



ENG SPEC, Green Procurement Guidelines

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Change History

Rev.	Description of Change	Release Date	Changed By
A	Initial Release per ECO-13-001563 .	01/28/2013	Cherrie Soetjipto
B	Revised per ECO-13-0425 : <ul style="list-style-type: none"> - Update to new Elo logo. - Inclusion of: <ul style="list-style-type: none"> - Regulation No. 757/2010 amending Regulation No. 850/2004 of the European Parliament and of the Council on Persistent Organic Pollutants as regards Annex I and Annex III. - Substance Restriction and labeling requirement of Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC. - New December 2012 and June 2013 Revision to EU REACH SvHC Candidate List to Table 2 Chemical Substances. - China GB/T 18455-2010 Packaging Recycling Standard that replaced China GB 18455-2001. - Reference to regulations that regulate shipment of Lithium ion batteries. - Danish Restriction on Phthalate DEHP, BBP, DIBP and DBP, which will come into force on December 31, 2015. - U.S. Battery Act (Mercury-Containing Rechargeable Battery Management Act). - Updates to EU REACH Annex XVII Restriction List. 	07/02/2013	Cherrie Soetjipto
C	Revised per ECO-14-0211 : <ul style="list-style-type: none"> - Updated: <ul style="list-style-type: none"> - Coming into force of Danish Restriction on Phthalate DEHP, BBP, DIBP, and DBP to December 1, 2016. - Included: <ul style="list-style-type: none"> - Ban on Bisphenol-A in thermal receipt printer. - New December 2013 revision to EU REACH SvHC Candidate List to Table 2 Chemical Substances. - Restriction on use of certain PAH substances in plastic components per REACH Annex XVII Restriction List, which will come into force on December 27, 2015. 	02/06/2014	Cherrie Soetjipto
D	Revised per ECO-14-0776 : Update to include new EU REACH Candidate List SVHCs published on June 18, 2014.	06/18/2014	Cherrie Soetjipto
E	Revised per ECO-14-0825 : Update dates by which PAHs and HBCDD shall be phased out in products supplied to Elo to ensure product compliance according to upcoming EU REACH Annex XVII and Stockholm Convention requirements.	07/14/2014	Cherrie Soetjipto



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F	Revised per ECO-15-0150 to: <ul style="list-style-type: none"> - Include new EU REACH Candidate List SVHCs published on December 17, 2014. - Update according to repealing of Danish Restriction on Phthalate DEHP, DBP, BBP, and DIBP. - Update according to EU Commission intensions to add DEHP, DBP, BBP, and DIBP to the list of restricted substances under EU RoHS. 	1/16/2015	Cherrie Soetjipto
G	Revised per ECO-15-1017 to: <ul style="list-style-type: none"> - Include new EU REACH Candidate List SVHCs published on June 15, 2015. - Include DEHP, DIBP, DBP, and BBP to the list of EU RoHS restricted substances. These new substance restrictions will apply from 22 July 2019 for Elo products. Elo asks that suppliers phase out by 31 December 2016. - Remove exemption for Mercury in button cell batteries per Directive 2013/56/EU. Button cells containing more than 0.0005% of Mercury by weight of cell are prohibited starting October 1, 2015. - Add BNST to list of banned substances per Canadian Environmental Protection Act requirements. - Updated / corrected reference to ES600665 (Packaging Specification) 	07/14/2015	C. Soetjipto
H	Revised per ECO-15-1202 to: <ul style="list-style-type: none"> - Ban the use of red phosphorus in plastic parts that contact conductor(s) due to quality concern. 	09/16/2015	C. Soetjipto
J	Revised per ECO-16-0318 to: <ul style="list-style-type: none"> - Include new EU REACH Candidate List SVHCs published on December 17, 2015. - Update EU REACH SVHC Candidate List notification obligations to capture new "once an article, always an article" rule. Communication down the supply chain is triggered not only for articles that contain Candidate List SVHC above 0.1% by weight of the article, but also when the article contains a sub-article that contains Candidate List SVHC above 0.1% by weight of the sub-article. - Capture update in China RoHS marking standard SJ/T 11364-2014. New marking per SJ/T 11364-2014 shall replace marking per SJ/T 11364-2006. 	02/19/2016	C. Soetjipto
K	Revised per ECO-16-0604 to: <ul style="list-style-type: none"> - Update perchlorate category from restricted substance to declarable substance. - Specify perchlorate warning label needed for products containing perchlorate (e.g. Lithium coin cell). - Include Taiwan voluntary standard CNS 15663 requirements 	04/20/2016	C. Soetjipto
L	Revised per ECO-16-0991 to: <ul style="list-style-type: none"> - Correct Nickel threshold limit per EU Regulation 1907/2006 Annex XVII - Include new EU REACH Candidate List SVHC published on June 20, 2016. - Delete EU RoHS Directive 2011/65/EU Annex III exemption 7b, which expires in July 2016. 	07/01/2016	C. Soetjipto
M	Revised per ECO-17-0311 to: <ul style="list-style-type: none"> - Update header legal language from Elo Confidential and Proprietary to Elo Copyright. - Update per January 2017 update to EU REACH Candidate List - Correction to Cadmium battery labeling threshold limit typo. 	02/07/2017	C. Soetjipto



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N	Revised per CO-17-1595 to: -Update per July 07, 2017 update to EU REACH SvHC Candidate List -Update HBCDD limit according to EU Regulation 2016/293 -Add DiNP, DIDP, DnHP as declarable substances per Prop 65 -Add polychlorinated and polybrominated dioxins and furans according to customer requirement	08/30/2017	C. Soetjipto
P	Revised per CO-18-2421 to: - Remove expired exemptions around PFOS ban - Update per January 15, 2018 update to EU REACH SvHC Candidate List - Include upcoming restriction per EU REACH Annex XVII Restriction List on PFOA, its salts, and its related substances.	3/12/2018	C. Soetjipto



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1.0 PURPOSE

As a reference document that specifies the environmental legislation and standard requirements for products and parts supplied to Elo Touch Solutions (Elo).

2.0 SCOPE

2.1 Content

This specification covers the applicable documents, regulations and requirements for supplier product environmental compliance.

2.2 Overview

The supplier requirements specified cover: 1) the elimination of “Banned Substances”, 2) the controlled usage of “Restricted Substances”, 3) the notification on the use/non-use of certain “Declarable Substances”, and 4) the disclosure of material content information.

2.3 Application

This specification applies to all materials, parts, components, and products (including packaging materials where indicated) supplied to Elo, whether finished or semi-finished.

3.0 REFERENCED DOCUMENTS

3.1 Regulations and Standards

Elo Touch Solutions’ requirements for suppliers are based on the following regulations and certain additional industry and customer requirements:

A. International

- a. Montreal Protocol on Substances that Deplete the Ozone Layer
- b. Stockholm Convention on Persistent Organic Pollutants
- c. ISPM-15 International Standards for Phytosanitary Measures, Publication Number 15
- d. IATA 2013 Dangerous Goods Regulations
- e. IMDG Special Provision 188 for Shipping Lithium Batteries

B. Europe

- a. Directive 2011/65/EU

EU RoHS (Recast)

NOTE: RoHS (recast) was published on 8 June 2011 and repealed Directive 2002/95/EC (RoHS) starting 3 January 2013. EEE product scope under RoHS recast will include 3 new categories that will progressively come into implementation towards 21 July 2019. RoHS (recast) continues to restrict the same hazardous substances with the same thresholds as RoHS, but have identified DEHP, DBP, BBP, and HBCDD as priority substances to be reviewed for possible inclusion in the near future into the directive. RoHS (recast) requires finished EEE manufactured in and shipped into the EU to bear the CE mark and requires manufacturers to keep a Declaration of Conformity and technical files to document conformity to the directive. All these new requirements may trigger more demands for test reports and systematic management in the supply chain.

- b. Directive 2015/863
- c. Directive 2006/66/EC
- d. Directive 2013/56/EU

Ammending Annex II to Directive 2011/65/EU
Batteries and Accumulators and Waste Batteries and Accumulators
Ammending Directive 2006/66/EC on Batteries and Accumulators and Waste Batteries and Accumulators

- e. Directive 2009/251/EC Products containing the biocide dimethylfumarate are not to be placed or made available on the market
 - f. Directive 94/62/EC Packaging and Packaging Waste
 - g. Directive 2012/19/EU Waste Electrical and Electronic Equipment
 - h. EN 50419:2006 Marking of Electrical and Electronic Equipment in accordance to Article 11(2) of Directive 2002/96/EC
 - i. Regulation EC No 1907/2006 REACH (Restriction, Evaluation, Authorization and Restriction of Chemicals)
 - j. Regulation EC No 842/2006 Certain fluorinated greenhouse gases
 - k. Regulation EC No 850/2004 Persistent Organic Pollutants
 - l. Regulation EU No 757/2010 Amending Regulation EC 850/2004 on Persistent Organic Pollutants
 - m. Regulation EU No 519/2012 Amending Regulation EC No 850/2004 on Persistent Organic Pollutants
 - n. Regulation EU 2016/293 Amending Regulation EC No 850/2004 on Persistent Organic Pollutants
 - o. Denmark Executive Order BEK No. 1113 of 26 November 2012 regulating the use of phthalates DEHP, DBP, BBP, and DIBP
- C. Asia
- a. China RoHS (Order No 39) Administrative measures on the control of pollution caused by Electronic Information Products
 - b. China GB/T 18455-2010 Packaging Recycling Marks
 - c. China GB/T 26572-2011 Standard of the Electronic Industry of the People's Republic of China: Requirements of Concentration Limits for Certain Restricted Substances in Electrical and Electronic Products
 - d. China SJ/T 11364-2014 People's Republic of China Electronic Industry Standard: Marking for the Restricted Use of Hazardous Substances in Electronic and Electrical Products
 - e. Japan Act No. 117 of October 16, 1973 Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture
 - f. Taiwan CNS 15663 Guidance to reduction of the restricted chemical substances in electrical and electronic equipments
- D. North America
- a. California RoHS Health and Safety Code sections 25214.9-25214.10.2 California Code of Regulations, title 22, section 66260.202
 - b. United States TPCCH US States Toxics in Packaging Clearinghouse Model Legislations
 - c. US Battery Act Mercury-Containing Rechargeable Battery Management Act, 42 U.S.C 14301-14336
 - d. Canadian Environmental Protection Act, 1999
- E. Industry Standards
- a. JIG-101 Ed. 4.1 Joint Industry Guide: Material Composition Declaration for Electrochemical Products
 - b. JIG-201 Ed. 1.0 Joint Industry Guide 201: Material Composition Declaration for Packaging of Electrotechnical Products

3.2 Related Documents

- ES600665 Packaging Specification
- SD503235 LABEL, EU Directive

4.0 DEFINITION OF TERMS

- 4.1 **Article:** Object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition.

