Compliance & Risks

Webinar

Regulatory Trends Impacting Electronic Components

12th March, 2025

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Meet the Team

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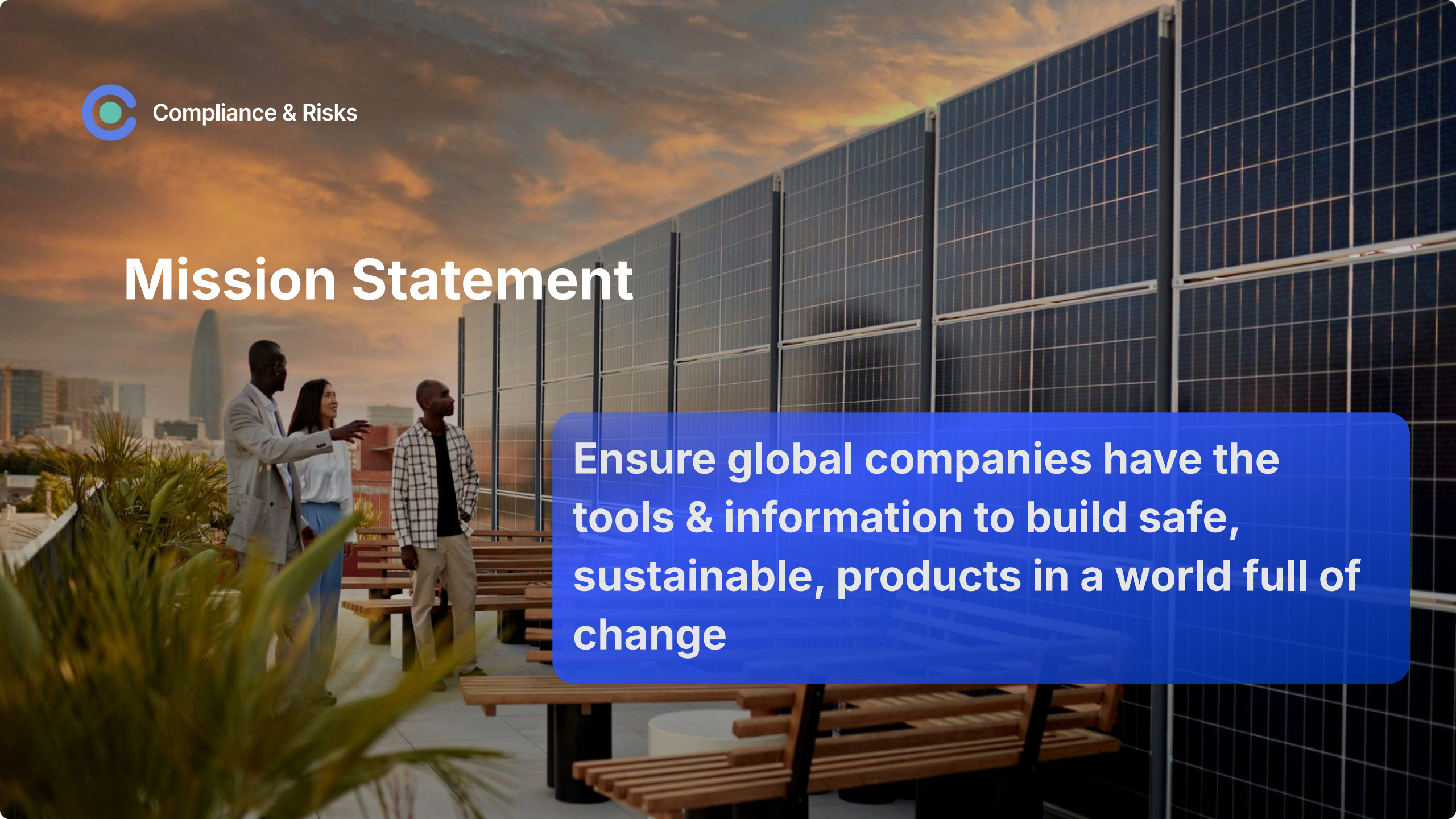
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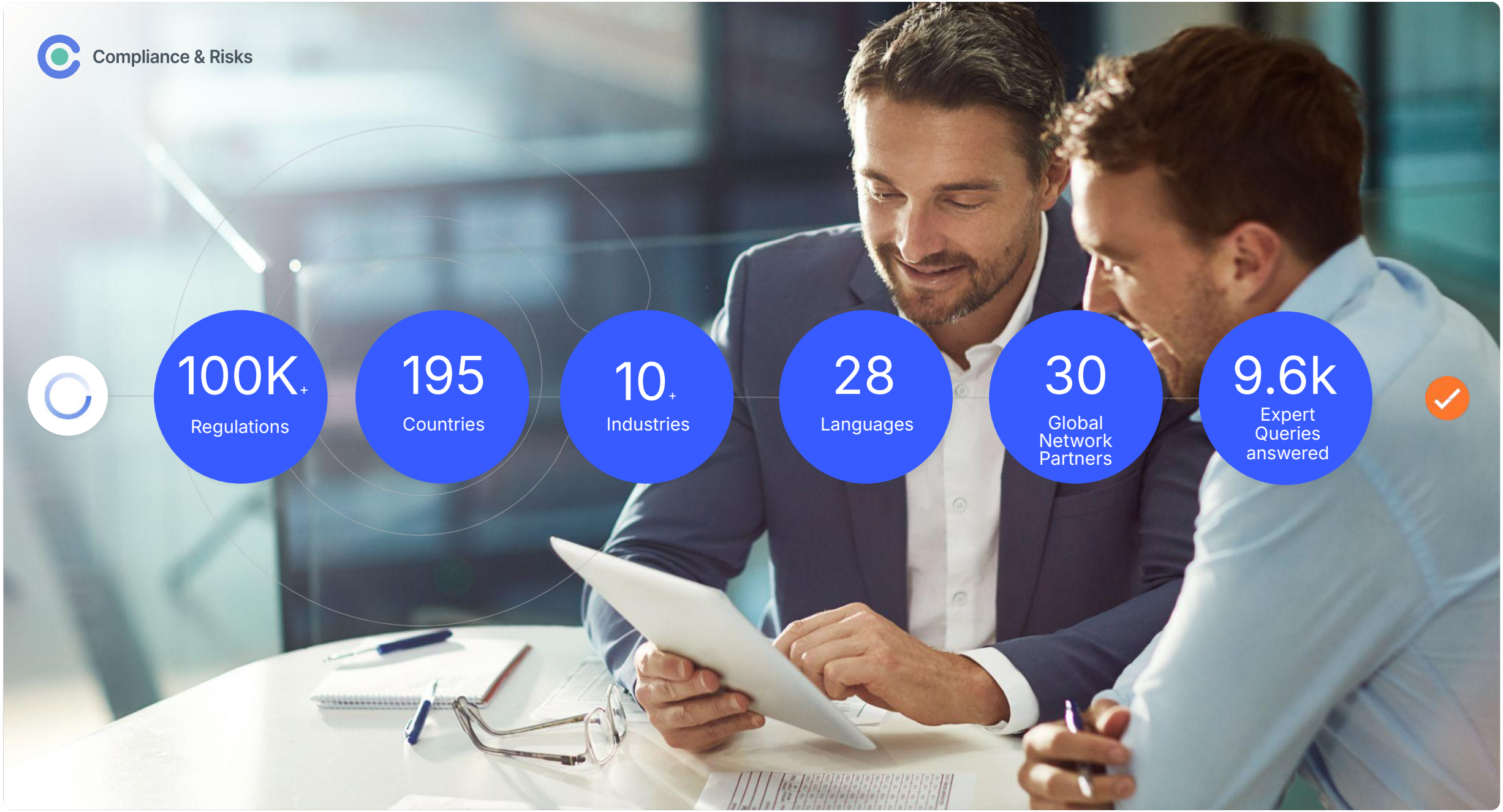

