

Saudi Standards, Metrology and Quality Organization

SASO

Technical Regulation for Restriction of Hazardous Substances in Electrical and Electronic Equipment

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Version (2)

Note:

Only the Arabic version of this Regulation is authentic in law and is applicable where there are differences with this translation



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Preamble

In line with the accession of the Kingdom of Saudi Arabia (KSA) to the World Trade Organization (WTO), as per the Decree No. 244 of the Council of Ministers, dated 21/09/1426 A.H., concerning the approval of documentation on the Kingdom's accession to the WTO, and the requirements by which the KSA shall adapt its relevant systems with the principles of WTO agreements, particularly, the Technical Barriers to Trade (TBT), which stipulates that no unnecessary technical requirements shall impede the flow of commodities among the member states, and that technical requirements and methods of conformity assessment shall not discriminate between products on the basis of origin, through the issuance of Technical Regulations that include the essential requirements and standardized business procedures.

In accordance with Article 3 (Clause-1), Statute of Saudi Standards, Metrology and Quality Organization, issued in accordance with the Council of Ministers Decree No. 216, dated 17/06/1431 A.H. (31/05/2010 A.D.), stipulating that: **“SASO shall issue Saudi standards, quality systems and guidelines and conformity assessment, compatible with international standards and guidelines, that meet the requirements of the World Trade Organization (WTO) Agreement, in addition to their compliance with Islamic Sharia and serving the interests of Saudi Arabia”**;

In accordance with Article 4 (Clause-2), Statute of Saudi Standards, Metrology and Quality Organization, issued in accordance with the Council of Ministers Decree No. 216, dated 17/06/1431 A.H. (31/05/2010 A.D.), stipulating that: **“SASO shall issue regulations for conformity assessment procedures of commodities, products, and services according to approved standards”**;

In accordance with Article 4 (Clause-14), Statute of Saudi Standards, Metrology and Quality Organization, issued in accordance with the Council of Ministers Decree No. 216, dated 17/06/1431 A.H. (31/05/2010 A.D.), stipulating that: **“SASO shall review the laws and control regulations related to SASO's work fields, and develop them, and propose amendments thereto in line with quality and safety requirements, and refer them to competent bodies in order to review and issue them, in accordance with applicable procedures”**;

In accordance with Article 6 (Clause-1), Statue of Saudi Standards, Metrology and Quality Organization, issued in accordance with the Council of Ministers Decree No. 216, dated 17/06/1431 A.H. (31/05/2010 A.D.), stipulating that: **“Subject to Article 4 of this Statute, SASO shall be the authority in charge of matters related to standards, conformity assessment procedures, granting the quality mark, metrology and calibration. All public and private sectors shall adhere to the Saudi standards in all purchases”** ;



Whereas the standards of the products included in a regulation shall be a basis for the conformity of such products with the essential safety requirements included in the specified regulation. Therefore, SASO has developed this Technical Regulation.

Note: This preamble and all the annexes of this regulation shall form an integral part thereof.

Article (1) Terms and Definitions

1/1 When applying the articles of this regulation, terms and expressions hereunder – shall have the meanings indicated in front thereof, unless the context otherwise requires:

KSA: The Kingdom of Saudi Arabia.

SASO: Saudi Standards, Metrology and Quality Organization.

The Board: SASO's Board of Directors.

Regulatory Authorities: Governmental body/bodies with regulatory tasks in consonance according to their specializations, which are responsible for the implementation and enforcement of technical regulations, whether in customs, markets, or factories.

Technical Regulation: A document approved by the Board that specifies the characteristics of products, associated processes and production methods, including the valid applicable administrative provisions; with which compliance is mandatory. It may include or pay attention to terms, definitions, packaging, and requirements of markings or labelling for products, services, processes or production methods.

Standard: A document approved by the Board that provides, for regular and recurring use, - non-mandatory rules, instructions, and specifications of products or processes and production methods. It may include or pay attention to terms, definitions, packaging, and requirements of markings or labelling products, services, processes or production methods.

Essential Requirements: The special requirements of the products; that may affect the safety, health, and the environment; that must be adhered to.

Market Surveillance Authorities: Governmental body/bodies responsible for carrying out market surveillance operations.

Market Surveillance: Activities and measures carried out by the market surveillance authorities to verify that products meet the requirements stipulated in the relevant technical regulations, and to ensure that they do not pose a risk to health, safety, environment, or any other aspect related to the protection of the public interest.



Supplier:

- A product manufacturer, in case that he is a resident in KSA, or the person identified as the manufacturer of the product, through linking the product to their name, or to a relevant commercial description, or any person who provides a product renewal.
- An agent, if the manufacturer is a resident outside KSA or an importer in the absence of an agent of the manufacturer.
- Any person in the supply chain, whose activities may affect the product's properties.

Conformity Assessment Procedures: A document approved by the Board of Directors, which describes the procedures used directly, or indirectly for the conformity assessment.

