

CRITERIA FOR THE ENVIRONMENTAL LABELLING OF TISSUE PAPER PRODUCTS

GENERAL FRAMEWORK

ARTICLE 1- These criteria have been established under the Environmental Label Regulation dated 19.10.2018 and numbered 30570.

ARTICLE 2- The “Tissue Paper” product group includes sheet or roll-shaped tissue papers (toilet paper, paper towels, napkins, paper handkerchiefs, box tissues) used to absorb liquids suitable for personal hygiene or to clean dirty surfaces. Tissue papers may be in one or more layers that are creped or embossed.

ARTICLE 3 - This product group does not include the following products:

- a) Wet wipes and hygienic products
- b) Paper products layered with a material other than paper.

ARTICLE 4 - In order for the products in the “tissue paper” product group to be awarded the Environmental Label within the scope of the Environmental Label Regulation, the criteria specified in this document must be fulfilled.

MADDE 5 - The Environmental Label criteria and assessment and verification requirements established for the product group “tissue paper” will be valid for 5 (five) years. The criteria may be updated within a five-year period when deemed necessary by the Environmental Labeling Board. The period of validity of the criteria may be extended based on the approval of the Environmental Labeling Board.

ASSESSMENT AND VERIFICATION REQUIREMENTS

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

When a statement, document, analysis, test report or other evidence is requested from the applicant to prove his/her compliance with the criteria, these requested documents may be issued by the applicant and/or his/her supplier(s) and/or their supplier/suppliers, in accordance with the current situation.

In accordance with the current situation, a method different from the test methods determined for each criterion may be used, provided that its equivalence is accepted by the Ministry evaluating the application.

The Ministry recognizes the tests performed by laboratories accredited by an accreditation body that is a party to the International Laboratory Accreditation Association (ILAC) - Mutual Recognition Agreement (MRA) according to TS EN ISO/IEC 17025. TÜRKAK accredited organizations can be accessed at <https://secure.turkak.org.tr/kapsam/search> TS EN ISO/IEC 17025 accreditation condition is not required if it is documented that there is no accredited organization for the test method, which is mandatory within the scope of evaluation and verification requirements.

When generating data on the classification of substances or mixtures, the provisions of the "Regulation on the Test Methods to be Applied in the Determination of the Physico-Chemical, Toxicological and Ecotoxicological Properties of Substances and Mixtures" published in the second repeated Official Gazette dated 11.12.2013 and numbered 28848 or methods that have been validated in accordance with internationally recognized scientific principles or international procedures should be considered.

The applicant must have fulfilled the necessary conditions of the "Environmental Law" published in the Official Gazette dated 11.08.1983 and numbered 18132 and the current legislation entering into force pursuant to this law. In this regard, it is possible to submit it with the EIA Decision, Environmental Permit Certificate, Zero Waste Certificate, Waste Plan Management and other documents requested by the Ministry.

Where appropriate, the Ministry may require supporting information/documentation and may carry out independent verification.

DEFINITIONS

Air Dry Ton (ADt): Ton of pulp at 90% dryness;

Chemical Pulp: Fibrous material obtained by removal from the raw material of a considerable part of non-cellulosic compounds that can be removed by chemical treatment (cooking, delignification, bleaching);

CMP: Pulp produced by chemomechanical method;

CTMP: Pulp produced by chemithermomechanical method;

De-inked Pulp': Recycled pulp derived from paper from which contaminants and inks have been eliminated;

Dyes: An organic substance that is fluorescent or possesses a vibrant hue, and which transfers its colour to a substrate through selective absorption.

Dyes are either soluble or undergo an application process that destroys their crystal structure, if not permanently. By means of ionic or covalent chemical bonds, absorption, solution, or mechanical retention, dyes are retained in the substrate.

ECF Pulp: Elemental chlorine-free bleached pulp;

Integrated Production: Pulp and paper are produced at same site.

The pulp is not dried before the paper manufacture. The production of paper/board is directly connected with the production of pulp.

Mechanical Woodpulp Paper or Board: Paper or board containing mechanical woodpulp as an essential constituent of its fibre composition;

Metal-Based Pigments and Dyes: Dyes and pigments containing more than 50 % by weight of the relevant metal compound(s);

Non-Integrated Production: Production of market pulp (for sale) in mills that do not operate paper machines, or production of paper/board using only pulp produced in other plants (market pulp);

Mother Reel: A large roll of tissue paper, wound onto the winding station, covering either the full width or part of the width of the tissue paper machine;

Paper Machine Broke: Paper materials that are discarded by the paper machine process but that have properties allowing it to be reused on site by being incorporated back into the same manufacturing process that generated it.

This term shall not be extended to conversion processes, which are considered as distinct processes to the paper machine.

Pigments: Coloured, black, white or fluorescent particulate organic or inorganic solids which usually are insoluble in, and essentially physically and chemically unaffected by, the vehicle or substrate in which they are incorporated.

They alter appearance by selective absorption and/or by scattering of light. Pigments are usually dispersed in vehicles or substrates for application, for instance in the manufacture of inks, paints, plastics or other polymeric materials. Pigments retain a crystal or particulate structure throughout the coloration process.

Recycled Fibres: Fibres diverted from the waste stream during a manufacturing process or generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product.

These fibres can no longer be used for their intended purpose. It excludes reutilisation of materials generated in a process and capable of being reclaimed within the same process that generated them (paper machine broke — own produced or purchased);

Structured Tissue Paper: Paper characterised by high bulk and absorption capacity obtained with significant local areas of high and low fibre density in the form of fibre pockets in the base sheet, generated by specific processes in the tissue paper machine;

TCF Pulp: Totally chlorine-free bleached pulp;

TMP: Thermomechanical pulp.

