CONTROLUNION

Friend of Earth Sustainable Textiles Standard

Copyright

CU Inspections & Certifications India Pvt. Ltd
OFFICE 22nd & 23rd Floor, B wing
Arihant Aura, Plot no. 13/1, TTC Industrial area , Opp. Turbhe Railway Station
Thane Belapur Road, MIDC side
Navi Mumbai - 400705
India
Website: www.controlunion.com

Disclaimer

This document has been developed by the authors with all possible care and best of intentions, however Control Union and any third parties involved in the creation of this document hereby state that the document is provided without warranty, either expressed or implied, of accuracy or fitness for purpose, and hereby disclaim any liability, direct or indirect, for damages or loss relating to the use of this document.

TABLE OF CONTENTS

1. Introduction - Main Pillars

The Friend of Earth Sustainable Textiles Standard is built on the following main pillars:

1. Ensures credible assurance for sustainably sourced inputs by requiring certifications from recognized bodies.
2. Promotes the sustainable use of chemicals throughout the manufacturing process to minimize environmental impact.
3. Mandates strict social and environmental compliance while providing equivalence to similar recognized standards.
4. Establishes robust product testing criteria to ensure the quality and sustainability of certified products.
5. Guarantees complete traceability from raw materials to the final product, promoting transparency across the supply chain.
6. Requires audits by independent third-party certification bodies for verification of compliance.
7. Adopts a modular certification approach to assist brands with accurate labeling and claims.
8. Operates under the independent governance of the World Sustainability Organization (WSO) – Friend of Earth.

2. Principles

The Friend of Earth Sustainable Textiles Standard establishes a comprehensive framework for promoting sustainability in textile production. The standard encompasses the entire lifecycle of textile materials, ensuring environmentally and socially responsible practices from raw material sourcing to the final product. It emphasizes transparency, traceability, and ethical operations across the supply chain.

Section A - General information

Criteria	Indicators
Scope	This standard applies to the processing, manufacturing, packaging, labeling, trading, and distribution of textiles that include at least 5% certified sustainable fibers. The final products may include garments, home textiles, fashion accessories, and bedding. The scope of the standard ensures Verification of the chain of custody for all certified sustainable materials.
Scope Certificate	Processors, manufacturers, traders, and retailers who demonstrate compliance with the relevant FOEST criteria through the certification process conducted by an Approved Certifier receive a FOEST Scope Certificate (SC).The Scope Certificate specifies the product categories and related details that Certified Entities can offer in compliance with FOEST. It also outlines the processing, manufacturing, and trading activities covered under the scope of certification including subcontarcting activities.
Additional materials and accessories	All additional fibres and textile accessories (e.g., buttons, zippers, tags, labels, threads) must comply with environmental and health regulations, including restricted substances or hazardous chemicals. Indicators : A compliant test report in accordance with Annex B, based on the risk assessment outlined in the suggested test matrix.

Section B - Verification of allowed inputs - Sustainable materials

Criteria	Indicators
Use of Sustainable Fibers	Ensure the use of sustainable fibers, including organic materials, recycled materials, sustainable man-made cellulosic fibers (MMCF), sustainable Animal Fibres Indicators: Procurement records confirming fiber types and relevant certifications scheme evidence
Ethical Sourcing of Animal Fibers	Animal fibers must comply with sustainable and humane practices, avoiding sources involved in animal cruelty or unsustainable farming. Indicators: Valid animal welfare certifications

Section B - Verification of allowed inputs - Sustainable materials

Criteria	Indicators
Promotion of Sustainable Agriculture	Support agricultural practices that enhance soil health, conserve water, and avoid harmful chemicals, encouraging fair treatment of farmers Indicators: Supplier certifications for sustainable agriculture (e.g., organic certifications, Fair Trade, regenagri or any other relevant sustainable certifications).
Use of Sustainable MMCF fibers	Promote the use of sustainable MMCF fibres, such as viscose , modal, Cupro, lyocell, or other regenarated cellulosics materials, to reduce environmental impact and support the circular economy. Indicators: Certification of relevant forestry management principles or any other relevant certification schemes).
Use of Recycled & Upcycled Materials	Promote the use of recycled and upcycled fibers, such as recycled cotton, polyester, and other materials, to minimize environmental impact and enhance circularity. Recycling and upcycling methods shall be considered as allowed inputs to extend material life and reduce waste. Indicators: Certification of recycled and upcycled materials (e.g., Global Recycled Standard, Recycled Claim Standard, Community Waste Program (CWP), Ocean Bound Plastic (OBP), or other relevant certification schemes).
Use of Virgin Materials	Promote use of virgin materials with established credentials via LCA methodology. Indicators: Verification of LCA assessment report
Traceability in Supply Chain	Maintain traceability of raw material origins to ensure compliance with sustainability and ethical sourcing requirements. Allowed only inputs which are not claimed in any other similar sustainable standards in further supply chain. Indicators: Documentation and traceability systems linking materials to their sources
Monitoring and Evaluation of Suppliers	Conduct regular assessments of suppliers to ensure adherence to eco-friendly and fair labor practices. Indicators: Supplier audit records and performance evaluation reports.