Notified Bodies: Conformity Assessment Bodies, approved by SASO in accordance with the Regulation of Conformity Assessment Bodies Acceptance.

Certificate of Conformity: A certificate issued by SASO or a notified body, which ensures the conformity of a product, or any batch thereof, with the requirements of relevant standards.

Supplier Declaration of Conformity: A declaration by the supplier by which it declares that a product conforms with the requirements of the applicable legislations, without the mandatory intervention of a third party neither in the design stage, nor in the production stage of the manufacturing process. A declaration may depend on testing the product in accordance with the relevant legislation.

Placing on Market: Launching a product for the first time in the Saudi market for which the manufacturer/supplier is responsible.

Making Available on the Market: Any supply of the product for distribution, consumption or use in the KSA, in the course of a commercial activity, whether in return for payment or free of charge.

Withdrawal: Any procedure that aims to prevent placing a product in the market or in a supply chain.

Recall: Any procedure that aims to recall products made available for the end-user.

Supply Chain: All the stages that a product passes through after its manufacture until it reaches the consumer, including its packaging, supply, transportation, storage, delivery, wholesale or retail sale, and any other related process.

Electrical and Electronic Devices and Equipment "EEE": Equipment operating using electric currents or electromagnetic fields, equipment for the



production, transmission and measurement of these currents and fields, designed for use with voltages not exceeding 1000 volts in alternating current and 1500 volts in direct current.

Large-scale Stationary Industrial Tools: A large-scale of machines, equipment, and/or components, functioning together for a specific application, permanently installed and de-installed by professionals at a given place, and used and maintained by professionals in an industrial manufacturing facility or research and development facility

Cables: All cables with a rated voltage of less than 250 volts that serve as a connection or an extension to connect EEE to the electrical outlet or to connect two or more EEE to each other;

Homogeneous material: one material of uniform composition throughout or a material, consisting of a combination of materials, that cannot be disjointed or separated into different materials by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes;

Control Tools and Industrial Monitoring: Control and monitoring tools designed only for industrial and professional purposes.

Hazard(s): A potential source of harm.

Risk (s): A potential risk causing damage; associated with the severity of damage.

1/2 Other terms and expressions specified in this Regulation shall have the meanings specified in the applicable laws, regulations, and decrees of SASO.

Article (2) Scope

This Technical Regulation shall apply to all electrical and electronic equipment and spare parts for the following categories:

- 1) Large and small home appliances.
- 2) Information and communication technology equipment
- 3) Lighting equipment
- 4) Electrical and electronic tools and equipment
- 5) Games, entertainment devices, and sports equipment.
- 6) Control and monitoring instruments.

Which are placed and displayed in the Kingdom's markets, whether manufactured inside the Kingdom or imported from abroad, in accordance with the definitions and related terms mentioned in Article (1).

The following items are excluded from the scope of this regulation:



- All substances excluded from the application of Hazardous Materials Limits included in Annex (1-A)
- Medical equipment.
- Military weapons and equipment.
- Equipment designed for use in space missions.
- Large-scale stationary industrial tools
- Large-scale fixed installation
- Some control and monitoring instruments listed in Annex (1-B)

Article (3) Objectives

This regulation aims to determine the percentages of hazardous materials set forth in Annex (1-c) in electrical and electronic equipment and their spare parts, included in the scope of this regulation, and to identify the conformity assessment procedures with which suppliers shall comply, to ensure the preservation of the environment and the health and safety of the consumer.

Article (4) Obligations of Supplier

The supplier shall adhere to the following requirements:

4/1 Technical Requirements

To fulfill the requirements of this regulation, the supplier shall fulfill the basic characteristics of electrical and electronic equipment and devices, as follows:

- 4/1/1 Electrical and electronic equipment and its spare parts – imported by the supplier – shall fulfill the technical requirements specified in the standards set out in Annex (2-a) of this regulation, and in the event that Saudi or Gulf standards are not available, they shall meet the international standards.
- 4/1/2 Electrical and electronic equipment and devices – imported by the supplier – shall pass the conformity assessment procedures set forth in this regulation, and be accompanied by a technical file that includes all the documents and information that prove the product's compliance with the requirements of this regulation.
- 4/1/3 Availability of an effective quality management system (a manufactory that has obtained a management system certificate in accordance with the requirements of implementing the relevant ISO 9001 - or its equivalent - shall be deemed to fulfill the requirements of this clause).

4/2 Essential Requirements

To fulfill the requirements of this regulation, the supplier shall fulfill the basic requirements and adhere to the permissible percentages of hazardous materials for electrical and electronic equipment and their spare parts set out in Annex (1-C) of this regulation.



4/3 Metrological Requirements

International system of units (SI Units), multiples or parts thereof shall be used during design, manufacturing or trading.

