



Standard Practices for Sampling Particulate Ion-Exchange Materials¹

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1. Scope

1.1 These practices² cover procedures for obtaining representative samples of ion-exchange materials. The following practices are included:

	Sections
Practice A—Sampling from a Single Package and Multiple Package Lots or Shipments	4 to 10
Practice B—Sampling from Fixed Bed Ion-Exchange Equipment Having Unrestricted Head Room	11 to 15
Practice C—Sampling from Fixed Bed Ion-Exchange Equipment Having Restricted Head Room	16 to 21

1.2 *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.*

2. Referenced Documents

- 2.1 *ASTM Standards:*
D 1129 Terminology Relating to Water³

3. Terminology

3.1 *Definitions*—Certain terms in these practices that relate to ion exchange are defined in Terminology D 1129.

PRACTICE A—SAMPLING FROM A SINGLE PACKAGE AND MULTIPLE PACKAGE LOTS OR SHIPMENT

4. Summary of Practice

4.1 A hollow, sample-probe guide that is comprised of mating threaded sections and that can be extended to any convenient length by the addition of more sections, is inserted into an ion-exchange unit. A sampling tube is inserted through the probe guide and is connected to a vacuum source. Ion-exchange material is removed by eduction. A core sampler also may be used.

5. Significance and Use

5.1 This practice will be used most frequently to sample materials as received from the manufacturer in the original shipping container and prior to any resin-conditioning procedure. Since certain ion-exchange materials are supplied by the manufacturer in the dry or free-flowing state whereas others are supplied moist, it is necessary to employ two different sampling devices. Therefore, this practice is divided into Sampling Procedure—Dry or Free-Flowing Material, and Sampling Procedure—Moist Material.

5.2 Once the sample is obtained, it is necessary to protect the ion-exchange materials from changes. Samples should be placed in sealable, gasproof containers immediately.

6. Apparatus

- 6.1 *Sampling Devices*, as shown in Fig. 1 and Fig. 2.⁴
6.2 *Sealable, Gasproof Containers*, for sample storage.
6.3 *Sample Quartering Materials*—A 0.5 by 0.5 m (20 by 20 in.) sheet of glazed paper, oil cloth, or flexible plastic film.

7. Kind and Number of Samples

7.1 For a representative sample from a single package, a minimum of three probes or increments should be taken with the sampling device.

7.2 For a representative sample from a multiple package lot or shipment:

7.2.1 If the markings on the package indicate the material to be sampled is from a single lot (batch or manufacturing run), the number of packages selected shall be not less than 10 % of the packages received. When less than 30 packages are received, a minimum of three packages shall be chosen at random for sampling. If a single lot contains more than 30 packages and the order of filling is designated on the packages, the first, last, and middle packages shall be sampled. If the results of the analysis of these three samples agree within the limits of precision of the test methods used, further samples from the lot need not be taken. If they are not in agreement, additional samples may be taken at the option of the parties concerned. When the entire shipment or an entire lot consists of

¹ These practices are under the jurisdiction of ASTM Committee D19 on Water and are the direct responsibility of Subcommittee D19.08 on Membranes and Ion Exchange Materials.

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² These practices were developed from activities within ASTM Committee D-19.

³ *Annual Book of ASTM Standards*, Vol 11.01.

⁴ The sampling device described in Fig. 2 is the same as that used in ASTM Methods C 183, Sampling Hydraulic Cement, *Annual Book of ASTM Standards*, Vol 14.01.