Section C - Chain of Custody (CoC) Requirements

Criteria	Indicators
Separation and Segregation of Materials	Ensure that sustainable and non-sustainable fibers are properly separated and segregated throughout the supply chain to avoid contamination. Indicators: Segregation records, storage protocols, and physical separation procedures
Volume Reconciliation	Regularly reconcile the volume of sustainable materials to ensure that the amount supplied matches the amount used, preventing discrepancies in material use. Indicators: Volume reconciliation reports matching purchase orders with production and sales records including annual Volume reconcilliation records
Transaction Certificate	Transaction Certificates (TCs) are essential for ensuring traceability and transparency within the FOEST (Friend of Earth Sustainable Textiles) supply chain, issued by FOEST-approved certification body. TCs are granted after thorough verification when FOEST-certified goods progress through the certified supply chain. Indicators: Verification of TCs: Certified entities must provide valid and verifiable TCs for each transaction to confirm compliance with FOEST requirements.
Use of Transaction Certificates (TCs)	Ensure that transaction certificates (TCs) accompany the raw materials to verify their authenticity and compliance with sustainable practices throughout the supply chain. Indicators: Transaction certificates provided with materials, confirming sustainable sourcing and certifications
Outgoing Transaction Certificates (TC)	Ensure that outgoing materials are accompanied by valid transaction certificates (TC) to confirm that the products meet the required sustainability criteria before distribution. Indicators: Issuance of transaction certificates for outgoing materials, ensuring compliance with **FOEST TC temp V1.0**

Criteria	Indicators
CoC Documentation and Reporting	Maintain CoC documentation for each transaction to ensure traceability and transparency of material flow across the supply chain. Indicators: Recordkeeping and tracking of CoC certificates for all incoming and outgoing materials. Records including relavent invoices, purchase orders, shipment docuements, packlist , test report if aplicable documenting both purchase and sales
Monitoring of CoC Compliance	Continuously monitor and evaluate compliance with CoC principles across the supply chain, ensuring no material is mixed or lost during production or processing. Indicators: Regular CoC audits and reports verifying compliance with traceability and transaction certificate requirements.

Section D - Technical and Residue Testing of Textile Materials

Criteria	Indicators
Development of Testing Policies	Establish and implement comprehensive policies for technical and residue testing of textile materials to ensure product quality and compliance with local and international applicable regulations. Indicators: Documented testing policies aligned with international and regional standards. Periodic review and revision of testing protocols to reflect industry regulatory updates. Implementation of quality assurance measures to validate testing accuracy and reliability.
Testing Protocols and Frequency	This protocol defines standardized procedures for conducting technical and residue tests on textile materials to ensure compliance with international and regional standards and quality consistency. Testing procedures shall adhere to recognized methods, including but not limited to ISO Standards, AATCC Methods, and Local Regulatory Requirements as applicable. The determination of testing parameters may be referenced in accordance with Annex A and B. Testing frequency may be conducted as defined in Annex D. Indicators: Documented and approved testing protocols, schedules, and frequency logs for each batch or production cycle.

