A-A-50177
October 5, 1988

COMMERCIAL ITEM DESCRIPTION

PAPER, LENS

The General Services Administration has authorized the use of this commercial item description in preference to Federal Specification NNN-P-40.

1. CLASSIFICATION

1.1 Classification. This commercial item description covers non-abrasive lens paper in the following types and classes:

Type I - Cleaning Paper

Class 1 - Lightweight
Class 2 - Mediumweight
Class 3 - Heavyweight, silicone treated
Class 4 - Heavyweight, wet-strength
Class 5 - Lightweight, wet-strength

Type II - Wrapping or covering for coated optical surfaces

1.2 Sizes. Sizes shall be specified by the purchasing activity (see 5.2).

2. SALIENT CHARACTERISTICS

2.1 Salient characteristics. Type I, classes 1, 2, 4 and 5 paper shall be white. Type I, class 3 paper shall be lavender. Type II paper shall be white or natural.

2.2 Type I.

2.2.1 Classes 1, 2 and 4. Classes 1, 2 and 4 paper shall be made from bleached chemical wood pulp, cotton, rayon or hemp fibers, or mixtures of these, and shall not be contaminated with any unbleached or mechanical wood pulp. The formation shall be uniform and open.

2.2.2 Class 3. Class 3 paper shall be made from 100 percent bleached chemical wood pulp. The formation shall be uniform and dense.

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2.2.3 Class 5. Class 5 paper shall be made from 1.5 denier viscose rayon fibers at least 3/16 inch long, hemp fibers or mixtures of these with cellulosic or cellulose derivative binding agents, and shall be free from wood pulp.

2.3 Type II. Type II paper shall be made from either white or unbleached wood pulp, and shall be free of ground wood particles.

2.4 Physical and chemical requirements. The paper shall conform to the physical and chemical requirements specified in table I.

TABLE I. Physical and chemical properties

Characteristic	Classes	Type I					Type II	TAPPI method
		1	2	3	4	5		
Basis weight:								
g/m^2 (Tol. ± 1.14)		8.95	12.20	10.20	16.92	11.71	18.71	T410
Lbs./24 x 36-500 (Tol. ± 0.70)		5.50	7.50	11.80	10.40	7.20	11.50	-
Bursting strength 1/:								
kPa, min.		207	-	276	-	-	345	-
Pounds/sq. in., min.		30	-	40	-	-	50	T403
Tensile strength, dry (25 mm. width), grams, minimum								
Machine direction		-	450	-	1800	700	-	T404
Cross direction		-	450	-	600	100	-	T404
Tensile strength, wet (25 mm. width), grams, minimum								
Machine direction		-	-	-	450	150	-	T456
Acidity (pH value)								
Minimum		5.0	5.0	5.0	4.5	4.5	6.0	T435 or
Maximum		7.5	7.5	7.5	7.5	7.5	7.0	T509
Ash percent, maximum		0.5	0.5	1.3 2/	0.5	0.5	-	T413
Silicone content, percent, minimum		-	-	4.0	-	-	-	3/

1/ Requirement is for 10 sheets tested together.

2/ After removal of silicone content.

3/ Commercial test as follows:

Ignite a 30 ml Vycor or equal micro-Kjeldahl flask at 1000°C, cool in a desiccator and weigh to the nearest 0.1 milligram. Support the flask in a water bath at 75° ± 2°C, with the level of the water about half way up the neck of the flask. Above the flask, suspend a funnel with filter paper to allow maximum free space at the neck and mouth of the flask for vapor dissipation. Adjust the position of the funnel so that the tip rests against the wall of the flask. The effluent should not drip but flow gently down the inner wall of the flask.

