



Draft Investment Proposal

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ABBREVIATIONS AND ACRONYMS

AATCC	American Association of Textile Chemists and Colorists
AS	Standards of Australia
ASTM	American Society for Testing and Materials
ASTMD	Code of ASTM Standard issued by American Society for Testing and Materials
BS	British Standards (Institution)
BS/DIN/NF	British Standards Institution /Deutsches Institute Für Normung / Association
EN	Francaise de Normalisation EN means they're equal
CAN/CGSB	Canadian General Standards Board
CCMI	Cashmere and Camel Hair Manufacturers Institute
CFR PART	USA Code of Federal Registrar Part Number
CI	Color Index
CNCA	Certification and Accreditation Administration of the People's Republic of China
DTM	Draft Test Method
EC	European Communities
GB/T	Code of Chinese Standard issued by Standardization Administration of China
ISO/FDIS	International Organization for Standardization/Final Draft Standard
ISOD	International Organization for Standardization Draft
IWTO	International Wool Textile Organization
JEOL	Japan Electron Optics Laboratory CO.,LTD
JIS L	Japanese Standards Association
NFG	Association Francaise de Normalisation
OFDA	Optical Fiber Diameter Analyzer
RMB	Chinese currency remimbi
SEM	Scanning Electronic Microscope
TWC	The Woolmark Company
UKAS	United Kingdom Accreditation Service
US CPSC	The US Consumer Product Safety Commission

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EXECUTIVE SUMMARY

Mongolia is the second largest cashmere fiber producer in the world. As most of the exported product is dehaired cashmere fiber, there remains a significant and relatively untapped opportunity to turn dehaired cashmere into spun yarn and finished product, which would add value to this unique diamond fiber while substantially benefiting the Mongolian cashmere industry.

The establishment of an internationally recognized cashmere testing laboratory with updated testing equipment, first class cashmere managers, and professional technicians will surely raise the public awareness of Mongolian cashmere and bolster international recognition of the Mongolian Fiber Mark.

In order to achieve internationally recognized status, it will be necessary to obtain accreditation from an international accreditation organization such as CCMI, UKAS, or CNCA. Proper laboratory management and continuous technical training by top cashmere experts with international marketing expertise are the key factors for building a successful cashmere testing laboratory in Mongolia.

Intertek Testing Services is in the unique position to assist the Mongolian Cashmere industry to establish a world renowned cashmere testing laboratory. Intertek has profound experience in technical training, accreditation, management, and international marketing. Depending on how well the new laboratory is set up, Intertek believes that this laboratory testing facility will be able to pay back its investment in approximately three years.

SECTION I: ANALYSIS OF PRESENT SITUATION OF CASHMERE AND OTHER NATURAL FIBER TESTING IN MONGOLIA

At this stage, we have observed that there is only one semi independent textile testing laboratory called **Textile Institute Laboratory – Cashmere & Wool Testing Centre** in Ulaanbaatar, Mongolia. This laboratory is associated with the Mongolian University of Science and Technology, which is a government owned institute.

The testing capability of **Textile Institute** includes:

Dehaired Cashmere: Physical testing including fiber diameter, coarse fiber content, fiber length (classified by hand), single fiber strength, moisture content, and grease content.

1. Yarn and finished product: fiber content, color fastness, and pilling. Testing methods are in accordance with the National Mongolian Standard.

Most testing equipment used at the **Textile Institute** in Ulaanbaatar is outdated. The conditioning room is not properly conditioned. It has been observed that some of the testing, which should be performed under a standard conditioning temperature and humidity level, is being performed outside of the conditioning room. Given these imperfections, such a testing environment does not meet international standards and requirements.

The maximum number of tests on samples per month in this laboratory is approximately 88. Among these samples, only 10% are yarn, fabric, and garment, with the remaining 90% of samples consisting of dehaired cashmere or other hairs, such as camel hair.

Cashmere manufacturers in Mongolia have some testing equipment to meet their individual needs. Comparatively, Gobi has more testing equipment than the rest of the existing manufacturers. Gobi also has OFDA, which is requested by some European buyers. The cashmere manufacturers in Mongolia usually handle fiber diameter evaluation, i.e. coarse fiber content, fiber length (evaluation by hand) and moisture content for dehaired cashmere. Very seldom will the manufacturers test semi-processed cashmere or an end product.

We have concluded that most Mongolian laboratories do not perform sufficient tests in fiber identification. They scarcely perform qualitative analysis of cashmere blended with other animal fiber, nor do they evaluate the fiber content of fiber blends. Mass volume testing and evaluation criteria are viewed by international retailers and fiber associations such as CCMI as the most important testing capability of a testing laboratory and Mongolian laboratories are clearly lacking such capabilities..

SECTION II: TESTING AND EVALUATION

1. First stage Testing: Establishment of Cashmere Testing Laboratory:

The following components should be included in 1st Stage Testing:

- Fiber identification and fiber content test
- Fiber diameter (projection/OFDA)
- Fiber length (by hand/comb/Almeter)
- Single fiber strength
- Moisture content
- Coarse fiber content
- Foreign matter content
- Grease content

List of Testing Equipment and Investment Cost for Cashmere Testing Laboratory

	Apparatus	Type	Manufacturer or Brand	Price (RMB)	Standard
1	Light Microscope Projection	CYG-055C	Shanghai, China	13,400	Fiber identification and fiber content test (LM method)
2	WIVnt Fiber Analysis and Measurement System	PS-	Beijing, China	41000 【exception of Personal computer (incl. monitor and printer)】	AATCC 20/20A ISO/FDIS 17751.2 GB/T 16988 Fiber diameter ASTM D 2130 ISO 137 IWTO 8 GB/T 10685
3	Fiber Cutter	Y(B)172	Changzhou, China	450	
4	Wedge scale (Standard)		China Fibre Inspection Bureau	430/1000 pieces	
5	OFDA Diameter Tester	OFDA 4000	Hornik Fibertech	800,000	Fiber diameter IWTO 47
6	SEM	JSM-6390	JEOL	1,000,000	Fiber identification and fiber content test (SEM method) IWTO 58
7	Comb Sorter		China	3,000	Fiber Length IWTO DTM-1
8	Almeter Fiber Length Tester	Almeter 100	Switzerland	600,000	Fiber Length IWTO 17
9	Board Covered With Black Velveteen, Ruler Which Can Be in Shape Changing			100	Fiber Length GB 18267
10	Electronic Single Fiber Strength Tester		Nan Tong, China	28,000	Single Fiber Strength GB/T 4711
11	Oven With 8 Baskets		China	5,500	Moisture Content GB/T 6500
12	Electronic Balance	AW220 0.0001mg	SHIMADZU	12,000	Coarse fiber/ Foreign matter content GB 18267
13	Oven		HUABEI	2900	Grease content BS 3582 TWC TM136
14	Soxhlet Extractor (4 sets)			1200	ASTM D 1574 IWTO 10 GB/T 6977
15	Water Bath	TW 20	Julabo	13,500	

Total Equipment Cost: Approx. RMB2.50 million (USD340K)

From the above list, the OFDA Diameter Tester & Almeter Fiber Length Tester are least essential. Only a few of the European buyers would request the OFDA cashmere fiber diameter and Almeter for cashmere fiber length evaluation. These two testers may be purchased and installed at a later stage.

