



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

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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.

2. Referenced Documents

2.1 OSHA Regulations:

29 CFR Labor, paragraphs 1910.1000 and 1910.1200²

2.2 U.S. DOT Regulations:

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

4. Description of Product (See Table 1)

4.1 Bisphenol A 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.)

4.2 While bisphenol A 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.

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 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 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.)

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,

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

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)

and intelligent conduct. Correct usage of protective equipment requires education in its proper use.

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.

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.

8.5 Conduct sampling and handling operations only by carefully instructed, experienced, reliable employees, under adequate supervision.

8.6 Accomplish loading, unloading, and sampling operations only when adequate lighting is provided.

8.7 Allow no eating or drinking in close proximity to the handling or sampling operation.

8.8 Employees shall:

8.8.1 Know the hazards connected with the handling of Bisphenol A;

8.8.2 Be completely acquainted with the purpose, use, and maintenance of personal protective equipment;

8.8.3 Be trained to report promptly to supervision all suspected leaks or equipment failures;

8.8.4 Be trained to recognize and report any symptoms of systemic poisoning or skin contact; be thoroughly trained in the proper procedures for administering first aid and for obtaining professional medical help;

8.8.5 Know and routinely practice the accepted methods of sampling and handling Bisphenol A in order to avoid spilling, leaks, skin contact, inhalation, or ingestion; and

8.8.6 Be completely familiar with the location and operation

of safety showers, eye baths, hose lines, and all other first aid equipment.

9. Unloading Hopper Cars or Hopper Trucks

9.1 Observe all safety precautions. Always follow shipper's instructions for unloading, and read and observe all caution markings on both sides of the hopper or dome.

9.2 Opening of the hopper car dome cover and attachment of delivery lines should all be done by accepted safety procedures.

10. Sampling Solid Bisphenol A

10.1 *Bulk Quantities*—Take a representative sample, preferably from a falling bisphenol A stream, using a straight-path sampler. Adjust sampler feed rate, slot width, cutter speed, and frequency to collect ½-lb (227-g) of sample per 10 000 lb (4540 kg) of bisphenol A.

10.2 *Bags (50 lb (22.7 kg))*:

10.2.1 Using a small thief, 8 to 12 in. (203 to 305 mm), remove about ¼ lb (113 g) of sample from 1 bag out of every 40 bags (2000 lb) (907 kg) of bisphenol A. Take the sample from the filling ear or, if necessary, by opening one corner of the bag. Place each sample in a plastic bag. Tightly secure the sample bag to minimize absorption of moisture. Label with proper identification and according to OSHA Regulations.

10.2.2 Make a composite blend from the individual samples and mix thoroughly before analyzing.

10.2.3 Aluminum, polyethylene, polypropylene, or stainless steel-type scoops are recommended for taking samples of product from the bags selected for sampling. Avoid contaminating the sample with iron or rust.

10.3 Extreme care and good judgment are necessary to ensure that the samples truly represent the product.

10.4 Remove approximately 75 g portions from each of the bags selected from a sample unit and place in a plastic bag. Seal the opened bags with suitable tape.

10.5 Label the sample container in accordance with OSHA Regulations to indicate, as a minimum, the date and time, source of the sample, type of material, purpose of the sample, and the name of the sample.

10.6 *Large Bulk Sacks (1100 to 2200 lb (500 to 1000 kg))*:

10.6.1 Use a sample thief to collect ½-lb (227-g) samples for each 4000 to 5000 lb (1814 to 2268 kg) of material.

10.6.2 Place samples in plastic bags. Tightly secure the sample bags to minimize absorption of moisture. Label samples in accordance with 10.5.

11. Keywords

11.1 bisphenol A; handling; sampling



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