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Guidelines for Quality Safety Management of Intelligent Consumer Product

智能消费品质量安全管理指南

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Guidelines for Quality Safety Management of Intelligent Consumer Product

1 Scope

This document provides the principles, contents, management activities, quality strategies, market research, development and design, production, warehousing and logistics, and consumer product applications of quality safety management of intelligent consumer product.

This document is applicable to various quality safety management activities of intelligent consumer product carried out by organizations.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 20002.4 Drafting for Special Aspects in Standards - Part 4: Safety Aspects for Their Inclusion in Standards

GB/T 20269 Information Security Technology - Information System Security Management Requirements

GB/T 22239 Information Security Technology - Baseline for Classified Protection of Cybersecurity

GB/T 22760 Consumer Product Safety - General Principles for Risk Assessment

GB/T 25321 Guidelines for Manufacture Management of Safer Consumer Products

GB/T 28216 Assessment and Control on Consumer Products Quality Safety Factors - General Principles

GB/T 28219 General Technology Requirements for Intelligent Household Appliances

GB/T 34400 Consumer Product Recall - Guidelines for Manufacturers

GB/T 35248-2017 Consumer Product Safety - Guidelines for Suppliers

GB/T 35253 Dividing Principles of Risk Warning on Product Quality Safety

d) Functional safety, including emergency functions, authorized function terminals, storage and query functions, information storage function, and prevention of illegal operation and mis-operation, etc.

6 Management Activities

6.1 Overview

6.1.1 The manufacturer of intelligent consumer products should establish a consumer product safety management system that complies with the requirements of GB/T 25321.

6.1.2 The responsibilities and functions of quality safety management should be solidified into the information system that supports the various links: production, management and service. In addition, the quality management system shall comprehensively control the quality, and information sharing shall be realized in the production, management and service links of intelligent consumer products.

6.1.3 Among the manufacturers, consumers, quality inspection personnel and other interested parties of intelligent consumer products, quality information should be transmitted throughout the supply chain in a specific mode.

6.2 Information-oriented Integration

6.2.1 It is advisable to establish a quality information platform to promote information exchange and sharing in quality management, and realize information integration. The manufacturer of intelligent consumer products takes the public database as the essential storage system, the market environment, demands and after-sales feedback information as the input information, and the design, manufacturing and sales sub-modules as the control objects to perform distributed information control on the execution units.

6.2.2 Information-oriented integration control should carry out information integration in accordance with the formation process of the quality of intelligent consumer products.

6.3 Process-oriented Integration

6.3.1 In the face of the whole life cycle of intelligent consumer products, it is advisable to establish a process-oriented integrated management system to perform quality prediction and diagnosis. The process-oriented integration includes two aspects:

a) Longitudinal integration covering the whole life cycle operation process of intelligent consumer products;

b) Transverse integration supporting parallel collaborative design and manufacturing of intelligent consumer products.

6.3.2 Process-oriented integration should be realized through technology integration, functional integration and organizational integration:

a) Technology integration is the integration that utilizes technologies like data mining, artificial intelligence and large-scale database to improve the response and adaptability to the production process;

b) Functional integration is a technology of integration formed by organically integrating various functions and methods, such as: design, production management, quality management and sales management, etc.;

c) Organizational integration is the integration of technological innovation bodies that integrate personnel from different departments, such as: design, process and manufacturing, etc.

6.4 Network-oriented Integration

The manufacturer of intelligent consumer products should comprehensively utilize methods and technologies, such as: artificial intelligence, manufacturing automation, system engineering, supply chain management, knowledge management, distributed database management and network communication, etc., to organically integrate the information, processes, organizations and knowledge of suppliers, clients and partners.

6.5 Emergency Management

In view of the serious quality safety problems of intelligent consumer products, which cause product quality safety incidents that endanger public health, personal and property safety, or may cause severer social impact, it is advisable to formulate emergency plans for the quality safety emergencies of intelligent consumer products. In addition, in accordance with the four-level risk early warning classified by GB/T 35253, hierarchical management and response shall be implemented.