- 4.2 **Banned Substances:** Substances whose intentional use is not permitted in any quantity for all indicated applications. If a threshold value is indicated, it applies only to impurities that are not intentionally added and the amount of impurity of the substance must be less than the threshold value.
- 4.3 **Button Cells:** Any small round portable battery or accumulator whose diameter is greater than its height and which is used for special purposes such as hearing aids, watches, small portable equipment and back-up power.
- 4.4 **CAS (Chemical Abstract Service) Numbers:** A unique registration numerical identifier for one chemical (substance).
- 4.5 **Consumer-Purchased Finished Goods:** Products that is sold to consumers and is ready for use by end users. Elo Consumer-Purchased Finished Goods include monitors, computers, and Interactive Digital Signage. Does not include components that are sold to customers who incorporate components into their Consumer-Purchased Finished Goods (e.g. touchscreens, touchcontrollers).
- 4.6 **Controlled Substances:** Controlled substances are consisting of Banned Substances, Restricted Substances, and Declarable Substances.
- 4.7 **Declarable Substances:** When Declarable Substances are present above the specified limits for the specified applications in any materials, parts, and products supplied to Elo, suppliers are required to inform and notify Elo of its presence and use.
- 4.8 **EEE (Electrical and Electronic Equipment):** Equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields and designed for use with a voltage rating not exceeding 1000 Volts for alternating current and 1500 Volts for direct current (Directive 2011/65/EU definition).
- 4.9 **Full Material Declaration:** A full material declaration discloses 100% of the homogenous materials that are found in the supplied materials/parts and a 100% of all the substances that are contained in those materials. Materials or substances (whether "Intentionally Added" or not) contained in materials/parts purchased (and in turn incorporated into supplier's products) must be disclosed. It is recognized that in certain situations, 100% disclosure by CAS Registry Number may not be feasible due to confidentiality or proprietary nature of the information. In such case, a supplier declaration shall also be supplied to Elo.
- 4.10 **Homogenous 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.
- 4.11 **Intentionally Added:** Deliberately used in the formulation of a product where its continued presence is desired to provide a certain characteristic, appearance, property, attribute or quality.
- 4.12 **Mixture:** A mixture or solution composed of two or more substances.
- 4.13 **Packaging:** All goods made of any material of any nature to be used for the containment, protection, handling, delivery, and presentation of products from the producer to the customer or the consumer. Packaging can be categorized but is not limited to primary, secondary and tertiary packaging.
 - Note 1: Items are considered to be packaging if they fulfill the abovementioned definition without prejudice to other functions which the packaging might also perform, unless the item is an integral part of a product and it is necessary to contain, support or preserve that product throughout its lifetime and all elements are intended to be used, consumed or disposed of together.
 - Note 2: Packaging components and ancillary elements integrated into packaging are considered to be part of the packaging into which they are integrated. Ancillary elements hung directly on, or attached to, a product and which perform a packaging function are considered to be packaging unless they are an integral part of this product and all elements are intended to be disposed of together.
 - Note 3: Packaging does not include road, rail, air or sea containers
 - Note 4: The term "Packaging" is frequently used in the integrated circuit industry to simplify the term IC Packaging which refers to the final stage of semiconductor device fabrication, which is outside the scope.
- 4.14 **Restricted Substance:** Substances whose presence above the specified limits for the specified application in any of the parts, products, and materials supplied to Elo are not allowed / restricted, unless a valid exemption applies. Valid EU RoHS exemptions are specified and listed in Table 4 in Section 7.4 herein.
- 4.15 **Substance:** A chemical element and its compounds in the natural state or obtained by any manufacturing process, including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

- 4.16 **Substance of Concern:** Substances that are not currently banned or restricted by Elo, but may be (or will be) banned/restricted in the future according to Industry Standards or upcoming regulations.
- 4.17 **Supplier Declaration of Compliance:** A declaration by suppliers that certifies the compliance of the parts or products indicated in the declaration with the environmental legislations, standards, or substance restrictions the declaration references.

5.0 SAFETY

N/A

6.0 SUPPLIER REQUIREMENTS

6.1 Parts and Materials Compliance

For all parts and materials supplied to Elo, suppliers shall ensure that parts and materials comply with the chemical substance requirements, as specified in Section 7 (Substances in Products) herein.

- A. All materials and parts supplied to Elo shall not contain Banned Substances or Restricted Substances above the allowed threshold for the pertinent applications as specified in Table 1 herein, unless an applicable EU RoHS exemption applies.
- B. When Declarable Substances are present in materials or parts supplied to Elo above the threshold levels in applications specified in Table 2, suppliers shall notify Elo regarding the presence of the Declarable substance above the threshold limit.

6.2 Product Labeling

A. China RoHS

Under China RoHS, all of Elo's consumer-purchased finished electrical/electronic products will require proper China RoHS product labeling as specified in SJ/T 11364-2014. Labeling is composed of Environmental Friendly Use Period (EFUP) label and a tic-tac-toe diagram that discloses the presence of RoHS hazardous substances above threshold levels specified in GB/T 26572-2011 in different product components.

B. EU RoHS Recast (Directive 2011/65/EU)

Consumer-purchased finished electrical and electronic goods: All of Elo's consumer-purchased finished electrical and electronic goods shall demonstrate compliance to EU RoHS Recast by the affixing the CE mark on the finished product visibly, legibly, and indelibly. Markings other than the standardized CE mark shall no longer be used to demonstrate compliance of consumer-purchased finished electrical/electronic products to EU RoHS as this is illegal starting 3 January 2013.

Other Elo Finished Goods: Compliance of other Elo products (i.e. non-EEE products, and non-consumer-purchased products), such as Bezels, Touch Screens, and Touch Controllers may still and shall be demonstrated by the non-standardized RoHS label specified in LABEL, EU Directive (SD503235) that Elo prescribes.

C. EU WEEE (Waste Electrical and Electronic Equipment) Directive

Under the EU WEEE Directive, Elo is responsible for registering as a WEEE producer and for making collection, recycling, and reporting arrangements in EU Countries where Elo:

- Manufactures and sells EEE (electrical and electronic equipment) under his own brand;
- Resells under its own brand EEE which is produced by other suppliers; or
- Imports/exports EEE on a professional basis into the Member State

Under the WEEE Directive, Elo consumer-purchased finished goods that is put into the market after August 13, 2005 shall bear the appropriate cross-out wheelie bin mark as specified in EN 50419 Standard.

D. EU Battery Directive

Batteries shall bear the appropriate crossed-out wheelie bin mark as specified in Annex II of Directive 2006/66/EC. Additionally, batteries with:

- More than 0.0005% of Mercury by weight of battery shall be marked with chemical symbol “Hg”;
- More than 0.002% of Cadmium by weight of battery shall be marked with chemical symbol “Cd”;
- More than 0.004% of Lead by weight of battery shall be marked with chemical symbol “Pb”.

E. US Battery Act

Rechargeable batteries must bear the three chasing arrows or a comparable recycling symbol. Additional marking requirements apply for rechargeable Nickel-Cadmium batteries and Lead-acid batteries. These required labeling shall also appear on packaging of rechargeable batteries that are sold separately.

F. California DTSC Perchlorate Warning

The following label shall be on the shipping box of Elo products that contain perchlorate-containing material (e.g. lithium coin cell batteries). To ensure legibility of the label, a minimum font size of 10 Arial shall be used.

This warning is for California (USA) use only and applies to Lithium coin cell contained in device:
Perchlorate Material - special handling may apply.
See www.dtsc.ca.gov/hazardouswaste/perchlorate.

G. Taiwan CNS 15663

Labeling according to Taiwan CNS 15663 shall be in user manual of Elo’s consumer-purchased finished electrical/electronic products. Labeling is composed of a diagram that discloses the applicability of RoHS exemption, and presence of RoHS hazardous substances above threshold levels specified in CNS 15663 in different product components.

6.3 Product Packaging

A. Controlled Substances

Elo Banned Substance, Restricted Substance, and Declarable Substance requirements for packaging materials apply to all packaging materials supplied to Elo, as well as all packaging materials used to ship parts / materials to Elo or directly to Elo customers. Banned Substances, Restricted Substances, and Declarable Substances that may be found in and apply non-exclusively to packaging materials are denoted by “(May be present in packaging)” in the Application column of Tables 1 and Table 2.

B. Recycling Labels

Recycling Labeling requirements apply to suppliers that provide Elo packaging materials and suppliers whose packaging materials are used to supply products/materials to Elo that could ultimately reach Elo customers. *Packaging Specification* (ES600665) serves as a guideline for graphic component selection and placement on packaging carton for Elo finished goods, and includes specification for the recycling label that should be on packaging cartons.

C. Solid Wood Packaging Materials

All solid wood packaging materials, including solid wood shipping pallets, shall conform to ISPM-15 (International Standards for Phytosanitary Measures, Publication Number 15) and shall bear the appropriate IPPC symbol to demonstrate compliance.

D. Shipping Lithium Ion / Polymer Batteries

When shipping lithium ion batteries, suppliers shall pay attention to relevant prevailing regulations and ensure proper product packaging, package labeling, and shipping documentation. Transportation of Lithium batteries excepted from Class 9 Dangerous Goods classification is regulated by:

- IATA Dangerous Goods Regulation, if shipped by air
- IMDG special provision 188, if shipped by sea.

6.4 Statement of Compliance

Suppliers shall provide a statement in a manner prescribed by Elo certifying that materials and parts supplied to Elo are in compliance to the chemical substance requirements specified in Section 7 (Substances in Products). Upon request from Elo, suppliers shall provide documentation to demonstrate the basis for the compliance statements provided to Elo. Examples of acceptable documentation include:

- A. Supplier Declaration of Compliance.
- B. Physical Test Report Results from a nationally or internationally certified test laboratory with ISO 17025 Certification. Test center should be accredited to perform chemical testing of Electricals and Electronics.
- C. Full Material Declaration.

6.5 Directive 2011/65/EU RoHS Recast Technical Documentation

Consumer-purchased finished electrical and electronic goods: Vendors shall draw up EU RoHS 2 Technical Documentation as specified in Directive 2011/65/EU and/or harmonized standard EN50581:2012 for all EEE supplied to Elo after January 1, 2013. Such Technical Documentation shall be maintained, updated, and made available upon request to Elo for 10 years following product release.

6.6 Legal/Notification Requirements

In addition to requirements referenced in this document, all suppliers shall comply with:

- A. Any other legal and regulatory requirements applicable to any products provided to Elo.
- B. Any additional legal, regulatory or customer requirements (of which supplier is aware) when such requirements would apply to products sold by Elo and into which supplier's products are incorporated. Suppliers shall notify Elo of any such additional requirements (of which supplier is aware).