2. Second stage Testing: Semi-Processed & End-Product Testing Facilities:

When there is sufficient testing volume to substantiate a physical property and color fastness laboratory in Mongolia, the laboratory would need to purchase and install equipment to test the following:

- Fiber content
- Color fastness (light/crocking/water/perspiration/washing/dry cleaning etc.)
- Dimensional stability (after washing/dry cleaning)
- Strength (tensile/bursting/seam properties/seam bursting strength)
- Yarn count/twist
- Fabric weight/Threads per unit Length
- Pilling resistance (pilling box/Martindale/Random)
- Abrasion resistance
- Flammability

List of Equipment and Investment Cost for Physical Property & Color Fastness Laboratory

	Apparatus	Type	Manufacture or Brand	Price (RMB)	Standard
1	Electronic Balance	AW220 0.0001g	SHIMADZU	12,000	Fiber content (chemical method) AATCC 20/20A BS 4407 ISO 1833 /5088 JIS L 1030 GB/T 2910/2911 CAN/CGSB-4.2 No.13
2	Constant temperature bath		BINDER	92,400	/14 NF G06 006-035 AS 2001.7
3	Shaker		Barnstead Lab-Line	1,050	
4	Vacuum pump			1,400	
5	Xenotest Alpha HE	55007804	Atlas	562,500	ISO 105 B02 GB/T 8427 BS/DIN/NF EN ISO 105 B02 CAN/CGSB-4.2 No.18.3
6	CI4000 Weather-Ometer	CI4000	SDL Atlas	992,200	AATCC 16E JIS L 0843 (Xenon arc lamp)
7	Cool water chiller	PA403R	PAN ASIA	30,000	
8	Crockmeter	CM-1	Atlas	8,415	ISO 105 X12 GB/T 3920 BS/DIN/NF EN ISO 105 X12 AATCC 8 AATCC 116 JIS L 0849 TYPE 1 CAN/CGSB-4.2 No.22
9	Perspiration Tester	PR-1	SDL Atlas	5,910	Water : ISO 105 E01 GB/T 5713 BS/DIN/NF EN AATCC 107 JIS L 0846 CAN/CGSB-4.2 No.20 AS 2001.4.E01 Perspiration: ISO 105 E04 GB/T3922 AATCC 15 JIS L 0848 BS/DIN/NF EN AS 2001.4.17 CAN/CGSB-4.2 No.23
10	Standard Multi-fiber fabric				
11	Lanunder-Ometer	LEF	Atlas	262,000	Washing: ISO 105 C06/C10 GB/T 3921/12490 BS/DIN/NF EN AATCC 61 AS 2001.4.15 JIS L 0844 CAN/CGSB-4.2 No19.1
12	Gyrowash		ROACHES	110,00	Drycleaning: ISO 105 D01 GB/T 5711 BS/DIN/NF EN ISO 105 D01 AATCC 132 AS 2001.4.16 JIS L 0860 CAN/CGSB-4.2 No29.1
13	Standard soap/detergent, standard multi-fiber cloth, standard single-fiber cloth,				
14	Assessment Cabinet		VeriVide Limited	21,000	Assessment for all color fastness tests
15	Grey scale (for USA)		AATCC	1,550	
16	Grey scale (for EU)		SDC	1,250	
17	Kenmore Automatic Washer	Kenmore 22862	SEARS Roebuck and Co.	13,500	AATCC 135/150 CAN/CGSB-4.2 No.58
18	Wascator	FOM 71 CLS	Electrolux	140,000	ISO 5077/6330 GB/T 8629/8630 BS/DIN/NF EN ISO 25077/6330 AS 2001.5.4
19	Dryclean machine		safQ	30,000	Commercial drycleaning
20	Tumble Dryer	M223/2	SDL Atlas	21,200	ISO 5077/6330 GB/T 8629/8630 BS/DIN/NF EN ISO

21	Standard soap/detergent, ruler,				25077/6330 AS 2001.5.4
22	Truburst Strength Tester	600	JAMES H.HEAL	111,000	ISO 13938-2 BS/DIN/NF EN ISO 13938-2
23	Mullen Bursting Tester	Model C	Mullen	99,750	ISO 13938-1 GB/T 7742 JIS L 1018 BS/DIN/NF EN ISO 13938-1 ASTM D 3786 AS 2001.2.4 CAN/CGSB-4.2 No11.1
24	Tensile Testing Machine	H10KS	Hounsfield	328,500	Tensile : ISO 13934-1/2 GB/T 3923.1/2 ASTM D 5034/5035 BS/DIN/NF EN ISO 13934-1/2 JIS L 1096 CAN/CGSB-4.2 No9.1/2 AS 2001.2.3.1/2 Seam : ISO 13935/6 JIS L 1093/1096 GB/T 13772.1/13773 BS 3320 AS 2001.2.20/21/22 NF G 07 117 BS/DIN/NF EN ISO 13935/6
					ASTM D 1683 /434 CAN/CGSB-4.2 No 32.1 Tearing : ISO 13937-2/3/4 GB/T 3917.2/3 ASTM D 2261 BS/DIN/NF EN ISO 13937-2/3/4 JIS L 1096 CAN/CGSB-4.2 No12.1/2 AS 2001.2.10 ASTM D 5587
25	Elmendorf	60-2001	Thwing- Albert	70,000	ISO 13937-1 GB/T 3917.2 JIS L 1096 BS/DIN/NF EN ISO 13937-1 ASTM D 1424 AS 2001.2.8 CAN/CGSB-4.2 No.12.3
26	Bundle of Yarn Meter	Y219B	SDL Atlas	23,000	BS EN ISO 2060 ASTM D1907
27	Electronic balance			1000	
28	Electrial Twist Tester	Y220B	SDL Atlas	55,425	ASTM D 1422/1423 ISO 2061 JIS L 1095 GB/T 2543.1 CAN/CGSB-4.2 No.8 AS 2001.2.14 BS/DIN/NF EN ISO 2061
29	ICI Pilling Box	516	JAMES H.HEAL	69,990	ISO 12945-1 GB/T 4802.3 BS/DIN/NF EN ISO 12945-1 JIS L 1076 AS 2001.2.10 CAN/CGSB-4.2 No51.1
30	Martindale	864	JAMES H.HEAL	189,800	Pilling: ISO 12945-2 GB/T 4802.2 BS/DIN/NF EN ISO 12945-2 Abrasion: ISO 12947 JIS L 1096 BS/DIN/NF EN ISO 12947 AS 2001.2.25 ASTM D 4966
31	Random Tumbler Pilling Tester	PT-2	Atlas	37,500	ASTM D 3512 JIS L 1076 CAN/CGSB-4.2 No51.2 NF G 07 121
32	Pilling Viewer		VeriVide Limited	82,000	ISO 12945-1 GB/T 4802.3 JIS L 1076 BS/DIN/NF EN ISO 12945-1 AS 2001.2.10 CAN/CGSB-4.2 No51.1
33	45DEG. Flammability Tester	TC-45	The Govmark Organization Inc	69,800	US CPSC 16 CFR PART 1610
34	safQ Button Strength Tester	STA-S1		20,000	

35	Roaches Zip Tester			330,000	
36	Sewing machine	Plain stitch sewing	JUKI Co.	2,600	
37	Whipstitch	MO6700	JUKI Co.	5,900	

Total Equipment Cost: Approx RMB1.7 million (USD220K)

3. Third stage Testing: Establishment of Eco Test Laboratory:

Before developing an eco testing laboratory, the following should be taken into consideration:

- Toxic substance analysis requires the importation and use of toxic chemicals.
- Testing equipment investment is high, and thus the return in investment period could be lengthy depending on the volume of eco testing required.
- The GCMS (Gas Chromatography Mass Spectrophotometer) requires highly educated and skilled technicians.