Criteria	Indicators
Accredited Testing Facilities	Conduct all tests in accredited laboratories compliant with recognized standards (e.g., ISO/IEC 17025). Indicators: Reports from accredited labs; documentation of lab accreditations.
Parameters for Residue Testing & Use of Recognized Testing Standards	Residue testing ensures compliance with safety and environmental regulations by assessing the presence of unwanted chemical substances in textiles. Testing follows recognized standards such as ISO and AATCC along with applicable local and international methods, to ensure accuracy and reliability. Ensures compliance with defined limits, with testing parameters referenced and tested as per the methods suggested in Annex A and Annex B. Indicators: Verified test results demonstrating compliance with specified residue limits, based on recognized testing methods.
Handling Non-Conforming Materials	Develop a protocol for managing materials that fail technical or residue tests, including procedures for re-testing, corrective actions, and disposal. Ensure that materials are assessed, actions are taken, and non-conformities are documented and addressed promptly. Indicators: Records of non-conformance reports, corrective actions, and re-testing outcomes. Documentation of material disposition (rework, disposal, or rejection) based on non-conformance. Monitoring of corrective actions to ensure effective resolution and prevent recurrence.

Criteria	Indicators
Risk-Based Approach to Testing	Implement a risk-based approach to testing, prioritizing higher-risk batches or materials to optimize testing efforts and reduce the need for testing every lot. Testing should be focused on factors such as past performance, material risks, or customer-specific requirements. The testing matrix and frequency are suggested in Annex A, B, and C. Indicators: Risk assessments and testing plans that prioritize batches based on identified risk factors. Reduced testing frequency for lower-risk batches or materials, based on historical data and risk evaluation. Documentation of testing rationale and risk-based decision-making processes.
Continuous Improvement in Testing	Regularly review and update testing procedures to integrate technological advancements, regulatory changes, and evolving customer requirements. Testing protocols can be updated with references from international third-party RSLs, such as AAFA (American Apparel & Footwear Association), AFIRM RSL, and others. Indicators: Documentation of procedure updates, technology upgrades, and customer feedback incorporation. Evidence of alignment with current industry standards, regulatory requirements, and customer specifications. Records of continuous improvement initiatives and their impact on testing accuracy and efficiency.

Section E - Management System

Criteria	Indicators
Organization Management System	A management representative must be designated to ensure compliance with all certification requirements. Indicators: Appointment of a management representative documented. Management representative's responsibilities outlined.

Criteria	Indicators
Site List	The organization must maintain an up-to-date list of all sites involved in certification, including the site name, address, tax ID, and activities performed at each site Indicators: List of all certified sites available. Site activities and tax identification details are included and updated.
Documented Procedures	The organization must establish and maintain documented procedures/work instructions for all certification criteria requirements. Indicators: Documented procedures available and reviewed regularly. Procedures cover all certification criteria.
Records of Compliance	The organization must maintain complete and current records of compliance with certification criteria, with records retained for a minimum of five years Indicator: Records are maintained and up-to-date. Records are accessible and kept for five years or more
Staff Training	Staff responsible for procedures must receive proper training, and records of this training must be maintained. Indicators: Training records available for staff involved in implementing procedures. Regular training sessions conducted and documented
Legal Compliance List	The organization must maintain an updated list of all applicable legal requirements. Indicators: Updated legal compliance list is maintained. Regular review of legal requirements documented
Legal Compliance Certificates	The organization must provide certificates or other documentation that proves compliance with all applicable legal requirements. Indicators: Certificates or documentary evidence of legal compliance are available.Compliance checked regularly with up-to-date evidence.

Section F - Social Compliance Management

Criteria	Indicators
Freedom of Association and Collective Bargaining	Workers have the right to form and join trade unions of their choice and engage in collective bargaining. Indicators: Existence of trade unions or worker organizations. Evidence of workers' participation in union activities. Agreements between management and workers' representatives (e.g., collective bargaining agreements).
Elimination of Forced Labour	No workers should be subjected to forced, bonded, or involuntary labour. Indicators: Written contracts for all employees outlining terms of employment. Freedom of workers to leave employment after giving reasonable notice. Absence of penalties or coercion for workers wanting to leave.
Child Labour Prohibition	The employment of children below the minimum legal age for employment is prohibited. Indicators: Age verification records (e.g., birth certificates). Clear age limits in employment contracts. Monitoring systems to prevent child labour.
Non-Discrimination in Employment	Employment decisions should not be based on race, gender, religion, or other discriminatory factors. Indicators: Equal opportunities in hiring, training, and promotion. Anti-discrimination policies and practices in place. Gender and diversity representation in management and workforce.
Occupational Health & Safety	Workplaces must be safe, hygienic, and conducive to the health and wellbeing of workers. Indicators: Regular safety inspections and risk assessments. Availability of protective gear and safety equipment. Health and safety training for workers.
Fair Wages and Benefits	Workers must receive fair wages and benefits, in compliance with national laws. Indicators: Regular payment of wages in compliance with minimum wage laws. Overtime payment, where applicable, and benefits like insurance. Transparent payroll and salary records.