7 Quality Strategies

It is advisable to clearly state the quality strategies of intelligent consumer products, and publicize them inside and outside the enterprise through various channels and modes, so as to ensure that the demands of users, suppliers, partners and other relevant parties are satisfied.

8 Market Research

8.1 It is advisable to take the initiative to conduct surveys on users and the market, and collect interaction information between users and intelligent consumer products; through the big data analysis of user experience and feedback information, excavate the actual demands and potential demands of users; through accurate data, ensure the orderly execution of quality safety management activities of intelligent consumer products.

8.2 It is advisable to effectively communicate with users on the following issues, and adopt information-oriented means to guide users to express in a normalized manner, so as to

conduct compliance inspection on intelligent consumer products, control factors affecting the quality safety of intelligent consumer products, monitor the production process in real time, automatically collect and tract quality safety information in the manufacturing process, form quality safety knowledge, make quality safety decisions, intelligently take countermeasures to solve on-site quality safety problems, and realize real-time dynamic production quality safety control and prediction.

10.1.2 For some key processes or key quality characteristics of a certain product that affect the quality safety of intelligent consumer products, on-site quality control activities should be carried out to keep the production process of key products and processes under control.

10.2 Error-proof

10.2.1 During the process of corrective actions, the manufacturer of intelligent consumer products should adopt an error-proofing method. Develop error-proof programs and online measurement error-proof software, so as to automatically detect, proofread and judge to realize error-proof in the production process.

10.2.2 It is advisable to reduce the diffusion of quality defects through automatic early warning and quality data sharing throughout the process. Through quality data analysis, carry out quality control to ensure the accuracy of data. In addition, verify the production information of products between processes, so as to reduce information entry errors.

10.3 Detection

10.3.1 The process detection on the production line should be focused on the pre-researched and determined process quality control points. A measuring and detecting instrument equipped with the functions of data collection, storage and sending shall be used to develop the detection data acquisition system and realize the interconnected collection with the detecting instrument.

10.3.2 Before the sales of intelligent consumer products, in accordance with the design specifications and quality control strategies of intelligent consumer products, a compliance inspection should be carried out on the products, so as to ensure that they comply with the requirements of laws, regulations and the implemented standards. An intelligent detection system should be established, and the following aspects should be considered:

a) Firstly, establish a demonstration system, test the cooperation between the production line and the intelligent detection system, and verify whether the detection results of the intelligent detection system are correct. After obtaining a satisfying overall effect, consider the comprehensive implementation of an overall scheme;

b) The detection speed should keep up with the production line, and the measures include:

   1) In the detection system, set a start-stop device to control the movement of the product being detected;

   2) Multiple intelligent detection equipment can be used in series, or the detection

equipment of multiple production lines can be integrated into a detection equipment network;

c) Integrate the detection system with workshop production execution system, enterprise resource planning system, product life cycle management and supply chain management system, etc., so as to realize information sharing;

d) Through the data exchange technology of a heterogeneous system, realize the interconnection of product information and detection data, etc.;

e) Establish a data center, select appropriate statistical tools, and process and analyze detection data; in accordance with product quality standards, provide the conformity conclusion of the product being detected; in accordance with the demands, provide statistical reports, and transmit the reports to the upper-level production management and intelligent detection room;

f) Utilize the big data of detection continuously accumulated in production, establish a big data model for detection, monitor the quality of production and put forward measures for improvement.

11 Warehousing and Logistics

11.1 Procurement and Supply Logistics

11.1.1 It is advisable to formulate a necessary logistics and procurement process for the safe production of intelligent consumer products and adopt a scientific and safe procurement mode.

11.1.2 It is advisable to strengthen the acceptance inspection management of the quality safe of intelligent consumer products, ensure that the raw materials, components and parts required for the production of intelligent consumer products comply with the safety design specifications and avoid scrapped products or unapproved substitutes.

11.1.3 It is advisable to stipulate the clauses of guaranteeing the quality and safety of intelligent consumer products in the contract of procurement and supply logistics.

11.1.4 In accordance with the material requirement planning of each production unit of intelligent consumer products, organize the source of goods, conduct unified and centralized procurement, and ensure safe procurement.

