

NSK Group

Green Procurement Standard



Edition 7.2

Revised on 28th October 2022

NSK Ltd.

Table 1 Revision History

Month/year	Rev. type	Edition	Contents
June, 2001	Newly established	Initial edition	
December, 2002	Partial revision	Edition 2	Added release of information for environmentally harmful substances.
March, 2004	Whole revision	Edition 3	Added control of environmentally harmful substances and wholly reviewed.
February, 2006	Whole revision	Edition 4	Added control of environmentally harmful substances and wholly reviewed.
July, 2008	Whole revision	Edition 5	Clarification of “Requirement” Added “Definition”. Partial reviewed control of environmentally harmful substances. Reviewed “NSK Environmentally Harmful Substance List”. Partial reviewed “Environmentally Harmful Substance Control System Check Sheet” Whole reviewed analysis method of 6 substances.
July, 2011	Whole revision	Edition 6	Reviewed “Definition”. Reviewed and added Requirements to the Supplier Reviewed “NSK Environmentally Harmful Substance List” Reviewed environmental protection activities Reviewed non-inclusion certificate Reviewed “NSK Environmentally Harmful Substance Control System Check Sheet” Reviewed analysis methods of 6 substances
May, 2019	Whole revision	Edition 7	Changed analysis methods due to revision of RoHS directive. Added columns to report 4 materials in Form 7: Report of analysis results of substances applicable to ELV and RoHS Directives. Added compliance to environmental laws.
August, 2020	Partial revision	Edition 7.1	Added Controlled Value for Prohibited Substances
October 2022	Partial revision	Edition 7.2	Updated NSK Environmental Policy and NSK Environmental Code of Conduct Corrected in association with the revision of Quality Assurance Procedure Reviewed the names of departments that take care of environment in association with the organizational change

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1. Policies Addressing Environmental Preservation

To reflect “protect the global environment” as set forth in NSK’s Mission Statement, NSK stipulates “Our commitment to environment management forms the basis of our existence and our pursuits.” Based on this principle, NSK promotes PDCA of various efforts: “environmentally harmful substance measures” and “compliance to ordinance and environmental risk measures.”

NSK promotes business operation with less environmental load as well as develops products and services that contribute to reducing environmental impact based on the environment management system that leads to decision making reflecting social expectations.

To realize the environmental policy, supplier’s cooperation is essential. Action for environmental protection is appreciated.

Mission Statement

NSK contributes to a safer, smoother society and helps protect the global environment through its innovative technology integrating Motion & Control™. As a truly international enterprise, we are working across national boundaries to improve relationships between people throughout the world.

NSK Environmental Policy

NSK is determined to contributing to a safer, smoother society and help protect the global environment through its innovative technology integrating Motion & Control™ as declared in the NSK Mission Statement.

The entire NSK Group works hard to achieve this mission by setting its own ambitious goals. The group continues to take on the challenge of maximizing the environmentally protective benefits of its products and minimizing the environmental impact of its business activities.

Living up to our aspiration to “Change & Go beyond”, we work hard to achieve our goal of net-zero environmental impact and create the kind of new value that will drive the green society of the future. We are committed to growing sustainably and continuing to be needed, trusted, and relied upon by society.

1. Contributing to the Establishment of a Carbon-Neutral Society

We help societies around the world to minimize energy loss by developing advanced technologies in the field of tribology (friction control and lubrication) and constantly improving our products and services. we seek to leverage our technological innovations to make our business carbon neutral and achieve net-zero greenhouse gas emissions.

2. Contributing to the Establishment of a Sound Material-Cycle Society

We help build a sound material-cycle society that makes the most of the benefits of recycling by developing environmentally friendly products and producing them with as few natural resources and as little energy as possible.

3. Contributing to the Establishment of an Environmentally Symbiotic Society

We work hard to prevent pollution and minimize environmental impact throughout the supply chain to help build an environmentally symbiotic society.

