



Designation: ~~D4297-99~~ Designation: **D 4297 – 05 (Reapproved 2009)**

Standard Practice for Sampling and Handling Bisphenol A (4,4' -Isopropylidinediphenol)¹

This standard is issued under the fixed designation D 4297; 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 safely sampling and handling 4,4'-isopropylidinediphenol, commercially known as bisphenol A, in various solid forms, and as a liquid at elevated temperatures in a manner which represents and preserves product quality.~~

~~1.2 Any person sampling or handling this product should have specific first aid instructions and equipment 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 4-8 and 9 Scope*~~

1.1 This practice covers procedures for safely sampling and handling 4,4'-isopropylidinediphenol, commercially known as bisphenol A (BPA), in various solid forms, and as a liquid at elevated temperatures in a manner which represents and preserves product quality.

1.2 Any person sampling or handling this product should have consulted a Material Safety Data Sheet (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 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered 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 Section 8.

2. Referenced Documents

2.1 OSHA Regulations:

~~29 CFR Labor, paragraphs 1910.1000 and 1910.1200~~

29 CFR Labor, paragraphs 1910.1000 and 1910.1200²

2.2 U.S. DOT Regulations:

~~49 CFR Transportation, Subchapter C, Parts 171-180²~~

49 CFR Transportation, Subchapter C, Parts 171-180²

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 MSDS. The information provided herein cannot be used as a substitute for expert safety and medical advice as provided in an appropriate MSDS, but rather as a supplement to such advice.

4. Description of Product (See Table 1)

4.1 Bisphenol A (BPA) is not classified as a hazardous chemical by the Department of Transportation, and is, therefore not subject to DOT regulations governing the transportation of hazardous articles. Bisphenol A is normally transported in several types of containers including cloth and paper bags, bulk trucks, and covered hopper cars. (See Table 1.)

¹ This practice is under the jurisdiction of ASTM Committee D16 on Aromatic Hydrocarbons and Related Chemicals and is the direct responsibility of Subcommittee D16.01 D16.08 on Handling and Sampling Aromatic and Cyclic Hydrocarbons.

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² Available from Superintendent of Documents, Government Printing Office, Washington, DC 20402.

³ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>.

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

TABLE 1 Typical Physical Properties Product Bisphenol A

Melting Point, °C	Boiling Point, °C (10.5 mm Hg)	Solid Forms	Flash Point, °F	Specific Gravity, 25°C
154–157	240	prills, flakes, crystals, powder	4.5	1.20 (solid)

4.2 While bisphenol A (BPA) is dangerous when handled improperly, particularly at elevated temperatures, its unloading need not be hazardous provided the hazards are recognized and handling instructions are rigidly observed as detailed here and in an appropriate MSDS.

5. Hazards

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

5.1.1 Aside from the risk of thermal burns in handling bisphenol A (BPA) when molten, and a possibility of dermatitis from impurities, particularly in crude grades, industrial use does not present a significant health hazard. However, ordinary precautions must be observed to protect personnel from contact with molten bisphenol A (BPA) 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.

5.2 *Fire*:

5.2.1 Bisphenol A in both the solid and liquid form is combustible and introduces a potential fire hazard when it is stored, handled, or used.

5.2.2 Bisphenol A vapors or dust can form explosive mixtures with air.

5.2.3 Dry chemicals, carbon dioxide, foam, and water can all be used in fighting fires involving bisphenol A.

5.3 For chemical emergency (spill, leak, fire, exposure, or accident) call CHEMTREC, day or night at 1-800-424-9300. For emergency calls outside the United States, call 703-527-3887. (Collect calls are accepted and all calls are recorded.)

5.2.1 BPA in both the solid and liquid form is combustible and introduces a potential fire hazard when it is stored, handled, or used.

5.2.2 BPA vapors or dust can form explosive mixtures with air.

5.2.3 Dry chemicals, carbon dioxide, foam, and water can all be used in fighting fires involving BPA.

6. Protective Equipment

6.1 Employees who work with bisphenol A should be well trained and should maintain safe working conditions. Persons handling molten bisphenol A require eye, face, respiratory, body, skin, and hand protection. Handling solid bisphenol A requires hand and body covering clothing to prevent excessive exposure to dust, safety glasses with side shields, and respiratory protection such as a dust mask.

6.2 Personal protective equipment is not an adequate substitute for good safe working conditions, proper ventilation, and intelligent conduct. Correct usage of protective equipment requires education in its proper use.

6.1 Employees who work with BPA should be well trained and should maintain safe working conditions. They should be required to read an appropriate MSDS for BPA in its entirety and consult appropriate, local, safety personnel if they have any questions or concerns. Persons handling molten bisphenol-A need to exercise particular care.

7. First Aid

7.1 Skin contact with molten bisphenol A causes third degree burns. In case of skin contact with molten bisphenol A, remove all contaminated clothing, immediately see a physician, and advise him of the type of product causing the burns.

7.2 If bisphenol A gets into the eyes, flush eyes with copious amounts of water for at least 15 min, holding eyes open, and then see a physician immediately.

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7.1 Consult an appropriate MSDS for BPA with regards to first aid measures that should be taken. In particular, extreme care must be observed handling molten BPA as it can cause severe thermal burns.

8. Safety Precautions

8.1 Exercise care to prevent spills and leaks. If they do occur, only properly protected personnel should remain in the contaminated area. All spill-related activities should comply with applicable EPA, OSHA, and local regulations and laws.

8.2 If the spill is large, rope off the area.

8.3 Because of fire and dust explosion hazards, do not permit open flames in the vicinity of tank carriers, other shipping containers, or storage tanks. Provide all electrical fixtures with vapor-proof globes and explosion-proof safety devices. Ground tank carriers by an approved method. Prohibit smoking. All pneumatic conveying should be done with nitrogen or other inert gas.

8.4 Any person sampling or handling these products should have specific first aid instructions and equipment available for use in the event of personal contact or exposure.