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Absorbent Gauze

» Absorbent Gauze is cotton, or a mixture of cotton, and not more than 53.0 percent, by weight, of rayon, and is in the form of a plain woven cloth conforming to the standards set forth herein. Absorbent Gauze that has been rendered sterile is packaged to protect it from contamination.

[NOTE—Condition all Absorbent Gauze for not less than 4 hours in a standard atmosphere of 65 ± 2% relative humidity at 21 ± 1.1° before determining the weight, thread count, and absorbency. Remove the Absorbent Gauze from its wrappings before placing it in the conditioning atmosphere, and if it is in the form of bolts or rolls, cut the quantity necessary for the various tests from the piece, excluding the first two and the last two meters when the total quantity of Gauze available so permits.]

Packaging and storage—Preserve in well-closed containers. Absorbent Gauze that has been rendered sterile is so packaged that the sterility of the contents of the package is maintained until the package is opened for use.

Labeling—Its type or thread count, length, and width and the number of pieces contained are stated on the container, and the designation "non-sterilized" or "not sterilized" appears prominently thereon unless the Gauze has been rendered sterile, in which case it may be labeled to indicate that it is sterile. The package label of sterile Gauze indicates that the contents may not be sterile if the package bears evidence of damage or has been previously opened.

The name of the manufacturer, packer, or distributor is stated on the package.

General characteristics—Absorbent Gauze is white cloth of various thread counts and weights. It may be supplied in various lengths and widths, and in the form of rolls or folds.

The accompanying table designates for each commercial type the thread count and weight in g per square meter.

Type	Threads per 2.54 Cm		Average Count, Threads per 6.45 Sq. Cm	Weight,[1] g per Sq. Meter
	Warp	Filling		
I	41 to 47	33 to 39	76 to 84[2]	43.8 to 55.8
II	30 to 34	26 to 30	57 to 63	32.9 to 41.9
III	26 to 30	22 to 26	49 to 55	28.4 to 36.2
IV	22 to 26	18 to 22	41 to 47	24.5 to 31.1
V	20 to 24	16 to 20	37 to 43	22.5 to 28.8
VI	18 to 22	14 to 18	33 to 39	19.8 to 25.2
VII	18 to 22	8 to 14	27 to 35	18.1 to 23.1
VIII	12 to 16	8 to 12	21 to 27	12.1 to 15.5

[1] For Absorbent Gauze that contains purified rayon, increase these values by 2.5%.

[2] For Type I rolled gauze, the range is 75 to 85 threads per 6.45 sq. cm.

Thread count—If the dimensions of the piece permit, count the warp and filling threads of Absorbent Gauze in three separate 76.2-mm squares, not counting threads nearer any edge than one-tenth of the dimension of the fabric and not including the same threads in any two counts. For pieces not greater than 76.2 mm in either dimension, count all the threads in three different places in that dimension of the piece.

Average the three counts for the warp and filling, respectively: the average lies within the ranges tabulated under *General characteristics*.

For Absorbent Gauze packaged in rolls, count the number of warp and filling threads in areas of 1.27 cm square at five points evenly spread along the center line of the bandage, no point being within 30.5 cm of either end of the bandage.

Length—Unfold or unroll it, smooth it without stretching it, and measure its length along the center line: the length is not less than 98.0% of that stated on the label.

Width—Measure the width at each of the points selected for the *Thread:* the average of the three measurements is within 1.6 mm of the width stated on the label.

Weight—Weigh a piece of gauze of stated size: the weight, expressed in terms of g per m^2, meets the requirements for weight under *General characteristics*.

Absorbency—Fold about 0.1 m^2 into a 10-cm section. For Absorbent Gauze packaged in rolls, use the entire roll. Hold the folded or rolled Gauze horizontally almost in contact with the surface of water at approximately 25°, and allow it to drop lightly upon the water: complete submersion takes place in not more than 30 seconds.

Sterility Tests ⟨71⟩ —Absorbent Gauze that has been rendered sterile meets the requirements.