CRITERIA

Environmental Label criteria cover pulp/fibre and paper production. The criteria for pulp production cover all sub-processes from the point where raw or recycled pulp enters the production facility to the point where the pulp exits. The criteria for paper production cover all sub-processes from the preparation of the pulp to be used in the production of tissue paper to the winding of the produced paper onto the main reel.

The energy used during the conversion of tissue paper into the final product, air emissions and discharges to water are not included. Environmental Label criteria does not include transportation and packaging of raw materials, pulp or final paper product.

Recycled pulp/fibre is defined as the pulp obtained as a result of the recycling of used paper, cardboard or cardboard obtained at the printing stage or at the consumer stage. The facility's own waste or the waste of factories producing paper from new pulp purchased from outside are not included in this definition.

CRITERION 1. EMISSIONS TO WATER AND AIR

As a prerequisite, the pulp and paper production site must meet all respective legal requirements of the country in which it is located.

Assessment and verification: The applicant shall provide a declaration of compliance, supported by relevant documentation and declarations from the pulp supplier(s).

Criterion 1(a) Chemical oxygen demand (COD), Phosphorous (P), Sulphur (S), Nitrogen Oxide (NO_x)

This criterion is related to the evaluation of the emissions of the product according to defined reference emission values. The ratio of the emission value of the product to the reference emission value is defined as the emission score (P).

The emission score calculated for any parameter (P_{COD} , P_{P} , P_{S} , P_{NOX}) will not exceed 1.3.

The total emission score calculated for the four emission parameters ($P_{\text{TOTAL}} = P_{\text{COD}} + P_{\text{P}} + P_{\text{S}} + P_{\text{NOX}}$), will not exceed 4.0.

For non-integrated production, the applicant will submit emission score calculation for both pulp and paper production.

The COD score (P_{COD}) for the co-production of pulp and paper will be calculated as follows (the same method will be applied for P_{P} , P_{S} , P_{NOX}):

For each pulp 'i' used, the related measured COD emissions ($\text{COD}_{\text{pulp},i}$, expressed in kg/air dry tonne — ADt) shall be weighted according to the proportion of each pulp used (pulp 'i' with respect to air dry tonne of pulp), and added together. Air dry tonne assumes 90 % dry matter content for pulp, and 95 % for paper.

The weighted COD emission for the pulp is then added to the measured COD emission from the paper production to give the total COD emission, $\text{COD}_{\text{total}}$

The weighted COD reference value for the pulp production shall be calculated in the same way, with the sum of the weighted reference value for each pulp used and added to the reference value for the paper production to give a total COD reference value $\text{COD}_{\text{ref, total}}$. Table 1 contains the reference values for each pulp type used and for the paper production.

Finally, the total COD emission shall be divided by the total COD reference value as follows:

$$P_{\text{Koi}} = \frac{\text{COD}_{\text{total}}}{\text{COD}_{\text{ref,total}}} = \frac{\sum_{i=1}^n [\text{pulp}_i \times (\text{Koi}_{\text{pulp}_i})] + \text{Koi}_{\text{papermachine}}}{\sum_{i=1}^n [\text{pulp}_i \times (\text{Koi}_{\text{ref,pulp}_i})] + \text{Koi}_{\text{ref,papermachine}}}$$

Table 1. Reference values for emissions from different pulp types and from paper production

Pulp grade/paper	Emissions (kg/ADt)			
	COD _{reference}	P _{reference}	S _{reference}	NO _x reference
Bleached chemical pulp (other than sulphite)	16.00	0.025 0.09 ^a	0.35	1.60
Bleached chemical pulp (sulphite)	24.00	0.04	0.75	1.60
Magnefite pulp	28.00	0.056	0.75	1.60
Unbleached chemical pulp	6.50	0.016	0.35	1.60
CTMP/CMP	16.00	0.008	0.20	0.25/0.70 ^b
TMP/groundwood pulp	3.00/5.40 ^c	0.008	0.20	0.25
Recycled fibre pulp without de-inking	1.10	0.006	0.20	0.25
Recycled fibre pulp with de-inking	3.20	0.012	0.20	0.25
	<i>Emissions (kg/tonne)</i>			
Tissue paper making	1.20	0.01	0.30	0.50
Structured tissue paper making	1.20	0.01	0.30	0.70

^a The higher value refers to mills using eucalyptus from regions with higher levels of phosphorous (e.g. Iberian eucalyptus).

^b NO_x emission value for non-integrated CTMP mills using flash-drying of pulp with biomass-based steam.

^c COD value for highly bleached mechanical pulp (70-100 % of fibre in final paper).

In cases where co-generation of heat and electricity occurs at the same plant, the emissions of S and NO_x resulting from on-site electricity generation can be subtracted from the total amount. The following equation can be used to calculate the proportion of emissions resulting from electricity generation:

$$\text{Share of emissions from electricity generation} = \frac{2 \times (\text{MWh}(\text{electricity}))}{[2 \times \text{MWh}(\text{electricity}) + \text{MWh}(\text{heat})]}$$

The electricity in this calculation is the electricity produced at the co-generation plant. The heat in this calculation is the net heat delivered from the co-generation plant to the pulp/paper production.

