WORLDWIDE ENVIRONMENTAL LEGISLATIONS UPDATE

ILTAM Workgroup meeting, 20.02.19

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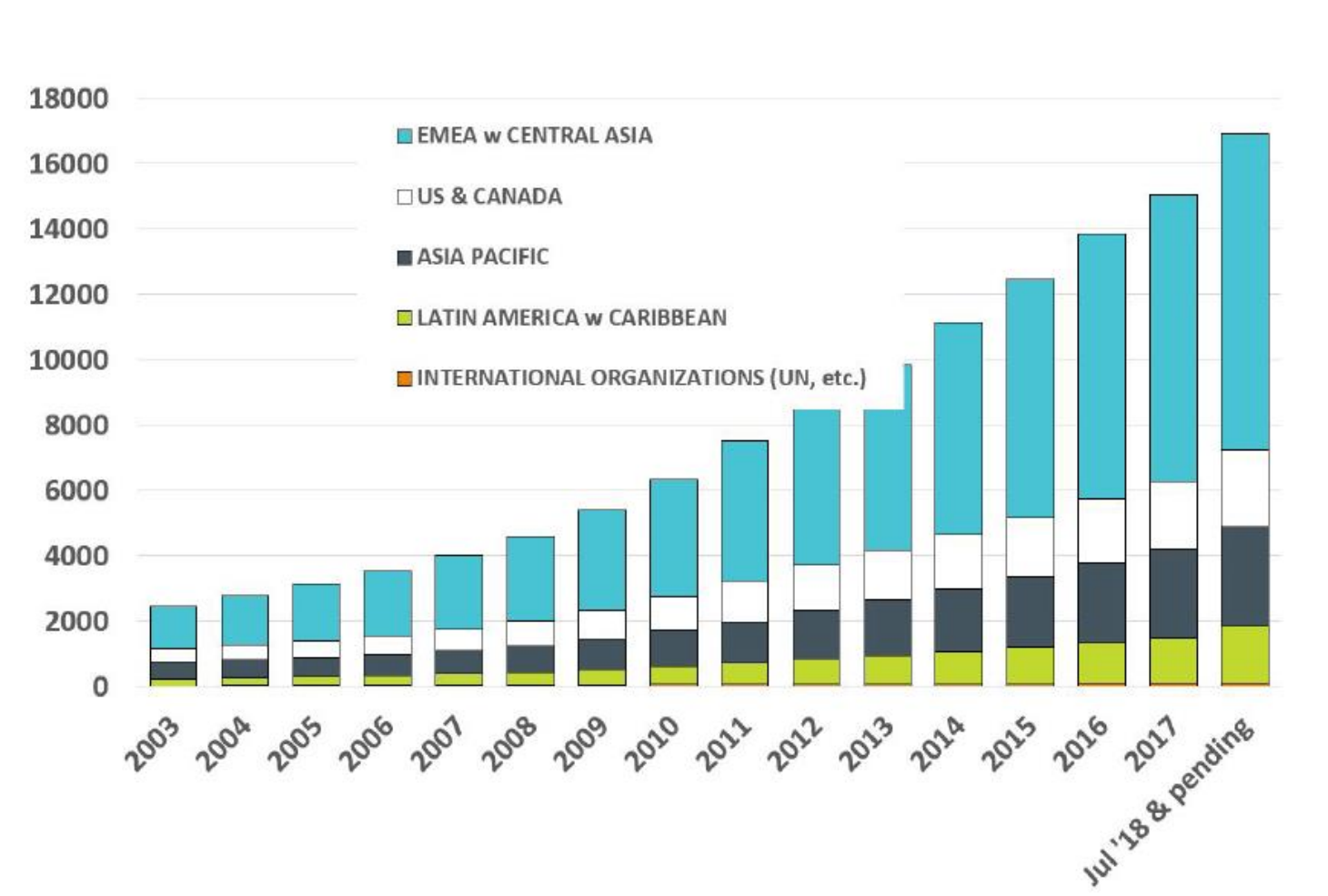
Worldwide Trends



