996 **Standard System for the Identification of the Hazards of Materials for Emergency Response**⁴

3. Significance and Use

3.1 This practice is issued to provide information useful in establishing sampling and handling procedures. It is expected that this information will only be utilized in conjunction with an existing health and safety program and consultation with an appropriate SDS. The information provided cannot be used as a substitute for expert safety and medical advice as provided in an appropriate SDS, but rather as a supplement to such advice.

4. Description of Products

4.1 Phenol is a colorless to light pink crystalline material which melts at 40 to 41°C. Technical and USP grades melt at lower temperatures.

4.2 Phenol is both extremely hygroscopic and sensitive to discoloration. Therefore, it cannot be overemphasized that proper precautions must be undertaken when unloading or sampling the product. Moisture must be excluded. The use of sampling devices that contain metals that may catalyze discoloration (iron, copper) must also be avoided.

4.3 Cresylic acid is a common chemical name applied to mixtures of alkyl-substituted phenols. Included are mixtures of cresols, xylenols, and higher alkylated phenols. Many cresylic acid mixtures contain measurable amounts of phenol.

4.4 Most cresylic acid mixtures are liquids at ambient temperatures. However, at low temperatures (<0°C) they sometimes become very viscous and difficult to pour. Some mixtures containing high concentrations of high melting isomers may form thick slurries or become solids at low temperatures.

4.5 While phenol or cresylic acids are highly dangerous when handled improperly, particularly at the elevated temperatures sometimes required to unload tank cars or tank trucks, handling and sampling need not be hazardous provided the dangers are recognized. Proper precautionary measures must be provided and scrupulously adhered to as prescribed by the SDS or other locally relevant guidelines.

⁴ Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169-7471, <http://www.nfpa.org>.

*A Summary of Changes section appears at the end of this standard