

# **EL314. Woven·Knitted Goods and Simply-Processed Goods**

[EL314-2006-1/2006-210]



## **1. Scope**

The criteria shall apply to textile & knitted fabric and its processed goods. However, products with separate certification criteria, engineering or industrial products, glass fiber, mineral fiber, metal fiber, carbon fiber, and inorganic fiber is excluded.

## **2. Definition**

### **2.1**

"Simple processed goods" refers to products processed by cutting and sewing without using accessories.

### **2.2**

"Accessories" refers to something that is used to give additional functions to the processed goods such as buttons, zippers, and cotton. Thread used for sewing, labels for indicating 'Handle with Care,' and things normally removed before use (ex: sticker, pin, trademark tag) is excluded from the scope of accessories.

### **2.3**

"Baby product" refers to textile & knitted fabric and its processed goods for babies under 24 months.

### **2.4**

"Product in direct contact with skin" refers to textile & knitted fabric used for the purpose of underwear, blouse, and shirts that can cause irritation by the broad area of the product coming in direct contact with the skin.

## 2.5

"Product in indirect contact with skin" refers to textile & knitted fabric and simple processed goods including table cloth that normally does not come in direct contact with the skin but in special cases or in which only a extremely small portion of it can come in direct contact with the skin.

## 2.6

"Organo-tin compounds" refers to organic compounds containing tin(Sn) element. The organo-tin compound which is the subject of this criteria is TBT(tri butyl tins) and DBT(dibutyl tins).

## 2.7

"Absorbable organo halogens" refers to halogenated organo halogens used as the index evaluating the environmental effect in the bleaching process of fabrics.

### **3. Certification Criteria**

#### **3.1 Environmental Criteria**

Note) The relevant chemical substance prescribed in the criteria is applied in connection to the name & CAS No. prescribed in <Attachment> chemical substance list.

##### 3.1.1

With respect to the use of chemical substance during the manufacturing process, the following substances shall not be used.

Note) The criteria does not apply to yarns which constitute the product but is used below the weight percentage of 5%.

##### 3.1.1.1

Allegen disperse dye, carcinogenic dye, azo dye, and chromium mordant dye in accordance to <Attachment>

### 3.1.1.2

Flame retardants in accordance to <Attachment>

### 3.1.1.3

APEOs(alkylphenol ethoxylates) & alkylphenol derivative, DTDMAC(dimethyl ammonium chloride), DSDMAC(distearyl dimethyl ammonium chloride), and NTA(nitrilotriacetic acid) as conditioner and cleanser.

### 3.1.2

With respect to the emission of harmful substances in the stage of use, the product shall satisfy the following requirements.

#### 3.1.2.1

The content of the harmful substances in the product by use shall satisfy the following requirements.

Classification		Use	Product in	Product in
		Baby Product	Direct Contact with Skin	Indirect Contact with Skin
pH		4.0 ~ 7.5	4.0 ~ 7.5	4.0 ~ 9.0
Formaldehyde [mg/kg]		≥ 20	≥ 75	≥ 300
Harmful Element [mg/kg]	tin(Sb)	≥ 30	≥ 30	≥ 30
	arsenic(As) <sup>note1)</sup>	≥ 0.2	≥ 1	≥ 1
	lead(Pb)	≥ 0.2	≥ 1.0	≥ 1.0
	cadmium(Cd)	≥ 0.1	≥ 0.1	≥ 0.1
	chromium(Cr)	≥ 1	≥ 2	≥ 2
	hexavalent chromium(Cr <sup>+6</sup> )	≥ 0.5	≥ 0.5	≥ 0.5
	cobalt(Co)	≥ 1	≥ 4	≥ 4
	copper(Cu)	≥ 25	≥ 50	≥ 50
	nickel(Ni)	≥ 1	≥ 4	≥ 4
	mercury(Hg) <sup>note1)</sup>	≥ 0.02	≥ 0.02	≥ 0.02

Sum of residual pesticides in accordance to <attachment> <sup>note1)</sup> [mg/kg]		≥ 0.5	≥ 1	≥ 1
Chlorinated Phenol [mg/kg]	PCP(pentachlorophenol)	≥0.05	≥0.5	≥0.5
	TeCP (2,3,5,6-tetrachlorophenol)	≥0.05	≥0.5	≥0.5
Sum of Phthalate in accordance to <Attachment>note1) [weight%]		≥0.1	-	-
Organo-tin Compounds <sup>note3)</sup> [mg/kg]	TBTs	≥0.5	≥1	≥1
	DBTs	≥1	-	-
OPP(O-Phenyl Phenol) [mg/kg]		≥50	≥100	≥100
Chlorinated Benzene, Chlorinated Toluene in accordance to <Attachment> <sup>note3)</sup> [mg/kg]		≥1	≥1	≥1

Note1) applied when 5% of weight percentage or over 5% of weight percentage of natural fiber is used in the product.