Article (5) Conformity Assessment Procedures

- 5/1 The supplier - responsible for placing electrical and electronic devices and equipment – on the market - shall obtain a certificate of conformity issued by a notified body approved by SASO, in accordance with the Conformity Assessment Form (Type 1a) as per ISO/IEC 17067; as shown in Annex (3).
- 5/2 If the manufacturer or its legal representative supplies the products included in the scope of this regulation to the Saudi market, the supplier declaration of conformity is sufficient.
- 5/3 The product shall be accompanied by a technical file that includes the following:
- A) Supplier (Manufacturer/Importer) Declaration of Conformity in accordance with the form attached in Annex (4)
 - B) Risk Assessment Document.
 - C) The necessary warnings, cautions and manuals for the safe and proper use of the product.

Article (6) Responsibilities of Regulatory Authorities

Regulatory Authorities, as a part of their competence and powers, shall carry out the following:

- 6/1 Regulatory Authorities shall verify that the products fulfill the specified conformity assessment procedures and the technical documents attached to the consignments at customs ports and manufactories.
- 6/2 Regulatory Authorities are entitled to - randomly – take samples of the products at customs ports and refer such samples to the competent laboratories to ascertain the extent of conformity with the requirements contained in this Technical Regulation.
- 6/3 Regulatory Authorities have the right to charge the suppliers (manufacturers and importers) with the costs of testing and the associated fees.
- 6/4 In case of non-conformity of the product, Regulatory Authorities shall withdraw the concerned products from warehouses, and take the necessary legal actions.



Article (7) Responsibilities of Market Surveillance Authorities

Market Surveillance Authorities, as a part of their competences and powers, shall carry out the following:

- 7/1 Enforce the market surveillance procedures to the products available in the markets, and the products stored in warehouses of traders and manufacturers, in order to validate their safety and the extent to which they meet the basic requirements set forth in this Technical Regulation and relevant standards.
- 7/2 Sample the product, whether from the market or warehouses of suppliers (manufacturers and importers) in order to conduct the necessary test and to verify the conformity with the requirements stipulated in this Technical Regulation.
- 7/3 In case of non-conformity of a product - displayed or stored - to the requirements of this Technical Regulation, Market Surveillance Authorities shall take all administrative actions including withdrawal and recall of such product. Procedures and penalties referred to in Article (8) shall be applied, after taking the necessary actions.

Article (8) Violations and penalties

- 8/1 It is prohibited to manufacture, import, place, display, or even advertise products that are non-conforming to the provisions of this Technical Regulation.
- 8/2 Failure to meet the requirements of this Technical Regulation shall be a sufficient reason for Market Surveillance Authorities and Regulatory Authorities to consider the product as non-conforming, which may pose a risk to the health and safety of the consumer and the environment, in the following cases:
 - A) Non-issuance or improper issuance of the certificate of conformity or the Supplier Declaration of Conformity.
 - B) Unavailability or incompleteness of technical documents.
- 8/3 In case of a violation of the provisions of this Technical Regulation, Market Surveillance Authorities – as the case may be - shall take all necessary actions to eliminate such violations, and their effects from the market. To this end, Market Surveillance Authorities may:
 - A) Mandate the violating party – responsible for placing and displaying the product – to withdraw the product from the warehouses or markets in order to rectify such violations, if possible. The product may be exported or destroyed (according to the nature of the product) within the period specified by the Market Surveillance Authorities.



- B) Withdraw, restrain or destroy the products, or take any other necessary action to recall such products from the markets. As the case may be, Market surveillance Authorities may announce the withdrawal of the product from markets, and the violating party shall bear all associated expenses.
- C) Deal with the violating products covered in this Technical Regulation in accordance with the laws and regulations applicable by Regulatory Authorities and the Market Surveillance Authorities.
- 8/4 When a violation of electrical and electronic equipment and devices is detected, SASO shall take the necessary measures against such products that violate the requirements of this regulation, including the cancellation of the relevant certificate of conformity.
- 8/5 Without prejudice to any more severe penalty stipulated in the applicable laws, a party that violates the provisions of this Technical Regulation shall be subject to the penalties stipulated in the applicable Anti-Commercial Fraud Law or any other superseding law.

Article (9) General Provisions

- 9/1 The supplier shall bear full legal responsibility for the implementation of the requirements of this Technical Regulation, and shall be subject to the penalties stipulated in the Anti-Commercial Fraud law and/or any other related laws, in case any violation of the articles herein is proven.
- 9/2 This Technical Regulation shall not prevent the supplier to comply with all other systems/regulations applicable in the Kingdom of Saudi Arabia; pertaining to trading, transporting, or storing electrical, electrical, and electronic equipment and devices and their spare parts, in addition to the rules/regulations related to the environment, security, and safety.
- 9/3 All suppliers of electrical and electronic equipment and devices and their spare parts - subject to the provisions of this Technical Regulation - shall provide the inspectors of the Regulatory and Market Surveillance Authorities with all facilitations and necessary information, when required, to carry out their assigned tasks.
- 9/4 Where a new case originates that cannot be treated under the provisions of this Technical Regulation, or where a dispute arises as a result of the application of those provisions, such matter shall be referred to the competent committee in SASO, in order to issue a proper resolution regarding the case or dispute, while taking the public interest into consideration.
- 9/5 The supplier may submit a new request after elimination of the reasons of rejection, and after the necessary corrections have been made. The supplier shall be responsible for any additional expenses determined by SASO.