Fit a 125 mL graduated separatory funnel with a Teflon (or equal) plug-cock and attach a spring tension adapter. Cut a 5 gram sample of lens cleaning tissue into 1/2 inch to 1 inch squares, weigh to the nearest 0.1 milligram and place in the separatory funnel. Cover the tissue with 75 mL of methylene chloride and agitate for 1 minute. Support the funnel above the filter and after 3 to 5 minutes to allow the liquid to flow gradually into the flask at a rate approximately equal to the loss of solvent by volatilization. Repeat to make three extractions of the tissue in fresh solvent. Evaporate the solvent by heating the flask on a steam bath, allow to cool and add 1.5 mL of fuming sulfuric acid and 10 drops of fuming nitric acid. Heat gently on a digestion rack until the material gels as indicated by no further bubble formation at the bottom of the flask. The heating to expel the acid should be done carefully in a vented hood in such a manner that the material does not spatter. Ignite the flask and residue at 1000°C, to constant weight. Cool and re-weigh to the nearest 0.1 milligram.

To confirm the residue as SiO_2, transfer the major portion to a platinum crucible. Add 3 mL of concentrated hydrofluoric acid and 3 drops of concentrated sulfuric acid. Carefully expel the acids and ignite. There will be no significant residue if the ash was SiO_2.

Determine the percent moisture content of the paper in accordance with TAPPI Test Method T 412. Then calculate the moisture free weight of the specimen as follows:

Wt. paper sample (moisture free) = Wt. paper sample - (Wt. paper sample x percent moisture)

Determine a blank value by analyzing a sample of untreated paper by the same procedure. Blank results are usually in the order of 2.5 mg SiO_2. Subtract the blank from the weight of the SiO_2 and calculate the silicone content of the paper as follows:

$$\text{Percent silicone content} = \frac{(\text{Wt. silica ash} - \text{blank})}{\text{Wt. paper sample (moisture free)}} \times 1.233\ (SiH(CH_3)_3) \times 100$$

3. QUALITY ASSURANCE

3.1 Certification. The contractor shall certify that the product offered meets the salient characteristics of the description, conforms to the producer's own drawings, specifications, standards, and quality assurance practices. When specific quality assurance provisions are specified for any commercial characteristic, the contractor shall furnish data resulting from inspection conducted in accordance with the specific quality assurance provisions. The Government reserves the right to require proof of such conformance prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

4. PACKAGING

4.1 Packaging. Paper, 3 by 5 inches through 5 by 7 inches, of the quantity of sheets specified (see 5.2), shall be provided in packages, envelopes or books (see 5.2). Paper larger than 5 by 7 inches shall be provided in 100 sheet envelopes or 500 sheet reams (see 5.2). Each ream shall be wrapped in kraft paper or plastic, or packaged in a box.

4.2 Packing. Paper, packaged as specified, shall be packed in a corrugated fiberboard shipping container conforming to style optional, class domestic, grade 275 of PPP-B-636. The shipping containers shall be closed in accordance with the appendix of PPP-B-636. No filled shipping container shall weigh more than 45 pounds.

4.3 Palletization. When specified (see 5.2), lens paper packed as specified shall be palletized on a 4-way entry pallet in accordance with load type Ia of MIL-STD-147. Each prepared load shall be bonded by means K and L or O or P, in accordance with MIL-STD-147.

4.4 Marking. In addition to any special markings required by the contract or purchase order, books, shipping containers and palletized loads shall be marked in accordance with MIL-STD-129.

5. NOTES

5.1 Intended use. Type I lens paper is used for wrapping and cleaning lenses and other glass and highly polished surfaces. Classes 1, 2, and 3 are for dry cleaning applications; classes 4 and 5, for wet cleaning. Type II lens paper is used for wrapping or covering of all coated optics.

5.2 Ordering data.

a. Title, number and date of this document.
b. Type(s), class(es) and size(s) required (see 1.1 and 1.2).
c. Applicable National Stock Number(s) (NSNs).
d. Quantity of sheets required (see 4.1).
e. Whether packages, envelopes or books are required (see 4.1).

f. Whether envelopes or reams are required (see 4.1).
g. When palletization is required (see 4.3).

5.3 Sources for nongovernmental association documents. Technical Association of the Pulp and Paper Industry (TAPPI) Standards - Copies are available from: Technical Association of the Pulp and Paper Industry, 1 Dunwoody Park, Atlanta, GA 30341.

MILITARY INTERESTS:

Custodians

Army - GL
Navy - MS
Air Force - 82

Review Activities

Army - AR, EA, MD, ME

User Activity

Army - MI
Navy - OS

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:

Army - GL

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