7.0 SUBSTANCES IN PRODUCTS

This section specifies:

- The chemical substances that Elo Bans (B), Restricts (R), requires suppliers to Declare (D), and Assesses (A).
- The application in which chemical substance restrictions, bans, declarations, and assessments apply.
- The threshold limit, above which the use of the chemical substance for the specified application is restricted, banned, requires supplier declaration, or should be assessed.

These chemical substances are classified into the three categories. Banned Substances and Restricted Substances shall not be present above the specified limits for the specified applications in any of the parts and materials supplied to Elo, unless it qualifies for an exemption. Declarable Substances must be declared if present above the specified limits for the specified applications in all materials and parts supplied to Elo. Substances to Assess, though currently not regulated, might be restricted, banned, or required to be declared by Elo in the future.

Restricted, Banned, or Declarable substances that may be found in and apply non-exclusively to packaging materials are denoted by "(May be present in packaging)" in the Application column.

7.1 Banned / Restricted Substances

Table 1 below specifies the regulated chemical substances that are banned or restricted above the specified levels in materials and parts supplied to Elo. Substances covered by the EU RoHS may be present in parts and materials supplied to Elo above the allowed limits **ONLY IF** an exemption listed in Table 4 applies. When a supplier claims an EU RoHS exemption, they must provide technical documentation that specifies:

- The exemptions being claimed.
- The homogenous material containing the EU RoHS chemical substance above threshold levels.
- Explanation of the use or application of the chemical substance in the part / material and why they qualify for the exemption.

Table 1. Chemical Substances that are Banned or Restricted

Substance Category	Category	Threshold Level	Application
Directive 2011/65/EU – EU Restriction of Hazardous Substances			
Cadmium / Cadmium Compounds (Note 1)	R	100 ppm per homogenous materials	All components, materials, and parts that make up EEE. Exemptions may apply. (Note 2)
Chromium VI Compounds (Note 1)	R	1000 ppm per homogenous materials	All components, materials, and parts that make up EEE. Exemptions may apply. (Note 2)
Lead /Lead Compounds (Note 1)	R	1000 ppm per homogenous materials	All components, materials, and parts that make up EEE. Exemptions may apply. (Note 2)
Mercury / Mercury Compounds (Note 1)	R	1000 ppm per homogenous materials	All components, materials, and parts that make up EEE. Exemptions may apply. (Note 2)
Polybrominated Biphenyls (PBB) (Note 1)	R	1000 ppm per homogenous materials	All components, materials, and parts that make up EEE.
Polybrominated Diphenyl Ethers (PBDE) (Note 1)	R	1000 ppm per homogenous materials	All components, materials, and parts that make up EEE.
Bis(2-ethylhexyl)phthalate (DEHP) (CAS# 117-81-7)	R	1000 ppm per homogenous materials	All (Note 3)
Benzyl butyl phthalate (BBP) (CAS# 85-68-7)	R	1000 ppm per homogenous materials	All (Note 3)
Dibutyl phthalate (DBP) (CAS# 84-74-2)	R	1000 ppm per homogenous materials	All (Note 3)
Diisobutyl phthalate (DIBP) (CAS# 84-69-5)	R	1000 ppm per homogenous materials	All (Note 3)
Regulation EC No 1907/2006 - EU REACH Annex XVII Restriction List			
Asbestos fibres (Note 1)	B	added intentionally	All (May be present in packaging)
Arsenic compounds (Note 1)	B	added intentionally	Wood Preservation (May be present in packaging) (Note 4)
Cadmium (CAS# 7440-43-9)	B	Intentionally added except for paints and varnishes with high zinc content (exceeding 10% (w/w) of zinc)	1. Synthetic organic polymers (plastic materials) 2. All paint applications 3. Vinyl chloride polymer or copolymer stabiliser

<p>Creosote; wash oil (CAS# 8001-58-9) Creosote oil; wash oil (CAS# 61789-28-4) Distillates (coal tar), naphthalene oils; naphthalene oil (CAS# 84650-04-4) Creosote oil, acenaphthene fraction; wash oil (CAS# 90640-84-9) Distillates (coal tar), upper; heavy anthracene oil (CAS# 65996-85-2) Creosote, wood (CAS# 8021-39-4) Low temperature tar oil, alkaline; extract residues (coal), low temperature coal for alkaline (CAS# 122384-78-5)</p>	B	Intentionally added	Treatment in wood (May be present in packaging) (Note 4)
<p>Dibutyltin (DBT) compounds (Note 1)</p>	R	0.1% by weight of tin	<p>All, except for use in: - one-component and two-component room temperature vulcanisation sealants (RTV-1 and RTV-2 sealants) and adhesives; - paint and coatings containing DBT compounds as catalysts when applied on articles; - PVC profile whether by themselves or coextruded with hard PVC These exceptions will end on 1 January 2015, (May be present in packaging)</p>
<p>Diocetyl tin (DOT) compounds (Note 1)</p>	R	0.1% by weight of tin	Two-component room temperature, vulcanisation moulding kits (RTV-2 moulding kits).
<p>Monomethyl - tetrachlorodiphenyl methane (Ugilec 141) (CAS# 76253-60-6)</p>	B	Intentionally added	All
<p>Mono-methyl-dibromo-diphenyl methane bromobenzylbromotoluene, mixture of isomers (DBBT) (CAS# 99688-47-8)</p>	B	Intentionally added	All
<p>Monomethyl-dichloro-diphenyl methane (Ugilec 21, Ugilec 121)</p>	B	Intentionally added	All
<p>Nickel (CAS# 7440-02-0)</p>	R	0.5 µg/cm ² /week rate of nickel release from parts that comes into contact with skin	Articles intended to come into direct and prolonged contact with the skin
<p>Tri-substituted organostannic compounds (Note 1)</p>	R	0.1% by weight of tin	All (May be present in packaging)
<p>Dimethylfumarate (DMF) (CAS# 624-49-7)</p>	R	0.00001% by weight of article or parts thereof	All (May be present in packaging)
<p>Phenylmercury acetate (CAS# 62-38-4)</p>	R	0.1% by weight of article or parts thereof	All
<p>Phenylmercury propionate (CAS# 103-27-5)</p>	R	0.1% by weight of article or parts thereof	All
<p>Phenylmercury 2-ethylhexanoate (CAS# 236-326-7)</p>	R	0.1% by weight of article or parts thereof	All
<p>Phenylmercury octanoate (CAS# 13864-38-5)</p>	R	0.1% by weight of article or parts thereof	All



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Phenylmercury neodecanoate (CAS# 26545-49-3)	R	0.1% by weight of article or parts thereof	All
50. Polycyclic-aromatic hydrocarbons (PAH): a. Benzo[a]pyrene (BaP) (CAS# 50-32-8) b. Benzo[e]pyrene (BeP) (CAS# 192-97-2) c. Benzo[a]anthracene (BaA) (CAS# 56-55-3) d. Chrysen (CHR) (CAS# 218-01-9) e. Benzo[b]fluoranthene (BbFA) (CAS# 205-99-2) f. Benzo[j]fluoranthene (BjFA) (CAS# 205-82-3) g. Benzo[k]fluoranthene (BkFA) (CAS# 207-08-9) h. Dibenzo[a,h]anthracene (DBAhA) (CAS# 53-70-3)	R	0.0001% by weight	Rubber and plastic components that will come in direct contact with end users. (Note 5)
57. Cyclohexane (CAS# 110-82-7)	R	0.1% by weight	Neoprene-based contact adhesives
62. a. Phenylmercury acetate (CAS# 62-38-4) b. Phenyl mercury propionate (CAS# 103-27-5) c. Phenylmercury 2-ethylhexanoate (CAS# 13302-00-6) d. Phenylmercury octanoate (CAS# 13864-38-5) e. Phenylmercury neodecanoate (CAS# 26545-49-3)	R	0.01% by weight of Mercury	All
66. Bisphenol A (CAS# 80-05-7)	R	0.02% by weight	Thermal paper
67. PFOA and individual salts and esters (Note 1)	R	25 ppb per component (Note 6)	All
67. PFOA-related substances: - Any related substance (including its salts and polymers) having a linear or branched perfluoroheptyl group with the formula C ₇ F ₁₅ - directly attached to another carbon atom, as one of the structural elements. - Any related substance (including its salts and polymers) having a linear or branched perfluorooctyl group with the formula C ₈ F ₁₇ - as one of the structural elements.	R	1000 ppb per component (Note 6)	All

The following substances are excluded from this designation: - C ₈ F ₁₇ -X, where X = F, Cl, Br - C ₈ F ₁₇ -C(=O)OH, C ₈ F ₁₇ -C(=O)O-X' or C ₈ F ₁₇ -CF ₂ -X' (where X' = any group, including salts)			
EU Regulation on Persistent Organic Pollutants			
Chlordecone (CAS# 143-50-0)	B	Intentionally added	All
Endosulfan (115-29-7; 959-98-8; 33213-65-9)	B	Intentionally added	All (May be present in packaging) (Note 4)
HCH, including lindane (CAS# 608-73-1; 58-89-9)	B	Intentionally added	All (May be present in packaging) (Note 4)
Hexabromobiphenyl (CAS# 36355-01-8)	B	Intentionally added	All
Mirex (CAS# 2385-85-5)	B	Intentionally added	All
Polychlorinated biphenyls (PCB) and specific substitutes (Note 1)	B	Intentionally added	All (May be present in packaging)
Perfluorooctane sulfonic acid (PFOS), and its derivatives (Note 1)	B	Intentionally added or 0.1% by weight of structurally or micro-structurally distinct parts	All, except for: controlled electroplating systems - photoresists or anti reflective coatings for photolithography processes - photographic coatings applied to films, papers, or printing plates - mist suppressants for non-decorative hard chromium (VI) plating in closed loop systems - hydraulic fluids for aviation
Pentachlorobenzene (CAS# 608-93-5)	B	Intentionally added	All
Tetrabromodiphenyl ether (CAS# 5436-43-1)	R	0.001% by weight of article; (up to 0.1% by article allowed if contain recycled material)	All, except for EEE / products in scope of RoHS
Pentabromobiphenyl ether (CAS# 60348-60-9)	R	0.001% by weight of article; (up to 0.1% by article allowed if contain recycled material)	All, except for EEE / products in scope of RoHS
Hexabromodiphenyl ether (CAS# 68631-49-2; 207122-15-4)	R	0.001% by weight of article; (up to 0.1% by article allowed if contain recycled material)	All, except for EEE / products in scope of RoHS
Heptabromodiphenyl ether (CAS# 446255-22-7; 207122-16-5)	R	0.001% by weight of article; (up to 0.1% by article allowed if contain recycled material)	All, except for EEE / products in scope of RoHS
Hexachlorobutadiene (CAS# 87-68-3)	B	Intentionally added	All
Polychlorinated naphthalenes (Note 1)	B	Intentionally added	All (May be present in packaging) (Note 4)
Alkanes, C10-C13, chloro (Short-chain chlorinated paraffins) (CAS# 85535-84-8)	B	Intentionally added	All