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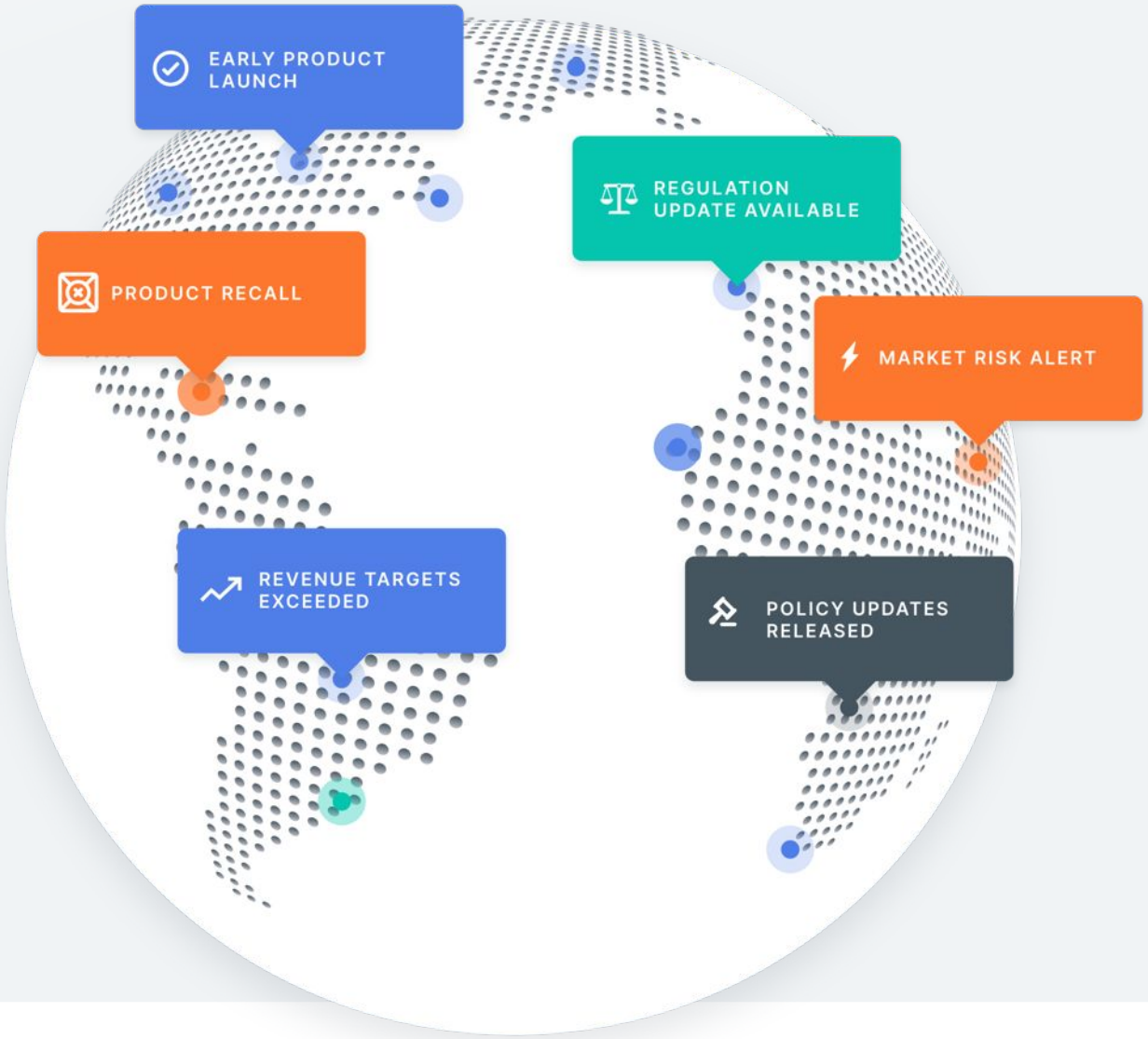