- 9/6 SASO shall examine the complaints received regarding the products that have obtained a certificate of conformity, verify the validity of such complaints, and take the necessary legal actions in case of any violations.
- 9/7 SASO shall have the right to annul the Certificate of Conformity if the supplier violates the provisions herein, and shall take the legal actions to ensure the preservation of the rights of SASO.
- 9/8 Upon any modifications to the product (except for formal modifications), the certificate or the supplier declaration for such product shall be annulled, and a new request shall be submitted, and the supplier shall notify SASO.
- 9/9 SASO, exclusively, have the right to interpret the articles herein. All beneficiaries of the application of this Technical Regulation shall adhere to the interpretations issued by SASO.

Article (10) Transitional Provisions

- 10/1 The supplier shall take corrective actions in accordance with the provisions of this Technical Regulation within a period of no more 180 days as of the date of publication in the Official Gazette.
- 10/2 Subject to the provisions of item (1) of this Article, products not complying with the provisions specified in this regulation may be traded for a period of no more than 365 days as of the date of publication in the Official Gazette.
- 10/3 This regulation – once adopted – shall supersede all preceding regulations in the field of conformity of electrical and electronic equipment and devices products and their fulfillment of safety requirements to restrict hazardous materials prior to placing them and after displaying them in the market.

Article (11) Publication

This Technical Regulation shall be published in the Official Gazette.



Annex (1)

Annex (1-a) List of Substances Excluded from the Application of Hazardous Materials Limits

Serial Number	Excluded Items
1	Mercury in single -capped fluorescent lamps (compact) with or without an integrated ballast not exceeding (per burner):
1-a	For general lighting purposes ≥ 30 W and < 150 W: 5 mg
1-b	For general lighting purposes < 30 W : 2.5mg
1-c	For general lighting purposes < 30 W with long life ($> 15,000$ hours): 3.5 mg
1-d	For general lighting purposes with circular or square structural shape and tube diameter ≤ 17 mm:7mg
2	Mercury in double-capped linear fluorescent lamps without an integrated ballast for general lighting purposes not exceeding (per lamp):
2-a	Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 5 mg
2-b	Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5): 5 mg
2-c	Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and ≤ 28 mm (e.g. T8): 8 mg
2-d	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg
2-e	Tri-band phosphor with long lifetime ($\geq 15\ 000$ h) and T8 halophosphate: 8 mg
3	Mercury in other fluorescent lamps without an integrated ballast not exceeding (per lamp):
3-a	Non-linear halophosphate lamps (all diameters): 15 mg
3-b	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9) :15mg
3-c	Lamps for other general lighting and special purposes (e.g. induction lamps) :15mg
3-d	T12 linear halophosphate lamps: 10 mg
4	Mercury in other low pressure discharge lamps (per lamp): 15mg
5	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index $R_a > 60$:
5-a	$P \leq 155$ W:30mg
5-b	150 W $< P \leq 405$ W : 40 mg



5-c	P > 405 W: 40 mg
6	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):
6-a	P ≤ 155 W: 25mg
6-b	150 W < P ≤ 405 W : 30mg
6-c	P > 405 W: 40 mg
7-a	Mercury in High Pressure Mercury (vapour) lamps (HPMV)
7-b	Mercury in metal halide lamps (MH)
7-c	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex
8-a	Lead in glass of cathode ray tubes
8-b	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight
9-a	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight
9-b	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight
9-c	Copper alloy containing up to 4 % lead by weight
10-a	Lead in high melting temperature type solders (i.e. leadbased alloys containing 85 % by weight or more lead)
10-b	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications
10-c	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound
10-d	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher
11	Cadmium and its compounds in electrical contacts
12	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution
13	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications
14-a	Lead in white glasses used for optical applications
14-b	Cadmium and lead in filter glasses and glasses used for reflectance standards
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages




16	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications
17	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as speciality lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as BSP (BaSi ₂ O ₅ :Pb)
18	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses
19	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors
20	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring
21	Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more
22	Lead in soldering materials in mercury free flat fluorescent lamps (which, e.g. are used for liquid crystal displays, design or industrial lighting)
23	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes
24	Lead in solders for the soldering of thin copper wires of 100 μm diameter and less in power transformers
25	Lead in cermet-based trimmer potentiometer elements
26	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body
27	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide
28	Lead linked to crystal glass

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Annex (1-b) list of equipment exempted from the application of hazardous materials limits for control and monitoring instruments:

- A) Equipment using or detecting ionizing radiation:
- 1- Lead, cadmium and mercury in ionizing radiation detectors.
 - 2- Lead bearings in X-ray tubes.
 - 3- Lead in electromagnetic radiation amplification devices: microchannel plate and capillary plate.
 - 4- Lead contained in the glass mix for X-ray tubes, image intensifiers, in the glass frit for gas laser assembly, and in vacuum tubes that convert electromagnetic radiation into electrons.
 - 5- Lead used in shielding against ionizing radiation.
 - 6- Lead used in X-ray body test.
 - 7- Lead Stearate crystals for X-ray diffraction.
 - 8- Cadmium isotope source for portable X-ray fluorescence spectrometers.
- B) Sensors, detectors and electrodes:
- 1- Lead and cadmium in ion-selective electrodes including glass pH electrodes.
 - 2- Lead nodes in electrochemical oxygen sensors.
 - 3- Lead, cadmium and mercury in infrared light detectors.
 - 4- Mercury in reference electrodes: low chloride mercury chloride, mercury sulfate and mercury oxide.
- C) Other:
- 1- Cadmium in helium and cadmium lasers.
 - 2- Lead and cadmium in atomic absorption spectroscopy lamps.
 - 3- Lead in balancing weights.
 - 4- Lead in single crystalline piezoelectric materials for ultrasonic transducers.
 - 5- Lead in welding splices for ultrasonic transformers.
 - 6- Mercury in high-resolution amplitude and loss measurement bridges and in high-frequency radio frequency switches and relays in control and control tools does not exceed 20 mg of mercury per key or relay.
 - 7- Lead in welding connect high-performance infrared imaging units to detect in the 8-14 micrometer range.
 - 8- Lead in liquid crystal screens on silicon (LCoS).
 - 9- Cadmium in X-ray metering filters
 - 10- Lead in the following applications that are used permanently at a temperature below - 20°C under normal operating and storage conditions: 



- a) Welding on printed circuit boards
 - b) Finished coatings of electrical and electronic components and paints of printed circuit boards
 - c) Welding to connect wires and cables
 - d) Welding link in power adapters and sensors
 - e) Lead in welding used in electrical connections integrated into temperature measurement sensors in devices designed for periodic use at temperatures below (-150°C)
- 11- Mercury in cold cathode fluorescent lamps, not exceeding 5 mg for lamp, for LCD lighting used in industrial controls and monitors on the market before the regulation enters into force
- 12- Lead in platinum electrodes used in conduction measurements, when at least one of the following conditions is met:
- a) Large-scale conductivity measurements, covering more than one order in size (e.g. between 0.1 milliseconds/meter and 5 milliseconds/m), in laboratory applications for unknown concentrations
 - b) Measuring solutions that require accuracy $\pm 1\%$ of the sample range and high resistance to the electrode of corrosion, in the following cases:
 - 1- PH-digit acid solutions <1
 - 2- Basic solutions with $\text{pH} > 13$
 - 3- Halogen-containing corrosive solutions
 - c) Conductivity measurements above 100 milliseconds/m are made using portable tools
- 13- Lead in micro channel plates (MCPs) used in equipment that contains at least one of the following characteristics:
- a) A micro electron or ion detector, where the detector area is limited to a maximum of 3 mm / MCPs (detector thickness + MCPs installation space) and a maximum of 6 mm in total, and it is scientifically and technically impossible to provide another order that provides more space for the detector
 - b) Two-dimensional spatial accuracy for detecting electrons or ions, with at least one of the following characteristics:
 - 1- Response time of less than 25 nanoseconds
 - 2- Space for sample detection greater than 149 mm²
 - 3- The batting factor is greater than 1.3×10^3



- c) Response time of less than 5 nanoseconds to detect electrons or ions
 - d) Sample detection area greater than 314 mm² l to detect electrons or ions
 - e) Multiplication factor greater than 4.0X10⁷
- 14- Cadmium anodes for Hersch batteries in oxygen sensors used in industrial controls and controls, when sensitivity is less than 10 parts per million (ppm).
- 15- Cadmium in radiation resistance camcorders analyzer tubes, designed for cameras with an image resolution of over 450 TV lines, used in environments where exposure to ionizing radiation exceeds 100 kGy

Note: The list of exceptions will be reviewed and updated on a regular basis.



Annex (1-c) Maximum Permissible Concentration Values by Weight in Homogeneous Materials for Hazardous Substances in Electrical and Electronic Equipment and Devices

The upper limit of the permissible percentages	Hazardous Substances categories in English
(0.1%)	Lead
(0.1%)	Mercury
(0.01%)	Cadmium
(0.1%)	Hexavalent chromium
(0.1%)	Polybrominated biphenyls
(0.1%)	Polybrominated biphenyls ethers

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Annex (2)