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Directive 94/62/EC– EU Packaging and Packaging Waste			
Heavy Metals: Lead + Cadmium + Mercury + Cr(VI)	R	Intentionally added or 100 ppm of the sum of Cd, Hg, Pb and Cr VI in the material	Packaging Materials
Directive 2006/66/EC – EU Battery Directive			
Mercury / Mercury Compounds	R	0.0005% Mercury w/w per battery	All batteries
Cadmium / Cadmium Compounds	R	0.002% Cadmium w/w per battery	All batteries
Other Banned Substances or Restricted Substances			
Bis(tributyltin)oxide (TBTO) (CAS# 56-35-9)	B	Intentionally added	Antiseptics for wood and mildew repellent; printing ink (May be present in packaging) (Note 4)
Cadmium / Cadmium Compounds (Note 1)	B	Intentionally added	Cadmium plating metallic products
Formaldehyde (CAS# 50-00-0)	B	Intentionally added	Composite Wood Products (May be present in packaging)
Fluorinated greenhouse gases (PFC, SF6, HFC)	B	Intentionally added	All
Ozone depleting substances (Note 1)	B	Intentionally added	All
Phenol,2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl) (CAS# 3846-71-7)	B	Intentionally added	All (May be present in packaging)
Polychlorinated terphenyls (PCTs) (CAS# 61788-33-8) including all isomers and congeners	R	Intentionally added	All (May be present in packaging)
Radioactive substances (Note 1)	B	Intentionally added	All
Hexabromocyclododecane (HBCDD) and all other major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD) (CAS# 25637-99-4, 3194-55-6 (134237-50-6) (134237-51-7) (134237-52-8))	B	Intentionally added or 0.01% by weight of articles	All (Note 7)
Bisphenol-A (CAS# 80-05-7)	B	Intentionally added	Thermal paper
Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST) (CAS# 68921-45-9)	B	Intentionally added	All, except as additive in rubber, except in tires
Red Phosphorus (CAS# 7723-14-0)	B	Intentionally added	Flame Retardant in plastic parts that contact a conductor.
Pentachlorophenol (PCP) (CAS# 87-86-5)	R	0.0005% by weight of homogenous material	All
PFOA and individual salts and esters (Note 1)	R	1000 ppm per component	All
Polychlorinated and polybrominated dioxins and furans (Note 1)	B	Intentionally added	All

7.2 Declarable Substances

Table 2 below specifies the chemical substances that must be declared by suppliers if the chemical substance is present above the specified threshold limits in parts and materials supplied to Elo. Declaration



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shall include information regarding the use and location of the chemical in the parts and materials supplied to Elo. Suppliers shall phase out the use of the chemicals listed in Table 2 if technically feasible.

Table 2. Chemical Substances that are Declarable

Substance Category	Category	Threshold Level	Application
China RoHS			
Cadmium / Cadmium Compounds (Note 1)	D	Intentionally added	Metallic coating
Chromium VI Compounds (Note 1)	D	Intentionally added	Metallic coating
Mercury / Mercury Compounds (Note 1)	D	Intentionally added	Metallic coating
Lead /Lead Compounds (Note 1)	D	Intentionally added	Metallic coating
EU REACH Candidate List SvHC (10/28/2008 Entry) (Note 8)			
Hexabromocyclododecane (HBCDD) (Note 1)	D	0.1% w/w per article	All (May be present in packaging)
Anthracene (CAS# 120-12-7)	D	0.1% w/w per article	All (May be present in packaging) (Note 4)
Alkanes, C10-C13, chloro (Short Chain Chlorinated Paraffins) (CAS# 85535-84-8)	D	0.1% w/w per article	All (May be present in packaging)
Dibutyl phthalate (DBP) (CAS# 84-74-2)	D	0.1% w/w per article	All (May be present in packaging) (Note 4)
Diarsenic pentaoxide (CAS# 1303-28-2)	D	0.1% w/w per article	All (May be present in packaging) (Note 4)
Dibutyl phthalate (DBP) (CAS# 84-74-2)	D	0.1% w/w per article	All (May be present in packaging)
Diarsenic pentaoxide (CAS# 1303-28-2)	D	0.1% w/w per article	All (May be present in packaging)
Diarsenic trioxide (CAS# 1327-53-3)	D	0.1% w/w per article	All (May be present in packaging)
Bis(tributyltin)oxide (TBTO) (CAS# 56-35-9)	D	0.1% w/w per article	All (May be present in packaging)
EU REACH Candidate List SvHC (01/13/2010 & 03/30/2010 Entry) (Note 8)			
Lead chromate (CAS# 7758-97-6)	D	0.1% w/w per article	All
Diisobutyl phthalate (CAS# 84-69-5)	D	0.1% w/w per article	All (May be present in packaging)
Tris(2-chloroethyl)phosphate (TCEP) (CAS# 115-96-8)	D	0.1% w/w per article	All (May be present in packaging)
Lead chromate molybdate sulphate red (C.I. Pigment Red 104) (CAS# 12656-85-8)	D	0.1% w/w per article	All
Lead sulfochromate yellow (C.I. Pigment Yellow 34) (CAS# 1344-37-2)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (06/18/2010 Entry) (Note 8)			
Potassium chromate (CAS# 7789-00-6)	D	0.1% w/w per article	All



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Disodium tetraborate, anhydrous (CAS# 1303-96-4, 1330-43-4, 12179-04-3)	D	0.1% w/w per article	All (May be present in packaging) (Note 4)
Sodium chromate (CAS# 7775-11-3)	D	0.1% w/w per article	All
Boric acid (CAS# 10043-35-3, 11113-50-1)	D	0.1% w/w per article	All (May be present in packaging) (Note 4)
Tetraboron disodium heptaoxide, hydrate (CAS# 12267-73-1)	D	0.1% w/w per article	All (May be present in packaging) (Note 4)
EU REACH Candidate List SvHC (12/15/2010 Entry) (Note 8)			
Cobalt(II) dinitrate (CAS# 10141-05-6)	D	0.1% w/w per article	All
Cobalt(II) carbonate (CAS# 513-79-1)	D	0.1% w/w per article	All
Acids generated from chromium trioxide and their oligomers. Group containing: Chromic acid (CAS# 7738-94-5); dichromic acid (CAS# 13530-68-2), or oligomers of chromic acid or oligomers of dichromic acid	D	0.1% w/w per article	All (May be present in packaging) (Note 4)
Chromium trioxide (CAS# 1333-82-0)	D	0.1% w/w per article	All (May be present in packaging) (Note 4)
2-Methoxyethanol (CAS# 109-86-4)	D	0.1% w/w per article	All
Cobalt(II) sulphate (CAS# 10124-43-3)	D	0.1% w/w per article	All
Cobalt (II) diacetate (CAS# 71-48-7)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (06/20/2011 Entry) (Note 8)			
2-Ethoxyethyl acetate (CAS# 111-15-9)	D	0.1% w/w per article	All
1,2,3-Trichloropropane (CAS# 96-18-4)	D	0.1% w/w per article	All
1-methyl-2-pyrrolidone (CAS# 872-50-4)	D	0.1% w/w per article	All
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP) (CAS# 68515-42-4)	D	0.1% w/w per article	All (May be present in packaging)
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (Diisheptyl phthalate DIHP) (CAS# 71888-89-6)	D	0.1% w/w per article	All (May be present in packaging)
Cobalt dichloride (CAS# 7646-79-9)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (12/29/2011 Entry) (Note 8)			
2,2'-dichloro-4,4'-methylenedianiline (CAS# 101-14-4)	D	0.1% w/w per article	All
Bis(2-methoxyethyl) ether (CAS# 111-96-6)	D	0.1% w/w per article	All
Bis(2-methoxyethyl) phthalate (CAS# 117-82-8)	D	0.1% w/w per article	All



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Formaldehyde, oligomeric reaction products with aniline (CAS# 25214-70-4)	D	0.1% w/w per article	All (May be present in packaging)
Potassium hydroxyoctaoxidizincatedichromate (CAS# 11103-86-9)	D	0.1% w/w per article	All
Arsenic acid (CAS# 7778-39-4)	D	0.1% w/w per article	All
Pentazinc chromate octahydroxide (CAS# 49663-84-5)	D	0.1% w/w per article	All
2-Methoxyaniline; o-Anisidine (CAS# 90-04-0)	D	0.1% w/w per article	All
Dichromium tris(chromate) (CAS# 24613-89-6)	D	0.1% w/w per article	All
4-(1,1,3,3-tetramethylbutyl)phenol (CAS# 140-66-9)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (06/18/2012 Entry) (Note 8)			
α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] (CAS# 6786-83-0)	D	0.1% w/w per article	All
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base) (CAS# 101-61-1)	D	0.1% w/w per article	All
1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β -TGIC) (CAS# 59653-74-6)	D	0.1% w/w per article	All
Diboron trioxide (CAS#1303-86-2)	D	0.1% w/w per article	All
4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] (CAS# 561-41-1)	D	0.1% w/w per article	All
Lead(II) bis(methanesulfonate) (CAS# 17570-76-2)	D	0.1% w/w per article	All
Formamide (CAS# 75-12-7)	D	0.1% w/w per article	All
[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] (CAS# 2580-56-5)	D	0.1% w/w per article	All
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	D	0.1% w/w per article	All



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1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC) (CAS# 2451-62-9)	D	0.1% w/w per article	All
4,4'-bis(dimethylamino)benzophenone (Michler's ketone) (CAS# 90-94-8)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (12/19/2012 Entry) (Note 8)			
Pyrochlore, antimony lead yellow (CAS# 8012-00-8)	D	0.1% w/w per article	All
6-methoxy-m-toluidine (p-cresidine) (CAS# 120-71-8)	D	0.1% w/w per article	All
Henicosafluoroundecanoic acid (CAS# 2058-94-8)	D	0.1% w/w per article	All
Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] <i>[The individual isomers [2], [3] and [4] (including their cis- and trans-stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]</i> (CAS# 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9)	D	0.1% w/w per article	All
Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] <i>[The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry]</i> (CAS# 85-42-7, 13149-00-3, 14166-21-3)	D	0.1% w/w per article	All
Dibutyltin dichloride (DBTC) (CAS# 683-18-1)	D	0.1% w/w per article	All
Lead bis(tetrafluoroborate) (CAS# 13814-96-5)	D	0.1% w/w per article	All
Lead dinitrate (CAS# 10099-74-8)	D	0.1% w/w per article	All
Silicic acid, lead salt (CAS# 11120-22-2)	D	0.1% w/w per article	All
4-Aminoazobenzene (CAS# 60-09-3)	D	0.1% w/w per article	All
Lead titanium zirconium oxide (CAS# 12626-81-2)	D	0.1% w/w per article	All
Lead monoxide (lead oxide) (CAS# 1317-36-8)	D	0.1% w/w per article	All
o-Toluidine (CAS# 95-53-4)	D	0.1% w/w per article	All
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine (CAS# 143860-04-2)	D	0.1% w/w per article	All

Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008] (CAS# 68784-75-8)	D	0.1% w/w per article	All
Trilead bis(carbonate)dihydroxide (CAS# 1319-46-6)	D	0.1% w/w per article	All
Furan (CAS# 110-00-9)	D	0.1% w/w per article	All
N,N-dimethylformamide (CAS# 68-12-2)	D	0.1% w/w per article	All
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]	D	0.1% w/w per article	All
4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	D	0.1% w/w per article	All
4,4'-methylenedi-o-toluidine (CAS# 838-88-0)	D	0.1% w/w per article	All
Diethyl sulphate (CAS# 64-67-5)	D	0.1% w/w per article	All
Dimethyl sulphate (CAS# 77-78-1)	D	0.1% w/w per article	All
Lead oxide sulfate (CAS# 12036-76-9)	D	0.1% w/w per article	All
Lead titanium trioxide (CAS# 12060-00-3)	D	0.1% w/w per article	All
Acetic acid, lead salt, basic (CAS# 51404-69-4)	D	0.1% w/w per article	All
[Phthalato(2-)]dioxotrilead (CAS# 69011-06-9)	D	0.1% w/w per article	All
Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE) (CAS# 1163-19-5)	D	0.1% w/w per article	All
N-methylacetamide (CAS# 79-16-3)	D	0.1% w/w per article	All
Dinoseb (6-sec-butyl-2,4-dinitrophenol) (CAS# 88-85-7)	D	0.1% w/w per article	All
1,2-Diethoxyethane (CAS# 629-14-1)	D	0.1% w/w per article	All
Tetralead trioxide sulphate (CAS# 12202-17-4)	D	0.1% w/w per article	All



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N-pentyl-isopentylphthalate (CAS# 776297-69-9)	D	0.1% w/w per article	All
Dioxobis(stearato)trilead (CAS# 12578-12-0)	D	0.1% w/w per article	All
Tetraethyllead (CAS# 78-00-2)	D	0.1% w/w per article	All
Pentalead tetraoxide sulphate (CAS# 12065-90-6)	D	0.1% w/w per article	All
Pentacosafuorotridecanoic acid (CAS# 72629-94-8)	D	0.1% w/w per article	All
Tricosafuorododecanoic acid (CAS# 307-55-1)	D	0.1% w/w per article	All
Heptacosafuorotetradecanoic acid (CAS# 376-06-7)	D	0.1% w/w per article	All
1-bromopropane (n-propyl bromide) (CAS# 106-94-5)	D	0.1% w/w per article	All
Methoxyacetic acid (CAS# 625-45-6)	D	0.1% w/w per article	All
4-methyl-m-phenylenediamine (toluene-2,4-diamine) (CAS# 95-80-7)	D	0.1% w/w per article	All
Methyloxirane (Propylene oxide) (CAS# 75-56-9)	D	0.1% w/w per article	All
Trilead dioxide phosphonate (CAS# 12141-20-7)	D	0.1% w/w per article	All
o-aminoazotoluene (CAS# 97-56-3)	D	0.1% w/w per article	All
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (CAS# 84777-06-0)	D	0.1% w/w per article	All
4,4'-oxydianiline and its salts (CAS# 101-80-4)	D	0.1% w/w per article	All
Orange lead (lead tetroxide) (CAS# 1314-41-6)	D	0.1% w/w per article	All
Biphenyl-4-ylamine (CAS# 92-67-1)	D	0.1% w/w per article	All
Diisopentylphthalate (CAS# 605-50-5)	D	0.1% w/w per article	All
Fatty acids, C16-18, lead salts (CAS# 91031-62-8)	D	0.1% w/w per article	All
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (CAS# 123-77-3)	D	0.1% w/w per article	All
Sulfurous acid, lead salt, dibasic (CAS# 62229-08-7)	D	0.1% w/w per article	All
Lead cyanamidate (CAS# 20837-86-9)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (06/21/2013 Entry) (Note 8)			
Cadmium (CAS# 7440-43-9)	D	0.1% w/w per article	All
Cadmium Oxide (CAS# 1306-19-0)	D	0.1% w/w per article	All
Ammonium pentadecafluorooctanoate (APFO) (CAS# 3825-26-1)	D	0.1% w/w per article	All



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Pentadecafluorooctanoic acid (PFOA) (CAS# 335-67-1)	D	0.1% w/w per article	All
Dipentyl phthalate (DPP) (CAS# 131-18-0)	D	0.1% w/w per article	All
4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (12/16/2013 Entry) (Note 8)			
Cadmium Sulfide (CAS# 1306-23-6)	D	0.1% w/w per article	All
Disodium 3,3'-[[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28) (CAS# 573-58-0)	D	0.1% w/w per article	All
Disodium 4-amino-3-[[[4'-[2,4-diaminophenyl]azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38) (CAS# 1937-37-7)	D	0.1% w/w per article	All
Dihexyl phthalate (CAS# 84-75-3)	D	0.1% w/w per article	All
Imidazolidine-2-thione (2-imidazoline-2-thiol) (CAS# 96-45-7)	D	0.1% w/w per article	All
Lead di(acetate) (CAS# 301-04-2)	D	0.1% w/w per article	All
Triethyl phosphate (CAS# 25155-23-1)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (06/16/2014 Entry) (Note 8)			
Cadmium chloride (CAS# 10108-64-2)	D	0.1% w/w per article	All
Sodium peroxometaborate (CAS# 7632-04-4)	D	0.1% w/w per article	All
Sodium perborate; perboric acid, sodium salt	D	0.1% w/w per article	All
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (CAS# 68515-50-4)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (12/17/2014 Entry) (Note 8)			
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320) (CAS# 3846-71-7)	D	0.1% w/w per article	All
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE) (CAS# 15571-58-1)	D	0.1% w/w per article	All
reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	D	0.1% w/w per article	All



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2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) (CAS# 25973-55-1)	D	0.1% w/w per article	All
Cadmium fluoride (CAS# 7790-79-6)	D	0.1% w/w per article	All
Cadmium sulphate (CAS# 10124-36-4,31119-53-6)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (06/15/2015 Entry) (Note 8)			
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate (CAS# 68515-51-5, 68648-93-1)	D	0.1% w/w per article	All
5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (12/17/2015 Entry) (Note 8)			
1,3-propanesultone (CAS# 1120-71-4)	D	0.1% w/w per article	All
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327) (CAS# 3864-99-1)	D	0.1% w/w per article	All
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350) (CAS# 36437-37-3)	D	0.1% w/w per article	All
Nitrobenzene (CAS# 98-95-3)	D	0.1% w/w per article	All
Perfluorononan-1-oic-acid and its sodium and ammonium salts (CAS# 375-95-1; 21049-39-8; 4149-60-4)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (06/20/2016 Entry) (Note 8)			
Benzo[def]chrysene (CAS# 50-32-8)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (01/12/2017 Entry) (Note 8)			
4,4'-isopropylidenediphenol (Bisphenol A / BPA) (CAS# 80-05-7)	D	0.1% w/w per article	All
4-heptylphenol, branched and linear (substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof)	D	0.1% w/w per article	All
Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts (CAS# 335-76-2)	D	0.1% w/w per article	All
p-(1,1-dimethylpropyl)phenol (CAS# 80-46-6)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (07/07/2017 Entry) (Note 8)			

Perfluorohexane-1-sulphonic acid and its salts (PFHxS)	D	0.1% w/w per article	All
EU REACH Candidate List SvHC (01/15/2018 Entry) (Note 8)			
Benz[a]anthracene (CAS# 56-55-3, 1718-53-2)	D	0.1% w/w per article	All
Cadmium carbonate (CAS# 513-78-0)	D	0.1% w/w per article	All
Cadmium hydroxide (CAS# 21041-95-2)	D	0.1% w/w per article	All
Cadmium nitrate (CAS# 10022-68-1, 10325-94-7)	D	0.1% w/w per article	All
Chrysene (CAS# 218-01-9, 1719-03-5)	D	0.1% w/w per article	All
Dodecachloropentacyclo[12.2.1.16.9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) (covering any of its individual anti- and syn-isomers or any combination thereof)	D	0.1% w/w per article	All
Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) (with ≥0.1% w/w 4-heptylphenol, branched and linear (4-HPbl))	D	0.1% w/w per article	All
Directive 2006/66/EC – Battery Directive			
Mercury / Mercury Compounds	D	0.0005% Mercury w/w per battery	All Batteries
Lead / Lead Compounds	D	0.004% Lead w/w per battery	All Batteries
Cadmium / Cadmium Compounds	D	0.002% Cadmium w/w per battery	All Batteries
Other Declarable Substances			
Lead /Lead Compounds (Note 1)	D	300 ppm	Surface coatings of cables/cords with thermoset or thermoplastic coatings
Antimony Trioxide (CAS# 1309-64-4)	D	.07% w/w per article	All
Perchlorates (Note 1)	D	0.0000006% by weight of product	All
Diisononyl phthalate (DiNP) (CAS# 28553-12-0, 68515-48-0)	D	Intentionally added	External Parts (e.g. external cables and mechanical enclosures)
Di-isodecyl phthalate (DIDP) (CAS# 68515-49-1, 26761-40-0)	D	Intentionally added	External Parts (e.g. external cables and mechanical enclosures)
Di-n-hexyl phthalate (DnHP) (CAS# 84-75-3)	D	Intentionally added	External Parts (e.g. external cables and mechanical enclosures)

7.3 Substances to Assess

Table 3 below specifies substances of concern that may be Restricted / Banned or Declarable if present in parts / materials supplied to Elo in the future.

Table 3. Chemical Substances of Concern

Substance Category	Category	Threshold Level	Application
Chlorine (CAS# 7782-50-5)	A	0.09% (w/w) of boards or laminates	printed circuit boards and substrate laminates
Bromine (CAS# 7726-95-6)	A	0.09% (w/w) of boards or laminates	printed circuit boards and substrate laminates

Chlorine (CAS# 7782-50-5)	A	0.1% (w/w) per plastic within component	Chlorinated Flame Retardants (Note 1) ; PVC; PVC Copolymers
Bromine (CAS# 7726-95-6)	A	0.1% (w/w) per plastic within component	Brominated Flame Retardants
Bromine + Chlorine (CAS# 8826-95-6; CAS# 7782-50-5)	A	1500 ppm contained in resin plus enforcement matrix	Non-halogenated epoxide with a glass transition temperature of 120°C minimum.
Beryllium oxide (BeO) (CAS# 1304-56-9)	A	0.1% (w/w) of product	Ceramics

7.4 EU RoHS Exemption List

Table 4 below lists out the EU RoHS Exemptions for specific applications that suppliers may claim in the case that EU RoHS substances are present above EU RoHS limits in the parts and materials they supply.