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Regulatory Trends Impacting the Electronic Components

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Agenda

1. Proposed amendments to the EU RoHS Directive 2011/65/EU
2. China RoHS Standard Amendment as regards the addition of 4 phthalates
3. Overview of California Proposition 65
4. Overview of Global PFAS Regulations

RoHS Directive 2011/65/EU Proposed Amendments

Proposed RoHS Amendment as regards an exemption for lead as an alloying element in steel, aluminium and copper (proposed in January 2025)

- **6(a)** Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight
  *Expires [**12 months after entry into force of the Delegated Directive**]*

- **6(a)-I** Lead as an alloying element in steel for machining purposes containing up to 0,35% lead by weight*
  *Expires on **31 December 2026** for all categories*

- **6(a)-II** Lead as an alloying element in batch hot-dip galvanised steel components containing up to 0,2% lead by weight*
  *Expires on **31 December 2026** for all categories*

- **6(b)** Lead as an alloying element in aluminium containing up to 0,4% lead by weight
  *Expires [**12 months after entry into force of the Delegated Directive**]*

RoHS Directive 2011/65/EU Proposed Amendments

Proposed RoHS Amendment as regards an exemption for lead as an alloying element in steel, aluminium and copper (proposed in January 2025)

- **6(b)-I** Lead as an alloying element in aluminium containing up to 0,4% lead by weight, provided it stems from lead-bearing aluminium scrap recycling

  *Expires [**12 months after the entry into force of the Delegated Directive**] for categories 1-7, 10*
  *Expires on **31 December 2026** for categories 9 industrial monitoring and control instruments, and 11*

- 6(b)-II Lead as an alloying element in aluminium for machining purposes with a lead content up to 0,4% by weight*

  *Expires [**18 months after the entry into force of the Delegated Directive**] for categories 1-7, 10*
  *Expires on **31 December 2026** for categories 9 (industrial monitoring and control instruments) and 11**

RoHS Directive 2011/65/EU Proposed Amendments

Proposed RoHS Amendment as regards an exemption for lead as an alloying element in steel, aluminium and copper (proposed in January 2025)

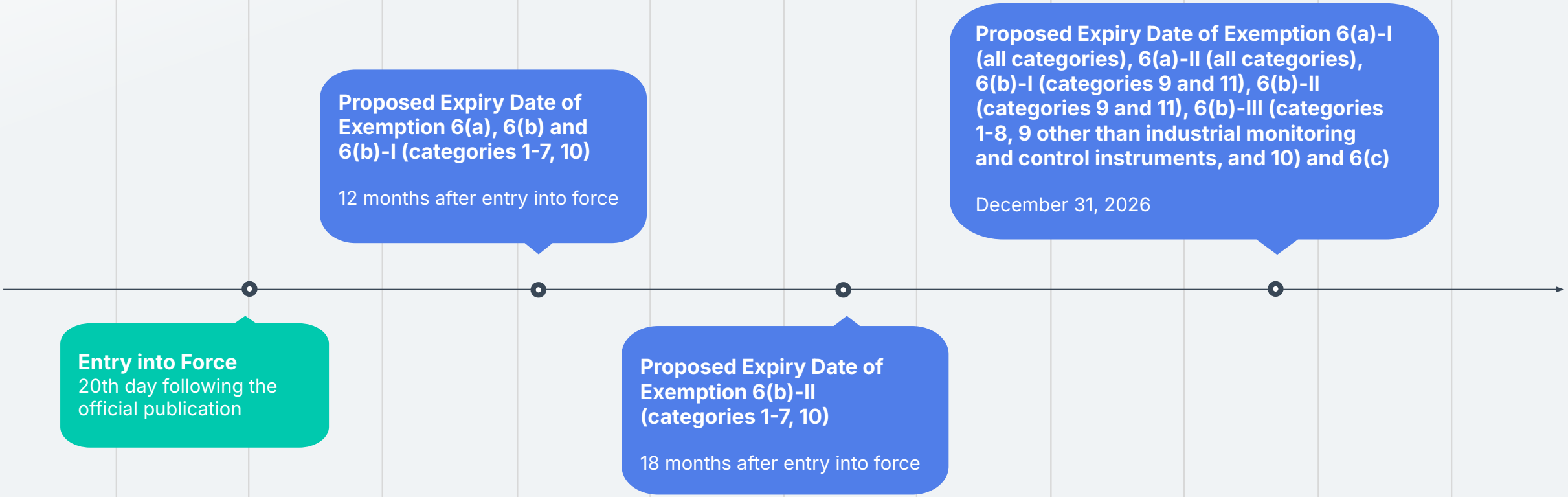
- **6(b)-III** Lead as an alloying element in aluminium casting alloys containing up to 0,3% lead by weight provided it stems from lead-bearing aluminium scrap recycling*
  *Expires on **31 December 2026** for categories 1-8, 9 other than industrial monitoring and control instruments, and 10*
- **6(c) Copper alloy containing up to 4% lead by weight***
  *Expires on **31 December 2026***

*** The exemption shall apply where the following can be both demonstrated**:

- The rate of lead release from such an EEE or any accessible part, whether coated or uncoated, does not exceed 0,05 µg/cm2 per hour (equivalent to 0,05 µg/g/h),
- For coated articles, that the coating is sufficient to ensure that this release rate is not exceeded for a period of at least two years of normal or reasonably foreseeable conditions of use of the EEE.