Eco testing would require equipment to test for the following:

- pH value
- Formaldehyde
- Extractable heavy-metals(Sb/As/Pb/Cd/Cr/Cr(Ⅵ)/Co/Cu/Ni/Hg)
- Pesticides
- Chlorinated phenols(PCP/TeCP)
- Phthalates(DINP, DNOP, DEHP, DIDP, BBP, DBP/DEHP, BBP, DBP)
- Organic tin compounds(TBT/DBT)
- Other chemical residues(opp/arylamines)
- Colorants(cleavable arylamines/carcinogens/allergens/others)
- Chlorinated benzenes and toluenes
- Biological active products
- Flame retardant products(PBB/TRIS/TEPA/pentaBDE/octaBDE)
- Color fastness (staining)
- Emission of volatiles
- Determination of odors

Please find additional information on eco textile testing in the attached files. , i.e: ITS1-Oeko-Tex Std-100 ITS2-Oeko-Tex Std-200 ITS3-Criteria Eco-Label Textiles

List of Testing Equipment and Investment Cost for Eco-Test Laboratory

	Apparatus	Type	Manufacture or Brand	Price (RMB)	Standard or Test item
1	pH meter	320	METTLER TOLEDO	2,300	AATCC 81 ISO 3071 GB/T 7573 BS/DIN/NF EN ISO 1413
2	Shaker machine	SW22	Julabo	32,880	
3	ICP-AES			1,000,000	Total heavy metal(Including total lead, total cadimium) EN71-3(acid exactable heavy metal)
4	Spectrophoto meter UV-VIS	CARY 100		150,000	Cr(VI) Formaldehyde
5	GC/MS			800,000	PBBs & PBDEs PCP Phthalates PAHs
					AZO Organotin
6	GC/MS with headspace sorptive extraction system			1,000,000	VOC
7	HPLC/DAD	1100	Agilent	800,000	PBBs, PBDEs, AZO Formaldehyde
8	AFS			250,000	Oeke-TEX 100/200
9	LC/MS			1,500,000	Carcogenic dyes Allergenic dyes PFOS
10	FTIR			300,000	PVC Asbestos

Total Equipment Cost: Approx RMB5.84 million (USD780K)

SECTION III: TESTING LABORATORY STAFFING

As discussed in Deliverable No. 1, the optimum number of laboratory technicians, managers, and front line customer service representatives and their qualifications are as follows:

1. Technical Qualifications of Laboratory Team:

- 1.1 Cashmere Laboratory Technical Manager: The candidate should have a textile college degree and experience working with the cashmere industry, laboratory, or manufacturer.
- 1.2 Physical Property & Color Fastness Laboratory Technical Manager: The candidate should have a textile college degree.
- 1.3 Eco Test Laboratory Technical Manager: The candidate should have a university degree in chemistry.

All of the above technical managers should understand the principles behind all of the tests and be familiar with testing standards of their respective laboratories. Job responsibilities include, but are not limited to: responding to clients' technical questions on testing and explaining and evaluating test results.

- 1.4 Laboratory Technician: The candidate should have a degree from a technical college. All technicians should have a minimum of three months of training in a textile laboratory. The cashmere laboratory technician should have a minimum of 12 months of training by a CCMI accredited manager.
- 1.5 Customer Service Coordinator: The candidate should have a textile college degree and training from an experienced professional.
- 1.6 Optimum Staffing Requirements: One general manager; one laboratory technical manager; three coordinators, ten technicians—four for cashmere lab, four for textile lab, and two for eco-test lab. Laboratory Testing Equipment Maintenance: 1 QA: 1

2. Training of Testing Laboratory Managers & Technicians

Based on our industry expertise, we would like to emphasize that animal fiber analysis is subjective. Furthermore, the physical characteristics of cashmere and camel hair are gradually changing due to geographical, nutritional, and weather factors and cashmere and animal fiber analysts should undergo continuous training and learning in order to provide accurate test results to the Mongolian textile industry.

3. Testing Laboratory Building Conditions

The laboratory should be located on the ground floor if possible.

Its total area should be a minimum of 400 square meters. 100-120 square meters should be separated into two conditioning rooms, one conditioning room built specifically for cashmere testing and the other for textile testing laboratory.

Two sets of air conditioners would cost RMB360K (US\$48K), not including import duty, transportation, installation, and maintenance service fees.

It should include two general offices and one meeting room totaling at least 80 square meters.

Once the proposed location and floor plan, i.e. water and electricity supply, wiring, plumbing, exhausted fan location, etc., of this cashmere and textile testing laboratory are identified, the detailed layout can easily be finalized within a matter of days.

4. Laboratory Accreditation

Once established, this cashmere testing laboratory should strive to apply for national and international accreditation through internationally recognized accreditation organizations such as UKAS, HOKLAS, or CCMI. Depending on the preparedness and skills of the cashmere technical manager and technicians and the timing of application, it will take one to two years to become accredited by an internationally recognized organization. The accreditation service fee ranges from US\$3K to US\$20K per accreditation, which should be set aside from the beginning in the case of onsite laboratory review and technician interviews by accreditation organizations.

5. Laboratory Test Fees

We have passed along our China textile and cashmere testing service fees to Chemonics International in Mongolia during our last visit to Ulaanbaatar during the week of September 15, 2007. While there is a difference in testing methods when comparing animal fiber testing in Mongolia and laboratories in western countries, we found that Textile Institute in Ulaanbaatar is currently charging a nominal fee of US\$5.00 per cashmere identification. This is an extremely low testing fee in comparison to the US\$200 to US\$600 charged per sample (fiber and fabric) in western countries. To enable the new cashmere testing laboratory to stand on its own, maintain its internationally recognized status, and grow by adopting new testing methods and technologies, we foresee the new laboratory charging a general testing fee of US\$60 to US\$220 per sample (fiber, fabric, or garment), depending on the complexity of the testing criteria and volume.

6. Sourcing of Necessary Laboratory Consumables & Chemicals

Laboratory Testing Equipment: We have specified brands and manufacturers for the appropriate testing items in the above three equipment and investment cost lists.

Other than the testing equipment listed, the laboratory should keep a continuous supply of Consumables and Chemicals such as: wedge and gray scales for assessment, color changing and color staining blue, wool fabric, soap/detergent, multi-fiber test cloth, and single-fiber cloth.

Separate files have been submitted with this deliverable per following appropriate Equipment, Laboratory Supplies, Consumable and Chemicals, i.e:

File ITS4-LabSupply+Chemicals: Azo Pretreat Equipment

File ITS5-LabSupply+Chemicals: Azo Reagent

File ITS6-LabSupply+Chemicals: Phthalate

File ITS7-LabSupply+Chemicals: Organotin

File ITS8-LabSupply+Chemical

ANNEX A: ITS3-CRITERIA ECO-LABEL TEXTILE

ANNEX A: ITS3-CRITERIA ECO-LABEL TEXTILES

COMMISSION DECISION of 15 May 2002 establishing the ecological criteria for the award of the Community eco-label to textile products and amending Decision 1999/178/EC (*notified under document number C (2002) 1844*) (Text with EEA relevance) (2002/371/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES, Having regard to the Treaty establishing the European Community, Having regard to Regulation (EC) No 1980/2000 of the European Parliament and of the Council of 17 July 2000 on a revised Community eco-label award scheme (1), and in particular Articles 4 and 6(1) thereof,

Whereas:

1. Under Regulation (EC) No 1980/2000 the Community eco-label may be awarded to a product possessing characteristics which enable it to contribute significantly to improvements in relation to key environmental aspects.
 2. Regulation (EC) No 1980/2000 provides that specific eco-label criteria are to be established according to product groups.
 3. It also provides that the review of the eco-label criteria, as well as of the assessment and verification requirements related to the criteria, is to take place in due time before the end of the period of validity of the criteria specified for each product group. That review is to result in a proposal for prolongation, withdrawal or revision.
 4. It is appropriate to revise the ecological criteria that were established by Commission Decision 1999/178/EC of 17 February 1999 establishing ecological criteria for the award of the Community eco-label to textile products (2) in order to reflect the developments in the market. At the same time, the period of validity of that Decision as extended by Commission Decision 2001/ 831/EC (3) should be modified.
 5. A new Commission Decision should be adopted establishing the specific ecological criteria for this product group, which will be valid for a period of five years.
 6. It is appropriate that, for a limited period of not more than 12 months, both the new criteria established by this Decision and the criteria established by Decision 1999/178/EC should be valid concurrently, in order to allow sufficient time for companies, that have been awarded or that have applied for the award of the eco-label for their products prior to the date of application of this Decision to adapt those products to comply with the new criteria.
 7. The measures provided for in this Decision are based on the draft criteria developed by the European Union Eco- Labeling Board established under Article 13 of Regulation (EC) No 1980/2000.
 8. The measures provided for in this Decision are in accordance with the opinion of the committee instituted by Article 17 of Regulation (EC) No 1980/2000,
- HAS ADOPTED THIS DECISION:**

Article 1

In order to be awarded the Community eco-label under Regulation (EC) No 1980/2000, textile products must fall within the product group 'textile products' as defined in Article 2, and must comply with the ecological criteria set out in the Annex to this Decision.