Note2) only applied on coated products, soft plastic product, and products using PVC pigments.

Note3) applied when 5% of weight percentage of synthetic fiber or over 5% of weight percentage of synthetic fiber is used in the product.

### 3.1.2.2

Harmful substances contained in the product shall satisfy the following requirements by material.

#### 3.1.2.2.1

In the case the product is made with acrylics as its major raw material, the residual acrylonitrile shall be not more than 1.5 mg/kg.

#### 3.1.2.2.2

In the case the product is made with cellulose synthetic fiber as its major raw material,

AOX shall be not more than 250 mg/kg.

Note) Cellulose synthetic fiber is also called 'regenerated fiber,' and according to the form and manufacturing process of the fiber, it is named by being classified with general names such as Viscose, Acetate, Triacetate, cupra, Lycocell, and Modal.

#### 3.1.2.2.3

In the case the product is made with polyester as its major raw material, antimony content shall be not more than 260 mg/kg. However, in the case of products using waste material, the criteria does not apply.

#### 3.1.2.3

The product shall not emit unusual odor, and when evaluating odor, the odor level shall be not higher than level 3.

### **3.2 Quality Criteria**

#### 3.2.1

If Korean Industrial Standards are available as a national standard of the product in question, it should satisfy the quality or performance criteria of the standard in question. However, items related to "3.1 Environmental Criteria" are excluded.

#### 3.2.2

If no Korean Industrial Standards are available as a national standard of the product in question, it should satisfy the quality and performance standard according to the following sequence. However, the items related to "3.1 Environmental Criteria" are excluded. Also, if the E-Mark Certification Criteria Setting Committee determines that the applying criteria are not reasonable considering the characteristic of the product, it should satisfy the standards that were modified by the committee (test item, test method, standards, etc.).

#### 3.2.2.1

National standards other than Korean Industrial Standards.

### 3.2.2.2

Overseas national standards or international standards regarding the product quality in question.

### 3.2.2.3

Standards of the organizations at home and abroad that are referred by the current E-mark target product and certification standard.

### 3.2.2.4

A private standard that is recognized as higher than the national standard in the industry of the product in question.

### 3.2.3

In the case of baby products and product in direct contact with skin, the product shall not use filament yarn

## 3.3 Information for Consumers

Indication on the items that the product contributes to the reasons for certification (Reduced harmful substances, Reduced body toxicity) during its consumption and disposal stage

## 4. Test Methods

Certification Criteria		Test & Verification Method
Environmental Criteria	3.1.1	Verification of submitted documents or certificates of standards equivalent or higher
	3.1.2	3.1.2.1 Test report by the relevant accredited testing laboratory in accordance to the following test method or certificate of standards equivalent or higher ▪ pH: KS K ISO 3071(Textiles-Determination of pH of aqueous extract) ▪ Formaldehyde: KS K ISO 14184-1 [Textiles – Determination of

		<p>formaldehyde – Part 1: Free and hydrolized formaldehyde (water extraction method)]</p> <p>formaldehyde of textile products : Water extraction method)</p> <ul style="list-style-type: none"> <li>▪ Harmful elements: KS K 0731(Test method for the determination of extractable heavy metals in textiles)</li> <li>▪ Residual pesticide: KS K 0732(Test method for the determination of pesticides in textiles)</li> <li>▪ Chlorinated phenol type(PCP, TePC): KS K 0733(Test method for determination of the pentachlorophenol content in textiles and/or leathers)</li> <li>▪ Phthalate: any one of the following standards KS K 0148(Test method for plasticizer mixtures from vinyl chloride on the fabrics) KS K 0738(Test method for plasticizer mixtures of polyvinyl chloride coated fabrics) KS M 1991(Determination of phthalates content in plastic materials)</li> <li>▪ Organotin compounds: KS K 0737(Test method for the determination of selected organotin compounds in textiles)</li> <li>▪ OPP, chlorinated benzene, chlorinated toluene: MSD(mass spectrometer), ECD(electron capture detector)</li> </ul>
	3.1.2.2	<p>Test report by the relevant accredited testing laboratory in accordance to the following test method or certificate of standards equivalent or higher.</p> <ul style="list-style-type: none"> <li>▪ Acrylonitrile: KS M ISO 4581 (Plastics - Styrene/acrylonitrile copolymers - Determination of residual acrylonitrile monomer content - Gas chromatography method)</li> <li>▪ AOX : KS M ISO 11480(Pulp. paper and board - Determination of total chlorine and organically bound chlorine)</li> <li>▪ Antimony: AAS(atomic absorption spectrophotometer)</li> </ul>
	3.1.2.3	<p>Test report by the relevant accredited testing laboratory in accordance to 'test method (1) &amp; (2)'</p>
Quality Criteria	3.2.1~3.2.2	Test report by the accredited testing laboratory or certificate of standards equivalent or higher
	3.2.3	Verification of submitted documents.
Consumer Information		Verification of submitted documents.