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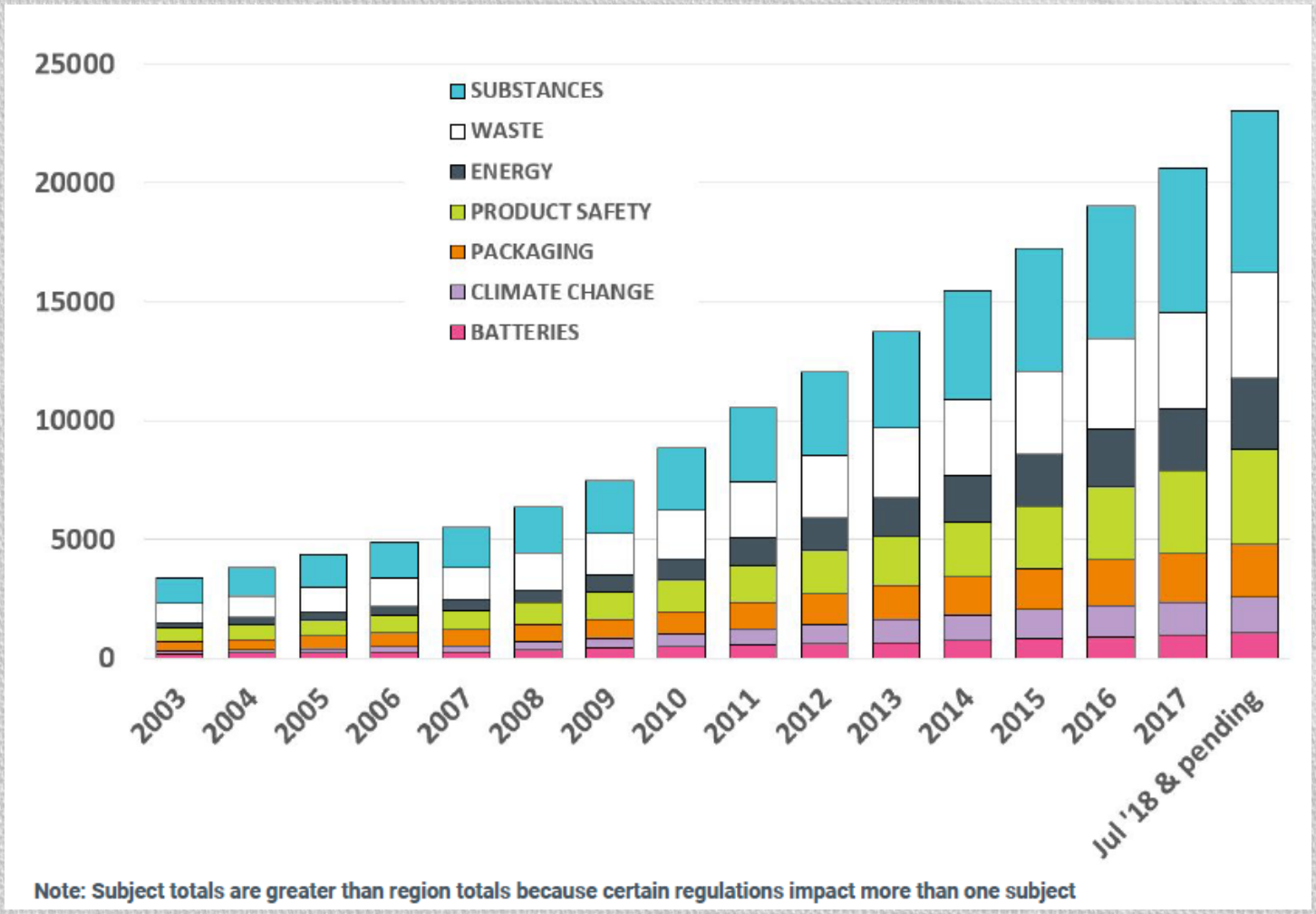
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Global Legislations by Region