1. OJ L 237, 21.9.2000, p. 1.

2. OJ L 57, 5.3.1999, p. 21. (3) OJ L 31, 28.11.2001, p. 29.

EN Official Journal of the European Communities 18.5.2002 L 133/30

Article 2

The product group 'textile products' shall comprise:

Textile clothing and accessories: clothing and accessories (such as handkerchiefs, scarves, bags, shopping bags, rucksacks, belts etc.) consisting of at least 90 % by weight of textile fibers; Interior textiles: textile products for interior use consisting of at least 90 % by weight of textile fibers. Wall and floor coverings are excluded; Fibers, yarn and fabric: intended for use in textile clothing and accessories or interior textiles. For 'textile clothing and accessories' and for 'interior textiles': down, feathers, membranes and coatings need not be taken into account in the calculation of the percentage of textile fibers.

Article 3

For administrative purposes the code number assigned to the product group 'textile products' shall be '016'.

Article 4

Article 3 of Decision 1999/178/EC is replaced by the following:

'The product group definition and the specific ecological criteria for the product group shall be valid until 31 May 2003.'

Article 5

This Decision shall apply from 1 June 2002 until 31 May 2007. Producers of products falling within the product group 'textile products' which have already been awarded the eco-label before 1 June 2002 may continue to use that label until 31 May 2003.

Producers of products falling within the product group 'textile products' which have already applied for the award of the eco-label before 1 June 2002 may be awarded the eco-label under the terms of Decision 1999/178/EC until 31 May 2003. From 1 June 2002, new applications for the award of the eco-label for the product group 'textile products' shall satisfy the criteria set out in this Decision.

Article 6

This Decision is addressed to the Member States.

Done at Brussels, 15 May 2002.

For the Commission

Margot WALLSTRÖM

Member of the Commission

EN Official Journal of the European Communities 18.5.2002 L 133/31

FRAMEWORK

The aims of the criteria

These criteria aim in particular at promoting the reduction of water pollution related to the key processes throughout the textile manufacturing chain, including fiber production, spinning, weaving, knitting, bleaching, dyeing and finishing.

The criteria are set at levels that promote the labeling of textile products which have a lower environmental impact.

Assessment and verification requirements

The specific assessment and verification requirements are indicated within each criterion.

Where the applicant is required to provide declarations, documentation, analyses test reports, or other evidence to show compliance with the criteria, it is understood that these may originate from the applicant and/or his supplier(s) and/or their supplier(s), et cetera, as appropriate.

Where appropriate, test methods other than those indicated for each criterion may be used if their equivalence is accepted by the Competent Body assessing the application. The functional unit, to which inputs and outputs should be related, is 1 kg of textile product at normal conditions (65 % RH \pm 2 % and 20 °C \pm 2 °C; these norm conditions are specified in ISO 139 Textiles — standard atmospheres for conditioning and testing).

Where appropriate, Competent Bodies may require supporting documentation and may carry out independent verifications.

The Competent Bodies are recommended to take into account the implementation of recognized environmental management schemes, such as EMAS or ISO 14001, when assessing applications and monitoring compliance with the criteria (*note: it is not required to implement such management schemes.*).

CRITERIA

The criteria are divided into three main categories, concerning textile fibres, processes and chemicals, and fitness for use.

TEXTILE FIBRE CRITERIA

Fiber-specific criteria are set in this section for acrylic, cotton and other natural cellulosic seed fibers, elastane, flax and other bast fibers, greasy wool and other keratin fibers, man-made cellulose fibers, polyamide, polyester and polypropylene.

Other fibers for which no fiber specific criteria are set are also allowed, with the exception of mineral fibers, glass fibers, metal fibers, carbon fibers and other inorganic fibers.

The criteria set in this section for a given fiber-type need not be met if that fiber contributes to less than 5 % of the total weight of the textile fibers in the product. Similarly they need not be met if the fibers are of recycled origin. In this context, recycled fibers are defined as fibers originating only from cuttings from textile and clothing manufacturers or from post-consumer waste (textile or otherwise). Nevertheless, at least 85 % by weight of all fibers in the product must be either in compliance with the corresponding fiber-specific criteria, if any, or of recycled origin. *Assessment and verification:* The applicant shall supply detailed information as to the composition of the textile product.

1. Acrylic

- a) The residual acrylonitrile content in raw fibers leaving the fiber production plant shall be less than 1,5 mg/kg.

Assessment and verification: The applicant shall provide a test report, using the following test method: extraction with boiling water and quantification by capillary gas-liquid chromatography.

- b) The emissions to air of acrylonitrile (during polymerization and up to the solution ready for spinning), expressed as an annual average, shall be less than 1 g/kg of fiber produced.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

2. Cotton and other natural cellulosic seed fibers (including kapok)

Cotton and other natural cellulosic seed fibers (hereinafter referred to as cotton) shall not contain more than 0,05 ppm (sensitivity of the test method permitting) of each of the following substances: aldrin, captafol, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, hexachlorocyclohexane (total isomers), 2,4,5-T, chlordimeform, chlorobenzilate, dinoseb and its salts, monocrotophos, pentachlorophenol, toxaphene, methamidophos, methylparathion, parathion, phosphamidon.

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This requirement does not apply where more than 50 % of the cotton content is organically grown cotton or transitional cotton, that is to say certified by an independent organization to have been produced in conformity with the production and inspection requirements laid down in Council Regulation (EEC) No 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs

(1). This requirement does not apply if documentary evidence can be presented that establishes the identity of the farmers producing at least 75 % of the cotton used in the final product, together with a declaration from these farmers that the substances listed above have not been applied to the fields or cotton plants producing the cotton in question, or to the cotton itself.

Where 100 % of the cotton is organic, that is to say certified by an independent organization to have been produced in conformity with the production and inspection requirements laid down in Regulation (EEC) No 2092/91 the applicant may place the mention 'organic cotton' next to the eco-label.

The applicant shall either provide proof of organic certification or documentation relating to the non-use by the farmers or a test report, using the following test methods: as appropriate, US EPA 8081 A (organo-chlorine pesticides, with ultrasonic or Soxhlet extraction and apolar solvents (iso-octane or hexane)), 8151 A (chlorinated herbicides, using methanol), 8141 A (organophosphorus compounds), or 8270 C (semi-volatile organic compounds).

3. Elastane

- a) Organotin compounds shall not be used.

Assessment and verification: The applicant shall provide a declaration of non-use.

- b) The emissions to air of aromatic diisocyanates during polymerisation and spinning, expressed as an annual average, shall be less than 5 mg/kg of fiber produced.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

4. Flax and other best fibers (including hemp, jute, and ramie)

Flax and other best fibers shall not be obtained by water retting, unless the waste water from the water retting is treated so as to reduce the COD or TOC by at least 75 % for hemp fibers and by at least 95 % for flax and the other best fibers.

Assessment and verification: If water retting is used, the applicant shall provide a test report, using the following test method: ISO 6060 (COD).