## **4.1 General Matters**

### 4.1.1

One test sample shall be required for each applied product. Only if more than one test sample is needed, the former requirement may not be met.

### 4.1.2

Test samples shall be collected at random by a certification institute from products in market or those in storage at the production site.

### 4.1.3

Test result shall be numerically set according to KS Q 5002 (Statistical interpretation method of the data – Part 1: Statistical description of the data).

## **4.2 Odor Test Method**

Note) This method is modified and organized to apply the Swiss national standard, SNV 195 651 (Testiles: Determination du degagement d'odeurs par des finissages) to this certification criteria.

### 4.2.1 Selection & Training of Panel

#### 4.2.1.1

The panel is organized of 6 odor analysis agents in accordance to the qualification criteria of judging personnel of 'odor process test method' according to 「Foul Odor Prevention Act」.

#### 4.2.1.2

The details of the selected panel and specific training performed on the selected panel shall be recorded in a report.



## 4.2.2 Preparation of Test Specimen

### 4.2.2.1

Cut a flat shaped test specimen into circle with a diameter of 13cm or a perfect square with the length of one side as 12 cm, and make the weight of the specimen  $40\pm 2$  g.

### 4.2.2.2

Leave the cut sample in a loose state or leave it unravel in the form of threads.

## 4.2.3 Mounting of Test Specimen

### 4.2.3.1

Stack up the test specimen in layers on a ceramic or glass saucer so that it does not stick to each other. Here, in the case of square specimen, fold its corner upwards.

Internal Diameter[cm]	Internal Height[cm]	Water Tank Capacity[mL]	Air Capacity[L]
14	10	300	1.7

Note) In case of using drier outside the prescribed standard, a drier with the capacity per 1g of the sample with the ratio of 40 mL must be used.

### 4.2.3.2

Fill 300 mL of saturated solution of sodium hydrogen carbonate on the bottom part of the drier or using chinaware, and then put the test specimen of 1) into the drier with the following standards.

### 4.2.3.3

After sealing the drier, put the specimen into the thermo-hygrostat that can maintain temperatures of  $37\pm 2$  °C and relative humidity of 90%.

#### 4.2.4 Examination

##### 4.2.4.1

After 15 hours, take out the drier from the thermo-hygrostat and open the lid, then perform the odor evaluation while leaving the test specimen in the drier as it is.

##### 4.2.4.2

When performing odor evaluation on several test specimen in order, the sense of smell must rest a minimum of over 15 minutes with fresh air between separate odor evaluations on each test specimen.

##### 4.2.4.3 General Conditions

###### 4.2.4.3.1

The determination of the odor shall be performed in a space where there is no odor if possible and no draft with spatial temperature of  $20 \pm 2$  °C.

###### 4.2.4.3.2

The panel starts the odor evaluation of the product after staying in a odorless place for 30 minutes or over 30 minutes. Here, they must not do anything that might affect the odor evaluation such as smoking.

#### 4.2.5 Evaluation & Determination

##### 4.2.5.1 Peculiar Odor Test

###### 4.2.5.1.1

In the case there is a sense of peculiar odor, evaluate as "there is odor", and when the panel cannot detect any odor, evaluate as "no odor."

Note) 'Peculiar odor' refers to an odor which does not occur in normal fabric products. Examples of peculiar smell can include such as mold odor, petroleum solvent odor, and insecticide odor.

#### 4.2.5.1.2

The determination is made that there is no peculiar odor when over 4 people evaluate as "no odor" after 6 evaluators individually evaluate the test specimen.

#### 4.2.5.2 Odor Level Test

##### 4.2.5.2.1

With respect to the stage of odor, it is evaluated according to the following odor stage chart.