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Global Legislations by Subject



Note: Subject totals are greater than region totals because certain regulations impact more than one subject

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EU RoHS-2

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Commission Delegated Directives

On 16.11.18, the following 10 Commission Delegated Directives were released, amending Annex III of the Directive:

- (EU) 2019/169 – Exemption 7(c)-II for lead in dielectric ceramic in certain capacitors.
- (EU) 2019/170 - exemption 7(c)-IV for lead in PZT based dielectric ceramic materials for certain capacitors.
- (EU) 2019/171 - exemption 8(b) & 8(b)-I for cadmium and its compounds in electrical contacts.
- (EU) 2019/172 – exemption 15 & 15(a) for lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages.
- EU) 2019/173 – exemptions 21, 21(a), 21(b) & 21(c) for lead and cadmium in printing inks for the application of enamels on glasses.
- (EU) 2019/174 – exemption 29 for lead bound in crystal glass as defined in Directive 69/493/EEC.
- (EU) 2019/175 – exemption 32 for lead oxide in seal frit used for making window assemblies for certain laser tubes.
- (EU) 2019/176 – exemption 37 for lead in the plating layer of certain diodes.
- (EU) 2019/177 – exemptions 18(b) & 18(b)-I for lead as activator in the fluorescent powder of discharge lamps containing phosphors.
- (EU) 2019/178 – exemption 42 for lead in bearings and bushes applied in certain non-road professional use equipment.

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RoHS Proposed Additional Substances (1)

- New Potential Restricted Substances (Pack #15). Per Article 24, paragraph 2, they shall be added no later than 22 July 2021.
- UBA study and methodology.
  - Methodology was developed by Austrian UBA for EC as part of the recast review study.
    - The study was much criticized by industry.
- Some aspects of methodology were good.
- But, UBA used too many assumptions when data was not available to make their recommendations on phthalate restrictions unreliable.
- They also proposed a list of many substances for possible future restriction.
  - List includes many substances that never occur in EEE.

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RoHS Proposed Additional Substances (2)

- Note that the RoHS directive does not specify a methodology.
  - It only requires that a substance be hazardous.
  - No need to prove that harm is caused.
  - No need for alternatives to exist or replacement be feasible.
  - RoHS requires that the "Precautionary Principal" be taken into account, but this should also be used for substitutes!
    - Important that any new restrictions will genuinely protect health and the environment. No action should be taken if a restriction will have no benefit to health or the environment.
- The approach used for REACH restrictions is different.
  - It is first necessary to prove that there is an uncontrollable risk of harm to health and / or the environment.
    - Restrictions are targeted at preventing specific causes of harm.

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RoHS Proposed Additional Substances (3)

Proposed restricted substances:

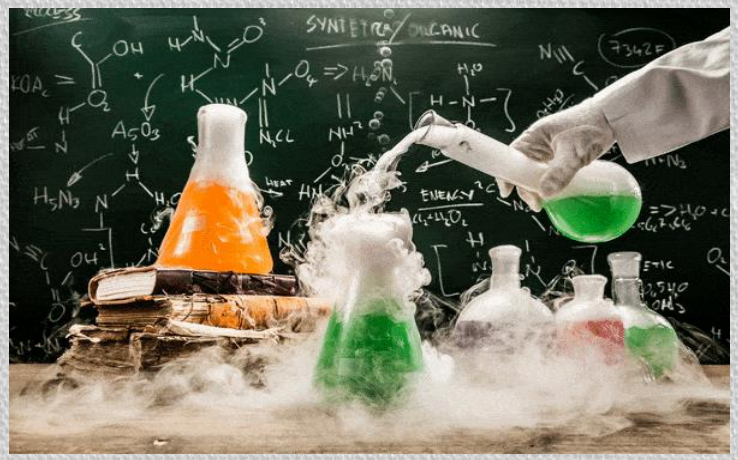
- Diantimony Trioxide - flame retardant
- Tetrabromobisphenol A (TBBP-A) - flame retardant
- Indium Phosphide - used in semiconductor devices
- Chloroalkanes C14-17 (MCCPs) - plasticizer in PVC
- Beryllium - switch contacts, terminal conductors, integrated circuits
- Nickel sulphate and sulfamate - nickel plating
- Cobalt dichloride and cobalt sulphate - plating processes in surface treatment