Criteria	Indicators
Working Hours	Work hours should not exceed the legal limits, and workers should have adequate rest and time off. Indicators: Documentation of working hours and schedules. Regular rest days and vacation entitlements. Overtime hours within legal limits.
Respect for Contracts	All employment relationships must be governed by clearly defined contracts. Indicators: Existence of signed, written contracts for all employees. Contract terms communicated in a language understood by workers. Compliance with contract terms regarding job roles, compensation, and benefits.
Social Dialogue	Workers and employers should engage in regular communication and consultation to address issues in the workplace. Indicators: Existence of grievance mechanisms. Regular meetings between management and worker representatives. Evidence of worker involvement in decision-making processes.
Written Policies and Procedures	The organization must have clear written policies and procedures to govern employment practices, health and safety, and workers' rights, and designate responsible staff and a Management Representative (MR) to oversee compliance. Indicators: Existence of written policies and procedures covering employment, workers' rights, health and safety, and grievance mechanisms. Staff responsible for policy implementation are clearly identified and trained. A Management Representative (MR) is designated to monitor adherence to policies and procedures. Policies are regularly reviewed and updated, and compliance is audited to ensure continuous improvement.
Recognition of Third-Party Social Standards	Compliance with internationally recognized social standards (e.g., SA8000, Sedex SMETA, Fair Trade, BSCI, WRAP, GOTS, GRS) is accepted as meeting social compliance requirements. Indicators: Valid certification or compliance documentation for the recognized social standard.

Section G - Environment Management System

Criteria	Indicators
Compliance with Environmental Laws and Regulations	Certified Organizations must comply with relevant environmental laws, including air emissions, wastewater discharge, and waste disposal. Indicators: Documentation and evidence of compliance with applicable local and national environmental laws.
Documented Environmental Policies and Procedures	The organization must establish policies and procedures to monitor and improve environmental performance, communicated to all employees. Indicators: Accessible documentation of policies and procedures, confirmed dissemination among employees.
Responsibility for EMS	A designated person must oversee the implementation and maintenance of the EMS within the organization. Indicators: Official appointment letter or organizational chart identifying the responsible person.
Data and Monitoring Methods	he organization must establish clear methods to track environmental data such as energy and water usage, waste generation, and pollution levels. Indicators: Maintained records of monitoring data with a clear tracking methodology.
Functional Effluent Treatment Plants (ETP)	All processing units must have operational ETPs compliant with regulatory requirements for wastewater treatment. Indicators: Functional ETPs verified through inspections and adherence to discharge standards.
Wastewater Testing	Regular testing of wastewater, including pollutant levels, is required to comply with local laws and ensure safe disposal or reuse of sludge. Indicators: Laboratory reports of wastewater testing and records of sludge management.
Waste Management Compliance	Organizations must separate hazardous and non-hazardous waste and ensure proper disposal per legal requirements. Indicators: Evidence of segregation processes, disposal records, and adherence to waste management laws.

Criteria	Indicators
Goals for Waste Reduction	The organization should establish measurable goals to minimize waste generation and improve waste management practices. Indicators: Documented waste reduction targets with annual progress reports.
Incident Response Plan	The organization must prepare a response plan for waste or pollution incidents to minimize environmental harm. Indicators: Documented procedures for incident management and evidence of drills or readiness.
Continuous Improvement Program	The organization must demonstrate ongoing efforts to enhance environmental management and performance. Indicators: Implementation records of improvement initiatives and periodic reviews.
Compliance with Air Emissions Standards	Air emissions must comply with applicable laws, and the organization should monitor and maintain necessary records this also includes GHG reduction action plan and use of Renewable energy Indicators: Air quality reports, action plan and emission monitoring logs.
Monitoring of Resource Usage	Regular tracking of water and energy usage to ensure compliance with legal and sustainability objectives. Indicators: Monthly resource usage records aligned with regulatory requirements.
Objectives for Resource Efficiency	The organization must set measurable objectives to reduce energy and water usage per unit of production. Indicators: Documented objectives with evidence of progress tracking.
Training on Environmental Responsibilities	Employees must be trained to properly handle and sort hazardous waste to prevent mishandling and environmental harm and on the efficient use and safe disposal of chemicals, as well as conservation of water and energy. Indicators: Records of employee training on: Hazardous waste handling and sorting. Proper handling, minimal use, and disposal of chemicals. Water and energy conservation practices. Continuous improvements in environmental awareness and performance.
Recognition of Third-Party Standards	Compliance with internationally recognized environmental standards (e.g., ISO 14001, Higg FEM, GRS, GOTS) is accepted as meeting EMS requirements. Indicators: Valid certification or compliance documentation/Audit reports for the recognized standard.