Odor Stage [level]	Explanation
1	No odor
2	Recognized that there is odor but unable to determine the odor
3	Although able to recognize a certain odor, it is a weak odor that can be normally emitted from fabric products.
4	Strong odor
5	Unbearable odor

##### 4.2.5.2.2

The determination is made with the odor level which is added with the standard error from the average of odor stage level individually evaluated by 6 evaluators.

## 5. Reasons for Certification

" Reduced harmful substances, Reduced body toxicity "

**<Attachment> Chemical Substance List [3.1 of '3. Certification Criteria' related])**

1. Allergen Dye Stuffs

CAS No.	Substance Name	CAS No.	Substance Name
002475-45-8	C.I. Disperse Blue 1	000730-40-5	C.I. Disperse Orange 3
002475-46-9	C.I. Disperse Blue 3	012223-33-5	C.I. Disperse Orange 37
003179-90-6	C.I. Disperse Blue 7	051811-42-8	C.I. Disperse Orange 76
003860-63-7	C.I. Disperse Blue 26	002872-52-8	C.I. Disperse Red 1
012222-75-2	C.I. Disperse Blue 35	002872-48-2	C.I. Disperse Red 11
012222-97-8	C.I. Disperse Blue 102	003179-89-3	C.I. Disperse Red 17
012223-01-7	C.I. Disperse Blue 106	000119-15-3	C.I. Disperse Yellow 1
061951-51-7	C.I. Disperse Blue 124	002832-40-8	C.I. Disperse Yellow 3
023355-64-8	C.I. Disperse Brown 1	006373-73-5	C.I. Disperse Yellow 9
002581-69-3	C.I. Disperse Orange 1	012236-29-2	C.I. Disperse Yellow 39
000082-28-0	C.I. Disperse Orange 11	054824-37-2	C.I. Disperse Yellow 49

2. Carcinogenic Dye Stuffs

CAS No.	Substance Name	CAS No.	Substance Name
003761-53-3	C.I. Acid Red 26	000573-58-0	C.I. Direct Red 28
000569-61-9	C.I. Basic Red 9	002475-45-8	C.I. Disperse Blue 1
000632-99-5	C.I. Basic Violet 14	000082-28-0	C.I. Disperse Orange 11
001937-37-7	C.I. Direct Black 38	002832-40-8	C.I. Disperse Yellow 3
002602-46-2	C.I. Direct Blue 6		

3. Azo Dye Stuffs

Note) This is the generic term of dye having azo group(-N=N-) as its chromophore, and is the following compound that can be decomposed into the following amines.

CAS No.	Substance Name	CAS No.	Substance Name
000092-67-1	4-aminobiphenyl	000838-88-0	3,3'-dimethyl-4,4'-diaminobiphenyl methane
000092-87-5	benzidine	000120-71-8	p-cresidine
000095-69-2	4-chloro-o-toluidine	000101-14-4	4,4'-methylene-bis-2-(chloroaniline)
000091-59-8	2-naphthylamine	000101-80-4	4,4'-oxydianiline
000097-56-3	o-aminoazotoluene	000139-65-1	4,4'-thiodianiline
000099-55-8	2-amino-4-nitrotoluene	000095-53-4	o-toluidine
000106-47-8	p-chloroaniline	000095-80-7	2,4-toluylendiamine
000615-05-4	2,4-diaminoanisole	000137-17-7	2,4,5-trimethylaniline
000101-77-9	4,4'-diaminobiphenyl methane	000090-04-0	o-anisidine
000091-94-1	3,3'-dichlorobenzidine	000095-68-1	2,4-xylidine
000119-90-4	3,3'-dimethoxybenzidine	000087-62-7	2,6-xylidine
000119-93-7	3,3'-dimethylbenzidine	001960-09-3	4-aminoazobenzene

4. Flame Retardants

CAS No.	Substance Name	CAS No.	Substance Name
059536-65-1	PBBs: polybrominated biphenyls	032534-81-9, 032536-52-0	PBDEs: polybromodiphenyl ethers
000126-72-7	TRIS : tri-(2,3-dibromopropyl)-phosphate	005455-55-1	TEPA : tris-(aziridiny) - phosphin oxide)

085535-84-8	Short-chain chlorinated paraffins(C=10~13), substance with over 50% of chlorine concentration
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#### 5. Residual Pesticides