Assessment and verification: The applicant shall provide detailed calculations and test data showing compliance with this criterion, together with related supporting documentation that

include test reports using the following continuous or periodical monitoring standard test methods (or equivalent standard methods that are accepted by the competent body as providing data of equivalent scientific quality): COD: ISO 15705, ISO 6060 or TS 2789; NO_x: TS EN 14792 or TS ISO 11564; S (sulphur oxides): TS EN 14791: or EPA no 8; S (reduced sulphur): EPA no 15A, 16A or 16B; S content in oil: TS EN ISO 8754; S content in coal: ISO 19579; S content in biomass: TS EN 16994; Total P: TS EN ISO 6878.

Rapid tests can also be used to monitor emissions as long as they are checked regularly (e.g. monthly) against the relevant aforementioned standards or suitable equivalents. In the case of COD emissions, continuous monitoring based on analysis of total organic carbon (TOC) shall be accepted as long as a correlation between TOC and COD results has been established for the site in question.

The minimum measurement frequency for wastewaters will be every two weeks for COD emissions and total phosphorus (P) emissions, unless otherwise specified in the work permit.

The minimum measurement frequency, unless specified otherwise in the operating permit, shall be daily for COD emissions and weekly for Total P emissions. In all cases, emissions of S and NO_x shall be measured on a continuous basis (for emissions from boilers with a capacity exceeding 50 MW) or a periodic basis (at least once a year for boilers and driers with a capacity less than or equal to 50 MW each).

NO_x measurement once a year is sufficient for facilities that meet their energy needs from natural gas.

Emission data shall be reported as annual averages except in cases where:

- the production campaign is for a limited time period only,
- the production plant is new or has been rebuilt, in which case the measurements shall be based on at least 45 subsequent days of stable running of the plant.

In either case, data may only be accepted if it is representative of the respective campaign and a sufficient number of measurements have been taken for each emission parameter.

The supporting documentation shall include an indication of the measurement frequency and calculation of the points for COD, Total P, S and NO_x.

Emissions to air shall include all emissions of S and NO_x which occur during the production of pulp and paper, including steam generated outside the production site, minus any emissions allocated to the production of electricity. Measurements shall include recovery boilers, lime kilns, steam boilers and destructor furnaces for strong smelling gases. Diffuse emissions shall also be taken into account. Reported emission values for S to air shall include both oxidised and reduced S emissions. The S emissions related to the heat energy generation from oil, coal and other external fuels with known S content may be calculated instead of measured and shall be taken into account.

Samples for wastewater discharges will be taken from the final exit point of the facility's wastewater treatment plant and analyzes will be carried out on samples without any

filtration or sedimentation process. In cases where the wastewater of the facility is discharged to an urban wastewater treatment facility or an external wastewater treatment facility, the samples taken from the wastewater channel at the exit of the facility (cellulose/paper production facility) will be analyzed without applying any filtration or sedimentation process and the results obtained will be sent to the urban wastewater treatment facility or will be multiplied by the annual average treatment efficiency of an external wastewater treatment plant. Annual average treatment efficiency data of the urban wastewater treatment plant or external wastewater treatment plant will be obtained from the operator of the wastewater treatment plant in question. The data in question will be provided to reflect the last six months before the application and to prove the production time of the products for which the Environmental Label application has been made. Total phosphorus (P) measurement for the last 2 months will be sufficient for the first Environmental Label application.

In the case of a new or reconstructed production facility, the emission measurement values to be carried out once a week for 45 consecutive days will be taken as basis, after the emission values of the facility become stable.

For integrated mills, due to the difficulties in getting separate emission figures for pulp and paper, if a combined figure is only available for pulp and paper production, the emission values for pulp(s) shall be set to zero and the combined emissions shall be compared against the combined reference values for the relevant pulp and paper production. The weighted content of each pulp granted a specific reference value from Table 1 shall be reflected in the equation.

Criterion 1 (b) AOX (Adsorbable organic halogens)

This criterion refers to elemental chlorine free (ECF) pulp.

The weighted average AOX value formed during the production of pulps used in the Environmentally Labeled tissue paper product shall not exceed 0.17 kg/ADt.

Assessment and verification: The applicant shall provide test reports using the AOX TS EN ISO 9562 test method or equivalent proven methods, accompanied by detailed calculations showing compliance with this criterion and any related supporting documentation

The applicant shall submit a list of the different ECF pulps used in the pulp mixture, their proportions in the pulp mixture and the amount of AOX emissions expressed in kg AOX/ADt pulp as a declaration of compliance with this criterion.

Supporting documentation shall include a indication of the measurement frequency. AOX shall only be measured in processes where chlorine compounds are used for bleaching the pulp. AOX does not need to be measured in the effluent from non-integrated paper production or in the effluents from pulp production without bleaching or where bleaching is performed with chlorine-free substances.

Measurements of AOX emissions to water shall be taken on unfiltered and unsettled samples at the effluent discharge point of the mills' wastewater treatment plant. In cases where mill effluent is sent to a municipal or other third-party wastewater treatment plant, unfiltered and unsettled samples from the mill effluent sewer discharge point shall be analysed and the results multiplied by a standard removal efficiency factor for the municipal or third-party wastewater treatment plant. The removal efficiency factor shall be based on information provided by the operator of the municipal or other third-party wastewater treatment plant.

Information on the emissions shall be expressed as the annual average from measurements taken at least once every 2 months. In case of a new or rebuilt production plant, measurements shall be based on at least 45 subsequent days of stable running of the plant. They shall be representative of the respective campaign.

In case the applicant does not use any ECF pulp, a corresponding declaration to the competent body is sufficient.

AOX emission values for imported pulp/fibre will be obtained from the relevant supplier/s and presented.