Environmental Code of Conduct

1. Ensuring Environmental Compliance

We always adhere to relevant environmental laws and regulations in the countries and regions where we operate. We assess the effect of our business activities on the environment and set our own standards and policies, while striving to prevent any pollution of air, water, or soil and minimizing negative environmental impact.

2. Fighting Global Warming and Climate Change

We deliver products and services that help reduce energy loss, contributing to even better energy efficiency. We minimize greenhouse gas emissions across every area of our corporate activities. In addition, we cooperate with our suppliers to minimize greenhouse gas emissions in the supply chain.

3. Conserving Resources and Practicing Recycling Measures

We use water efficiently and procure parts and raw materials with low environmental impact. We make every effort to reduce, reuse and recycle in our production operations, while minimizing both resource inputs and waste.

4. Developing and Popularizing Environmentally Friendly Products

We develop advanced technologies in the field of tribology (friction control and lubrication). We develop, produce, and provide environmentally friendly products that make the most of these technologies, thereby making the greatest possible contribution to environmental protection and social progress.

5. Conserving Biodiversity

We monitor the effect of our business activities on biodiversity, especially in the phases of research and development, procurement, and production. We mitigate the impact of these activities and work to protect biodiversity as a responsible member of the local communities where we operate.

6. Reducing Use of Environmentally Harmful Substances

We properly assess the environmental risks of any potentially harmful substances we must use, and whenever possible we switch to alternatives. We practice rigorous substance management at each phase of our operations, from development and design, to procurement, production, and distribution.

7. Communicating with Stakeholders

We disclose the progress of our environmental management efforts, and we seek to continually improve their effectiveness. We pursue good communication with our stakeholders, including government environmental agencies, local communities, customers, and suppliers.

2. Objectives

NSK will purchase environmentally sound products from suppliers who actively pursue environmental protection activities and aim to promote the “protection of the environment” beyond the framework of NSK. In addition, NSK will establish environmentally harmful substance control systems for NSK products through the supply chain by working with suppliers.

3. Scope

This standard is applicable to parts, materials, sub-materials, production ancillary materials and packaging materials purchased by NSK and to suppliers who deliver these products to NSK. This standard also applies to suppliers who are assembling and processing parts and materials (forging, turning, grinding, surface treatment, etc.) for delivery. If a supplier has more than one operating unit, this standard applies to all their operating units which manufacture parts delivered to NSK.

Table 1. Specific examples of products for delivery

Application	Content	Specific examples of products for delivery
Part, material	Parts, materials, finished products, subassemblies, etc. used for NSK products.	Resin/plastic (parts, material), rubber (parts, material), grease, oils, solder, surface treatment (plating), steel material, non-metallic material, processed part, screw, sensor, motor, controller, electronic part, etc.
Sub-material	Material adhering to NSK product at point of shipping.	Rust-preventive oil, adhesives, paints, tape, labels, instruction manual, ink, marker, etc.
Production ancillary material	Lubricants, grinding wheels, cutting tools, Jigs and tools, used in the NSK production process.	Heat treating oil, processing oil (forging, turning, grinding), surface treating agent, washing agent, solvent (thinner, etc.), intermediate rust-preventive oil, cutting tools, grinding wheels, Jigs and tools, etc.
Packaging material	Materials used for transportation and conveyance of NSK products.	Polyethylene boxes, trays, polyethylene bags, polyethylene sheets, stretch film, cushioning materials, pallets, wooden frames, corrugated boards, tape, tying band, labels, printing inks, etc.

4. Terms and Definitions

1) Environmentally harmful substances

This refers to substances that impede or may impede the protection of the environment or maintenance of the health of people.

2) Intentional inclusion

Intentional inclusion refers to cases where substances are continuously used and included to maintain physical properties, quality, and appearance of materials etc.

3) Unintentional inclusion

Unintentional inclusion refers to instances where substances are not purposely added to the composition.

- where substances are included in raw materials and cannot be technologically removed in the refining process as an industrial material.
- where by-products produced in the manufacturing process cannot be technologically removed.

4) Acceptable concentration (threshold value)

Applied only to unintentional inclusion, this refers to values below which materials are not subject to a ban or reduction.