CAS No.	Substance Name	CAS No.	Substance Name
000093-76-5	2,4,5-T	033213-65-9	endosulfan, -
000094-75-7	2,4-D	000072-20-8	endrin
000086-50-0	azinophosmethyl	066230-04-4	esfenvalerat
002642-71-9	azinophosethyl	051630-58-1	fenvalerat
000309-00-2	aldrin	000076-44-8	heptachlor
004824-78-6	bromophos-ethyl	001024-57-3	heptachlorepoxyd
024250-60-1	captafol	000118-74-1	hexachlorbenzol
000063-25-2	carbaryl	000319-84-6	hexachlorcyclohexane
000057-74-9	chlordane	000319-85-7	hexachlorcyclohexane
001970-95-9	chlordimeform	000319-86-8	hexachlorcyclohexane
000470-90-6	chlorfenvinphos	000058-89-9	lindan
000056-72-4	coumaphos	000121-75-5	malathion
068359-37-5	cyfluthrin	000094-74-6	MCPA
091465-08-6	cyhalothrin	000094-81-5	MCPB
052315-07-8	cypermethrin	000093-65-2	mecoprop
000078-48-8	dEF	010265-92-6	metamidophos
052918-63-5	deltamethrin	000072-43-5	methoxychlor
000053-19-0 000072-54-8	DDD's	002385-85-5	mirex
003424-82-6 000072-55-9	DDE's	006923-22-4	monocrotophos
000050-29-3 000789-02-6	DDT's	000056-38-2	parathion
000333-41-5	diazinon	000298-00-0	parathion-methyl
000120-36-2	dichlorprop	007786-34-7	phosdrin/mevinphos
000141-66-2	dicrotophos	031218-83-4	propethamphos
000060-57-1	dieldrin	041198-08-7	profenophos
000060-51-5	dimethoat	013593-03-8	quinalphos
000088-85-7	dinoseb und salze	008001-35-2	toxaphen (camphechlor)
000115-29-7	endosulfan	001582-09-8	trifluralin

#### 6. Phthalates

CAS No.	Substance Name	CAS No.	Substance Name
028553-12-0	DINP: di-iso-nonylphthalate	026761-40-0	DIDP: di-iso-decylphthalate
000117-84-0	DNOP: di-n-octylphthalate	000085-68-7	BBP: butylbenzylphthalate
000117-81-7	DEHP: di-(2-ethylhexyl) phthalate	000084-74-2	DBP: di-butylphthalate

#### 7. Chlorinated Benzenes, Chlorinated Toluenes

CAS No.	Substance Name	CAS No.	Substance Name
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-	pentachlorobenzenes	-	tetrachlorotoluenes
-	hexachlorobenzenes	-	pentachlorotoluenes
-	dichlorobenzenes	-	chlorotoluenes
-	trichlorobenzenes	-	dichlorotoluenes
-	tetrachlorobenzenes	-	trichlorotoluenes

## **Common Criteria, Notice No. 2012-36, the Ministry of Environment**

1. Eco-label products must follow the following provisions with regard to the proper treatment of environmental pollution substances, such as air and water wastes and noxious chemical substances emitted in the process of manufacturing or service operation.

A. When first applying for certification, the product manufacturer should observe the environment related laws and agreements pertaining to the region where the production factory or the place of service operation is located for a period of one year prior to the date of application. Any case of violation of the penalty clause will be verified by confirming documents involved during a period of one year to the date of application. Regarding any violation not related to the penalty clause, confirmation will be made on the completion of appropriate measures.

B. A person who has received a certification of eco-labeling shall observe the environment related laws and agreements pertaining to the region where the production factory or the place of service operation is located during the period of certification. However, regarding any violation besides a penalty, confirmation will be made on the completion of appropriate measures.

2. As a general rule, information for consumers shall be indicated on the surface of the product in such a way not to be easily erased. However, in case that indication on the surface of the product is impossible or undesirable, it can be indicated on the appropriate part such as product packaging, product guidebook and user's manual that consumers can recognize. However, the service information should be indicated inside and outside of the place of service operation. In case that indication inside and outside of the place of service operation is impossible or undesirable, it can be indicated on the appropriate part such as an agreement, letter of delivery, letter of guarantee, and PR materials that consumers can recognize.

3. In order to establish fair trade and to protect consumer, the applicant for eco-label and the holder of eco-label license shall observe the Act on the Fairness of

Indication and Advertisement with respect to the environmental aspects of the product.

4. For Various standards referred in the certification criteria by target product, the latest revised edition applies at the date of application, if not specified otherwise.

5. In applying the quality related criteria for each target product, if no standard is available that can be applied as the quality criteria, the president of Korea Environmental Industry & Technology Institute (KEITI) (hereafter referred to as "president of KEITI") may establish and operate the quality criteria for the product involved after review by a competent committee.