5. Greasy wool and other keratin fibers (including wool from sheep, camel, alpaca, goat)

- a) The sum total content of the following substances shall not exceed 0,5 ppm: γ -hexachlorocyclohexane (lindane), α -hexachlorocyclohexane, β -hexachlorocyclohexane, δ -hexachlorocyclohexane, aldrin, dieldrin, endrin, p,p'-DDT, p,p'-DDD.
- b) The sum total content of the following substances shall not exceed 2 ppm: diazinon, propetamphos, chlorfenvinphos, dichlorfenthion, chlorpyrifos, fenclorophos.
- c) The sum total content of the following substances shall not exceed 0,5 ppm: cypermethrin, deltamethrin, fenvalerate, cyhalothrin, flumethrin.
- d) The sum total content of the following substances shall not exceed 2 ppm: diflubenzuron, triflumuron. These requirements (as detailed in (a), (b), (c) and (d) and taken separately) do not apply if documentary evidence can be presented that establishes the identity of the farmers producing at least 75 % of the wool or keratin fibres in question, together with a declaration from these farmers that the substances listed above have not been applied to the fields or animals concerned.

Assessment and verification for (a), (b), (c) and (d): The applicant shall either provide the documentation indicated above or provide a test report, using the following test method: IWTO Draft Test Method 59.

- e) For scouring effluent discharged to sewer, the COD discharged to sewer shall not exceed 60 g/kg greasy wool, and the effluent shall be treated off-site so as to achieve at least a further 75 % reduction of COD content, expressed as an annual average. For scouring effluent treated on site and discharged to surface waters, the COD discharged to surface waters shall not exceed 5 g/kg greasy wool. The pH of the effluent discharged to surface waters shall be between 6 and 9 (unless the pH of the receiving waters is outside this range), and the temperature shall be below 40 °C (unless the temperature of the receiving water is above this value).

Assessment and verification: The applicant shall provide relevant data and test report, using the following test method: ISO 6060.

(1) OJ L 198, 22.7.1991, p. 1.

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6. Man-made cellulose fibers (including viscose, lyocell, acetate, cupro, triacetate)

- a) The level of AOX in the fibers shall not exceed 250 ppm.

Assessment and verification: The applicant shall provide a test report, using the following test method: ISO 11480.97 (controlled combustion and microcoulometry).

- b) For viscose fibers, the sulphur content of the emissions of sulphur compounds to air from the processing during fiber production, expressed as an annual average, shall not exceed 120 g/kg filament fiber produced and 30 g/kg staple fiber produced. Where both types of fiber are produced on a given site, the overall emissions must not exceed the corresponding weighted average.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

- c) For viscose fibers, the emission to water of zinc from the production site, expressed as an annual average, shall not exceed 0,3 g/kg.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

- d) For cupro fibers, the copper content of the effluent water leaving the site, expressed as an annual average, shall not exceed 0,1 ppm.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

7. Polyamide

The emissions to air of N₂O during monomer production, expressed as an annual average, shall not exceed 10 g/kg polyamide 6 fiber produced and 50 g/kg polyamide 6,6 produced.

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

8. Polyester

- a) The amount of antimony in the polyester fibers shall not exceed 260 ppm. Where no antimony is used, the applicant may state 'antimony free' (or equivalent text) next to the eco-label.

Assessment and verification: The applicant shall either provide a declaration of non-use or a test report using the following test method: direct determination by Atomic Absorption Spectrometry. The test shall be carried out on the raw fiber prior to any wet processing.

- b) The emissions of VOCs during polymerization of polyester, expressed as an annual average, shall not exceed 1,2 g/kg of produced polyester resin. (VOCs are any organic compound having at 293,15 K a vapor pressure of 0,01 kPa or more, or having a corresponding volatility under the particular conditions of use).

Assessment and verification: The applicant shall provide detailed documentation and/or test reports showing compliance with this criterion, together with a declaration of compliance.

9. Polypropylene

Lead-based pigments shall not be used.

Assessment and verification: The applicant shall provide a declaration of non-use.

PROCESSES AND CHEMICALS CRITERIA

The criteria in this section apply, where appropriate, to all stages of production of the product, including the production of the fibers. It is nevertheless accepted that recycled fibers may contain some of the dyes or other substances excluded by these criteria, but only if they were applied in the previous life-cycle of the fibers.

10. Auxiliaries and finishing agents for fibers and yarns

- a) Size: At least 95 % (by dry weight) of the component substances of any sizing preparation applied to yarns shall be sufficiently biodegradable or eliminable in wastewater treatment plants, or else shall be recycled.

Assessment and verification: In this context, a substance is considered as ‘sufficiently biodegradable or eliminable’:

— if when tested with one of the methods OECD 301 A, OECD 301 E, ISO 7827, OECD 302 A, ISO 9887, OECD 302 B, or ISO 9888 it shows a percentage degradation of at least 70 % within 28 days,

— or if when tested with one of the methods OECD 301 B, ISO 9439, OECD 301 C, OECD 302 C, OECD 301 D, ISO 10707, OECD 301 F, ISO 9408, ISO 10708 or ISO 14593 it shows a percentage degradation of at least 60 % within 28 days, EN Official Journal of the European Communities 18.5.2002 L 133/34

— or if when tested with one of the methods OECD 303 or ISO 11733 it shows a percentage degradation of at least 80 % within 28 days,

— or, for substances for which these test methods are inapplicable, if evidence of an equivalent level of biodegradation or elimination is presented.

The applicant shall provide appropriate documentation, safety data sheets, test reports and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all sizing preparations used.

- b) Spinning solution additives, spinning additives and preparation agents for primary spinning (including carding oils, spin finishes and lubricants): At least 90 % (by dry weight) of the component substances shall be sufficiently biodegradable or eliminable in waste water treatment plants. This requirement does not apply to preparation agents for secondary spinning (spinning lubricants, conditioning agents), coning oils, warping and twisting oils, waxes, knitting oils, silicone oils and inorganic substances.

Assessment and verification: ‘Sufficiently biodegradable or eliminable’ is as defined above in part (a). The applicant shall provide appropriate documentation, safety data sheets, test reports and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all such additives or preparation agents used.

- c) The content of polycyclic aromatic hydrocarbons (PAH) in the mineral oil proportion of a product shall be less than 1,0 % by weight.

Assessment and verification: The applicant shall provide appropriate documentation, safety data sheets, product information sheets or declarations, indicating either the content of polycyclic aromatic hydrocarbons or the non-use of products containing mineral oils.

11. Biocidal or biostatic products

- a) Chlorophenols (their salts and esters), PCB and organotin compounds shall not be used during transportation or storage of products and semi-manufactured products.

Assessment and verification: The applicant shall provide a declaration of non-use of these substances or compounds on the yarn, fabric and final product. Should this declaration be subject to verification the following test method and threshold shall be used: extraction as appropriate, derivatization with acetic anhydride, determination by capillary gas-liquid chromatography with electron capture detection, limit value 0,05 ppm.

- b) Biocidal or biostatic products shall not be applied to products so as to be active during the use phase.

Assessment and verification: The applicant shall provide a declaration of non-use.

12. Stripping or depigmentation

Heavy metal salts (except of iron) or formaldehyde shall not be used for stripping or depigmentation.

Assessment and verification: The applicant shall provide a declaration of non-use.

13. Weighting

Compounds of cerium shall not be used in the weighting of yarn or fabrics.

Assessment and verification: The applicant shall provide a declaration of non-use.

14. Auxiliary chemicals

Alkylphenoethoxylates (APEOs), linear alkylbenzene sulfonates (LAS), bis(hydrogenated tallow alkyl) dimethyl ammonium chloride (DSDMAC), distearyl dimethyl ammonium chloride (DSDMAC), di(hardened tallow) dimethyl ammonium chloride (DHTDMAC), ethylene diamine tetra acetate (EDTA), and diethylene triamine penta acetate (DTPA) shall not be used and shall not be part of any preparations or formulations used.