- The concentration is calculated based on the weight on homogeneous materials in which it is present.
- In the case of intentional inclusion, even if the concentration is below this threshold it will still be subject to NSK prohibited, reduced or observation substances.

5) NSK prohibited substances

Substances which must not be included either within or on the surface of product. Any products containing such substances must not be delivered to NSK.

6) NSK reduced substances

Substances for which an approval must be obtained from NSK if such substances are included in or on delivered product. When substitute is made, the change shall be implemented in a controlled manner. If NSK specifies a timescale for total abolition, this must be met.

7) NSK observation substances

Substances for which the purpose and use shall be clarified and monitored. A report on the use of such substances shall be made upon request from NSK.

8) Evidence

This refers to chemical composition tables, mill sheets, or analysis data. Analysis data refers to the measurement of chemicals either or on the product.

9) IMDS (International Material Data System)

IMDS is the system to control information of material standard, weight, and chemical composition of automotive parts. Car manufacturer and their related manufactures require there suppliers to disclose at least 90% (by mass) of the chemical composition of the supplied part using IMDS. The system was originally introduced to confirm conformity with the European ELV Directives, identify the-use of environmentally harmful substances and determine the recycling ratio for passenger vehicles sold on the European market. It has now become the recognized system through which all vehicle and related manufacturers require registration of product information.

5. Requirements to Suppliers

The requirements with which NSK suppliers should comply are shown below.

- 1) **Compliance to environmental laws**
- 2) **Development of an Environmental Management System (EMS)**
- 3) **Development of environmentally harmful substance control system**
(Products with NSK prohibited substances in them or on them shall not be delivered.)
- 4) **Promotion of environmental protection activities**

- Where any relevant laws/treaties or industry guidelines have been newly established or revised subsequent to the publication of this standard, or where additional requirements have been specified by an NSK customer, NSK may ask the supplier to take appropriate measures accordingly.
- Requirements specified in drawings and purchasing specifications shall take precedence over this standard.

5.1 Compliance to environmental laws

Ensure thorough compliance to environmental laws. In addition, contact NSK immediately in the case that violation of environmental ordinance has a negative impact on supply of products for delivery.

5.2 Requirements for the Development of an Environmental Management System (EMS)

The supplier is requested to become certified under the following standard or implement an equivalent system: International standards ISO 14001, EMAS (the EU Eco-Management and Audit Scheme), other third-party certificates such as [KES (Kyoto Environmental Management System Standard), EcoAction 21 (Ministry of the Environment), and Eco Stage].

5.3 Requirements for the Development of an Environmentally Harmful Substance Control System

Ensure that NSK prohibited substances are not included within or on products delivered to NSK.

1) Control of NSK prohibited substances at the stage of design and development

The supplier shall document and implement a control method at the stage of design and development to prevent NSK prohibited substances from being included in or adhered to products delivered to NSK.

2) Control of NSK prohibited substances at the stage of production

The supplier shall prescribe control methods in the process manual and QC process chart etc. and ensure such methods are known and implemented to prevent NSK prohibited substances from being included in or on products delivered to NSK during the production stage.

3) Control of NSK prohibited substances through supply chains

Requirements include a mechanism to exercise control through the supply chain to prevent NSK prohibited substances from being included within or on products delivered to NSK.

For details, refer to “NSK Environmentally Harmful Substance Control System Check Sheet” (Form 9). In addition, if either “Supplier Quality Assurance Manual” (SQAM) or the “Material Supplier Quality Assurance Procedure” (NSK Q 002) is presented by NSK, deploy them along with this standard.

5.4 Requirements for Environmental Protection Activities

In doing business with NSK, suppliers are requested to promote environmental protection activities in all areas of their business activities such as reduction of greenhouse gas emissions, water consumption, and waste, as well as prevention of air, water, and soil pollution, and protection of biodiversity.

Especially, in efforts to reduce greenhouse gas emissions and water use, suppliers are requested to understand the amount of energy and water use and take steps to reduce this. In addition, the supplier is requested to provide data based upon NSK's requests.