Table 4. EU RoHS Exemptions

#	Description	Scope and dates of applicability
1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):	
1(a)	For general lighting purposes < 30 W: 5 mg	2,5 mg shall be used per burner
1(b)	For general lighting purposes ≥ 30 W and < 50 W: 5 mg	3,5 mg may be used per burner
1(c)	For general lighting purposes ≥ 50 W and < 150 W: 5 mg	
1(d)	For general lighting purposes ≥ 150 W: 15 mg	
1(e)	For general lighting purposes with circular or square structural shape and tube diameter ≤ 17 mm	7 mg may be used per burner
1(f)	For special purposes: 5 mg	
2(a)	Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):	
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg	3,5 mg may be used per lamp
2(b)	Mercury in other fluorescent lamps not exceeding (per lamp):	
2(b)(2)	Non-linear halophosphate lamps (all diameters): 15 mg	Expires on 13 April 2016
2(b)(3)	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9)	15 mg may be used per lamp
2(b)(4)	Lamps for other general lighting and special purposes (e.g. induction lamps)	15 mg may be used per lamp
3	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):	
3(a)	Short length (≤ 500 mm)	3,5 mg may be used per lamp
3(b)	Medium length (> 500 mm and ≤ 1 500 mm)	5 mg may be used per lamp
3(c)	Long length (> 1 500 mm)	13 mg may be used per lamp
4(a)	Mercury in other low pressure discharge lamps (per lamp)	15 mg may be used per lamp
4(b)	Mercury in High Pressure Sodium (vapor) lamps for general lighting purposes not exceeding (per burner) in lamps with improved color rendering index Ra > 60:	
4(b)-I	P ≤ 155 W	30 mg may be used per burner
4(b)-II	155 W < P ≤ 405 W	40 mg may be used per burner
4(b)-III	P > 405 W	40 mg may be used per burner
4(c)	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):	

4(c)-I	$P \leq 155 \text{ W}$	25 mg may be used per burner
4(c)-II	$155 \text{ W} < P \leq 405 \text{ W}$	30 mg may be used per burner
4(c)-III	$P > 405 \text{ W}$	40 mg may be used per burner
4(d)	Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
4(e)	Mercury in metal halide lamps (MH)	
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	
5(a)	Lead in glass of cathode ray tubes	
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	
6(a)	Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight	
6(b)	Lead as an alloying element in aluminum containing up to 0,4 % lead by weight	
6(c)	Copper alloy containing up to 4 % lead by weight	
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	
7(c)-i	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	
7(c)-ii	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	
7(c)-iv	Lead in PZT based dielectric ceramic materials for capacitors which are part of integrated circuits or discrete semiconductors	Expires on 21 July 2016
8(b)	Cadmium and its compounds in electrical contacts	
9	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	
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	
13(a)	Lead in white glasses used for optical applications	
13(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 in linear incandescent lamps with silicate coated tubes	Expires on 1 September 2013
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
18(b)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi2O5:Pb)	
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive	



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	69/493/EEC (1)	
30	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	
31	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)	
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	
34	Lead in cermet-based trimmer potentiometer elements	
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	
39	Cadmium in colour converting II-VI LEDs (< 10 µg Cd per mm ² of light-emitting area) for use in solid state illumination or display systems	Expires on 1 July 2014
40	Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment	Expires on 31 December 2013

8.0 RESPONSIBILITIES

N/A

9.0 RETENTION OF QUALITY RECORDS

N/A



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10.0 APPENDIX A: List of applicable substances

Arsenic Compounds	
<u>Arsenic Compounds</u>	<u>CAS #</u>
Arsenic	7440-38-2
Chromated copper arsenate (CCA)	37337-13-6
Diarsenic pentoxide	1303-28-2
Diarsenic trioxide	1327-53-3
Triethyl arsenate	15606-95-8
Various - Other arsenic compounds	-

Asbestos	
<u>Asbestos</u>	<u>CAS #</u>
Asbestos	1332-21-4
Actinolite	77536-66-4
Amosite (Grunerite)	12172-73-5
Anthophyllite	77536-67-5
Chrysotile	12001-29-5 132207-32-0
Crocidolite	12001-28-4
Tremolite	77536-68-6

Azodyes and pigments	
<u>Aromatic Amines</u>	<u>CAS #</u>
Biphenyl-4-ylamine	92-67-1
Benzidine	92-87-5
4-chloro-o-toluidine	95-69-2
2-naphthylamine	91-59-8
o-aminoazotoluene	97-56-3
5-nitro-o-toluidine	99-55-8
4-chloroaniline	106-47-8
4-methoxy-m-phenylenediamine	615-05-4
4,4'-methylenedianiline	101-77-9
3,3'-dichlorobenzidine	91-94-1
3,3'-dimethoxybenzidine	119-90-4
3,3'-dimethylbenzidine	119-93-7
4,4'-methylenedi-o-toluidine	838-88-0
6-methoxy-m-toluidine	120-71-8
4,4'-methylene-bis(2-chloroaniline)	101-14-4
4,4'-oxydianiline	101-80-4
4,4'-thiodianiline	139-65-1
o-toluidine	95-53-4
4-methyl-m-phenylenediamine	95-80-7
2,4,5-trimethylaniline	137-17-7
o-anisidine	90-04-0
4-amino azobenzene	60-09-3

Brominated Flame Retardants (other than PBBs, PBDEs, or HBCDD)	
<u>Brominated Flame Retardants (other than PBBs, PBDEs, or HBCDD)</u>	<u>CAS #</u>



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Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(14) [Aliphatic/alicyclic brominated compounds]	-
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(15) [Aliphatic/alicyclic brominated compounds in combination with antimony compounds]	-
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(16) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls]	-
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(17) [Aromatic brominated compounds excluding brominated diphenyl ether and biphenyls) in combination with antimony compounds]	-
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(22) [Aliphatic/alicyclic chlorinated and brominated compounds]	-
Brominated flame retardant which comes under notation of ISO 1043-4 code number FR(42) [Brominated organic phosphorus compounds]	-
Poly(2,6-dibromo-phenylene oxide)	69882-11-7
Tetra-decabromo-diphenoxy-benzene	58965-66-5
1,2-Bis(2,4,6-tribromo-phenoxy)ethane	37853-59-1
3,5,3',5'-Tetrabromo-bisphenol A (TBBA)	79-94-7
TBBA, unspecified	30496-13-0
TBBA-epichlorhydrin oligomer	40039-93-8
TBBA-TBBA-diglycidyl-ether oligomer	70682-74-5
TBBA carbonate oligomer	28906-13-0
TBBA carbonate oligomer, phenoxy end capped	94334-64-2
TBBA carbonate oligomer, 2,4,6-tribromo-phenol terminated	71342-77-3
TBBA-bisphenol A-phosgene polymer	32844-27-2
Brominated epoxy resin end-capped with tribromophenol	139638-58-7
Brominated epoxy resin end-capped with tribromophenol	135229-48-0
TBBA-(2,3-dibromo-propyl-ether)	21850-44-2
TBBA bis-(2-hydroxy-ethyl-ether)	4162-45-2
TBBA-bis-(allyl-ether)	25327-89-3
TBBA-dimethyl-ether	37853-61-5
Tetrabromo-bisphenol S	39635-79-5
TBBS-bis-(2,3-dibromo-propyl-ether)	42757-55-1
2,4-Dibromo-phenol	615-58-7
2,4,6-tribromo-phenol	118-79-6
Pentabromo-phenol	608-71-9
2,4,6-Tribromo-phenyl-allyl-ether	3278-89-5
Tribromo-phenyl-allyl-ether, unspecified	26762-91-4
Bis(methyl)tetrabromo-phthalate	55481-60-2
Bis(2-ethylhexyl)tetrabromo-phthalate	26040-51-7
2-Hydroxy-propyl-2-(2-hydroxy-ethoxy)-ethyl-TBP	20566-35-2
TBPA, glycol-and propylene-oxide esters	75790-69-1



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N,N'-Ethylene-bis-(tetrabromo-phthalimide)	32588-76-4
Ethylene-bis(5,6-dibromo-norbornane-2,3-dicarboximide)	52907-07-0
2,3-Dibromo-2-butene-1,4-diol	3234-02-4
Dibromo-neopentyl-glycol	3296-90-0
Dibromo-propanol	96-13-9
Tribromo-neopentyl-alcohol	36483-57-5
Poly tribromo-styrene	57137-10-7

Cadmium/Cadmium Compounds	
<u>Cadmium/Cadmium Compounds</u>	<u>CAS #</u>
Cadmium	7440-43-9
Cadmium oxide	1306-19-0
Cadmium sulfide	1306-23-6
Cadmium chloride	10108-64-2
Cadmium sulfate	10124-36-4
Various - Other cadmium compounds	-

Chlorinated Fire Retardants (Note 9)	
<u>Chlorinated Fire Retardants</u>	<u>CAS #</u>
Tetrakis(2-chloroethyl)dichloroisopentyldiphosphate	38051-10-4
Tris(1-chloro-2-propyl)phosphate	13674-84-5
Tris(2,3-dichloro-1-propyl)phosphate	66108-37-0
Other Chlorinated Flame Retardants	-

Chromium (VI) Compounds	
<u>Chromium (VI) Compounds</u>	<u>CAS #</u>
Chromium (VI) oxide	1333-82-0
Barium chromate	10294-40-3
Calcium chromate	13765-19-0
Lead (II) chromate	7758-97-6
Lead chromate molybdate sulphate red	12656-85-8
Lead sulfochromate yellow	1344-37-2
Sodium chromate	7775-11-3
Sodium dichromate	10588-11-9
Strontium chromate	7778-06-2
Potassium dichromate	7778-50-9
Potassium chromate	7789-00-6
Zinc chromate	13530-65-9
Pentazinc chromate octahydroxide	49663-84-5
Potassium hydroxyoctaoxidizincatedichromate	11103-86-9
Various - Other chromium VI compounds	-

Dibutyltin Compounds (DBT)	
<u>Dibutyltin Compounds (DBT)</u>	<u>CAS #</u>
Dibutyltin oxide	818-08-6
Dibutyltin diacetate	1067-33-0
Dibutyltin dilaurate	77-58-7
Dibutyltin maleate	78-04-6
Various - Other dibutyltin compounds	-