Section H - Chemical Management System

Criteria	Indicators
Documented Policies for Chemical Management	Develop and implement policies for procurement, storage, and use of chemicals, aligning with local and international regulations. Regularly update policies to reflect regulatory changes or industry best practices. Indicators: Documented and regularly updated chemical management policies; employee awareness of policies.
Compliance with Regulatory Standards	Adherence to local, national, and international laws governing chemical use, handling, and disposal in the textile industry. Maintain necessary permits and approvals. Indicators: Valid permits, documented compliance records, and periodic regulatory audits
Comprehensive Employee Training	Provide training on proper chemical handling, storage, and emergency response. Ensure employees can interpret MSDS information and understand health hazards and safety protocols. Indicators: Training schedules, attendance records, and assessments demonstrating employee understanding of MSDS and safe practice
Implementation of Safety Measures	Implement safety measures, including PPE usage, ventilation systems, and emergency response plans. Conduct regular safety audits and drills to ensure preparedness. Indicators: Records of PPE distribution, safety inspection reports, and emergency drill outcomes.
Standardized Handling and Transportation Protocols	Develop and enforce procedures for safe handling and transport of chemicals. Ensure all containers are labeled with hazard information, and measures are in place to prevent spills or leaks. Indicators: Documented handling protocols, labeled chemical containers, and incident prevention measures in place.

Criteria	Indicators
Incident Reporting and Investigation Protocols	Establish clear procedures for reporting chemical incidents promptly. Investigate incidents thoroughly to identify root causes and prevent recurrence. Indicators: Incident reports, root cause analysis documentation, and corrective action plans.
Up-to-Date Chemical Inventory	Maintain an accurate inventory of all chemicals, including names, quantities, storage locations, and purposes of use. Indicators: Current and accessible inventory records.
Accessible Material Safety Data Sheets (MSDS)	Obtain and regularly update Material Safety Data Sheets (MSDS) for all chemicals in use. Ensure that MSDSs are easily accessible to employees handling chemicals. Refer to Annex C for suggested MSDS preparation norms. Indicators: Up-to-date MSDS library accessible at chemical storage and usage sites. Availability of MSDS for all chemicals used, ensuring proper handling and safety measures.
Health Hazard Communication	Clearly display health hazard information for each chemical in an understandable language. Include effects, risks, and precautions. Indicators: Visible health hazard displays near chemical storage and usage areas.
Recognition of Environmentally Friendly Certifications	Chemical inputs used in certified materials must complies with latest versions of standards such as GOTS Letter of Approval or ZDHC MRSL Level 1 Conformance or Bluesign or Eco Passport by OEKO-TEX. Indicators: Certification documents for chemical inputs meeting the approved standards.

Section I - Claims and Labelling

Criteria	Indicators
Certification Accuracy	Any claim made about compliance with the FOEST Standard must be based on a valid certification issued by an accredited certification body. Organizations must ensure that claims are specific, verifiable, and do not mislead consumers. Indicators: Valid certification records, audit reports, compliance documentation.
Material Composition Disclosure	Claims regarding the percentage of sustainable materials in a product must be substantiated with traceable documentation. Products labeled as compliant must meet the minimum threshold of 5% sustainable materials **(FOEST certified material)** as per the standard's requirements. Indicators: Procurement records, transaction certificates, supplier declarations.
Ongoing Compliance and Monitoring	Organizations must maintain accurate records of compliance and be prepared to provide evidence supporting their claims during audits. Misrepresentation of claims may lead to revocation of certification or legal consequences. Indicators: Audit results, compliance records, evidence of corrective actions taken.
Approval of Claims	All claims and product labeling must be approved by Friend of the Earth (FOE) before being used in marketing, packaging, or promotional materials. Unauthorized claims will be subject to penalties or corrective measures. Indicators: FOE-approved claim records, documented approvals for labels, compliance review reports.