Timeline

Proposed RoHS Amendment as regards an exemption for lead as an alloying element in steel, aluminium and copper



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RoHS Directive 2011/65/EU Proposed Amendments

Proposed RoHS Amendment as regards an exemption for lead in high melting temperature solders (proposed in January 2025)

- Internal interconnections in EEE;
- Integral connections of die attach in EEE components;
- Integral connections for components other than die to be mounted on sub-assemblies (first level solder joints);
- Second level solder joints for the attachment of components to printed circuit board or lead frames;
- Hermetic sealing materials;
- Lead-containing high melting temperature type solders in certain lamps;
- Audio transducers.

RoHS Directive 2011/65/EU Proposed Amendments

Proposed RoHS Amendment as regards an exemption for lead in high melting temperature solders (proposed in January 2025)

Expiry date of **31 December 2026**: Exemption for lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead) for all categories (except applications covered by point 24 of the Annex).

Expiry date of **31 December 2027**: Exemption for lead in high melting temperature type solders (i.e., lead-based alloys containing 85% by weight or more lead) for:

- Internal interconnections for attaching die, or other components along with a die in semiconductor assembly with steady state or transient/impulse currents of 0.1 A or greater or blocking voltages beyond 10 V, or die edge sizes larger than 0.3 mm x 0.3 mm;

RoHS Directive 2011/65/EU Proposed Amendments

Proposed RoHS Amendment as regards an exemption for lead in high melting temperature solders (proposed in January 2025)

- For integral (meaning internal and external) connections of die attach in electrical and electronic components, if all the following conditions are met:
  - The thermal conductivity of the cured/sintered die attach material is >35W/(m*K),
  - The electrical conductivity of the cured/sintered die attach material is >4.7MS/m ,
  - Solidus melting temperature is higher than 260°C.
- In first level solder joints (internal or integral connections - meaning internal and external) for manufacturing components so that subsequent mounting of electronic components onto subassemblies (i.e. modules, sub-circuit boards, substrates, or point-to-point soldering) with a secondary solder does not reflow the first level solder;

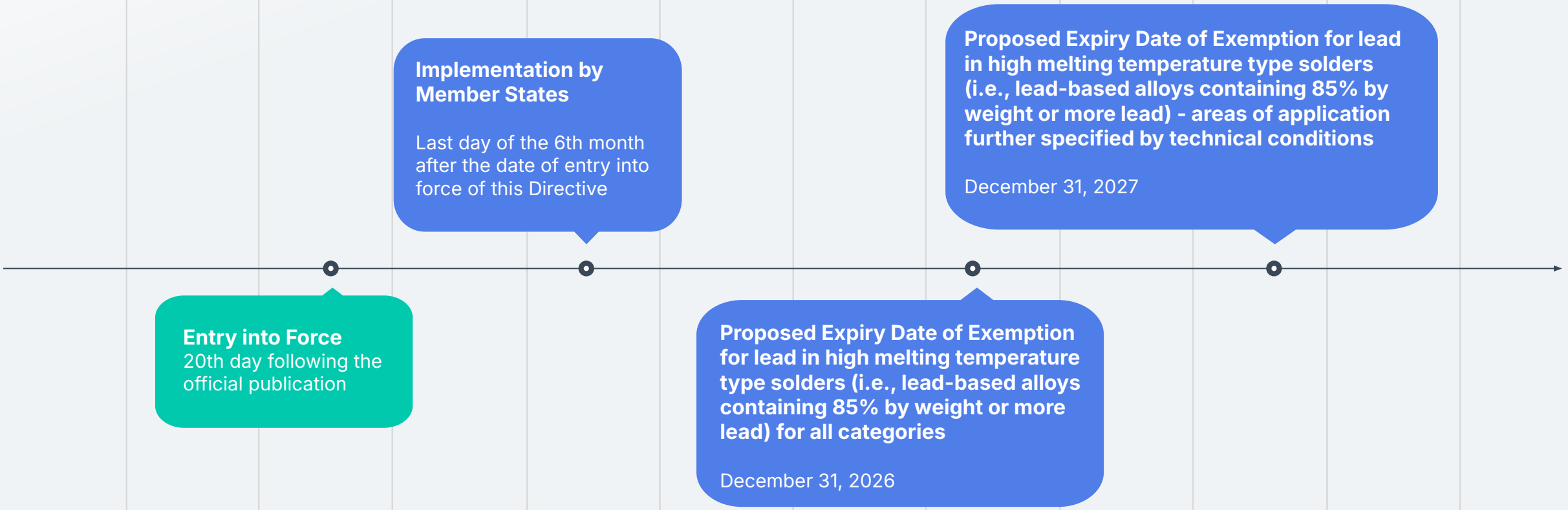
RoHS Directive 2011/65/EU Proposed Amendments

Proposed RoHS Amendment as regards an exemption for lead in high melting temperature solders (proposed in January 2025)

- In second level solder joints for the attachment of components to printed circuit board or lead frames:
  - In solder balls for the attachment of ceramic ball-grid-array (BGA)
  - In high temperature plastic overmouldings (> 220 °C)
- As a hermetic sealing material between:
  - A ceramic package or plug and a metal case
  - Component terminations and an internal sub-part
- For establishing electrical connections between lamp components in incandescent reflector lamps for infrared heating, high intensity discharge lamps, or oven lamps
- Audio transducers where the peak operating temperature exceeds 200°C

Timeline

Proposed RoHS Amendment as regards an exemption for lead in high melting temperature solders



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RoHS Directive 2011/65/EU Proposed Amendments

Proposed RoHS Amendment as regards an exemption for lead in glass or ceramic components (proposed in January 2025)

Expiry date of **31 December 2026**:

- **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

Expiry date of **31 December 2027**:

- **7(c)-II Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher excluding applications covered by point 7(c)-I or 7(c)-IV.**
- **7(c)-V** Electrical and electronic components containing lead in a glass or glass matrix compound that fulfils any of the following functions:
    - For protection and electrical insulation in glass beads of high-voltage diodes and glass layers for wafers on the basis of a lead-zinc-borate or a lead-silica-borate glass body;

RoHS Directive 2011/65/EU Proposed Amendments

Proposed RoHS Amendment as regards an exemption for lead in glass or ceramic components (proposed in January 2025)

- For hermetic sealing between ceramic, metal and/or glass parts;
- **For bonding purposes in a process parameter window for < 500 °C combined with a viscosity of 1013.3 dPas ('glass-transition temperature')**;
- For use as a resistive material such as ink, with a resistivity range from 1 ohm/square to 1 megohm/square, excluding trimmer potentiometers;
- **For use in chemically modified glass surfaces for microchannel plates (MCPs), channel electron multipliers (CEMs) and resistive glass products (RGPs)**.

RoHS Directive 2011/65/EU Proposed Amendments

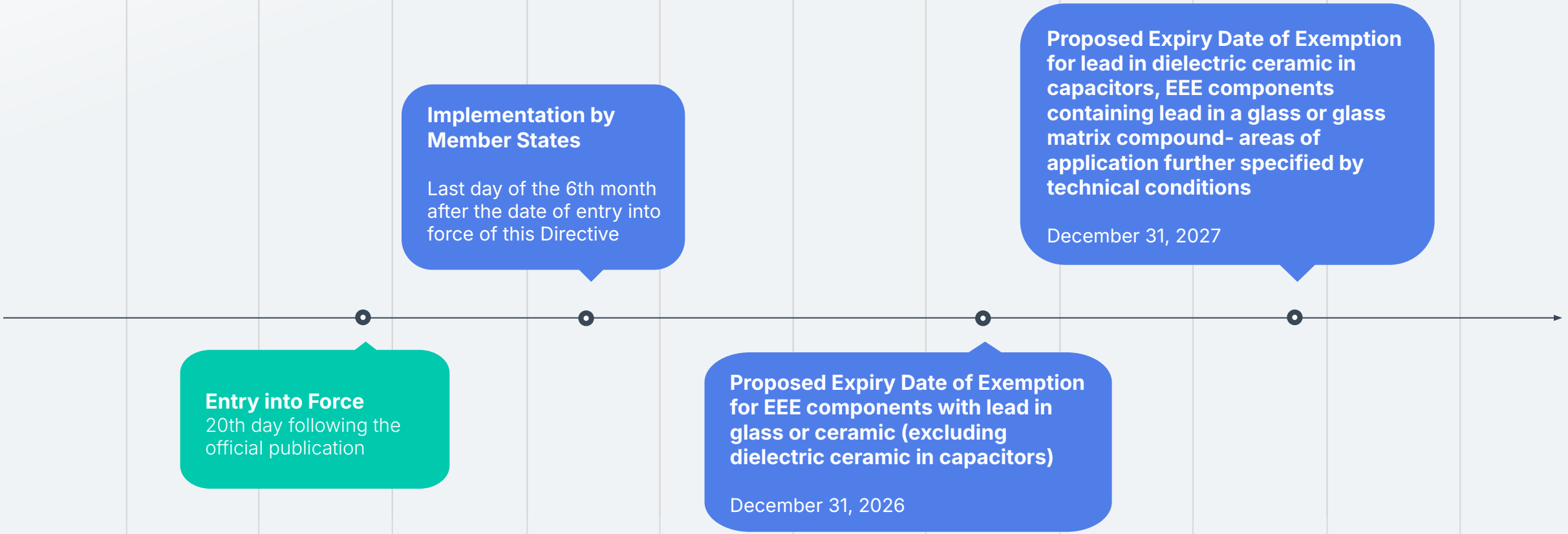
Proposed RoHS Amendment as regards an exemption for lead in glass or ceramic components (proposed in January 2025)

Expiry date of **31 December 2027**:

- **7(c)-VI** Electrical and electronic components containing lead in a ceramic that fulfils any of the following functions (excluding items covered by points 7(c)-II, 7(c)-III and 7(c)-IV of the Annex as well as point 14 of Annex IV):
  - **For use in piezoelectric lead zirconium titanate (PZT) ceramics;**
  - **For providing ceramics with a positive temperature coefficient (PTC)**.

Timeline

Proposed RoHS Amendment as regards an exemption for lead in glass or ceramic components

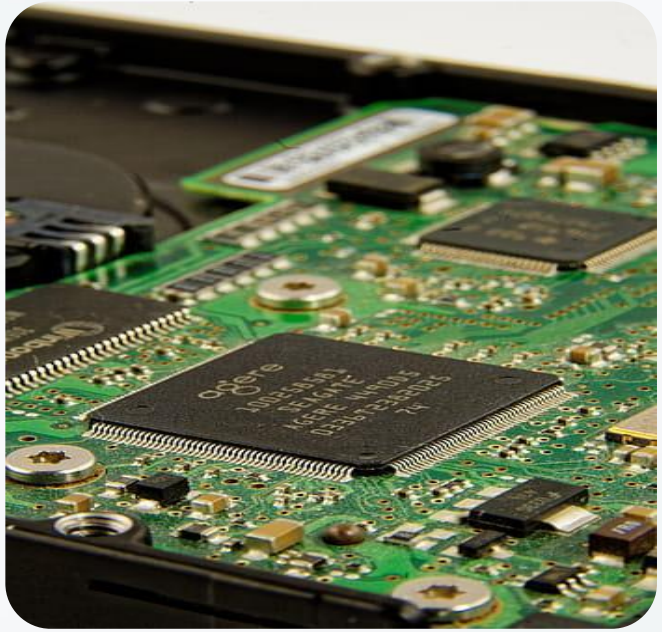


China RoHS Standard Amendment

GB/T 26572-2011 RoHS Standard Amendment No. 1
(coming into force on January 01, 2026)

Addition of four new substances to the limit requirements of electrical and electronic products, specifically:

- Diisobutyl phthalate (DIBP): ≤0.1%
- Di-n-butyl phthalate (DBP): ≤0.1%;
- Butylbenzyl phthalate (BBP): ≤0.1%;
- Di(2-ethylhexyl) phthalate (DEHP): ≤0.1%.