Annex (2-a) List of Relevant Standards

No.	Standard No.	Standard Title in English
1	SASO IEC 63000	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
2	SASO IEC 62321-1	Determination of certain substances in electrotechnical products - Part 1: Introduction and overview
	SASO IEC 62321-2	Determination of certain substances in electrotechnical products - Part 2: Disassembly, disjointment and mechanical sample preparation
	SASO IEC 62321-3-1	Determination of certain substances in electrotechnical products - Part 3-1: Screening - Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry
	SASO IEC 62321-3-2	Determination of certain substances in electrotechnical products - Part 3-2: Screening - Fluorine, bromine and chlorine in polymer and electronics by combustion-ion chromatography (C-IC)
	SASO IEC 62321-4	Determination of certain substances in electrotechnical products - Part 4: Mercury in polymers, metals and electronics by CV-AAS, CV-AFS, ICP-OES and ICP-MS
	SASO IEC 62321-5	Determination of certain substances in electrotechnical products - Part 5: Cadmium, lead and chromium in polymers and electronics and cadmium and lead in metals by AAS, AFS, ICP-OES and ICP-MS
	SASO IEC 62321-6	Determination of certain substances in electrotechnical products - Part 6: Polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas chromatography -mass spectrometry (GC-MS)



No.	Standard No.	Standard Title in English
	SASO IEC 62321-7-1	Determination of certain substances in electrotechnical products - Part 7-1: Hexavalent chromium - Presence of hexavalent chromium (Cr(VI)) in colourless and coloured corrosion-protected coatings on metals by the colorimetric method
	SASO IEC 62321-7-2	Determination of certain substances in electrotechnical products - Part 7-2: Hexavalent chromium - Determination of hexavalent chromium (Cr(VI)) in polymers and electronics by the colorimetric method
3	SASO IEC 62474	Material declaration for products of and for the electrotechnical industry
4	SASO IEC TR 62474-1	Material declaration for products of and for the electrotechnical industry - Part 1: Guidance for the implementation of IEC 62474
5	SASO IEC TR 62476	Guidance for evaluation of product with respect to substance-use restrictions in electrical and electronic products

Note: The list of standards mentioned in this Annex is subject to review, and suppliers are responsible for ensuring that they use the latest standards through SASO's website.



Annex (2-b) List of Products and Customs Coding

No.	Customs Coding	Product
1	8402	Boilers for the generation of water and other vapors (except for central heating hot water boilers which are also capable of producing low pressure steam); rated water boilers
2	8403	Central heating boilers
3	8404	Boiler auxiliary devices (eg, economisers, super-heaters, soot removers, gas recoverers) and steam condensers
4	8414	Air and vacuum pumps
5	8415	Air conditioner
6	8418	Refrigerators and Freezers
7	8421	Equipment for washing, cleaning and drying pots
8	8422	Devices for washing, cleaning and drying bottles
9	8423	Weighing devices, adjusting devices and other units of measurement related to weight
10	8435	Presses and Mashers
11	8443	Equipment used for printing or photocopying and telephone (fax) copiers.
12	8443	Equipment used for printing by plates or cylinders
13	8450	Domestic washing and drying equipment
14	8451	Machines for washing, cleaning, spinning, drying or pressing (including hot-hold presses)
15	8452	Sewing devices
16	8456	Machine-tools for working any material by removal of material, by laser or other light or photon beam, ultrasonic, electro-discharge, electro-chemical, electron beam, ionic-beam or plasma are processes.



No.	Customs Coding	Product
17	8459	Machine tools (including slide actuators) for drilling or adjusting holes
18	8460	Machine tools for trimming, honing, honing, smoothing, sanding or other processing for working metal or cermet
19	8461	Mechanized tools for wiping, leveling, splitting, hammering, cutting, sharpening, preparing gear teeth, sawing, separating, and other mechanical tools.
20	8467	Hand tools, pneumatic, hydraulically driven, with integrated electric motor or with non-electric motor
21	8468	Welding machines and apparatus, whether or not capable of cutting
22	8470	Calculators with arithmetic functions, stamp stamping and ticketing machines
23	8471	Machines for self-processing of information and their units; Magnetic or optical readers
24	8472	Other office machinery and equipment (for example, hectographs or stenciling machines, address printers, and automated teller machines)
25	8473	Parts and accessories (other than covers, transport boxes and the like) for office equipment
26	8475	Assembly devices for electrical or electronic lamps, tubes, or fuses
27	8476	Automated (automated) merchandise vending machines (for example, vending machines for postage, cigarettes, food or drinks), including currency exchange machines
28	8479	Automated devices with self-contained function



No.	Customs Coding	Product
29	8481	Appliances for pipes, boilers, tanks and similar vessels, including pressure-reducing valves and thermostat-controlled valves.
30	8504	Electrical transformers and static (electrostatic) modulators
31	8505	Electromagnets
32	8506	Primary cells and primary cell groups (batteries)
33	8507	Electrical accumulators (groups), including their dividers, whether or not rectangular (including square)
34	8508	vacuum cleaners
35	8509	Electric mechanical appliances for home use with a built-in electric motor
36	8510	Shavers, hair clippers and hair removal devices, with built-in electric motor
37	8512	Electrical appliances for lighting or signaling, and electrical appliances for wiping, defrosting, and removing condensate
38	8513	portable light bulbs,
39	8514	electric ovens
40	8516	instantaneous water heaters and thermoelectric appliances for space or soil heating or similar uses; electric heat styling appliances (eg, dryers, curlers, heated curling tongs) and hand dryers; electric irons
41	8517	Phones
42	8518	Audio announcers (microphones)
43	8519	Sound recording or broadcasting equipment