Annex A - Suggested Technical Quality Parameters

Parameters	Limits	Main test method	Alternate acceptable test methods
Rubbing fastness	3-4 (Dry) 2 (Wet)	ISO 105 X12	AATCC 8, DIN 54021, JIS L0849
Perspiration fastness, alkaline and acidic	3-4.	ISO 105 E04	AATCC 15, DIN 54020, JIS L0848
Light fastness	3-4.	ISO 105 B02	AATCC 16 option 3, DIN 54004, JIS L0843
Dimensional change	max ±8% (Knitted/hosiery) max ±3% (Woven)	ISO 6330	AATCC 135 (fabrics) and 150 (garments), DIN 53920, JIS L1018
Saliva Fastness	5	BVL B 82.92.3 DIN 53160-1	DIN 53160-1
Washing fastness when washed at 40 °C	3-4.	ISO 105 C06 A1M	AATCC 61 option 3A (at 140 °F), DIN EN 20105-C03, JIS L0844

Annex B - Suggested Test Matrix for Residue Testing of Textile Materials

Parameters	Grey Yarn/ Fabric	Printed Fabric	Dyed Fabric/ Yarn	Processed / Undyed Fabric	Finished Fabric	Metallic Accessories	Other accessories	Sewing Thread
Sensitizing/ Allergenic Disperse								*
Dyes (PES)								*

Parameters	Grey Yarn/ Fabric	Printed Fabric	Dyed Fabric/ Yarn	Processed / Undyed Fabric	Finished Fabric	Metallic Accessories	Other accessories	Sewing Thread
AOX	*	*	*	*			*	*
AP/APEO	*	*	*		*		*	*
Lead / Cadmium	*	*	*	*	*	*	*	*
Extractable HM	*	*	*	*	*	*	*	
Nickel Release						*		
Formaldehyde	*	*	*	*	*			
Banned Amines		*	*		* (for Dyed/Printed fabric only)		*	*
Chlorophenols	*			*				
Phthalates		*	*		* (for Printed fabric only)		*	
pH value		*	*	*	*		*	
Colour fastness & Shrinkage		*	*	*	*		*	*

Parameters	Grey Yarn/ Fabric	Printed Fabric	Dyed Fabric /Yarn	Processed / Undyed Fabric	Finished Fabric	Metallic Accessories	Other accessories	Sewing Thread
PFAS (Perfluorinated)					* (For water repellent finish only)			
Cyclic Siloxanes (D4, D5, D6)					* (For Silicone based finish only)			
Organotin compounds		* (For plastisol prints only)			* (For water repellent /PU coating finish /plastisol prints only)			
Chlorinated Paraffins		* (For ink-based prints only)			* (For Flame retardant/ paraffin based finish only)			
Flame Retardants					* (For Flame retardant finish only)			
PVC		* (For ink-based prints only)						

Chemical Name	Cas Number	Limit Value	Test Method
Formaldehyde	50-00-0	< 16 mg/kg	ISO 14184-1 (2011)
Alkylphenol ethoxylates (APEOs)	Several	< 20 mg/kg	For AP: ISO 21084:2019
Nonylphenol ethoxylates (NPEO)			For NP, OP: Extraction, derivatisation, GC/MS or
Octyl phenol ethoxylates (OPEO)			HPLC/MS
Alkylphenols (APs)	Several	< 10 mg/kg	For NPEO, OPEO: Extraction in methanol,
Octyl phenol (OP), mixed isomers			derivatisation, HPLC/MS: EN ISO 18254-1 or NPLC: EN ISO 18254-2
Nonylphenol (NP), mixed isomers			(test range for NPEO and OPEO: 3-15 moles)
AOX		< 5 mg/kg	Extraction with boiling water, adsorption on
			charcoal; AOX analyzer based on ISO 9562
			Alternatively: HJ/T 83-2001
Arylamines			
With carcinogenic properties	Several	< 20 mg/kg	EN ISO 14362-1 (2017)
(amine-releasing azo dyes MAKIII, category 1,2,3)			EN ISO 14362-3 (2017)
Aniline, free (MAK III category 4)	Several	< 20 mg/kg	EN 14362-1; (HPLC/GCMS) without reductive cleavage
Disperse dyes classified as allergenic	Several	< 20 mg/kg	DIN 54231; (LC/MS)
pH value		4.5 - 7.5	ISO 3071

