



# Standard Practice for Sampling and Handling Naphthalene, Maleic Anhydride, and Phthalic Anhydride<sup>1</sup>

This standard is issued under the fixed designation D 3438; 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 naphthalene, maleic anhydride, and phthalic anhydride in various solid forms, and as liquids at elevated temperatures in a safe manner that represents and preserves quality.

1.2 Any person sampling or handling these products should consult the applicable Material Safety Data Sheets (MSDS) 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 *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, and 7.

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

**E 300** Practice for Sampling Industrial Chemicals

2.2 *Other Documents:*

**OSHA Regulations 29 CFR**, paragraphs 1910.1000 and 1910.1200<sup>3</sup>

## 3. Significance and Use

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

<sup>1</sup> 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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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> 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>.

## 4. Description of Products (See **Table 1**)

4.1 Phthalic anhydride is classified as hazardous by the Department of Transportation as a corrosive material and is therefore subject to DOT regulations governing the transportation of hazardous materials. Maleic anhydride and naphthalene are classified as hazardous by the Department of Transportation and are subject to DOT regulations. Maleic anhydride has the classification corrosive material, and naphthalene has the classification flammable solid.

4.1.1 These products are normally transported in several types of containers, including cartons, barrels, bags, cans, metal and fiber drums, tank trucks, tank cars, and barges.

## 5. Hazards

5.1 *Health*—Consult current OSHA regulations and supplier's Material Safety Data Sheets, and local regulations for all materials used in this practice.

5.1.1 Aside from the risk of burns in sampling these products when molten, and a possibility of dermatitis from impurities, particularly in crude grades, industrial use does not present a significant health hazard. However, ordinary sampling precautions must be observed to protect personnel from contact with molten material or excessive exposure to dusts or high concentrations of vapor.

5.1.2 Precautions must be observed to protect personnel from excessive inhalation of vapors and dust.

NOTE 1—For permissible exposure limits see **OSHA Regulations**, paragraph 1910.1000.

5.2 *Fire:*

5.2.1 These products in both the solid and liquid forms are combustible, and introduce a potential fire hazard where they are stored, handled, or used.

5.2.2 Naphthalene, maleic and phthalic anhydride vapors or dust can form explosive mixtures with air.

5.2.3 When molten naphthalene, at temperatures above 110°C, comes into contact with water, foaming or possible explosion may result.

5.2.4 Dry chemicals, carbon dioxide, and foam can all be used in fighting fires involving these materials.

5.2.5 Maleic anhydride decomposes violently in the presence of amines or alkali metals, especially at elevated temperatures.

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