6. Audit and Investigation on Environmentally Harmful Substances

1) Audit procedure

Self-audit regularly by using "NSK Environmentally Harmful Substance Control System Check Sheet".

Based on the self-audit, NSK will visit suppliers directly and audit the site if considered necessary.

2) Response to the request for survey

NSK may request surveys such as those below. Respond to such surveys immediately.

- Environmentally Harmful Substance Investigation based on NSK management standards (Submit Form 5)
- Investigation on specific chemical substances requested by customers (Submit documents based on the request from customers)

7. Documents for Submission

Table 2 Documents for submission

⊙ Mandatory ○ Upon request

Documents for submission	Part, Material	Sub-material	Production ancillary material	Packaging material	Destination
(Form 1) Agreement of Correspondence to Environment Matters	⊙	⊙	⊙	⊙	Office in charge
(Form 2) Company Information Registration Sheet	⊙	⊙	⊙	⊙	Office in charge
(Form 3) Environmental Protection Activity Investigation Sheet	⊙	⊙	⊙	⊙	Office in charge
(Form 4) Product Environmental Impact Reduction Investigation Sheet	○	○	○	○	The department requesting it
(Form 5) Environmentally Harmful Substance Investigation Sheet	○	○	○	○	The department requesting it
(Form 6) Composition Investigation Sheet of Product Delivered (In principle: 100 mass % disclosure)	○	○	—	—	The department requesting it
(Form 7) Report of analysis results of substances applicable to ELV and RoHS Directives (1) Screening (Qualitative) Analysis Result Report (2) Precision (Quantitative) Analysis Result Report	○	○	○	○	The department requesting it
(Form 8) Non-inclusion Certificate	○	○	○	○	The department requesting it
(Form 9) NSK Environmentally Harmful Substance Control System Check Sheet (1) NSK Environmentally Harmful Substance Control System Check Report (2) NSK Environmentally Harmful Substance Control System Audit Check Sheet	○	○	○	○	The department requesting it

The forms above are subject to revision in response to future revisions of laws and regulations.

(Form 1) Agreement for Correspondence to Environment Matters

- (1) When the supplier begins business with NSK, this Agreement must be submitted.
- (2) If the suppliers more than one NSK legal entity within the NSK Group, an agreement should be signed for each one.
- (3) The form submitted in the past shall be considered as ongoing and effective. However, the revised agreement must be resubmitted if there are any changes.

(Form 2) Company Information Registration Sheet

- (1) The senior manager/director with responsibility for the environmental, together with environmental officer/representative responsible for day-to-day operational activity shall be detailed. If there are any

modifications or changes, the revised information must be resubmitted.

(2) If the supplier has more than one business office, this sheet shall be submitted for every business office.

(3) When the supplier is a trading company (distributor), the manufacturer shall also be registered.

(Form 3) Environmental Protection Activity Investigation Sheet

NSK will confirm development of the environmental management system based on ISO 14001 or implementation of an equivalent environmental management system. Any supplier that has not yet obtained ISO 14001 certificate shall make a self-evaluation of its efforts regarding NSK's environmental policies using the "(Form 3) Environmental Protection Activity Investigation Sheet".

(Form 4) Product Environmental Impact Reduction Investigation Sheet

NSK will confirm that the supplier is implementing various environment-oriented measures for their products, such as energy saving, recycling, simplification of packaging/packaging materials, ease of disposal etc., at each stage of the product life cycle, ranging from the materials used for manufacturing to the usage of the product and its disposal. Suppliers are requested to self-evaluate their efforts using "(Form 4) Product Environmental Impact Reduction Investigation Sheet".

(Form 5) Environmentally Harmful Substance Investigation Sheet

NSK is requested by its customer to report on environmentally harmful substances included in its products as well as the parts and materials used during manufacture. Therefore, the supplier shall report on the products it supplies to NSK using "(Form 5) Environmentally Harmful Substance Investigation Sheet".