No.	Customs Coding	Product
44	8521	Image and sound recording and broadcasting equipment (video)
45	8523	Disks, tapes, permanent hard storage devices
46	8525	Broadcasting (radio) or video broadcasting (television) transmitters
47	8526	Radar and radio navigation guidance equipment and radio remote guidance equipment
48	8527	Radio receivers
49	8530	Electrical devices for signaling or safety and control
50	8531	Electrical devices for sound or visual alerts
51	8532	Electric capacitors, fixed, variable or adjustable
52	8533	Non-thermal electrical resistors
53	8535	Electrical devices for connecting, disconnecting, protecting or dividing electrical circuits
54	8536	Electrical devices for connecting, disconnecting, protecting or dividing electrical circuits, electrical shock absorbers, electrical socket connections, sockets (plugs) and lamp bases
55	8539	light bulbs
56	8540	Electronic valves and tubes
57	8541	Diodes, transistors and similar semiconductor devices; Photosensitive semiconductor devices
58	8542	integrated electronic circuits
59	8544	Insulated wires and cables
60	8548	(Batteries) and electric savings



No.	Customs Coding	Product
61	9010	Photographic equipment and devices
62	9013	Laser devices, other than laser diodes; Optical instruments and devices
63	9015	Surveying devices and tools
64	9016	Sensitive scales
65	9017	Electronic Length Measurement Tools
66	9025	Density meters and instruments Thermometers (thermometers and pyrometers) and barometers Hygrometers (hygrometers and micrometers)
67	9026	Apparatus and instruments for measuring, checking and controlling flow, altitude, pressure, or other variables in liquids or gases
68	9027	Apparatus and instruments for measuring or testing the degree of viscosity, porosity or expansion
69	9028	Supply or production meters for gases, liquids or electricity, including their calibration devices
70	9029	Counters, turn counters, production counters, taximeters, odometers, linear odometers and the like
71	9030	Instruments for measuring rapid changes in electric quantities or “acylosopes”, spectrometers, and other apparatus and instruments for measuring or controlling electric quantities
72	9031	Apparatus, tools and instruments for measuring or inspecting
73	9032	Devices and tools for self-regulation or self-monitoring and control



No.	Customs Coding	Product
74	9102	Wristwatches, pocket watches and similar watches, including period measuring watches,
75	9103	Working clocks and alarms, with several clock movements
76	9107	Timing switches and other apparatus with a watchmaking gear, or with a synchronous motor.
77	9108	Several watch movement, complete and assembled
78	9109	Wristwatches, pocket watches and similar watches, including period measuring watches,
79	9405	Lighting devices and lighting supplies

Note: The products and customs tariffs (HS Codes) found in Saber electronic platform are considered the updated and approved version.



Annex (3)

Conformity Assessment Form (Type 1a) as per ISO/IEC 17067

(Type Approval)

1 Type Approval

Type approval is defined as one of the conformity assessment procedures, under which a notified body reviews and verifies the technical design of the product and declares that the technical design meets the requirements of the relevant Saudi Technical Regulations.

Type approval may be conducted by one of the two following methods:

- A) Examination of a representative sample of the entire product, that represent the expected production (production model).
- B) Assessment of the conformity of the technical design of the product by auditing the relevant technical documentation and manuals (design model), and examining of a representative sample of the expected production for one part or more involving hazardous parts of the product (a combination of the production model and the design model).

2 Procedures of Type Approval

2/1 Submission of a Type Approval Request to a Notified Body

The manufacturer shall submit a request for type approval to a notified body selected by the manufacturer, such request shall include:

- A) Name and address of the manufacturer;
- B) A written declaration not to submit the same request to any other Notified Body.
- C) Technical documentation facilitating the assessment of the conformity of the product to the requirements of Saudi technical regulations. Such documentation shall include adequate analysis and evaluation of risks.
- D) Technical documentation shall identify the requirements that apply to the product. Including, as required by the assessment, the design of the product, manufacturing and operation (use) of the product.
- E) Technical documentation shall include – at least - the following:
 - 1) A general description of the product.
 - 2) Design and manufacturing drawings, horizontal projections (diagrams), components, units, subdivisions, etc.