Criterion 1(c) CO₂

This criterion refers to the sum total CO₂ emissions from fossil fuel consumption in pulp and paper production processes. CO₂ emissions resulting from the process of converting tissue paper into the final product are not covered.

Carbon dioxide emissions from fossil fuels used for the production of process heat and electricity (whether on-site or off-site) must not exceed the following limit values:

- (1) 1200 kg CO₂/tonne for conventional tissue paper;
- (2) 1850 kg CO₂/tonne for structured tissue paper.

The actual emission value shall be calculated as the sum of the emissions from the pulp and paper production, taking into account the mixture of pulps used.

Assessment and verification: The applicant shall provide data and detailed calculations showing compliance with this criterion, together with related supporting documentation.

For each pulp used, the pulp manufacturer shall provide the applicant with a single CO₂ emission value in kg CO₂/ADt. For integrated mills, CO₂ emissions for pulp and paper production may be reported as a single value.

The CO₂ emission data shall include all sources of non-renewable fuels used during the production of pulp and paper, including the emissions from the production of electricity (whether on-site or off-site).

In the calculations, 2020 CO₂ emission factors included in the Turkish Greenhouse Gas Emission Inventory published by TURKSTAT in April 2022 and given in the "Technical Annex for Tissue Paper Products - E1" will be used for fuel-related emissions.

Alternatively, for fuel-related emissions, the applicant may also submit the greenhouse gas emission reports they have prepared in accordance with the provisions of the "Regulation on the Monitoring of Greenhouse Gas Emissions", which came into force after being published in the Official Gazette numbered 29003 dated 17.05.2014.

In the calculations, Republic of Türkiye The Electricity Consumption Point Emission Factors included in the "Turkiye Electricity Production and Electricity Consumption Point Emission Factors Information Form" published by the Ministry of Energy and Natural Resources on 9 August 2022 and given in Table 2 shall be used.

Table 2. Electricity Consumption Point Emission Factors

Factor Type	Year	Value (tCO ₂ /MWh)	Value (tCO ₂ -eq./MWh)
Consumption Point Emission Factor Based on Transmission Line	2020	0.444	0.447
Consumption Point Emission Factor Depending on the Distribution Line	2020	0.481	0.484

Calculations or mass balances will be made for a 12-month production period. In the case of a new or reconstructed production facility, the calculations will be based on the emission measurement values of the facility to be carried out weekly for at least 45 consecutive days.

For electricity supplied from the grid, the value given above will be used unless the applicant submits documentation establishing the average value for electricity suppliers (committed suppliers); In this case, the applicant may use this value instead of the specified value. Documents used as proof of compliance will include specifications (i.e. copy of a contract) showing the average value.

If the applicant certifies that he uses electrical energy from renewable energy sources within the scope of Law No. 6446 and the relevant provisions of Law No. 5346 and relevant legislation, the renewable electricity value can be excluded from the calculation. Apart from this, the value given for all mains electricity will be used.

When calculating CO₂ emissions for energy obtained from renewable sources purchased and used in production processes, "zero CO₂ emissions" will be accepted. The applicant will provide appropriate documentation that such energy is actually used on site or purchased externally.

In paper production facilities that do not produce steam in their own facilities but import it from outside, if the CO₂ emission per unit steam cannot be obtained from the supplier company; Based on the fuel used by the supplier company, CO₂ emissions will be calculated

based on the steam consumed in the tissue paper production facility, taking into account the emission factors given above.

The fuel used to convert tissue paper into a product and the transportation of the product, pulp, or raw materials will not be included in the calculations.

CRITERION 2. ENERGY USE

This criterion relates to the energy used during the production of pulp and paper, on which certain reference values are based. Energy consumption, which includes electricity (P_E) and fuel (P_Y) used for heat generation, will be expressed in points (P_{total}) as detailed below:

The total number of points ($P_{total} = P_E + P_Y$) shall not exceed 2.5.

Reference values to be used in calculating the energy consumption score are given in Table 3.

If more than one pulp is used for a paper product, the reference value for the fuel consumption score used in electricity consumption and heat generation will be used, weighted by the proportion of each pulp used in the total (pulp 'i' per ton of air-dry pulp).

Criterion 2(a) Electricity

The electricity consumption related to pulp and paper production shall be expressed in terms of points (P_E) as detailed below.

Calculation for pulp production: For each pulp i used, the related electricity consumption ($E_{pulp,i}$ expressed in kWh/ADt) shall be calculated as follows

$E_{pulp,i}$ = internally produced electricity + purchased electricity – sold electricity

Calculation for paper production: Similarly, the electricity consumption related to paper production (E_{paper}) shall be calculated as follows:

E_{paper} = internally produced electricity + purchased electricity – sold electricity

Finally, the points for pulp and paper production shall be combined to give the overall number of points (P_E) as follows:

$$P_E = \frac{\sum_{i=1}^n [\text{pulp},i \times (E_{pulp,i})] + E_{paper}}{\sum_{i=1}^n [\text{pulp},i \times (E_{ref,pulp,i})] + E_{ref,paper}}$$

In case of integrated mills, due to the difficulties in getting separate electricity figures for pulp and paper, if a combined figure is only available for pulp and paper production, the electricity values for pulp(s) shall be set to zero and the figure for the paper mill shall include both pulp and paper production.

Criterion 2(b) Fuel consumption for heat production

The fuel consumption related to pulp and paper production shall be expressed in terms of points (P_Y) as detailed below.