China RoHS Standard Amendment

GB/T 26572-2011 RoHS Standard Amendment No. 1
(coming into force on January 01, 2026)

Tier 1: Catalogued electrical and electronic products

Catalogued electrical and electronic products must not contain any of the 10 hazardous substances at levels exceeding the maximum threshold. The product list includes refrigerators, air conditioners, washing machines, electric water heaters, printers, copiers, fax machines, televisions, monitors, microcomputers, mobile communication devices, and telephones. Compliance may also be achieved through the application of an exemption.

Tier 2: Non-catalogued electrical and electronic products

Manufacturers/importers of all other electrical and electronic products within the scope of the Administrative Measures (Order No. 32, 2016) are not required to limit substances in their products below the threshold and so these may still be legally placed on the market, subject to complying with labeling provisions.

China RoHS Standard Amendment

GB/T 26572-2011 RoHS Standard Amendment No. 1
(coming into force on January 01, 2026)

- **RoHS Labeling**
  Both Tier 1 (including those in respect of which an exemption is claimed) and Tier 2 products must be labeled in accordance with the provisions of **SJ/T 11364**, recently revised as **SJ/T 11364-2024** to include references to phthalates.

- **Testing**
  China's National Certification and Accreditation Administration (CNCA) has also changed the applicable conformity assessment system testing methods. **Effective March 1, 2024,** the GB/T 26125 series has been replaced with **the GB/T 39560** series (corresponding to the IEC 62321 series) for determining hazardous substances in electronic products.

California Proposition 65

Regulation, 27 CCR 25601-25653 on Clear and Reasonable Warnings - Warning Labels
(In Force since January 01, 2025)

The regulation is amended to:

- Increase the time for implementation of revised short-form warning content from two years to three years from the date of final ruling,
- **Provide a 60-day transition period, during the three-year implementation period for retailers to update online short-form warnings after notice from a manufacturer**,
- Revert to the original regulation text for most of the internet and catalog warning content, and
- **Provide internet retailers a 60-day grace period, from when they receive a warning or written notice changing to the new warning content, to update their online short-form warnings during the three-year implementation period**
- Short-form warnings will include at **least one chemical name**
- **Provides additional warning options** for businesses to select from
- Make explicit that short-form warnings may be used to provide safe harbor warnings for food products
- And provide new tailored safe harbor warnings for passenger or off-highway motor vehicle parts and recreational marine vessel parts.

California Proposition 65

Regulation, 27 CCR 25601-25653 on Clear and Reasonable Warnings - Warning Labels (In Force since January 01, 2025)

Manufacturers can choose either a long-form or short-form label.

The amendments to the short-form warning:
The short-form warning should include the following elements (valid for products manufactured and labeled prior to January 1, 2028):

- The Warning symbol;
- The word "**WARNING:**" in all capital letters, in bold print.
  - For exposures to listed carcinogens, the words, "Cancer -- www.P65Warnings.ca.gov."
  - For exposures to listed reproductive toxicants, the words, "Reproductive Harm -- www.P65Warnings.ca.gov."
  - For exposures to both listed carcinogens and reproductive toxicants, the words, "Cancer and Reproductive Harm -- www.P65Warnings.ca.gov."

Overview of Global PFAS Regulations

U.S. EPA PFAS Regulations

Toxic Substances Control Act (TSCA), Reporting and Recordkeeping Requirements for Perfluoroalkyl and Polyfluoroalkyl (PFAS) Substances (In Force since Nov 13, 2023)

- **To submit information to EPA** regarding PFAS manufacture, uses, production volumes, byproducts, disposal, exposures, hazards, and existing information on environmental or health effects
- Manufacturers **report information to the extent that the information is known to or reasonably ascertainable** by the manufacturer, including: chemical identity, production volumes, industrial and consumer products, worker exposure and hazards, disposal methods
- **Recordkeeping requirements**: retain records that document any information reported to EPA for a period of **5 years** beginning on the last day of the submission period
- **Reporting Timeframe: from July 11, 2025 to January 11, 2026**

Overview of Global PFAS Regulations

U.S. EPA PFAS Regulations

Significant New Use Rule for Inactive PFAS (In Force since March 3, 2024)

- **Notify EPA at least 90 days** before commencing any manufacture (including import) or processing of the chemical substance for a significant new use
- **EPA review of health and safety information** - including an assessment to determine whether the new use may present an unreasonable risk to health or the environment and to ensure that EPA takes appropriate action to protect health or the environment

Who does this Final Rule affect?

If you manufacture (including import), process, or distribute in commerce chemical substances and mixtures you may be affected by this Final Rule.