Assessment and verification: The applicant shall provide a declaration of non-use.

15. Detergents, fabric softeners and complexing agents

At each wet-processing site, at least 95 % by weight of the detergents, at least 95 % by weight of fabric softeners and at least 95 % by weight complexing agents used shall be sufficiently degradable or eliminable in wastewater treatment plants.

Assessment and verification: 'Sufficiently biodegradable or eliminable' is as defined above in the criterion related to auxiliaries and finishing agents for fibers and yarns. The applicant shall provide appropriate documentation, safety data sheets, test reports and/or declarations, indicating the test methods and results as above, and showing compliance with this criterion for all detergents, fabric softeners and complexing agents used.

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16. Bleaching agents

In general, AOX emissions in the bleaching effluent shall be less than 40 mg Cl/kg. In the following cases, the level shall be less than 100 mg Cl/kg:

— linen and other best fibers,

— cotton, which has a degree of polymerization below 1 800, and which is intended for white end products. This requirement does not apply to the production of man-made cellulose fibers. The applicant shall either provide a declaration of non-use of chlorinated bleaching agents or provide a test report using the following test method: ISO 9562 or prEN 1485.

17. Impurities in dyes

The levels of ionic impurities in the dyes used shall not exceed the following: Ag 100 ppm; As 50 ppm; Ba 100 ppm; Cd 20 ppm; Co 500 ppm; Cr 100 ppm; Cu 250 ppm; Fe 2 500 ppm; Hg 4 ppm; Mn 1 000 ppm; Ni 200 ppm; Pb 100 ppm; Se 20 ppm; Sb 50 ppm; Sn 250 ppm; Zn 1 500 ppm. Any metal that is included as an integral part of the dye molecule (e.g. metal complex dyes, certain reactive dyes, etc.) shall not be considered when assessing compliance with these values, which only relate to impurities.

The applicant shall provide a declaration of compliance.

18. Impurities in pigments

The levels of ionic impurities for pigments used shall not exceed the following: As 50 ppm; Ba 100 ppm, Cd 50 ppm; Cr 100 ppm; Hg 25 ppm; Pb 100 ppm; Se 100 ppm Sb 250 ppm; Zn 1 000 ppm. The applicant shall provide a declaration of compliance.

19. Chrome mordant dyeing

Chrome mordant dyeing is not allowed.

The applicant shall provide a declaration of non-use.

20. Metal complex dyes.

If metal complex dyes based on copper, chromium or nickel are used:

- a) In case of cellulose dyeing, where metal complex dyes are part of the dye recipe, less than 20 % of each of those metal complex dyes applied (input to the process) shall be discharged to waste water treatment (whether on-site or off-site).

In case of all other dyeing processes, where metal complex dyes are part of the dye recipe, less than 7 % of each of those metal complex dyes applied (input to the process) shall be discharged to waste water treatment (whether on-site or off-site).

The applicant shall either provide a declaration of non-use or documentation and test reports using the following test methods: ISO 8288 for Cu, Ni; ISO 9174 or prEN 1233 for Cr.

- b) The emissions to water after treatment shall not exceed: Cu 75 mg/kg (fiber, yarn or fabric); Cr 50 mg/kg; Ni 75 mg/kg.

The applicant shall either provide a declaration of non-use or documentation and test reports using the following test methods: ISO 8288 for Cu, Ni; ISO 9174 or prEN 1233 for Cr.

21. Azo dyes

Azo dyes shall not be used that may cleave to any one of the following aromatic amines:

4-aminodiphenyl (92-67-1)

Benzidine (92-87-5)

4-chloro-o-toluidine (95-69-2)
2-naphthylamine (91-59-8)
o-amino-azotoluene (97-56-3)
2-amino-4-nitrotoluene (99-55-8)
p-chloroaniline (106-47-8)
2,4-diaminoanisole (615-05-4)
4,4'-diaminodiphenylmethane (101-77-9)
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3,3'-dichlorobenzidine (91-94-1)
3,3'-dimethoxybenzidine (119-90-4)
3,3'-dimethylbenzidine (119-93-7)
3,3'-dimethyl-4,4'-diaminodiphenylmethane (838-88-0)
p-cresidine (120-71-8)
4,4'-methylene-bis-(2-chloroaniline) (101-14-4)
4,4'-oxydianiline (101-80-4)
4,4'-thiodianiline (139-65-1)
o-toluidine (95-53-4)
2,4-diaminotoluene (95-80-7)
2,4,5-trimethylaniline (137-17-7)
4-aminoazobenzene (60-09-3)
o-anisidine (90-04-0)

Assessment and verification: The applicant shall provide a declaration of non-use of these dyes. Should this declaration be subject to verification the following test method and threshold shall be used: German method B-82.02 or French method XP G 08-014, 30 ppm threshold. (*Note:* false positives may be possible with respect to the presence of 4-aminoazobenzene, and confirmation is therefore recommended).

22. Dyes that are carcinogenic, mutagenic or toxic to reproduction

a) The following dyes shall not be used:

C.I. Basic Red 9
C.I. Disperse Blue 1
C.I. Acid Red 26
C.I. Basic Violet 14
C.I. Disperse Orange 11
C. I. Direct Black 38
C. I. Direct Blue 6
C. I. Direct Red 28
C. I. Disperse Yellow 3

Assessment and verification: The applicant shall provide a declaration of non-use of such dyes.

b) No use is allowed of dye substances or of dye preparations containing more than 0,1 % by weight of substances that are assigned or may be assigned at the time of application any of the following risk phrases (or combinations thereof):

R40 (limited evidence of a carcinogenic effect),

R45 (may cause cancer),

R46 (may cause heritable genetic damage),

R49 (may cause cancer by inhalation),

R60 (may impair fertility),

R61 (may cause harm to the unborn child),

R62 (possible risk of impaired fertility),

R63 (possible risk of harm to the unborn child),

R68 (possible risk of irreversible effects),

as laid down in Council Directive 67/548/EEC of 27 June 1967 on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances (1), and its subsequent amendments.

Assessment and verification: The applicant shall provide a declaration of non-use of such dyes.

(1) OJ L 196, 16.8.1967, p. 1.

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23. Potentially sensitizing dyes

The following dyes shall only be used if the fastness to perspiration (acid and alkaline) of the dyed fibers, yarn or fabric is at least 4:

C.I. Disperse Blue 3 C.I. 61 505

C.I. Disperse Blue 7 C.I. 62 500

C.I. Disperse Blue 26 C.I. 63 305

C.I. Disperse Blue 35

C.I. Disperse Blue 102

C.I. Disperse Blue 106

C.I. Disperse Blue 124

C.I. Disperse Orange 1 C.I. 11 080

C.I. Disperse Orange 3 C.I. 11 005

C.I. Disperse Orange 37

C.I. Disperse Orange 76

(previously designated Orange 37)

C.I. Disperse Red 1 C.I. 11 110

C.I. Disperse Red 11 C.I. 62 015

C.I. Disperse Red 17 C.I. 11 210

C.I. Disperse Yellow 1 C.I. 10 345

C.I. Disperse Yellow 9 C.I. 10 375

C.I. Disperse Yellow 39

C.I. Disperse Yellow 49

Assessment and verification: The applicant shall either provide a declaration of non-use of these dyes or a test report using the following test method for color fastness: ISO 105-E04 (acid and alkaline, comparison with multi-fiber fabric).

24. Halogenated carriers for polyester

Halogenated carriers shall not be used.

Assessment and verification: The applicant shall provide a declaration of non-use.

25. Printing

- a) Printing pastes used shall not contain more than 5 % volatile organic compounds (VOCs: any organic compound having at 293,15 K a vapor pressure of 0,01 kPa or more, or having a corresponding volatility under the particular conditions of use).