Calculation for pulp production: For each pulp i used, the related fuel consumption ($F_{pulp,i}$ expressed in kWh/ADt) shall be calculated as follows:

$F_{pulp,i}$ = (internally produced fuel + purchased fuel – sold fuel – 1,25 × internally produced electricity)

Not:

1. $F_{pulp,i}$ (and its contribution to P_F , pulp) does not need to be calculated for mechanical pulp unless it is market air dried mechanical pulp containing at least 90 % dry matter.
2. The amount of fuel used to produce the sold heat shall be added to the term ‘sold fuel’ in the equation above.

Calculation for paper production: Similarly, the fuel consumption related to paper production (F_{paper} , expressed in kWh/ADt) shall be calculated as follows:

F_{paper} = internally produced fuel + purchased fuel – sold fuel – 1,25 × internally produced electricity)

$$P_F = \frac{\sum_{i=1}^n [\text{pulp},i \times (F_{pulp,i})] + F_{paper}}{\sum_{i=1}^n [\text{pulp},i \times (F_{ref,pulp,i})] + F_{ref,paper}}$$

Table 3. Reference values for electricity and fuel

Pulp grade	Fuel kWh/ADt		Electricity kWh/ADt	
	$F_{reference}$		$E_{reference}$	
	Non-admp	Admp	Non-admp	Admp
Chemical pulp	3650	4650	750	750
TMP	0	900	2200	2200
Groundwood pulp (including pressurised groundwood)	0	900	2000	2000
Chemithermomechanical pulp (CTMP)	0	800	1800	1800
Recycled pulp	350	1350	700	700
Paper grade	kWh/t			
Tissue paper	1950		950	
Structured tissue	3000		1500	
Admp: Air dried market pulp				

Assessment and verification (for both (a) and (b)): The applicant shall provide detailed calculations showing compliance with this criterion, together with all related supporting documentation. Reported details shall therefore include the total electricity and fuel consumption.

The applicant shall calculate all energy inputs, divided into heat/fuels and electricity used during the production of pulp and paper, including the energy used in the de-inking of waste paper for the production of recycled pulp. Energy used in the transportation of raw materials, as well as in packaging, is not included in the energy consumption calculations.

Total heat energy includes all purchased fuels. It also includes heat energy recovered by incinerating liquors and waste from on-site processes (e.g. wood waste, sawdust, liquors, waste paper, paper broke) as well as heat recovered from the internal generation of electricity. However, the applicant only needs to count 80 % of the heat energy from such sources when calculating the total heat energy.

Electric energy means net imported electricity coming from the grid and the internal generation of electricity measured as electric power. Electricity used for wastewater treatment does not need to be included.

Where steam is generated using electricity as the heat source, the heat value of the steam shall be calculated, then divided by 0.8 and added to the total fuel consumption.

In case of integrated mills, due to the difficulties in getting separate fuel (heat) figures for pulp and paper, if a combined figure is only available for pulp and paper production, the fuel (heat) values for pulp(s) shall be set to zero and the figure for the paper mill shall include both pulp and paper production.

CRITERION 3. FIBRES — CONSERVING RESOURCES, SUSTAINABLE FOREST MANAGEMENT

The fibre raw material may consist of recycled fibres or virgin fibres.

Any virgin fibres must not originate from GMO species.

All fibres shall be covered by valid chain of custody certificates issued by an independent third-party certification scheme such as the Forest Stewardship Council (FSC), the Programme for the Endorsement of Forest Certification (PEFC) or equivalent, or be covered by delivery notes of paper for recycling in accordance with TS EN 643.

At least 70 % of the fibre material allocated to the product or production line shall originate from forests or areas managed according to sustainable forestry management principles that meet the requirements set out by the relevant independent chain of custody scheme and/or originate from recycled materials.

Excluded from the calculation of recycled fibre content is the reutilisation of waste materials that are capable of being reclaimed within the same process that generated them (i.e. paper machine broke — own produced or purchased). However, inputs of broke from conversion operations (own or purchased) may be considered as contributing towards the recycled fibre content if covered by TS EN 643 delivery notes.

Any uncertified virgin material shall be covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect

to uncertified material. The certification bodies issuing forest and/or chain of custody certificates shall be accredited or recognised by that certification scheme

Assessment and verification: The applicant shall provide to the competent authority a declaration of conformity supported by an independently validated chain of custody certificate from Turkish Environmental Label tissue manufacturers and valid for all cellulose used in the product or production line. FSC, PEFC or equivalent certification will be considered independent third-party certification. If recycled cellulose is used and FSC or PEFC or equivalent recycling declarations are not used, the evidence will be within the scope of TS EN 643 delivery note information.

The applicant shall provide audited accounting documents that demonstrate that at least 70% of the materials allocated to the product or production line originate from forests or areas managed according to sustainable forestry management principles that meet the requirements set out by the relevant independent chain of custody scheme and/or originate from recycled materials.

If the product or production line includes uncertified virgin material, proof shall be provided that the content of uncertified virgin material does not exceed 30% and is covered by a verification system that ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.

In case the certification scheme does not specifically require that all virgin material is sourced from non-GMO species, additional evidence shall be provided to demonstrate this.

CRITERION 4. RESTRICTED HAZARDOUS SUBSTANCES AND MIXTURES

The basis for demonstrating compliance with each of the sub-criteria under Criterion 4 shall be the applicant providing a list of all the relevant chemicals used together with appropriate documentation (safety data sheet (SDS) or a declaration from the chemical supplier).

Criterion 4(a) Restrictions on Substances of Very High Concern (SVHC)

All process and functional chemicals used in the paper mill and, where relevant, during the tissue paper conversion process must be screened. This criterion does not apply to chemicals used for wastewater treatment unless the treated wastewater is recirculated back into the paper production process.