(Form 6) Composition Investigation Sheet of Delivered Product (In principle, 100 mass% disclosure)

Car manufacturers require disclosure of more than 90 mass% of the chemical composition contained in NSK products in accordance with IMDS (International Material Data system). In principle, NSK requires suppliers they should disclose 100 mass%, but disclosure of at least 90 mass% is permitted when disclosure cannot be made by reason of confidentiality. However, for substances list in the Environmentally Harmful Substance Investigation Sheet, full disclosure of that substance must be made.

(Form 7) Report of analysis results of substances applicable to ELV and RoHS Directives

(1) Screening (Qualitative) Analysis Result Report

(2) Precision (Quantitative) Analysis Result Report

NSK is requested by its customers to submit analysis data of applicable substances as evidence of non-inclusion of substances applicable to ELV and RoHS Directive. The supplier shall, upon request by NSK, promptly submit Forms 7 with analysis data of substances using the screening (qualitative) analysis and precision (quantitative) analysis.

However, please follow our instructions in the case you request individual qualitative analysis (ICP data, etc.) at the customer's specification.

(Form 8) Non-inclusion Certificate

This is a document that certifies that, for every product to be delivered, no more than the acceptable concentration (threshold value) of NSK prohibited substances is included within or adhered to parts, materials, sub-materials, production auxiliary materials and packaging materials delivered to NSK. The list of prohibited substances is defined in the latest issue of the List of NSK Environmentally Harmful Substance.

(Form 9)

(1) NSK Environmentally Harmful Substance Control System Check Report

(2) NSK Environmentally Harmful Substance Control System Check Sheet

This is a check sheet to evaluate the environmentally harmful substances control system NSK requires of its suppliers.

8. Handling of Information

The supplier's company information and private information obtained by NSK through Green Procurement activities shall not be released to third parties without prior consent. However, information on the composition of chemical substance may be released to customers as NSK product information.

9. Revision

This standard is subject to revision depending on legal requirements, social conditions, or customer demand. The latest edition can be found at the following link.

https://www.nsk.com/jp/csr/supplier/green_procurement_standards/

10. Section to contact

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NSK

Attachment

Analysis method of substance subject to ELV and RoHS (pretreatment) and guidance when making requests to analysis organizations.

1) Sampling and hints to request to an analysis organization

In principle, the analysis method shall be compliant with the latest version of IEC62321 (*1).

Attention shall be paid to the following items when requesting analysis by an external organization.

(1) Sampling shall be made after disassembling down to homogeneous materials (*2) so that each materials is analyzed individually.

Ex.: Rubber seal shall be divided into rubber and core metal to analyze separately.

(2) Part name, your part name, NSK part name, color and color No. shall be identified.

(3) Methods of pretreatment and analysis shall be defined.

Ex.: For ICP quantitative analysis, it is important that specimen is thoroughly melted in pretreatment.

(4) In principle, the testing laboratory used shall be certified to ISO/IEC 17025(*3).

(*1): International regulations IEC (International Electrotechnical Commission) stipulated as an international standard for RoHS analysis method.

(*2): Homogeneous materials is a material having “uniform composition entirely” which cannot be divided into separate material by a mechanical method. Example: plastics, ceramics, glass, metal, alloy, paper, board, resin, coating and surface treatment.

(*3): ISO/IEC 17025 specifies the general requirements for the competence to carry out tests and/or calibrations, including sampling.

2) Analysis flow and its method

(1) Analysis flow

In principle, analysis shall be the precision (quantitative) type A screening (qualitative) analysis by X-ray fluorescence analysis is also permitted. However, when an element of substance applicable to ELV and RoHS is detected by the screening (qualitative) analysis, the precision (quantitative) analysis must always be made. The purpose of Inclusion must be confirmed with your supplier, and it shall be reported to NSK by entering in “Comment” of “4. Analysis result” Table in the screening (Qualitative) Analysis Result Report (Form 7-1)

Analysis result report shall be made by the following Forms.