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Diocetyl tin Compounds (DOT)	
<u>Diocetyl tin Compounds (DOT)</u>	<u>CAS #</u>
Diocetyl tin oxide	870-08-6
Diocetyl tin dilaurate	3648-18-8
Other diocetyl tin compounds	-

Disodium Tetraborate, Anhydrous	
<u>Disodium tetraborate, anhydrous</u>	<u>CAS #</u>
Disodium tetraborate decahydrate	1303-96-4
Disodium tetraborate, anhydrous	1330-43-4
Disodium tetraborate, pentahydrate	12179-04-3

Fluorinated Greenhouse Gases	
<u>Fluorinated Greenhouse Gases</u>	<u>CAS #</u>
Tetrafluoromethane (Carbon tetrafluoride, PFC-14)	75-73-0
Hexafluoroethane (PFC-116)	76-16-4
Octafluoropropane (PFC-218)	76-19-7
Decafluorobutane (PFC-31-10)	355-25-9
Dodecafluoropentane (PFC-41-12)	678-26-2
Tetradecafluorohexane (PFC-51-14)	355-42-0
Octafluorocyclobutane (PFC-c318)	115-25-3
Sulfur Hexafluoride (SF6)	2551-62-4
Trifluoromethane (HFC-23)	75-46-7
Difluoromethane (HFC-32)	75-10-5
Methyl fluoride (HFC-41)	593-53-3
2H,3H-Decafluoropentane (HFC-43-10mee)	138495-42-8
Pentafluoroethane (HFC-125)	354-33-6
1,1,2,2-Tetrafluoroethane (HFC-134)	359-35-3
1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2
1,1-Difluoroethane (HFC-152a)	75-37-6
1,1,2-Trifluoroethane (HFC-143)	430-66-0
1,1,1-Trifluoroethane (HFC-143a)	420-46-2
2H-Heptafluoropropane (HFC-227ea)	431-89-0
1,1,1,2,2,3-Hexafluoro-propane (HFC-236cb)	677-56-5
1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)	431-63-0
1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)	690-39-1
1,1,2,2,3-Pentafluoropropane (HFC-245ca)	679-86-7
1,1,1,3,3-Pentafluoropropane (HFC-245fa)	460-73-1
1,1,1,3,3-Pentafluorobutane (HFC-365mfc)	406-58-6

Hexabromocyclododecane (HBCDD) and all other major diastereoisomers	
<u>Hexabromocyclododecane (HBCDD) and all other major diastereoisomers</u>	<u>CAS #</u>
Hexabromocyclododecane (HBCDD)	25637-99-4
	3194-55-6
α-HBCDD	134237-50-6
β-HBCDD	134237-51-7
γ-HBCDD	134237-52-8



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Lead/lead Compounds	
<u>Lead / lead compounds</u>	<u>CAS #</u>
Lead	7439-92-1
Lead (II) sulfate	7446-14-2
Lead (II) carbonate	598-63-0
Lead (II) chromate	7758-97-6
Lead chromate molybdate sulphate red	12656-85-8
Lead hydrocarbonate	1319-46-6
Lead acetate	301-04-2
Lead (II) acetate, trihydrate	6080-56-4
Lead phosphate	7446-27-7
Lead selenide	12069-00-0
Lead (IV) oxide	1309-60-0
Lead (II,IV) oxide	1314-41-6
Lead (II) sulfide	1314-87-0
Lead (II) oxide	1317-36-8
Lead (II) carbonate basic	1319-46-6
Lead hydroxidcarbonate	1344-36-1
Lead hydrogen arsenate	7784-40-9
Lead (II) phosphate	7446-27-7
Lead sulfochromate yellow	1344-37-2
Lead (II) titanate	12060-00-3
Lead sulfate, sulphuric acid, lead salt	15739-80-7
Lead sulphate, tribasic	12202-17-4
Lead stearate	1072-35-1
Various - Other lead compounds	-

Mercury / Mercury Compounds	
<u>Mercury / Mercury Compounds</u>	<u>CAS #</u>
Mercury	7439-97-6
Mercuric chloride	33631-63-9
Mercury (II) chloride	7487-94-7
Mercuric sulfate	7783-35-9
Mercuric nitrate	10045-94-0
Mercuric (II) oxide	21908-53-2
Mercuric sulfide	1344-48-5
Various - Other mercury compounds	-

N,N'-Ditolyl-p-phenylenediamine, N-Tolyl-N'-xylyl-p-phenylenediamine, or N,N'-Dixylyl-p-phenylenediamine	
<u>N,N'-Ditolyl-p-phenylenediamine, N-Tolyl-N'-xylyl-p-phenylenediamine, or N,N'-Dixylyl-p-phenylenediamine</u>	<u>CAS #</u>
N,N'-Di-4-tolyl-1,4-phenylenediamine	620-91-7
N,N'-Di-2-tolyl-1,4-phenylenediamine	15017-02-4
N,N'-Di-2-tolyl-1,4-phenylenediamine	15017-02-4
N,N'-Di-2-tolyl-1,4-phenylenediamine	15017-02-4
N,N'-Ditolyl-1,4-phenylenediamine	27417-40-9
N,N'-Ditolyl-1,4-phenylenediamine	27417-40-9



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N,N'-Ditolyl-1,4-phenylenediamine	27417-40-9
N,N'-Bis(dimethylphenyl)-1,4-phenylenediamine	28726-30-9
N-(Dimethylphenyl)-N'-tolyl-1,4-phenylenediamine	70290-05-0

Ozone Depleting Substances	
<u>Ozone depleting substances including its isomers</u>	CAS #
Trichlorofluoromethane (CFC-11)	75-69-4
Dichlorodifluoromethane (CFC-12)	75-71-8
1,1,2-Trichlorotrifluoroethane (CFC-113)	76-13-1
Dichlorotetrafluoroethane (CFC-114)	76-14-2
Monochloropentafluoroethane (CFC-115)	76-15-3
Bromochlorodifluoromethane (Halon 1211)	353-59-3
Bromotrifluoromethane (Halon 1301)	75-63-8
Dibromotetrafluoroethane (Halon 2402)	124-73-2
Chlorotrifluoromethane (CFC-13)	75-72-9
Pentachlorofluoroethane (CFC-111)	354-56-3
Tetrachlorodifluoroethane (CFC-112)	76-12-0
Heptachlorofluoropropane (CFC-211)	422-78-6
Hexachlorodifluoropropane (CFC-212)	3182-26-1
Pentachlorotrifluoropropane (CFC-213)	2354-06-5
Tetrachlorotetrafluoropropane (CFC-214)	29255-31-0
Trichloropentafluoropropane (CFC-215)	4259-43-2
Dichlorohexafluoropropane (CFC-216)	661-97-2
Chloroheptafluoropropane (CFC-217)	422-86-6
Carbon tetrachloride	56-23-5
1,1,1-trichloroethane (does not pertain to 1,1,2-trichloroethane)	71-55-6
Methyl Bromide	74-83-9
Dichlorofluoromethane (HCFC-21)	75-43-4
Monochlorodifluoromethane (HCFC-22)	75-45-6
Monochlorofluoromethane (HCFC-31)	593-70-4
Tetrachlorofluoroethane (HCFC-121)	354-14-3
Trichlorodifluoroethane (HCFC-122)	354-21-2
Dichlorotrifluoroethane (HCFC-123)	306-83-2
Monochlorotetrafluoroethane (HCFC-124)	2837-89-0
Trichlorofluoroethane (HCFC-131)	359-28-4
Dichlorodifluoroethane (HCFC-132b)	1649-08-7
Monochlorotrifluoroethane (HCFC-133a)	75-88-7
Dichlorofluoroethane (HCFC-141b)	1717-00-6
Monochlorodifluoroethane (HCFC-142b)	75-68-3
Hexachlorofluoropropane (HCFC-221)	422-26-4
Pentachlorodifluoropropane (HCFC-222)	422-49-1
Tetrachlorotrifluoropropane (HCFC-223)	422-52-6
Trichlorotetrafluoropropane (HCFC-224)	422-54-8
Dichloropentafluoropropane (HCFC-225ca)	422-56-0
Dichloropentafluoropropane (HCFC-225cb)	507-55-1
Monochlorohexafluoropropane (HCFC-226)	431-87-8
Pentachlorofluoropropane (HCFC-231)	421-94-3
Tetrachlorodifluoropropane (HCFC-232)	460-89-9



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Trichlorotrifluoropropane (HCFC-233)	7125-84-0
Dichlorotetrafluoropropane (HCFC-234)	425-94-5
Monochloropentafluoropropane (HCFC-235)	460-92-4
Tetrachlorofluoropropane (HCFC-241)	666-27-3
Trichlorodifluoropropane (HCFC-242)	460-63-9
Dichlorotrifluoropropane (HCFC-243)	460-69-5
Monochlorotetrafluoropropane (HCFC-244)	679-85-6
Monochlorotetrafluoropropane (HCFC-251)	421-41-0
Dichlorodifluoropropane (HCFC-252)	819-00-1
Monochlorotrifluoropropane (HCFC-253)	460-35-5
Dichlorofluoropropane (HCFC-261)	420-97-3
Monochlorodifluoropropane (HCFC-262)	421-02-03
Monochlorofluoropropane (HCFC-271)	430-55-7
Dibromofluoromethane	-
Bromodifluoromethane	-
Bromofluoromethane	-
Tetrabromofluoroethane	-
Tribromodifluoroethane	-
Dibromotrifluoroethane	-
Bromotetrafluoroethane	-
Tribromofluoroethane	-
Dibromodifluoroethane	-
Bromotrifluoroethane	-
Dibromofluoroethane	-
Bromodifluoroethane	-
Bromofluoroethane	-
Hexabromofluoropropane	-
Pentabromodifluoropropane	-
Tetrabromotrifluoropropane	-
Tribromotetrafluoropropane	-
Dibromopentafluoropropane	-
Bromohexafluoropropane	-
Pentabromofluoropropane	-
Tetrabromodifluoropropane	-
Tribromotrifluoropropane	-
Dibromotetrafluoropropane	-
Bromopentafluoropropane	-
Tetrabromofluoropropane	-
Tribromodifluoropropane	-
Dibromotrifluoropropane	-
Bromotetrafluoropropane	-
Tribromofluoropropane	-
Dibromodifluoropropane	-
Bromotrifluoropropane	-
Dibromofluoropropane	-
Bromodifluoropropane	-
Bromofluoropropane	-



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Perchlorates	
Perchlorate	CAS #
Lithium perchlorate	7791-03-9
Various - Other perchlorate compounds	-