Chemical Name	Cas Number	Limit Value	Test Method
Chlorinated Phenols			
Trichlorophenol, all isomers	25167-82-2	< 0.2 mg/kg	LFGB 82-02-08/ EN ISO 17070 (GC/MS)
Tetrachlorophenol, its salts and compounds	25167-83-3	< 0.01 mg/kg	
Pentachlorophenol, its salts, esters and compounds	Several	< 0.01 mg/kg	
Mono- and Dichlorophenols	Several	< 0.5 mg/kg	
Extractable Heavy Metals			
Antimony (Sb)		< 0.2 mg/kg	EN 16711-2, ISO 17294-2 (ICP/MS)
Arsenic (As)		< 0.2 mg/kg	
Cadmium (Cd)		< 0.1 mg/kg	
Chromium (Cr)		< 1.0 mg/kg	
Cobalt (Co)		< 1.0 mg/kg	
Copper (Cu)		< 25 mg/kg	
Lead (Pb)		< 0.2 mg/kg	
Nickel (Ni)		< 1 mg/kg	
Mercury (Hg)		< 0.02 mg/kg	
Selenium (Se)		< 0.2 mg/kg	
Tin (Sn)		< 2.0 mg/kg	

Chemical Name	Cas Number	Limit Value	Test Method
Extractable Heavy Metals			
Manganese (Mn)		< 90 mg/kg	EN 16711-2, ISO 17294-2 (ICP/MS)
Zinc (Zn)		< 750 mg/kg	
Barium (Ba)	7440-39-3	< 1000 mg/kg	
Chromium VI (Cr-VI)	18540-29-9	< 0.5 mg/kg	Elution using EN 16711-2, EN ISO 17075-2
Total heavy metals (in digested sample)			
Cadmium (Cd)	7440-43-9	< 40 mg/kg	EPA 3050 B, ICP/MS, EPA 3051 or EN 16711-1
Lead (Pb)	7439-92-1	< 50 mg/kg	
Organotin compounds			
TBT	Several	< 0.05 mg/kg	Extraction in solvent, ISO 17353 (GC/MS) or
TphT	Several	< 0.05 mg/kg	ISO/TS 16179 or ISO 22744-1:2020, Part 1 and
DBT	Several	< 0.05 mg/kg	Part 2
DOT	Several	< 0.05 mg/kg	
MBT	Several	< 0.1 mg/kg	
DMT, DPT, MoT, MMT, MPhT, TeBT, TCyHT, TMT, TOT, TPT, DphT, TeET	Several	< 0.1 mg/kg	

Chemical Name	Cas Number	Limit Value	Test Method
Per- and polyfluoroalkyl Substances (PFAS) PFOA and related Substances such as			
Me-PFOA, Et-PFOA	Several	< 0.025 mg/kg	DIN EN 17681-1
PFOS and PFAS C9-C14	Several	< 0.025 mg/kg	DIN EN 17681-2
C9-C14 related PFAS	Several	< 0.1 mg/kg	
FTOH	Several	< 0.01 mg/kg	
Phthalates, sum parameter			
Such as BBP, DBP, DCHP, DEHP, DEP, DHNUP, DHP, DHxP, DIBP, DIDP, DIHP, DIHxP, DINP, DMEP,DMP, DNOP, DNP, DPP, DPrP	Several	< 100 mg/kg	DIN EN 15777:2009-12 (GC/MS) or ISO 14389
Chlorinated paraffins, sum parameter			
Short Chain Chlorinated Paraffins(C10-13) & Medium Chain	Several	< 50 mg/kg	ISO 22818 (2021)
Chlorinated Paraffins (C14-17)			
Cyclic Siloxanes			
D4-Siloxane	556-67-2	< 1000 mg/kg	GC / With reference to TEGEWA method (2021)
(Octamethylcyclotetrasiloxane)			
D5-Siloxane	541-02-6	< 1000 mg/kg	
(Decamethylcyclopentasiloxane)			
D6-Siloxane	540-97-6	< 1000 mg/kg	
(Dodecamethylcyclohexasiloxane)			