The final product contains substances of high concern defined in Article 49 of the "Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals", which came into force after being published in the Official Gazette dated 23.06.2017 and numbered 30105, at a concentration limit of 0.10% by weight or It will not contain any substance on it. No exceptions to this requirement will be accepted.

Assessment and verification: The applicant shall provide a declaration that the paper product does not contain any SVHC in concentrations greater than 0,10 % by weight. The declaration shall be supported by SDSs or appropriate declarations from chemical suppliers of all process

and functional chemicals used in the paper mill that show that none of the chemicals contain SVHC in concentrations greater than 0,10 % (weight by weight).

Criterion 4(b) Classification, Labelling and Packaging (CLP) restrictions

All process and functional chemicals used in the paper mill and, where relevant, during the tissue paper conversion process must be screened. This criterion does not apply to chemicals used for wastewater treatment unless the treated wastewater is recirculated back into the paper production process.

Unless an exception is specified in Table 4, the product shall not contain substances classified in any of the hazard classes included within the scope of Annex-1 of the "Regulation on Classification, Labeling and Packaging of Substances and Mixtures" published in the Official Gazette dated 11.12.2013 and numbered 28848 and specified below at or above the concentration limit of 0.10% by weight.

- Group 1 hazards: Category 1A or 1B carcinogenic, mutagenic and/or toxic for reproduction (CMR): H340, H350, H350i, H360, H360F, H360D, H360FD, H360Fd, H360Df.
- Group 2 hazards: Category 2 CMR: H341, H351, H361, H361f, H361d, H361fd, H362; Category 1 aquatic toxicity: H400, H410; Category 1 and 2 acute toxicity: H300, H310, H330; Category 1 aspiration toxicity: H304; Category 1 specific target organ toxicity (STOT): H370, H372, Category 1 skin sensitiser (*): H317.

* H317 restrictions shall only apply to commercial dye formulations, surface finishing agents and coating materials applied to paper.

- Group 3 hazards: Category 2, 3 and 4 aquatic toxicity: H411, H412, H413; Category 3 acute toxicity: H301, H311, H331; Category 2 STOT: H371, H373.

The use of substances or mixtures that are chemically modified during the paper production process (e.g. inorganic flocculating agents, cross-linking agents, inorganic oxidising and reducing agents) so that any relevant restricted CLP hazard no longer applies shall be exempted from the above requirement.

Table 4. Derogations to the CLP hazard restrictions and applicable conditions

Substance/mixture type	Applicability	Derogated classification(s)	Derogation conditions
Dyes and pigments	Used in wet end or surface application during the production of coloured paper.	H411, H412, H413	The chemical supplier shall declare that a fixation rate of 98 % can be achieved on the paper and provide instructions about how this can be ensured. The paper producer shall provide a declaration of compliance with any relevant instructions.
Polyamidoamine-epichlorohydrin (PAE)-based wet strength agents	Used as retention agents to improve runnability or to impart wet strength to the product.	H411, H412, H413	The combined residual monomer content of epichlorohydrin (ECH, CAS No 106-89-8) and its breakdown products 1,3-dichloro-2-propanol (DCP, CAS No 96-23-1) and 3- monochloro-1,2-propanediol (MCPD, CAS No 96-24-2) must not exceed 0,35 % (w/w) of the active solids content of the formulation.
Glyoxal (recycled fibre)	Impurity in recycled fibres.	H341, H317	Only permitted in concentrations exceeding 0,10 % (w/w) if due to contaminants from recycled materials used in the papermaking process. In such cases, compliance with the limit defined in criterion 6c) must be demonstrated.
Polyamidoamine-epichlorohydrin (PAE)-based Yankee auxiliary chemicals	Used as creping aids.	H411, H412, H413	The combined residual monomer content of epichlorohydrin (ECH, CAS No 106-89-8) and its breakdown products 1,3-dichloro-2-propanol (DCP, CAS No 96-23-1) and 3- monochloro-1,2-propanediol (MCPD, CAS No 96-24-2) must not exceed 0,05 % (w/w) of the active solids content of the formulation.
Cationic polymers (including polyethyleneimines, polyamides and polyamines)	Various uses possible, which include use as retention aids, improve wet-web strength, dry strength and wet strength.	H411, H412, H413	The paper producer shall provide a declaration of compliance with any relevant instructions for safe handling and dosing specified in the safety data sheet.

Assessment and verification: The applicant shall provide a list of all relevant chemicals used together with the relevant SDS or supplier declaration. Chemicals containing substances or mixtures with restricted CLP regulation classifications will be highlighted in the relevant list. Taking into account the approximate dosing rate of the chemical, the concentration of the restricted substance or mixture in that chemical (as specified in the SDS or supplier declaration), and the retention factor assumed to be 100%, the amount by weight of the restricted substance or mixture remaining in the final product will be determined.

Justifications for any deviation from a retention factor of 100 % or for chemical modification of a restricted hazardous substance or mixture must be provided in writing to the competent body.

For any restricted substances or mixtures that exceed 0,10 % by weight of the final paper product but are derogated, proof of compliance with the relevant derogation conditions must be provided.

Criterion 4 (c) Chlorine

This requirement shall apply to pulp and paper producers. While it also applies to the bleaching of recycled fibres, it is accepted that the fibres in their previous life cycle may have been bleached with chlorine gas.

Chlorine gas shall not be used as a bleaching agent. This requirement does not apply to chlorine gas related to the production and use of chlorine dioxide.

Assessment and verification: The applicant shall provide a declaration that chlorine gas has not been used as a bleaching agent in the paper production process, together with declarations from any relevant pulp suppliers.