Overview of Global PFAS Regulations

Significant New Use Rule for Inactive PFAS
(In Force since March 3, 2024)

Potentially affected entities may include:

- NAICS 325 - Chemical Manufacturing;
- NAICS 325120 - Industrial Gas Manufacturing;
- NAICS 325211 - Plastics Material and Resin Manufacturing;
- NAICS 336111 - Automobile Manufacturing;
- NAICS 423120 - Motor Vehicle Supplies and New Parts Merchant Wholesalers;
- NAICS 423420 - Office Equipment Merchant Wholesalers;
- NAICS 423510 - Metal Service Centers and Other Metal Merchant Wholesalers;
- NAICS 423740 - Refrigeration Equipment and Supplies Merchant Wholesalers;
- NAICS 423990 - Other Miscellaneous Durable Goods Merchant Wholesalers;
- NAICS 424690 - Other Chemical and Allied Products Merchant Wholesalers;
- NAICS 551112 - Offices of Other Holding Companies

Overview of Global PFAS Regulations

U.S. Significant New Use Rules on Certain Chemical Substances (In Force since March 7, 2025)

General Applicability
The manufacture, process, or use of the chemical substances

Potentially affected entities may include:
Manufacturers or processors of one or more subject chemical substances (NAICS codes 325 and 324110), e.g., chemical manufacturing and petroleum refineries.

Applicability to Importers and Exporters
This action may also affect certain entities through pre-existing import certification and export notification requirements under TSCA. Importers of chemical substances in bulk form, as part of a mixture, or as part of an article (if required by rule) must certify that the shipment of the chemical substance complies with all applicable rules and Orders under TSCA.

Overview of Global PFAS Regulations

EU PFAS Restrictions in Firefighting Foams
(In Force since October 10, 2024)

- Regulation (EU) 2024/2462 **restricting the use of undecafluorohexanoic acid ('PFHxA') and PFHxA -related substances**
- **Banning the sale and use of PFHxA in consumer textiles**
- Does not affect other applications of PFHxA, for example in semiconductors, batteries or fuel cells for green hydrogen
- **April 10, 2026**: Ban on firefighting foams for training, testing, and public fire rescue services (excluding COMAH industrial chemical sites) containing PFHxA over 25 ppb.
- **October 10, 2029**: Ban on firefighting foams for civil aviation containing PFHxA over 25 ppb.

Overview of Global PFAS Regulations

Global PHAS Regulations

Canada: Notice with respect to certain PFAS (In Force since July 27, 2024)

- **January 29, 2025** - entities that manufactured, imported, or used PFAS in 2023 to report detailed information to Environment and Climate Change Canada (ECCC)

New Zealand: Cosmetic Products Group Standard Amendments (Signed on January 25, 2024)

- **December 31, 2026**: Importing or manufacturing cosmetics with PFAS ingredients will be prohibited.
- **December 31, 2027**: Selling cosmetics containing PFAS ingredients will no longer be allowed.
- **June 30, 2028**: Any remaining cosmetic products with PFAS ingredients must be disposed of.

Japan: Chemical Substances Control Law (CSCL)

- **September 10, 2024:** Perfluoro alkanoic acid (branched with 8 carbon atoms (PFOA isomers)) or their salts.
- **December 3, 2025:** 8. Difluorotelomer alcohol used in the manufacture of invasive and implantable medical devices
- **December 31, 2036**: Perfluorooctyl iodide for the purposes of producing pharmaceutical products

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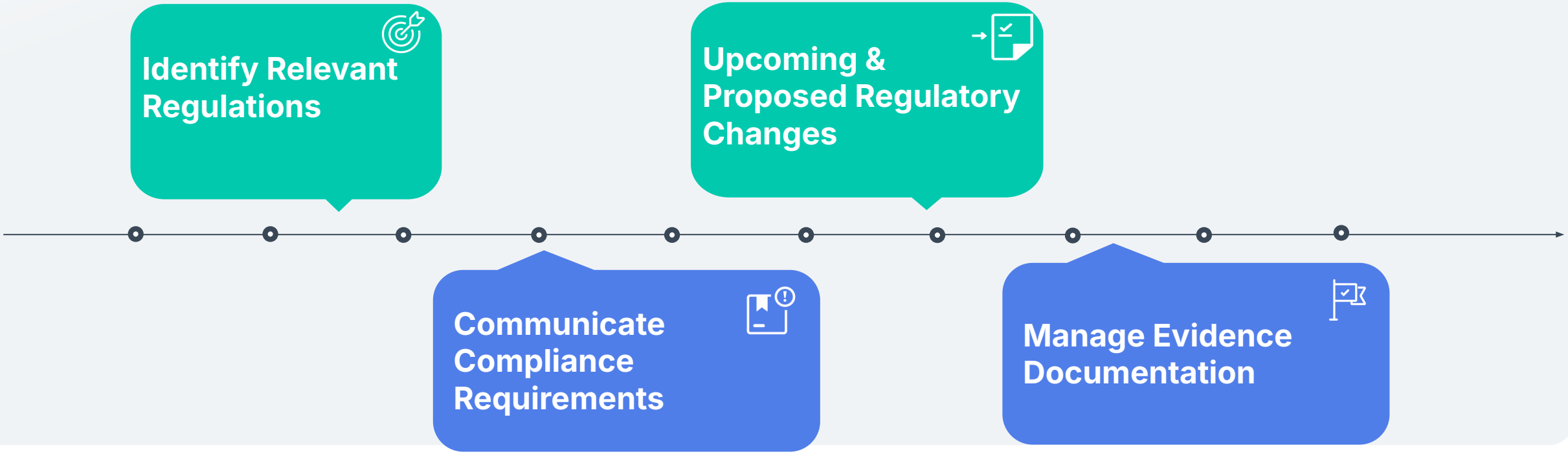