Chemical Name	Cas Number	Limit Value	Test Method
Flame retardants			
Tetrabromobisphenol A -(TBBP A)	79-94-7	< 5 mg/kg	EN ISO 17881-1 (2016)
Tetrabromobisphenol A bis(2,3-dibromopropylether)	21850-44-2	< 5 mg/kg	
Tri(aziridin-1-yl) phosphine oxide - (TEPA)	545-55-1	< 5 mg/kg	EN ISO 17881-2 (2016)
Bis(2,3-dibromopropyl) phosphate - (BDBPP)	5412-25-9	< 5 mg/kg	
Trimethyl phosphate	512-56-1	< 5 mg/kg	
Tri-o-cresyl phosphate	78-30-8	< 5 mg/kg	
Tris(methylphenyl) phosphate	1330-78-5	< 5 mg/kg	
Tris(2-chloroethyl) phosphate - (TCEP)	115-96-8	< 5 mg/kg	
Tris-(2-chloro-1-methylethyl) phosphate - (TCPP)	13674-84-5	< 5 mg/kg	
Tris-[2-chloro-1 (chloromethyl)ethyl] phosphate - (TDCP or TDCPP)	13674-87-8	< 5 mg/kg	
Tris(2,3-dibromopropyl) phosphate - (TRIS)	126-72-7	< 5 mg/kg	
Trixylyl phosphate - (TXP)	25155-23-1	< 5 mg/kg	

Chemical Name	Cas Number	Limit Value	Test Method
Flame retardants			
2,2-Bis(bromomethyl)-1,3propanediol - (BBMP)	3296-90-0	< 5 mg/kg	EN ISO 17881-1 (2016)
2,3-Dibromopropan-1-ol - (2,3-DBPA)	96-13-9	< 5 mg/kg	
1-Propanol, 2,2-dimethyl-, tribromo deriv.	36483-57-5	< 5 mg/kg	
	1522-92-5		
Hexabromocyclododecan, all isomers - group for all major diastereoisomers identified	Several	< 5 mg/kg	
Polybrominated diphenyl ethanes	Several	< 5 mg/kg	
Decabromodiphenylethane (DBDPE)	84852-53-9	< 5 mg/kg	
Polybrominated diphenyl ethers	Several	< 5 mg/kg (for each substance)	
Polyvinyl chloride	9002-86-2	Not Detected	Total chlorine (EN 14582) / FTIR (when chlorine detected)

Annex C - Reference List of Chemical Regulations for use, handling, and disposal

1	GHS (Globally Harmonized System of Classification and Labelling of Chemicals) – Standardized system for hazard classification, labeling, and SDS requirements.
2	ISO 11014-1:2009 – International standard for the preparation of Safety Data Sheets (SDS).
3	OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200) – Requires chemical hazard classification, labeling, and SDS in workplaces.

4	ANSI Z400.1/Z129.1:2010 – Standard for SDS preparation in compliance with OSHA regulations
5	REACH Regulation (EC 1907/2006) – Controls the registration, evaluation, and restriction of hazardous substances in textiles.
6	Regulation (EU) 2020/878 – Sets updated SDS requirements in alignment with GHS.
7	BIS IS 168 (Bureau of Indian Standards) – Sets safety norms for chemical use in textiles.
8	JIS Z7253:2012 – Japanese standard for SDS and GHS classification compliance.

Annex D - Suggested Testing Frequency for Textile Materials

The frequency of testing should be determined based on regulatory requirements, production scale, and risk assessment. Below are general guidelines for conducting technical and residue tests:	
1	**Routine Testing (Per Batch / Production Cycle)** Conducted for critical quality parameters to ensure consistency in every production cycle. Includes physical tests (e.g., tensile strength, tear strength, dimensional stability) and basic chemical tests (e.g., pH, colorfastness).
2	**Periodic Testing (Monthly / Quarterly)** Conducted for parameters that do not fluctuate significantly with each batch but require monitoring over time. Includes residue testing (e.g., formaldehyde, heavy metals) and durability assessments (e.g., Fastness Testing).
3	**Compliance Testing (Bi-Annual / Annual)** Comprehensive testing to ensure compliance with regulatory and customer requirements. Includes restricted substance testing (e.g., azo dyes, volatile organic compounds) and environmental impact assessments (e.g., wastewater analysis).
4	**Random Audits & Verification (As Needed)** Additional testing conducted based on risk assessment, customer complaints, or changes in raw materials. Ensures ongoing adherence to quality standards and regulatory updates.