- 3) Description and explanations, referred to therein, necessary to understand the drawings, diagrams, and the operation (use) of the product.
- 4) A list of the Saudi standards or any other relevant technical specifications adopted by SASO, whether fully or partially applied, and a description of the adopted solutions to meet the essential requirements of the Saudi technical regulations in case of non-application of the aforementioned standards. In case of partial application of Saudi standards, the technical documentation shall clarify the applied clauses.
- 5) Report results (graph calculations) of the design, operation control, conducted tests, etc.
- 6) Test reports.
- 7) Representative samples of the planned production. The notified body may request additional samples, if necessary.
- 8) Evidences (proofs) supporting the appropriateness of the technical solutions applied in the design. Such evidence shall refer to all documents, particularly in case of non-application of the Saudi standards and/or the aforementioned appropriate technical specification. Supporting evidences – as applicable - shall include results of test conducted in the suitable laboratory in the manufacturer or any other laboratory under the responsibility of manufacturer.

2/2 Tasks of the Notified Body

2/2/1 With regard to the product, the notified body shall:

Study the technical documentation and supporting evidence for the purpose of assessment of the technical design of the product.

2/2/2 With regard to the samples, the notified body shall:

- 1) Ensure that the manufacturing of samples is conformant to the technical documentation, in addition to identifying the elements designed in accordance with the Saudi standards, and the elements designed in accordance with other standards.
- 2) Carry out appropriate examinations and tests, or outsource them in order to verify that the technical solutions adopted by the manufacturer meet the essential requirements specified in the standards, in case of non-application of the relevant standards.



- 3) Carry out appropriate tests or outsource them, in order to verify that – in case of non-application of Saudi standards and/or other appropriate standards - the technical solutions adopted by the manufacturer meet the essential requirements of the Saudi technical regulations.
- 4) Be in agreement with the manufacturer on the venue where tests should be conducted.

2/2/3 As for decisions made by the Notified Body:

- 1) The notified body shall issue an assessment report of the procedures carried out and their outputs. The notified body shall not publish, fully or partially, the report without the approval of the manufacturer.
- 2) In case the type meets the requirements of the Saudi technical regulations relevant to the concerned product, the Notified Body shall issue a Type Approval Certificate for the manufacturer. Such certificate shall include the name and address of the manufacturer, test results, the validity conditions thereof, if any, and all information required for identification of the certified type. The certificate may also include attachments.
- 3) The certificate, along with its attachments, shall include all necessary information required to assess the conformity of manufactured products, according to the tested type and for monitoring during operation.
- 4) In case the type is non-conforming to the requirements of the Saudi Technical Regulations applicable to the product, the Notified Body shall not issue the Type Approval Certificate and shall notify the applicant of its decision, stating detailed justifications for such decision.
- 5) The Notified Body shall follow all recognized technological developments. Whenever such developments indicate that the possibility that the certified type may no longer comply with the requirements of the Saudi Technical Regulations, the Notified Body shall determine to what extent further tests are required, and it shall inform the manufacturer accordingly.
- 6) The manufacturer shall inform the Notified Body, holding the technical documentation related to the Type Approval Certificate, of all modifications of the certified type, which may affect the conformity of the product to the requirements of the Saudi Technical Regulations, or to the terms of validity of the Type Approval Certificate. As such modifications require additional approval other than the primary Type Approval Certificate.





- 7) Notified bodies shall inform SASO of the Type Approval Certificates and any additions issued or withdrawn, and shall periodically, or upon request, provide a list of the Type Approval Certificates and any additions that has been rejected, suspended, or restricted in any way.
- 8) Each Notified Body shall inform the other accredited Notified Bodies of the Type Approval Certificates and any additions that has been rejected, suspended, or restricted in any way. In addition, they shall be informed, upon request, about Type Approval Certificates or any additions released.
- 9) Upon request, SASO and other Notified Bodies can obtain copies of the Type Approval Certificates and/or additions thereto. SASO may obtain copies of technical documentation and testing results carried out by the Notified Body, upon request. The Notified Body shall keep a copy of the Type Approval Certificate, its annexes and additions, in addition to the technical documentation (including documents attached by the manufacturer) up until the certificate's expiration date.
- 10) The manufacturer shall keep a copy of the Type Approval Certificate, its annexes and additions thereto, in addition to the technical documentation. Furthermore, the manufacturer shall make all documents available to Regulatory Authorities and Market Surveillance Authorities for ten (10) years after placement of the product in the market.
- 11) The supplier may submit the request mentioned in Clause (2/1/1), and carry out the aforementioned tasks on behalf of the manufacturer, on the condition of the manufacturer's consent.



Annex (4)

Supplier Declaration of Conformity

This form should be filled out on company official paper

1) Supplier data:

- Name:.....
- Address:.....
- Contact person:.....
- Email:.....
- Tel. No.:.....
- Fax. No.:.....

2) Product details:

- Trademark:.....
- Type:.....
- Product Description:.....
- Category (according to the standards):
- Reference standards/ technical specifications:.....
.....

We, hereby, acknowledge that the above-mentioned product is conforming to the Saudi technical regulation (), and the Saudi standards included therein.

Person in Charge

Company Name:

Signature:..... Date:/...../.....