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RoHS Proposed Additional Substances (4)

- 3 substances in particular causing concern: *Beryllium, indium phosphide & diantimony trioxide.*
  - *Beryllium: substitution often not possible*
  - *Indium phosphide: no alternatives*
  - *Diantimony trioxide: restriction unnecessary*
- Stakeholders feedback was received from 20 entities.
- 2019: decision to be made on restrictions and relevant legislation drafted.



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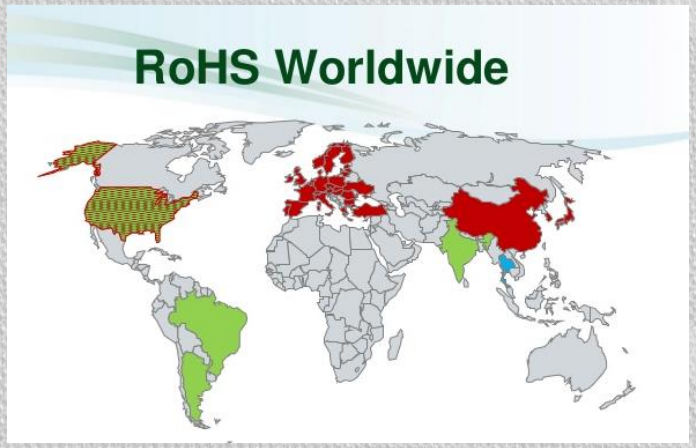
RoHS Proposed Additional Substances (5)

Conclusions:

- Seven types of additional RoHS substances are proposed.
- Several do not occur or only rarely occur in EEE.
- Some have no substitutes where they are used.
- Some cause no harm.
  - If restrictions are adopted, these could take effect by 2025.
- Manufacturers will need to identify all uses, determine if substitutes exist and will be reliable and if not, prepare and submit exemption requests at the latest 3 years before the restriction takes effect.

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RoHS Worldwide

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RoHS Around the World (1)

	EU RoHS2	China RoHS	Japan RoHS	S. Korea RoHS	India RoHS	Turkey RoHS	Singapore RoHS
Substances	Standard six, 10 in 2019	Standard six	Standard six	Standard six, plus four for vehicles	Standard six	Standard six	Standard six
Included Products	EEE	EEP	Seven specific categories	Nine specific categories	Consumer EEE, IT and telecom	EEE	Six specific categories
Exemptions	Yes	None	Similar to EU	None	Similar to EU	Similar to EU	Similar to EU
Special Form	No	Yes	Yes	No	No	No	No
Special Label	Yes for compliant	Yes	Yes	No	No	No	No

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RoHS Around the World (2)

	Taiwan RoHS	Vietnam RoHS	Eurasian Customs Union RoHS	Serbia RoHS	Ukraine RoHS 2	United Arab Emirates RoHS
Substances	Standard six	Standard six	Standard six	Standard six	Standard six	Standard six (10 in 2020)
Included Products	Five specific categories	Nine specific categories	12 specific categories	14 specific categories	Same as EU	Same as EU
Exemptions	None	Similar to EU	Similar to EU	Yes	Similar to EU	Similar to EU
Special Form	Yes	No	No	No	No	No
Special Label	Yes for non-compliant	Yes	Yes	No	No	Yes