11.1.5 The manufacturer of intelligent consumer products places purchase orders and delivery plans, and the supplier completes the distribution through third-party logistics or by itself.

11.1.6 By sharing inventory information of raw materials, components and parts with the supplier, guide the supplier in production with accurate information, timely replenish the inventory, and reduce the impact of demand fluctuations on the supplier's production, thereby effectively controlling the inventory safety of raw materials, components and parts in the supply

intelligent consumer products through the modes of selecting self-built warehouses, renting public warehouses or adopting contractual warehouses.

11.4.2 The manufacturer of intelligent consumer products should perfect the warehouse management from the following aspects:

---Perfect the moisture-proof, fire-proof, anti-theft, sun-proof, anti-odor and anti-extrusion of the warehousing environment, so as to ensure the quality safety of intelligent consumer products;

---In accordance with the characteristics and storage requirements of intelligent consumer products, carry out partitioned and classified storage for intelligent consumer products, and consider the bearing weight of the ground and shelves, so as to avoid the occurrence of quality safety incidents of intelligent consumer products;

---Perfect the daily safety management of intelligent consumer products in storage environment sanitation, temperature and humidity, ventilation and lighting, etc.;

---Strengthen the safety management of basic links of intelligent consumer products, such as: acceptance inspection, enter-warehousing and exit-warehousing of relevant materials; grasp the quantity of the stored items in a timely manner, and ensure the consistency between physical objects and ledgers;

---Construct a warehouse management information-oriented system for intelligent consumer products, ensure its integration with the workshop production execution system, enterprise resource planning system, business intelligence system and electronic procurement system; manage the inventory and circulation of various materials in the supply chain, and realize the safety management of intelligent consumer products;

---Utilize the Internet of Things, cloud computing, big data and mobile Internet technologies to implement intelligent online interconnection of fire-fighting equipment in the storage environment of intelligent consumer products, 24-hour real-time monitoring of the operation status of fire-fighting equipment and facilities in the storage environment. When an abnormal situation occurs, carry out multi-channel warning notifications, so as to ensure the quality safety of intelligent consumer products.

12 Application of Consumer Products

12.1 Information Management

12.1.1 The information security of intelligent consumer products should comply with the stipulations in GB/T 20269 and GB/T 22239.

12.1.2 Only after being explicitly authorized can network technology solutions (such as: systems, protocols and software, etc.) and their services applied to intelligent consumer

products collect, transmit and save relevant information. In addition, information security shall be ensured, including not being misused, abused and disclosed. DO NOT collect, transmit or save unauthorized sensitive data.

12.2 Quality Traceability

12.2.1 It is advisable to utilize information technology to obtain the whole-process quality safety management data of intelligent consumer products, such as: system design information, processing history, sales information and usage information, etc. From the perspectives of system developers, producers, sellers and users of intelligent consumer products, a safety responsibility system should be designed to assign responsibility to each individual and provide fast and comprehensive after-sales product traceability.

12.2.2 It is advisable to carry out forward traceability and reverse traceability of the quality of intelligent consumer products:

a) Forward traceability: along the production and manufacturing direction of consumer products, perform the trace and predict potential quality hazards;

b) Reverse traceability: trace back against the production and manufacturing process of consumer products, and diagnose the root cause of quality problems that have occurred.

12.3 Recalls of Defective Consumer Products

The implementation of the recalls of defective intelligent consumer products should comply with the stipulations of GB/T 34400.

12.4 Information Feedback

12.4.1 It is advisable to remotely and automatically perceive the status of intelligent consumer products, and user demands and experience, so as to realize real-time independent feedback on problems that arise during the use of intelligent consumer products, for example, the use of information technology to establish and maintain the channel for quality safety information feedback.

12.4.2 It is advisable to report and complain about the quality safety incidents of intelligent consumer products through channels, such as: consumer rights protection telephones and complaint platforms, etc.

12.4.3 It is advisable to actively evaluate the quality safety of intelligent consumer products, and inform the supplier of the evaluation results.

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