Perfluorooctane Sulfonate (PFOS)	
Perfluorooctane sulfonate (PFOS)	CAS #
Perfluoro(octane-1-sulfonic acid)	1763-23-1
Potassium perfluorooctane-1-sulfonate	2795-39-3
Sodium perfluoro(octane-1-sulfonate)	4021-47-0
Ammonium perfluorooctane-1-sulfonate	29081-56-9
Lithium perfluorooctane-1-sulfonate	29457-72-5
Tetraethylammonium perfluorooctane-1-sulfonate	56773-42-3
Compound of 2,2'-iminodiethanol and perfluorooctane-1-sulfonic acid (1:1)	70225-14-8
Piperidin-1-ium perfluorooctane-1-sulfonate	71463-74-6
Magnesium bis(perfluorooctane-1-sulfonate)	91036-71-4
Didecan-1-yl(dimethyl)ammonium perfluorooctane-1-sulfonate	251099-16-8
Various - Other PFOS	-

Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	
Perfluorooctanoic acid (PFOA) and individual salts and esters of PFOA	CAS #
Perfluorooctanoic acid	335-67-1
Ammoniumpentadecafluorootanoate	3825-26-1
Sodiumpentadecafluorootanoate	335-95-5
Potassiumpentadecafluorootanoate	2395-00-8
Silverpentadecafluorootanoate	335-93-3
Pentadecafluorooctanoylfluorid	335-66-0
Methyl pentadecafluorooctanoate	376-27-2
Ethyl pentadecafluorooctanoate	3108-24-5

Polybrominated Biphenyls (PBB)	
Polybrominated Biphenyls (PBB)	CAS #
Polybrominated Biphenyls	59536-65-1
Dibromobiphenyl	92-86-4
2-Bromobiphenyl	2052-07-5
3-Bromobiphenyl	2113-57-7
4-Bromobiphenyl	92-66-0
Tribromobiphenyl	59080-34-1
Tetrabromobiphenyl	40088-45-7
Pentabromobiphenyl	56307-79-0
Hexabromobiphenyl	59080-40-9
Hexabromo-1,1-biphenyl	36355-01-8
Firemaster FF-1	67774-32-7
Heptabromobiphenyl	35194-78-6
Octabromobiphenyl	61288-13-9
Nonabromobiphenyl	27753-52-2



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Decabromobiphenyl	13654-09-6
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Polybrominated Diphenyl Ethers (PBDEs)	
Polybrominated Diphenyl Ethers (PBDEs)	CAS #
Bromodiphenyl ether	101-55-3
Dibromodiphenyl ether	2050-47-7
Tribromodiphenyl ether	49690-94-0
Tetrabromodiphenyl ether	40088-47-9
Pentabromodiphenyl ether (note: Commercially available PeBDPO is a complex reaction mixture containing a variety of brominated diphenyloxides.	32534-81-9 (CAS# used for commercial grades of PeBDPO)
Hexabromodiphenyl ether	36483-60-0
Heptabromodiphenyl ether	68928-80-3
Octabromodiphenyl ether	32536-52-0
Nonabromodiphenyl ether	63936-56-1
Decabromodiphenyl ether	1163-19-5

Polychlorinated Biphenyls (PCBs)	
Polychlorinated Biphenyls (PCBs)	CAS #
Polychlorinated Biphenyls (all isomers and congeners)	1336-36-3
Monomethyl-tetrachloro-diphenyl methane (Ugilec 141)	76253-60-6
Monomethyl-dichloro-diphenyl methane (Ugilec 121, Ugilec 21)	81161-70-8
Monomethyl-dibromo-diphenyl methane (DBBT)	99688-47-8

Polychlorinated and polybrominated dioxins and furans	
Polychlorinated and polybrominated dioxins and furans	CAS #
2,3,7,8-Tetra-CDD	1746-01-6
1,2,3,4,6,7,8,9-Octa-CDD	3268-87-9
1,2,3,7,8-Penta-CDD	40321-76-4
1,2,3,4,6,7,8-Hepta-CDF	67562-39-4
2,3,7,8-Tetra-CDF	51207-31-9
1,2,3,4,7,8,9-Hepta-CDF	55673-89-7
2,3,4,7,8-Penta-CDF	57117-31-4
1,2,3,4,6,7,8,9-Octa-CDF	39227-28-6
1,2,3,4,7,8-Hexa-CDD	39001-02-0
2,3,7,8-Tetra-BDD	50585-81-6
1,2,3,7,8,9-Hexa-CDD	19408-74-3
1,2,3,7,8-Penta-BDD	109333-34-8
1,2,3,6,7,8-Hexa-CDD	57653-85-7
2,3,7,8-Tetra-BDF	67733-57-7
1,2,3,7,8-Penta-CDF	57117-41-6
2,3,4,7,8-Penta-BDF	131166-92-2
1,2,3,4,7,8-Hexa-CDF	70648-26-9
1,2,3,4,7,8-Hexa-BDD	110999-44-5
1,2,3,7,8,9-Hexa-CDF	72918-21-9
1,2,3,7,8,9-Hexa-BDD	110999-46-7



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1,2,3,6,7,8-Hexa-CDF	57117-44-9
1,2,3,6,7,8-Hexa-BDD	110999-45-6
2,3,4,6,7,8-Hexa-CDF	60851-34-5
1,2,3,7,8-Penta-BDF	109333-34-8
1,2,3,4,6,7,8-Hepta-CDD	35822-46-9

Polychlorinated Naphthalenes	
Polychlorinated Naphthalenes	CAS #
Polychlorinated Naphthalenes	70776-03-3
Other polychlorinated naphthalenes	-

Polycyclic-aromatic hydrocarbons (PAH)	
Polycyclic-aromatic hydrocarbons (PAH)	CAS #
Benzo[a]pyrene (BaP)	50-32-8
Benzo[e]pyrene (BeP)	192-97-2
Benzo[a]anthracene (BaA)	56-55-3
Chrysen (CHR)	218-01-9
Benzo[b]fluoranthene (BbFA)	205-99-2
Benzo[j]fluoranthene BjFA	205-82-3
Banzo[k]fluoranthene (BkFA)	207-08-9

Radioactive Substances	
Radioactive Substances	CAS #
Uranium-238	7440-61-1
Radon	10043-92-2
Americium-241	14596-10-2
Thorium-232	7440-29-1
Cesium-137	10045-97-3
Strontium-90	10098-97-2
Various - Other radioactive substances	-

Shortchain Chlorinated Paraffins (C10-C13)	
Shortchain chlorinated paraffins (C10-C13)	CAS #
Alkanes, C10-13, chloro	85535-84-8
Alkanes, C10-12, chloro	108171-26-2
Alkanes, C12-13, chloro	71011-12-6
Alkanes, chloro	61788-76-9
Various - Other Short Chain Chlorinated Paraffins	-

Tri-Substituted Organostannic compounds	
Tri-substituted organostannic compounds	CAS #
Triphenyltin-N, N-dimethyldithiocarbamate	1803-12-9
Triphenyltinfluoride	379-52-2
Triphenyltinacetate	900-95-8
Triphenyltinchloride	639-58-7
Triphenyltinhydroxide	76-87-9
Triphenyltin fattyacid((9-11)salt)	18380-71-7
	18380-72-8
	47672-31-1

	94850-90-5
Triphenyltinchloroacetate	7094-94-2
Tributyltinmethacrylate	2155-70-6
Bis(tributyltin)fumalate	6454-35-9
Tributyltinfluoride	1983-10-4
Bis(tributyltin)2,3-dibromosuccinate	31732-71-5
Tributyltinacetate	56-36-0
Tributyltinlaurate	3090-36-6
Bis(tributyltin)phthalate	4782-29-0
Copolymer of alkyl (c=8) acrylate, methyl methacrylate and tributyltin methacrylate	67772-01-4
Tributyltinsulfamate	6517-25-5
Bis(tributyltin)maleate	14275-57-1
Tributyltinchloride	1461-22-9
	7342-38-3
Tributyltin cyclopentane carbonate = mixture	85409-17-2
Tributyltin-1,2,3,4,4a,4b,5,6,10,10a-decahydro-7-isopropyl-1,4a-dimethyl-1-phenanthrenecarboxylatemix	26239-64-5
Various - Other tri-substituted organostannic compounds	-

11.0 NOTES

1. Refer to Appendix A for list of applicable chemical substances
2. Refer to Table 2. for list of applicable RoHS exemptions
- 3 EU Commission delegated Directive 2015/863 of 31 March 2015 amends Directive 2011/65/EU by adding DEHP, BBP, DBP, and DIBP to the list of EU RoHS restricted substances. These new substance restrictions will apply from 22 July 2019 for Elo products. Elo asks that suppliers phase out by 31 December 2016.
4. This substance may be used for wood preservation and may be found in wood pallets used for shipment or in wood packaging. Since wood pallets used to transport products to Elo may be reused to transport Elo products to customers, all wooden pallets shall conform to the requirements specified herein. Under REACH, packaging and wood pallets are be considered as articles, and thus when REACH Candidate List SvHC (Substances of Very High Concern) are present in packaging above the 0.1% limit, suppliers shall notify Elo accordingly.
5. The listed PAH are restricted per EU REACH Annex XVII and shall not be present above 0.00001% by weight of rubber or plastic components that will come in direct contact with end users. This restriction will come into force on December 27, 2015. Elo asks that suppliers phase out by June 01, 2015 the use of these regulated PAH above specified threshold limit in products to be supplied to Elo to ensure regulatory compliance of Elo products.
6. On June 13, 2017, the EU Commission updated EU REACH Annex XVII Restriction List to include restriction on Perflurooctanoid acid and its salts. From July 4, 2020, 1) PFOA and its salts shall not be present in concentrations equal to or greater than 25 ppb in any part of an article, and 2) PFOA-related substances shall not be present in concentrations equal to or greater than 100 ppb in any part of an article. Elo asks that suppliers phase out comply with new requirements by January 1, 2020.
7. On May 2, 2013, a decision was made to add HBCDD to Annex A of the Stockholm Convention on Persistent Organic Pollutants. As this amendment to the Stockholm Convention will enter into force on November 26, 2014, Elo asks that suppliers phase out by November 26, 2014 the use of HBCDD in products to be supplied to Elo.
- 8 In September 2015, the European Court of Justice held that EU importers notify and communicate to their customers when the product they import is or contains an article that contain a substance listed in the EU REACH SVHC Candidate List above 0.1% by weight of the article. Starting on Febuary 01, 2016, Elo suppliers shall investigate presence of EU REACH SVHC Candidate List in products supplied to Elo not only on the product level,



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but on the component level. For example, if a REACH Candidate List SVHC is present above 0.1% by weight of a resistor or transducer contained in a monitor supplied to Elo, the monitor supplier will need to notify Elo of the presence of the Candidate List SVHC in the resistor or transducer, even if the Candidate List SVHC are not present in the monitor above 0.1% by weight of the monitor.

9. Regulated chlorinated flame retardants are not listed in the Chlorinated Fire Retardant table above and are listed in separate tables. Example: Short-chain chlorinated paraffin and TCEP, etc.