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COMMERCIAL ITEM DESCRIPTION

PAPER, LENS

The General Services Administration has authorized the use of this commercial item description by all federal agencies.

1. SCOPE

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 in the order or contract.

2. SALIENT CHARACTERISTICS

2.1 General. 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.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any other data that may improve this document should be sent to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSMI-RD-SE-TD-ST, Redstone Arsenal, AL 35898-5000.

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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. They 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.

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.

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TABLE I. Physical and chemical properties

Characteristic Classes	Type I 1	Type I 2	Type I 3	Type I 4	Type I 5	Type II	1/ TAPPI Method
Basic 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 2/:							
KPa, minimum	207	-	276	-	-	345	-
Pounds/square inch, minimum	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	3/
Maximum	7.5	7.5	7.5	7.5	7.5	7.0	3/
Ash percent, maximum	0.5	0.5	1.3 4/	0.5	0.5	-	T413
Silicone content, percent, minimum	-	-	4.0	-	-	-	5/

1/ TAPPI – Technical Association of the Pulp and Paper Industry

2/ Requirement is for 10 sheets tested together.

3/ T435 or T509

4/ After removal of silicone content

5/ See 2.4.1

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2.4.1 Commercial test. 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 ½ 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 for 3 to 5 minutes to allow the liquid to flow gradually into th e flask at a rate approximately equal to the loss of solvent by volatilization. Repeat to make three extractions of the tissue . Evaporate the solvent by heating the flask on a steam bath, allow to cool and add 1.5 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 T412. 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:

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

3. REGULATORY REQUIREMENTS

The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation.

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4. PRODUCT CONFORMANCE

The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producers own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

5. PACKAGING

Preservation, packing, and marking shall be as specified in the contract or order.

6. NOTES

6.1 Intended use. Type I lens paper is used for wrapping and cleanin g 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 all coated optics.

6.2 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. Specific preservation, packing and marking requirements.

6.3 Sources for non-governmental association documents. TAPPI Standards are available from Technical Association of the Pulp and Paper Industry, PO Box 105113, Atlanta, GA 30348.

MILITARY INTERESTS:

Custodians:
Army – MI
Navy – MS
Air Force – 99
DLA – DM

Review Activities:
Army – AR, AV, MD
Navy – AS, CG
AF – 03, 71

CIVIL AGENCY COORDINATING ACTIVITY:

GSA – 7FXE

PREPARING ACTIVITY:
Army – MI

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