Criterion 4(d) Alkylphenol ethoxylates (APEOs)

This requirement shall apply to pulp and paper producers.

APEOs or other alkylphenol derivatives shall not be added to cleaning chemicals, de-inking chemicals, foam inhibitors or dispersants. Alkylphenol derivatives are defined as substances that upon degradation produce alkylphenols.

Assessment and verification: The applicant shall provide a declaration(s) from its chemical supplier(s) that APEOs or other alkylphenol derivatives have not been added to these products.

Criterion 4(e) Surfactants used in de-inking

This requirement shall apply to the producer(s) of de-inked pulp.

All surfactants used in de-inking processes shall demonstrate ready biodegradability or inherent ultimate biodegradability (see test methods and pass levels below).

The only exemption to this requirement shall be the use of surfactants based on silicone derivatives provided that paper sludge from the de-inking process is incinerated.

Assessment and verification: The applicant shall provide a declaration of compliance with this criterion together with the relevant safety data sheets or test reports for each surfactant. These shall indicate the test method, threshold and conclusion reached using one of the following test methods and pass levels:

- For ready biodegradability: OECD No 301 A-F (or equivalent ISO standards) with a percentage degradation (including absorption) within 28 days of at least 70 % for 301 A and E, and of at least 60 % for 301 B, C, D and F.
- For inherent ultimate biodegradability: OECD 302 A-C (or equivalent ISO standards), with a percentage degradation (including adsorption) within 28 days of at least 70 % for 302 A and B, and of at least 60 % for 302 C.

In cases where silicone-based surfactants are used, the applicant shall provide a safety data sheet for the chemicals used and a declaration that paper sludge from the de-inking process is incinerated, including details of the destination incineration facility or facilities.

SDSs are prepared in accordance with Annex-2 of the "Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals". It can also be prepared in accordance with the "Regulation on Safety Data Sheets Concerning Harmful Substances and Mixtures", which came into force after being published in the Official Gazette dated 13.12.2014 and numbered 29204.

Criterion 4(f) Biocidal product restrictions for slime control

This requirement shall apply to the paper producer.

The active ingredients of biocides or bioactive substances used against scale-forming organisms in circulating water systems containing fibres will not potentially bioaccumulate.

To meet this criterion; The bioaccumulation potential of the active ingredients of biocides or bioactive substances shall be $\log K_{ow}$ (\log octanol/water partition coefficient) ≤ 3.0 or (experimentally determined) bioconcentration factor ≤ 100 .

Assessment and verification: The applicant shall provide a declaration of compliance with this criterion together with the relevant material safety data sheet or test reports. The submitted documents shall include the test method used (OECD 107, 117 or 305 A-E), as well as the threshold values and results achieved.

Criterion 4(g) Azo dye restrictions

This requirement shall apply to the paper producer.

Azo dyes that can release one or more aromatic amines by reductive cleavage of one or more azo groups are listed in "Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals" (KKDİK) which came into force after being published in the Official Gazette dated 23.06.2017 and numbered 30105 Appendix 17. These listed azo dyes will not be used in the production of tissue paper.

Assessment and verification: The applicant shall submit a declaration of conformity to this criterion, obtained from the supplier(s) of all colorants used in the production process for tissue products. The declaration of the colorant supplier must be supported by test reports according to the appropriate methods or equivalent methods described in the "Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals", which came into force after being published in the Official Gazette No. 30105 dated 23.06.2017.

Criterion 4(h) Metal-based pigments and dyes

This requirement shall apply to the paper producer or, where relevant, to the tissue paper converter. For a description of metal-based pigments and dyes, see the introduction to this document.

Aluminum (**), silver, arsenic, barium, cadmium, cobalt, chromium, mercury, manganese, nickel, lead, selenium, antimony, tin or zinc based paints or pigments will not be used.

Assessment and verification: The applicant shall submit a declaration(s) of compliance with the requirements of this criterion from all supplier(s) of colorants used in the production process. Supplier declaration(s) shall be supported by SDSs or other relevant documents.

(**) *The aluminum restriction does not apply to aluminosilicates.*

Criterion 4(i) Ionic impurities in dye-stuffs

This requirement shall apply to the paper producer or, where relevant, to the tissue paper converter.

The levels of ionic impurities in the dyestuffs used shall not exceed the following limits: silver 100 ppm; arsenic 50 ppm; barium 100 ppm; cadmium 20 ppm; cobalt 500 ppm; chromium 100 ppm; mercury 4 ppm; nickel 200 ppm; lead 100 ppm; selenium 20 ppm; antimony 50 ppm; tin 250 ppm; zinc 1500 ppm..

Assessment and verification: The applicant shall submit a declaration(s) of conformity to the requirements of this criterion obtained from the supplier(s) of all colorants used in the production process for the tissue product. Supplier declaration(s) must be supported by SDSs or other relevant documents.

Criterion 4(j) Lotions

No substances classified as H317, H334 CMR or on the Candidate List of Substances of Very High Concern will be added to lotion formulations used during the production of tissue products. Additionally, no parabens, triclosan, formaldehyde, formaldehyde releasers or methylisothiazolinone will be added to lotion formulations.

Furthermore, no lotion formulation used shall be dosed in quantities that result in any individual substances with the CLP restricted classifications listed in criterion 4(b) being present in quantities exceeding 0.010 % by weight of the final tissue product.

The sum of substances with any particular restricted CLP classifications shall not exceed 0.070 % by weight of the tissue product.