Assessment and verification: The applicant shall either provide a declaration that no printing has been made or provide appropriate documentation showing compliance together with a declaration of compliance.

- b) Plastisol-based printing is not allowed.

Assessment and verification: The applicant shall either provide a declaration that no printing has been made or provide appropriate documentation showing compliance together with a declaration of compliance.

26. Formaldehyde

The amount of free and partly hydrolysable formaldehyde in the final fabric shall not exceed 30 ppm for products that come into direct contact with the skin, and 300 ppm for all other products.

Assessment and verification: The applicant shall either provide a declaration that formaldehyde containing products have not been applied or provide a test report using the following test method: EN ISO 14184-1.

27. Waste water discharges from wet-processing

- a) Waste water from wet-processing sites (except greasy wool scouring sites and flax retting sites) shall, when discharged to surface waters after treatment (whether on-site or off-site), have a COD content of less than 25 g/kg, expressed as an annual average.

Assessment and verification: The applicant shall provide detailed documentation and test reports, using ISO 6060, showing compliance with this criterion, together with a declaration of compliance.

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- b) If the effluent is treated on site and discharged directly to surface waters, it shall also have a pH between 6 and 9 (unless the pH of the receiving water is outside this range) and a temperature of less than 40 °C (unless the temperature of the receiving water is above this value).

Assessment and verification: The applicant shall provide documentation and test reports showing compliance with this criterion, together with a declaration of compliance.

28. Flame retardants

No use is allowed of flame retardant substances or of flame retardant preparations containing more than 0,1 % by weight of substances that are assigned or may be assigned at the time of application any of the following risk phrases (or combinations thereof):

R40 (limited evidence of a carcinogenic effect),

R45 (may cause cancer),

R46 (may cause heritable genetic damage),
R49 (may cause cancer by inhalation),
R50 (very toxic to aquatic organisms),
R51 (toxic to aquatic organisms),
R52 (harmful to aquatic organisms),
R53 (may cause long-term adverse effects in the aquatic environment),
R60 (may impair fertility),
R61 (may cause harm to the unborn child),
R62 (possible risk of impaired fertility),
R63 (possible risk of harm to the unborn child),
R68 (possible risk of irreversible effects),
as laid down in Directive 67/548/EEC and its subsequent amendments.

This requirement does not apply to flame retardants that on application change their chemical nature to no longer warrant classification under any of the R-phrases listed above, and where less than 0,1 % of the flame retardant on the treated yarn or fabric remains in the form as before application.

Assessment and verification: The applicant shall either provide a declaration that flame retardants have not been used, or indicate which flame retardants have been used and provide documentation (such as safety data sheets) and/or declarations indicating that those flame retardants comply with this criterion.

29. Shrink resistant finishes

Halogenated shrink-resist substances or preparations shall only be applied to wool slivers.

Assessment and verification: The applicant shall provide a declaration of non-use (unless used for wool slivers).

30. Finishes

No use is allowed of finishing substances or of finishing preparations containing more than 0,1 % by weight of substances that are assigned or may be assigned at the time of application any of the following risk phrases (or combinations thereof):

R40 (limited evidence of a carcinogenic effect),
R45 (may cause cancer),
R46 (may cause heritable genetic damage),
R49 (may cause cancer by inhalation),
R50 (very toxic to aquatic organisms),
R51 (toxic to aquatic organisms),
R52 (harmful to aquatic organisms),
R53 (may cause long-term adverse effects in the aquatic environment),
R60 (may impair fertility),
R61 (may cause harm to the unborn child),
R62 (possible risk of impaired fertility),
R63 (possible risk of harm to the unborn child),
R68 (possible risk of irreversible effects), as laid down in Directive 67/548/EEC and its subsequent amendments.

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Assessment and verification: The applicant shall either provide a declaration that finishes have not been used, or indicate which finishes have been used and provide documentation (such as safety data sheets) and/or declarations indicating that those finishes comply with this criterion.

31. Fillings

- a) Filling materials consisting of textile fibers shall comply with the textile fiber criteria (Nos 1 — 9) where appropriate.
- b) Filling materials shall comply with criterion 11 on 'Biocidal or biostatic products' and the criterion 26 on 'Formaldehyde'.
- c) Detergents and other chemicals used for the washing of fillings (down, feathers, natural or synthetic fibers) shall comply with criterion 14 on 'Auxiliary chemicals' and criterion 15 on 'Detergents, fabric softeners and complexing agents'.

Assessment and verification: As indicated in the corresponding criteria.

32. Coatings, laminates and membranes

(a) Products made of polyurethane shall comply with criterion 3(a) regarding organic tin and criterion 3(b) regarding the emission to air of aromatic diisocyanates.

Assessment and verification: As indicated in the corresponding criteria.

(b) Products made of polyester shall comply with criterion 8(a) regarding the amount of antimony and criterion 8(b) regarding the emission of VOCs during polymerization.

Assessment and verification: As indicated in the corresponding criteria.

(c) Coatings, laminates and membranes shall not be produced using plasticizers or solvents, which are assigned or may be assigned at the time of application any of the following risk phrases (or combinations thereof):

R40 (limited evidence of a carcinogenic effect),

R45 (may cause cancer),

R46 (may cause heritable genetic damage),

R49 (may cause cancer by inhalation),

R50 (very toxic to aquatic organisms),

R51 (toxic to aquatic organisms),

R52 (harmful to aquatic organisms),

R53 (may cause long-term adverse effects in the aquatic environment),

R60 (may impair fertility),

R61 (may cause harm to the unborn child),

R62 (possible risk of impaired fertility),

R63 (possible risk of harm to the unborn child),

R68 (possible risk of irreversible effects), as laid down in Directive 67/548/EEC and its subsequent amendments.

Assessment and verification: The applicant shall provide a declaration of non-use of such plasticizers or solvents.

33. Energy and water use

The applicant is requested, on a voluntary basis, to provide detailed information on water and energy use for the manufacturing sites involved in spinning, knitting, weaving and wet processing.

Assessment and verification: The applicant is requested to provide, on a voluntary basis, the abovementioned information.

FITNESS FOR USE CRITERIA

The following criteria apply either to the dyed yarn, the final fabric(s), or the final product, with tests carried out as appropriate.

34. Dimensional changes during washing and drying

Information on dimensional changes (%) shall be stated both on the care label and on the packaging and/or other product information if the dimensional changes exceed:

- 2 % (warp and weft) for curtains and for furniture fabric that is washable and removable,
- 6 % (warp and weft) for other woven products,
- 8 % (length and width) for other knitted products,
- 8 % (length and width) for terry toweling.

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This criterion does not apply to:

- fibers or yarn,
- products clearly labeled ‘dry clean only’ or equivalent (insofar as it is normal practice for such products to be so labeled),
- furniture fabrics that are not removable and washable.

Assessment and verification: The applicant shall provide test reports using the following test method: ISO 5077 modified as follows: 3 washes at temperatures as indicated on the product, with tumble drying after each washing cycle unless other drying procedures are indicated on the product, at temperatures as marked on the product, wash load (2 or 4 kg) depending on the wash symbol. Should any of the abovementioned limits be exceeded, a copy of the care-label and of the packaging and/or other product information shall be provided.

35. Color fastness to washing

The color fastness to washing shall be at least level 3 to 4 for color change and at least level 3 to 4 for staining.

This criterion does not apply to products clearly labeled ‘dry clean only’ or equivalent (insofar as it is normal practice for such products to be so labeled), to white products or products that are neither dyed nor printed, or to non-washable furniture fabrics.

Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 C06 (single wash, at temperature as marked on the product, with perborate powder).

36. Color fastness to perspiration (acid, alkaline)

The color fastness to perspiration (acid and alkaline) shall be at least level 3 to 4 (color change and staining).