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- Illegal Logging
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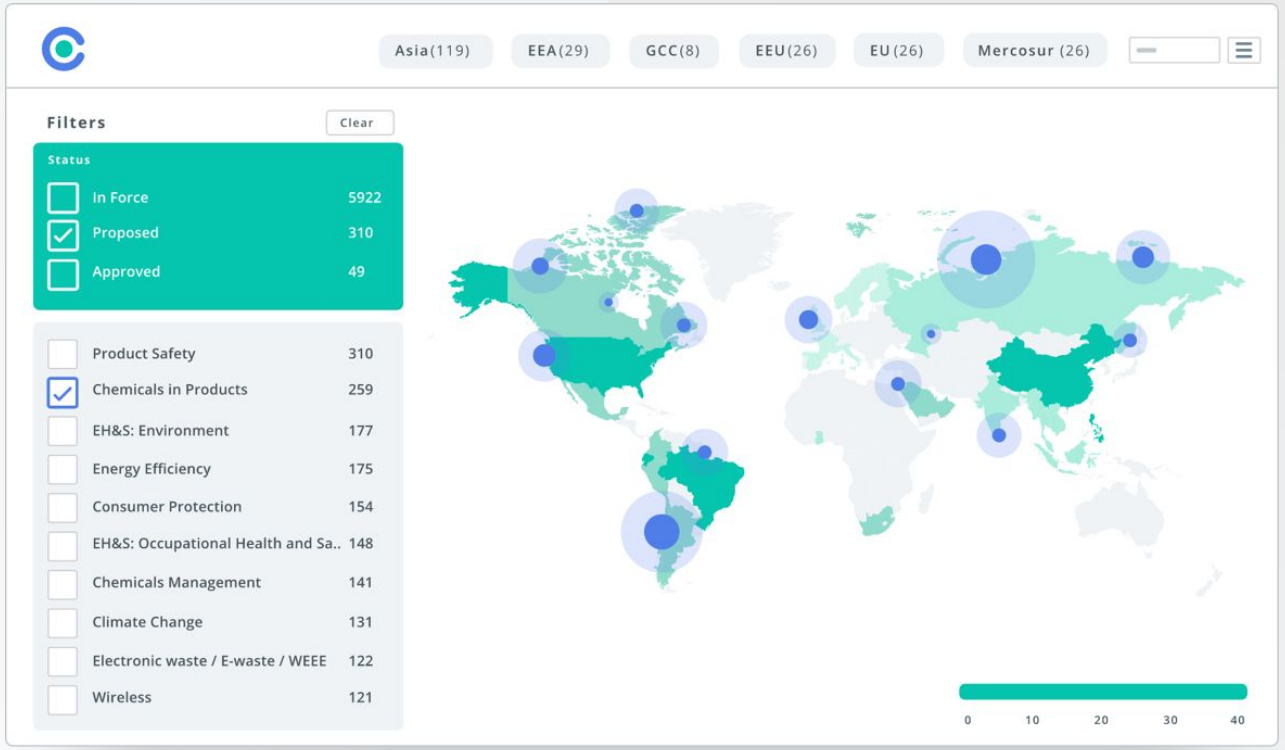

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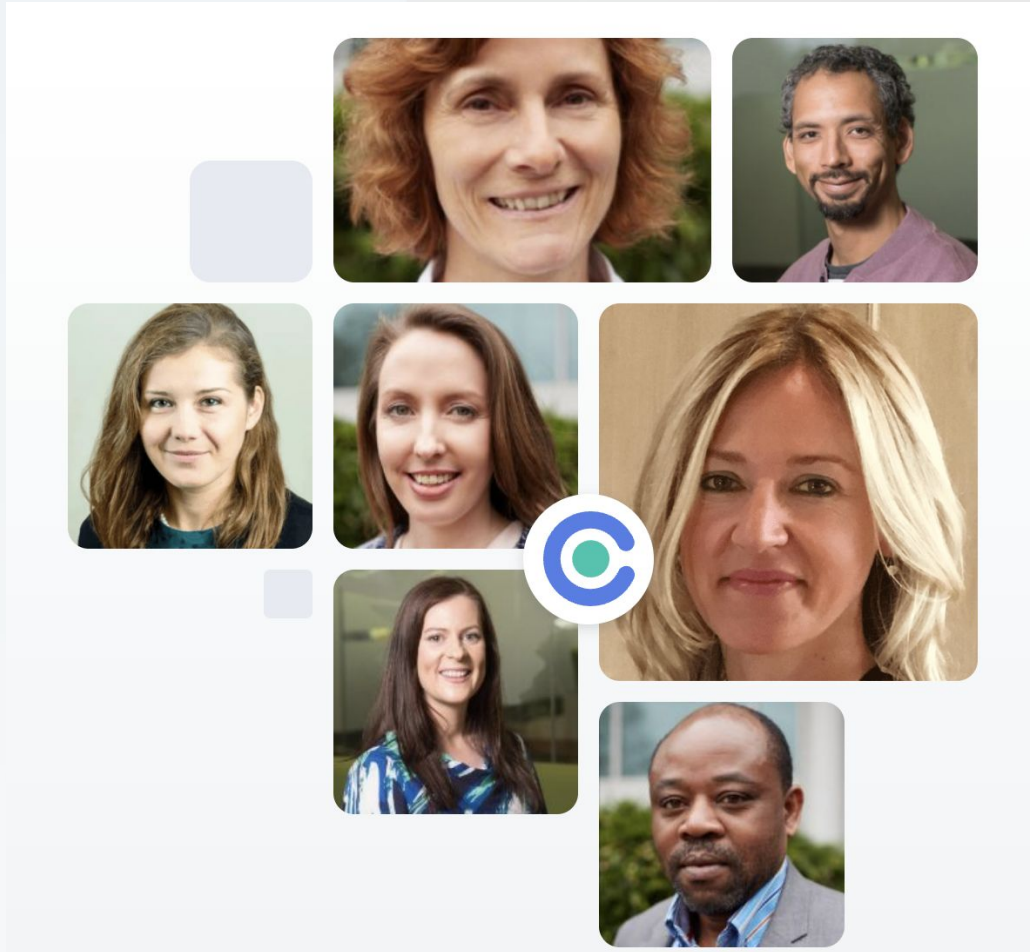

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Questions?

Lets Talk

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Orlaith Morris,
Content Marketing Manager

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