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EU WEEE

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Directive (EU) 2018/849

- A **Circular Economy Package** includes four Directives, was adopted by the European Parliament on 18 April 2018 and by the EU Council on 22 May 2018.
- They came into force 4.07.18 and must be implemented in the national legislation of member states by 5 July 2020.
- The one relevant for EEE is **Directive (EU) 2018/849**.
- It amend Directives 2000/53/EC on end-of-life vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EU on waste electrical and electronic equipment.
  - Makes amendments which establish reporting requirements for Member States regarding **reuse and recovery targets** for end-of-life vehicles, collection targets for batteries and accumulators, and collection targets for waste electrical and electronic equipment.



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WEEE Worldwide

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WEEE Worldwide

- The **Bangladesh** Ministry of Environment and Forests published a final draft version of the proposed rules on the management of WEEE and RoHS requirements .
- **Rwanda** adopteda new e-waste regulation which establishes a legal framework for the management of WEEE in the national territory.
- **Kenya** proposes draft strategy on national e-waste in January 2019. Aim is to analyze current situation & help government and stakeholders to understand the need to come up with regulations on e-waste management through a collaborative process.
- **India** enacted amendment to its E-waste management rules resulting in changes to its collection targets.

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China WEEE

- Prevention and Control of Environmental Pollution by Solid Waste Law.
- Draft revision was published on 11 July 2018.
- Main amendments focus on the following matters:
  - Prevention of secondary pollution during solid waste recycling and reuse in the products
  - Reduction in the volume of landfill waste by reducing solid waste and increase recycling
  - Strengthening the responsibility of waste producers and establishing a solid waste discharge license system
  - Extension of the manufacturer's responsibility
  - Reform on solid waste import, in particular foreign waste import
  - Establishing domestic waste sorting system
  - Improving hazardous waste management systems
  - Stricter penalties

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China Imported Waste Management (1)

Amendment to the Imported Solid Waste Catalogue.

- Published on 13 April 2018.
- Ban on import of 32 types of solid waste.
- 16 types of solid waste to be banned from import beginning 31 December 2018 including.
  - Compressed car scrap
  - Scrap ships
  - Plastics rejected from factory processes
  - PET bottles
  - Steel-based waste of hardware appliances
  - Aluminum-based wire waste
  - Copper-based waste of electric power products



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EU REACH



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SVHC List Update

- Since May 2018, ECHA updated the SVHC list twice:
  - June 27th 2018: 10 substances
  - January 2019: 6 substances
- The total amount of substances now is 197.



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Lead added to the SVHC List

- One of the substances added in June is lead (Pb, CAS #7439-92-1)!
- Lead is found in a surprisingly wide range of applications, including-
  - alloys of copper, steel or aluminum (e.g., the "6 series" of exemptions).
  - various ceramics and glasses (e.g., the "7c- series" of exemptions).
  - certain solders (e.g., exemptions 7a and 15).
- Although 31 lead compounds are already classed as SVHCs, the addition of lead (in any form) is important for a number of reasons. Here are a couple of the most significant:
  - According to the Regulation, importer/producer of lead containing article exceeding the 0.1% w/w must provide information to the recipients which allows for safe use (in writing and free of charge).
  - Such importer/producer should also submit notification to ECHA no later than 6 months after the substance was included in the Candidate List.
  - RoHS Directive enable the use of lead under several exemptions, most exceed the 0.1% w/w REACH threshold. If you take advantage of any, be aware you might have to disclose based on REACH.
  - Some industry categories are out of RoHS scope, and consequently can use lead. They will now have an obligation to identify their uses of lead and inform their customers.
- And it might also be added shortly to the Authorization list...