Assessment and verification: The applicant shall submit a list of relevant lotion formulations product used in the production of tissue products, the declarations of conformity of the relevant suppliers regarding these lotion formulations, together with their SDS, calculations based on dosage rates where the concentrations of the relevant substances in the formulation are determined to demonstrate compliance with the limits of any restricted CLP regulation substance in the final tissue.

CRITERION 5 — WASTE MANAGEMENT

All pulp and paper production sites, including converted tissue production sites, shall have a system in place for the handling of waste arising from the production process and a waste management and minimisation plan that describes the production process and includes information on the following aspects:

- 1) Procedures in place for waste prevention;
- 2) Procedures in place for waste separation, reuse, and recycling
- 3) Procedures in place for the safe handling of hazardous waste;
- 4) Continuous improvement objectives and targets relating to the reduction of waste generation and the increase of reuse and recycling rates

Assessment and verification: The applicant will submit the Waste Management Plan prepared within the scope of the "Waste Management Regulation" published in the Official Gazette No. 29314 dated 02.04.2015.

Applicants certified according to ISO 14001 are considered to have met this criterion if the issue of waste management is addressed in the ISO 14001 certificate they receive..

CRITERION 6 — FINAL PRODUCT REQUIREMENTS

Criterion 6(a) Dyes and optical brighteners

For dyed tissue paper, good fastness (level 4 or higher) shall be demonstrated according to the short procedure defined in TS EN 646.

For tissue paper treated with optical brightening agents, good fastness (level 4 or higher) shall be demonstrated according to the short procedure defined in TS EN 648.

Assessment and verification: The applicant or the chemical supplier(s) shall provide a declaration of compliance with this criterion supported by relevant test reports in accordance with standards TS 646, ISO 625 and/or TS EN 648 as appropriate.

Otherwise, the applicant shall provide a declaration stating that no dyes or optical brightening agents have been used.

Criterion 6(b) Slimicides and antimicrobial substances

Samples of the final tissue product shall not result in the growth inhibition of micro-organisms in accordance with TS EN 1104.

Assessment and verification: The applicant shall provide a declaration of compliance with this criterion supported by relevant test reports in accordance with TS EN 1104.

Criterion 6(c) Product safety

Any final tissue product that contains recycled fibre shall not contain any of the following hazardous substances above the specified limits and according to the specified test standards:

- Formaldehyde: 1 mg/dm² in accordance with TS EN 1541 (cold water extraction),
- Glyoxal: 1.5 mg/dm² in accordance with DIN 54603
- Pentachlorophenol (PCP): 2 mg/kg in accordance with TS EN ISO 15320 (cold water extraction).

Assessment and verification: The applicant shall provide a declaration of compliance with this criterion supported by relevant test reports in accordance with the respective standards.

Criterion 6(d) Fitness for use

For structured tissue paper, the absorbency of the individual base sheet of tissue paper before conversion shall be equal to or higher than 10.0 g water/g tissue paper.

Assessment and verification: The applicant shall provide a declaration of compliance with the criterion supported by relevant documentation.

Producers shall guarantee the fitness for use of their products, providing documentation that demonstrates the product quality in accordance with TS EN ISO/IEC 17050-1. The standard provides general criteria for suppliers' declaration of conformity with normative documents.

For structured tissue paper, the applicant shall provide a declaration of compliance with the requirement supported by a relevant test report in accordance with TS EN ISO 12625-8.

CRITERION 7 — INFORMATION APPEARING ON THE ENVIRONMENTAL LABEL

The following information shall be included with the Environmental Label on the product:

The Environmental Label with dimensions of 5*5 cm shall be placed on the product packaging. The environmental label shall contain the document number in the 10-point font and the statement of "The use of Environmental Label in this product has been approved by the Ministry of Environment, Urbanization and Climate Change in accordance with the Environmental Label Regulation published in the Official Gazette dated 19.10.2018 and numbered 30570 due to its environmental performance." at the bottom of the label.

If approved during the application process for the product, the following statements may be included.

- a) Reduced air and water emissions from production processes
- b) Reduced energy consumption in production processes
- c) Percentage of recycled paper use or percentage of certified fibres

Değerlendirme ve doğrulama: The applicant shall submit a photograph showing the label placed on the product packaging, the Environmental Label use permit number and relevant statements, together with the signed declaration of conformity.

The approval of the Ministry is required for the Environmental Label to be included in the packaging of products of different sizes in sizes other than the size specified by Republic of Türkiye the Ministry of Environment, Urbanization and Climate Change.

TECHNICAL ANNEX FOR CLEANING PAPER PRODUCTS

Table A1. CO₂ Emission Factors of Fuels

Fuel Type	Unit	Year (2020)
Anthracite	t/TJ	91.8
Lignite	t/TJ	104.8
Asphaltite	t/TJ	96.1
Coke	t/TJ	110.7
Coal Tar	t/TJ	80.7
Crude Oil	t/TJ	73.7
Petcoke	t/TJ	97.4
Fuel Oil	t/TJ	77
Diesel	t/TJ	72.3
Gasoline	t/TJ	69.3
Lpg	t/TJ	63.1
Refinery Gas	t/TJ	57.6
Aviation Fuel	t/TJ	71.5
Gas Oil	t/TJ	71.9
Naphtha	t/TJ	72.7
Intermediate Products	t/TJ	73.3
Base Oil	t/TJ	73.3
White Spirit	t/TJ	73.3
Bitumen	t/TJ	80.7
Other Petroleum Products	t/TJ	73.3
Natural Gas	t/TJ	53.7
Wood	t/TJ	111.8
Animal and Vegetable Waste	t/TJ	100.1
Biofuel	t/TJ	70.8