【Precision (quantitative) analysis】 Precision (Quantitative) Analysis Result Report (Form 7-2)

【Screening (qualitative) analysis】 Screening (Qualitative) Analysis Result Report (Form 7-1)

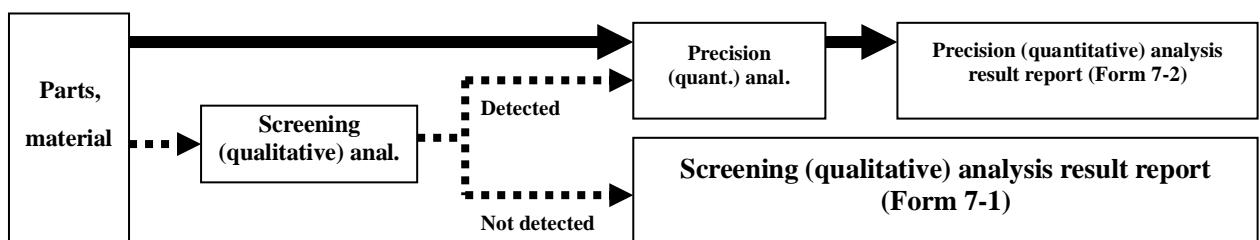


Fig. 1 Analysis flow of substance testing applicable to ELV and RoHS

(2) Analysis method

Table 1 Analysis method

Name of substance	Analysis method	
	Screening (qualitative) analysis (Judgment of presence of element)	Precision (quantitative) analysis (Correct judgment of content)
Cadmium (Cd)	- Energy dispersion type X-ray fluorescence analysis (EDXRF) - Wavelength dispersion type X-ray fluorescence analysis (WDXRF)	- Inductive coupling plasma emission spectroscopic analysis [ICP-AES (OES)] - Inductive coupling plasma mass spectrometric analysis (ICP-MS) - Atomic-absorption spectroscopy (AAS)
Lead (Pb)		
Mercury (Hg)		
Chromium (VI) (Cr ⁶⁺)	- Energy dispersion type X-ray fluorescence analysis (EDXRF) (However, measurement of total amount of chromium) - Wave length dispersion type X-ray fluorescence analysis (WDXRF) (However, measurement of total amount of chromium)	- Diphenyl carbazide absorption spectroscopy
Specific bromine system flame-retardant (PBB, PBDE)	- Energy dispersion type X-ray fluorescence analysis (EDXRF) (However, measurement of total amount of bromine) - Wave length dispersion type X-ray fluorescence analysis (WDXRF) (However, measurement of total amount of bromine)	- Gas chromatograph mass spectrometry (GC-MS)
Phthalic esters (DIBP, DBP, BBP, DEHP)	-	- Gas chromatography-mass spectrometry (GC-MS)

3) Confirmation item of analysis result report

When received an analysis report from an analysis organization, the following items shall be confirmed.

- 1) Are part name, supplier part No., NSK part No, color and color No described?
- 2) Is the part disassembled to homogeneous material level and is every material analyzed?
Ex.: For rubber seals, is it divided into rubber and core metal so as to analyze each separately.
- 3) Is the pretreatment suitable?
Ex.: For ICP quantitative analysis, “specimen was thoroughly melted during pretreatment.” must be described.
- 4) Implementation of the suitable analysis method shall be confirmed.
- 5) Are the lower limit of quantitative analysis and the lower limit of detection described?
- 6) Is the name of analysis organization described?
- 7) Are the date of reception, date of analysis and date of report described?
- 8) Are the manufacturer and model of analyzer described?

Controlled Values for Prohibited Substances

The following controlled value is content concentration which must be managed by NSK Group. If the contained concentration of the Prohibited substance exceeds the controlled value, request the supplier for clarification of the reason of content, and request the supplier to reduce the contained concentration to below the controlled value as necessary. (Warranty for controlled value is not to be requested to suppliers).

Content concentration is to be measured according to IEC 62321.

Table. List of controlled value for prohibited substances

Prohibited substance	Applicable product	Controlled value
Four phthalates (DEHP, DBP, DIBP, BBP)	Resin/Plastic, Rubber, Grease, Oils, Adhesives, Paints, Ink, Marker	Less than 300ppm