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New Database on Candidate List Substances in Articles (1)

- 11 July 2018:
  - ECHA will establish a new database on the presence of hazardous chemicals in articles by the end of 2019 for waste treatment operators and consumers.
  - The database will comprise information submitted by companies producing, importing or selling articles that contain Candidate List substances.
  - Companies need to submit this information by the end of 2020.
- Feb. 2019: It seems this project shall be postponed due to budget constrains…



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New Database on Candidate List Substances in Articles(2)

- If/when fully implemented, the database will be a centralized repository of article declarations for all products and their components entering the EU.
- This database would result in a huge benefit in streamlining and standardizing declarations for products entering the EU.
- This database would make enforcement of REACH very easy. Enforcing the "No Data, No Market" principle would be as simple as checking the database for a product name and seeing whether it has data, and/or whether there are any conflicts between articles linked to the finished product.



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Nanomaterials

- The European Commission (EC) announced on December 3, 2018, that it adopted amendments to several Annexes of the REACH Regulation to clarify the information requirements for nanomaterials.
- ECHA press release, December 3, 2018, states that nanoforms of substances are those covered by the EC's recommendation for a definition of a nanomaterial.
  - ECHA "strongly encourages registrants of nanoform substances to familiarize themselves with the amendments and assess what action they need to take to comply."
  - ECHA is currently assessing the need to update existing guidance or issue new guidance to help registrants comply with the new requirements.
- The information requirements will apply beginning **January 1, 2020**.

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IEC 62474 Declarable Substance List (DSL)

IEC 62474 was updated –

- to version D16.00 on July 8, 2018 to include 8 of the 10 substances added in June 2018, and
- to version D17.00 on January 15, 2019 to include 5 of the 6 substances added in January 2019.
- The list now contains 153 substances.



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SIN List

- In June 2018 the SIN List was updated with six CAS numbers to reflect the update of the REACH Candidate List (10 substances). The SIN list in June contained 919 entries.
- In January 2019 the SIN List was updated with five CAS numbers to reflect the update of the REACH Candidate List (6 substances). Actually, the new CAS numbers represents three new entries on the Candidate List, so the SIN List in January contains 922 entries.

SIN LIST by chemsec

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Korea REACH



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K-REACH Amendment (1)

- The amended of K-REACH has been implemented since 1st January 2019.
- The obligations of enterprises has been tremendously changed.
- K-REACH pre-registration starts from 1st Jan 2019 and ends on 30th June 2019.
- Pre-registration is required under K-REACH for anyone who manufactures or imports existing chemicals in quantity of over 1 ton per year.
- Manufacturing enterprise out of Korea must entrust a legal entity based in Korea as its only representative (OR).

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K-REACH Amendment (2)

- Similar to the SVHC list under EU REACH, there is a list of Priority Management Chemicals (PMC) under K-REACH.
- A manufacturer or importer must submit a notification for PMCs placed on Korean market when meeting all of the following conditions:
  - The PMC exceed 0.1% by weight in a product.
  - The total amount of the PMC contained in a product exceeds 1tpa.