A level of 3 is nevertheless allowed when fabrics are both dark colored (standard depth > 1/1) and made of regenerated wool or more than 20 % silk. This criterion does

not apply to white products, to products that are neither dyed nor printed, to furniture fabrics,

curtains or similar textiles intended for interior decoration.

Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 E04 (acid and alkaline, comparison with multi-fiber fabric).

37. Color fastness to wet rubbing

The color fastness to wet rubbing shall be at least level 2 to 3. A level of 2 is nevertheless allowed for indigo dyed denim.

This criterion does not apply to white products or products that are neither dyed nor printed.

Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 X12.

38. Color fastness to dry rubbing

The color fastness to dry rubbing shall be at least level 4.

A level of 3 to 4 is nevertheless allowed for indigo dyed denim.

This criterion does not apply to white products or products that are neither dyed nor printed, or to curtains or similar textiles intended for interior decoration.

Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 X12.

39. Color fastness to light

For fabrics intended for furniture, curtains or drapes, the color fastness to light shall be at least level 5. For all other products the color fastness to light shall be at least level 4.

A level of 4 is nevertheless allowed when fabrics intended for furniture, curtains or drapes are both light colored (standard depth < 1/12) and made of more than 20 % wool or other keratin fibers, or more than 20 % silk, or more than 20 % linen or other best fibers.

This requirement does not apply to mattress ticking, mattress protection or underwear.

Assessment and verification: The applicant shall provide test reports using the following test method: ISO 105 B02.

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40. Information appearing on the eco-label

Box 2 of the eco-label shall contain the following text:

- reduced water pollution
- hazardous substances restricted
- whole production chain covered

Assessment and verification: The applicant shall provide a sample of the product packaging showing the label, together with a declaration of compliance with this criterion.

ANNEX B: ITS4-ITS8 LAB SUPPLIES AND CHEMICALS

ANNEX B: ITS4-ITS8 LAB SUPPLIES AND CHEMICALS

NAME	BRAND	TYPE	QUANTITY
Mechanical Shaker	EB		1
Centrifuge	Hettich	D-78532	1
Centrifuge Tube	10mL		20
Electric Cooker	EGO		3
Test Tube With Stopper	70mL		144pieces/1carton
	50mL		144pieces/1carton
Test Tube Rack	3*8		4
	4*10		6
Test Tube Rack With Sponge		2	
Volumetric Flask	100mL 50mL 10mL		50pieces each one
Reagent Bottle	50mL		40
Round Bottom Flask	50mL		20
Flat Bottom Flask	100mL		20
Chem-Elut	20mL		1000
One-Way Stopcock	Alltech		10
Piston-Operated Pipette	Transferpette	5mL(10-5000uL)	2
		1mL(10-1000uL)	2
		0.1mL(10-100uL)	2
Piston-Operated Pipette Tip	5mL(10-5000uL)		100
	1mL(10-1000uL)		100
	0.1mL(10-100uL)		100
Bottle-Top Dispenser	Dispensette	25mL	5
Economical Allihn Condenser		6	
Iron Support		12	
Burette	15cm		Many(100↑)
Flower Twig Clippers		1	
Airblowing Equipment		1	
Glass Stirring Rod		Many(50↑)	
Injector		Many	
Filter For Injector	2mL		Many
Extract Bottle	1L		1
Nylon Filter Membrane	47mm 0.20micron		Some
Refrigeratory		1	
PTFE/Red Silicone Rubber Septa	GN		Many

	NAME	BRAND	PRODUCT NO	.CAS NO.	QUANTITY
Standard Sample	4-Aminodiphenyl	Sigma	A2898-1G	92-67-1	1
	Benzidine	Fluka	12115	92-87-5	1
	4-Chloro-o-Toluidine	Fluka	25078	95-69-2	10
	2-Naphthylamine	Sigma	N8381-1G	91-59-8	1
	p-Chloroaniline	Fluka	23340	106-47-8	1
	2,4-Diaminoanisole	TCI	D0074	615-05-4	1
	4,4'-Diaminodiphenylmethane	Fluka	32948	101-77-9	1
	3,3'-Dichlorobenzidine	Sigma	D9886	91-94-1	1
	3,3'-Dimethoxybenzidine	Fluka	33430	119-90-4	1
	3,3'-Dimethylbenzidine	Fluka	89580	119-93-7	1
	3,3'-Dimethyl-4,4'-Diaminodiphenylmethane	TCI	D2046	838-88-0	1
	p-Cresidine	Fluka	65784	120-71-8	1
	4,4'-Methylene-bis(2-Chloroaniline)	TCI	M0609	101-14-4	1
	4,4'-Oxydianiline	Fluka	32930	101-80-4	1
	4,4'-Thiodianiline	TCI	T0632	139-65-1	1
	o-Toluidine	Fluka	89610	95-53-4	1
	2,4-Toluylenediamine	Fluka	33359	95-80-7	1
	2,4-Dimethylaniline	Fluka	39480	95-68-1	1
	2,6-Dimethylaniline	Fluka	39520	87-62-7	1
	2,4,5-Trimethylaniline	ChemService	F2146	137-17-7	10
	o-Anisidine	Fluka	10460	90-04-0	1
	p-Aminoazobenzene	Aldrich	18,636-8	60-09-3	1
	1,4-Phenylenediamine	Fluka	78429	106-50-3	1
	Aniline	ChemService	O-335		1
	m-Chloroaniline	Fluka	23320		1
	m-Toluidine	Fluka	89620	108-44-1	1
	p-Toluidine	Fluka	89630	106-49-0	1
p-Anisidine	Fluka	10490	104-94-9	1	
m-Anisidine	Fluka	10480	536-90-3	1	
1-Naphthylamine	Fluka	70731	134-32-7	1	
Reagent	Sodium Dithionite	RDH*	13551	7775-14-6 1KG	1
	Sodium Sulfate Anhydrous	Fluka	71962	7757-82-6 5KG	1
	Citric Acid Monohydrate	RDH*	33114	5949-29-1 2.5K	1
	Sodium Hydroxide			AR	
	Chlorobenzene			AR	
	Sodium Phosphate Dibasic	RDH*	30427	7558-79-4 1KG	1
	Ammonium Phosphate Monobasic	Fluka	09717	7722-76-1 1KG	1
	Methanol	Tedia	MS-1922	67-56-1 4L	Many
tert-Butyl Methyl Ether	Tedia	MS-1971	1634-04-4 4L	Many	

	CAS NO.
DBP	84-74-2
BBP	85-68-7
DEHP	117-81-7
DNOP	117-84-0
DINP	68515-48-0
DIDP	26761-40-0
DMP	131-11-3
DEP	84-66-2
DPrP	131-16-8
DIBP	84-69-5
DPP	131-18-0
DHP	84-75-3
DCHP	84-61-7
DIOP	28553-12-0
DNP	84-76-4

ITS7-LABSUPPLIES AND CHEMICALS

NAME	CAS NO.	
Standard Sample	Monobutyltin Trichloride	1118-46-3
	Dibutyltin Dichloride	683-18-1
	Tributyltin Chloride	1461-22-9
	Monoheptyltin Trichloride	59344-47-7
	Diheptyltin Dichloride	74340-12-8
	Tripropyltin Chloride	2279-76-7
Reagent	Sodium Diethylene Dithiocarbamate	
	Sodium Acetate Trihydrate	6131-90-4
	Tetrahydrofuran	109-99-9
	Sodium Tetraethylborate	

ITS8-LABSUPPLIES AND CHEMICALS

NAME	CAS NO.
2,3,5,6-Tetrachlorophenol	935-95-5
Pentachlorophenol-13C6	85380-74-1
2,4,6-Trichlorophenol	88-06-2
Pentachlorophenol	87-86-5
2-Methoxy-Tetrachlorophenol	2539-17-5