Dried and ignited residue, Acid or alkali, and Dextrin or starch, in water extract—Place 20 ± 0.1 g in 500 mL of water, and boil the mixture for 15 minutes, adding boiling water as necessary to maintain the original volume. Pour the water through a funnel into a 1000-mL volumetric flask, transfer the Absorbent Gauze to the funnel, press out the excess water with a glass rod, and wash it with two 250-mL portions of boiling water, pressing the gauze after each washing. Cool the combined washings, dilute to volume, and mix. Then apply the following tests.

Dried residue—Evaporate 400 mL of the extract, filtering if necessary, in a suitable dish on a steam bath, and dry the residue at 105° to constant weight: the weight of the residue so obtained does not exceed an amount, in mg, calculated by the formula:

$$80 - 0.6C$$

in which C is the corrected percentage of cotton (50 mg maximum, or 0.6%).

Ignited residue—Ignite the dried residue in a muffle furnace at a dull-red heat to constant weight: the weight of the ignited residue does not exceed an amount, in mg, calculated by the formula:

$$20 - 0.14C$$

in which C is the corrected percentage of cotton (13 mg maximum, or 0.16%).

Acid or alkali—To separate 200-mL portions of the extract, add 3 drops of phenolphthalein TS and 1 drop of methyl orange TS, respectively: no pink color develops in either portion.

Dextrin or starch—To a 200-mL portion of the extract add 1 drop of iodine TS: no red, violet, or blue color develops.

Residue on ignition—Place about 5 g, accurately weighed, in a suitable dish, and moisten with 2 N sulfuric acid. Gently heat the mixture until it is charred, then ignite more strongly until the carbon is completely consumed: the weight of the residue corresponds to not more than the percentage of the weight of the Gauze, calculated by the formula:

$$0.002C + 0.015(100 - C)$$

in which C is the corrected percentage of cotton (0.89% maximum).

Fatty matter—Pack 10 ± 0.01 g in a continuous-extraction thimble with a tared flask, and extract with ether for 5 hours, adjusting the rate so that the ether siphons not less than four times per hour. The ether extract in the flask shows no trace of blue, green, or brownish color. Evaporate the extract to dryness, and dry at 105° to constant weight: the weight of the residue does not exceed an amount, in mg, calculated by the formula:

$$0.4C + 30$$

in which C is the corrected percentage of cotton (70 mg maximum, or 0.7%).

Alcohol-soluble dyes—Pack 10 g in a narrow percolator, and extract slowly with alcohol until the percolate measures 50 mL: when observed downward in a column 20 cm in depth, the percolate may show a yellowish color, but neither a blue nor a green tint.

Cotton and rayon content—

Sulfuric acid solution (59.5% by weight)—Add sulfuric acid slowly to water until the specific gravity, determined at 20°, is between 1.4902 and 1.4956.

Procedure—Place about 500 mg of Absorbent Gauze, previously bleached and dried at 110° to constant weight and accurately weighed, in a glass-stoppered, 125-mL flask, add 50.0 mL of *Sulfuric acid solution*, and shake by mechanical means for 30 minutes. Pass the mixture through a tared sintered-glass crucible, using three 10-mL portions of *Sulfuric acid solution* to rinse the flask and applying suction each time to drain the acid. Wash the residue in the crucible with 50 mL of 2 N sulfuric acid, then wash it with water until the filtrate is neutral to litmus. Add 40 mL of 6 N ammonium hydroxide to the crucible, allow the residue to soak for 10 minutes, then apply suction to remove the liquid. Similarly wash the residue with three 50-mL portions of water, allowing the residue to soak for 15 minutes each time. Dry the residue at 105°

to 110° to constant weight. Calculate *C*, the corrected percentage of cotton, taken by the formula:

$$[100(1.046J/G) - 1.6]$$

in which *J* is the weight, in mg, of the residue; *G* is the weight, in mg, of the portion of Absorbent Gauze taken; and 1.046 and 1.6 are empirical correction factors. Calculate *R*, the corrected percentage of rayon, taken by the formula:

$$100 - C.$$

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
ABSORBENT GAUZE	Leslie Furr Associate Scientific Liaison	GCDF2020 General Chapters - Dosage Forms 2020

Chromatographic Database Information: Chromatographic Database

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