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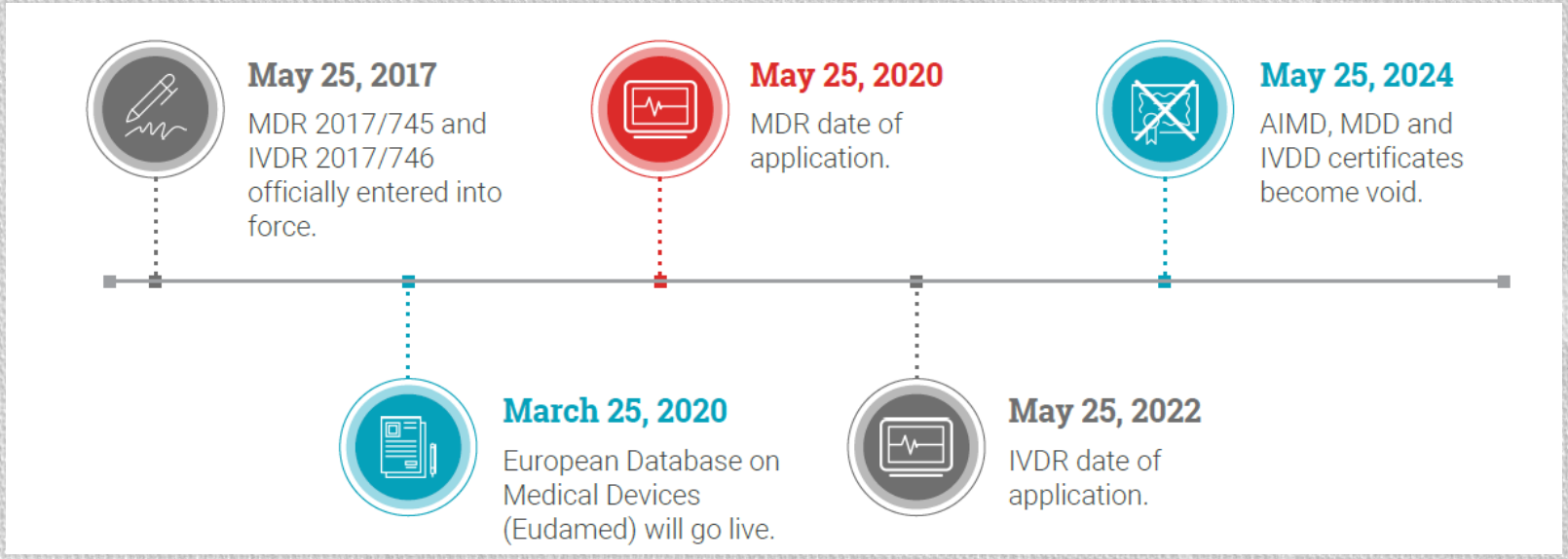
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EU Medical Device Regulation (MDR)

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Regulation (EU) 2017/745

- Regulation (EU) 2017/745 of the European Parliament and of the Council of April 5, 2017, on medical devices, amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC.



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Realities of Medical Device Suppliers

- Historically, medical device companies have been reluctant to let all suppliers know which purchased components and materials would go into medical devices.
- This was driven by a fear that the parts/materials would not be sold due to low volume and high risk.
- The MDR will force due diligence and reveal the use of parts/materials.

The MDR substance list features more than 1,000 chemicals!

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USA Conflict Minerals

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Overview of Reporting Year 2018

- In 2018, there have been 1,098 reports (Form SDs) filed since the beginning of 2018 for RY2017 (in contrast to the 1,154 reports that were filed in 2017 for RY2016 filings).



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FY 2017 Fillings

- The 2018 SEC filings mark the fifth year of conflict minerals reporting.
- The comparison between 2017 and 2018 scores regrettably shows a decline in due diligence efforts of a large number of companies.
  - This likely follows an indication by the SEC that it would not recommend enforcement action for failure to comply with the requirements of the Act.
  - The uncertainty brought by the Trump administration and its rejection of regulatory frameworks in every sector is crucial when analyzing companies' limited efforts to improve the quality of their disclosures.
- Despite this regrettable trend, proactive, due-diligence-based strategies, including strong multi-stakeholder and on-the-ground support, have been implemented by the five leading companies: **Intel**, **Microsoft**, **Apple**, **Qualcomm**, and **Ford**.

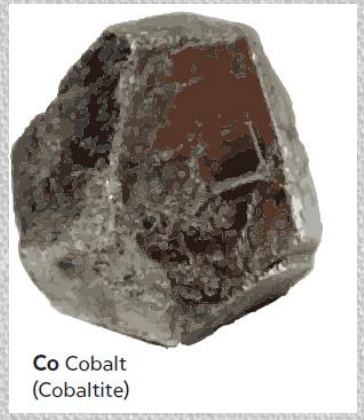
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The Case of Cobalt (1)

Cobalt consumption sources:

- The current increase in Electric Vehicle (EV) production: 125 million electric cars will be on the road by 2030.
- This estimate nearly doubles to 230 million if demand for electric cars increases in an effort to meet reduced emissions goals connected to global warming.
- In this context, cobalt supply for battery production is emerging as a strategic prize for countries and companies from upstream to downstream sectors.
- And, we should keep in mind the crucial role of cobalt traditional industries such as defense and aerospace.



Co Cobalt
(Cobaltite)

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The Case of Cobalt (2)

- The DRC supplies roughly 60% of the world's cobalt.
- According to the U.S. Geological Survey, more than half of the world's reserves are situated in the DRC.
- A free, standardized reporting template was developed by the Responsible Minerals Initiative (RMI) to collect and understand data from the cobalt supply chain.
  - CRT 1.1 formally released by the RMI at end of 2018.
  - The next version of CRT is anticipated to be released in the spring of 2019.

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California Prop-65



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Prop-65 Revision (1)

30 August 2018:

- Californian Office of Environmental Health Hazard Assessment (OEHHA) revisions to its Proposition 65 (Prop 65) Article 6 "clear and reasonable warnings" regulations came into effect.
- The most notable change is that related to the required warning language.
- And adding a new warning symbol, consisting of a black exclamation point in a yellow equilateral triangle with a bold black outline



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Prop-65 Revision (2)

- Penalties for violating Prop 65 warning requirements may be assessed in the amount of $2,500 per day, per violation.
- Enforcement of these new regulations through California's AG Office, or more likely private plaintiffs (*i.e.*, bounty hunters), is expected to be immediate and potentially widespread.
- There is a strong probability that companies will be asked to demonstrate that their due diligence results align with the labels they have affixed on their products.
  - The results of this inspection/investigation could demonstrate non-compliance or false reporting.

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thinkstep Approach



- 105 substances out of the >900 substances may be found in component parts of mechanical or electrical products.
- 39 of these substances do not require "safe harbor" warnings, for example Indium Phosphide is a crystalline solid located inside electronic components which are located inside products.
- 66 of these substances may require "safe harbor" warnings.
  - 29 of these 66 Prop-65 risk substances are already regulated under RoHS, REACH substance restrictions, POPs regulation or REACH Candidate List with appropriate threshold levels.

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Batteries

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EU Activity

- 09 January 2019 - EU Consultation opened on a Commission initiative to comprehensively explore options to improve the sustainability, energy and environmental performance of batteries placed on the EU's internal market.
- Consultation runs until 6 February 2019.
- A meeting of the Ecodesign Consultation Forum will take place in Q2 or Q3 2019.



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Worldwide Activity (1)

- **Colombia** adopted a resolution approving a technical regulation on the labeling of zinc-carbon and alkaline batteries .
- **Argentina** established the certification bodies qualified to award certificates of compliance for primary batteries .
- **Vietnam** released national standards based on IEC standards covering general, testing and labeling requirements for lead-acid batteries, as well as functional characteristics and dimensions, terminals and marking .
- **Malaysia** issued guidelines on safety requirements based on the standard on secondary cells and batteries containing alkaline or other non-acid electrolytes.



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Worldwide Activity (2)

- The **Saudi Arabian** Standards, Metrology & Quality Organization (SASO) approved, in December 2018, a Technical Regulation on Electric Batteries - sets out requirements on safety, chemicals, labelling & instructions on recycling and waste treatment. Full text yet to be published.
- **Brazil** opened a public consultation in 2018 on a proposed sectoral agreement for implementation of reverse logistics system for lead acid batteries.
- **Mexico** published a standard on maximum values for mercury & cadmium in primary lithium batteries and accumulators & specifications for testing and labelling, effective Sep 2019. Also there was a draft decree on take-back & recycling of batteries .

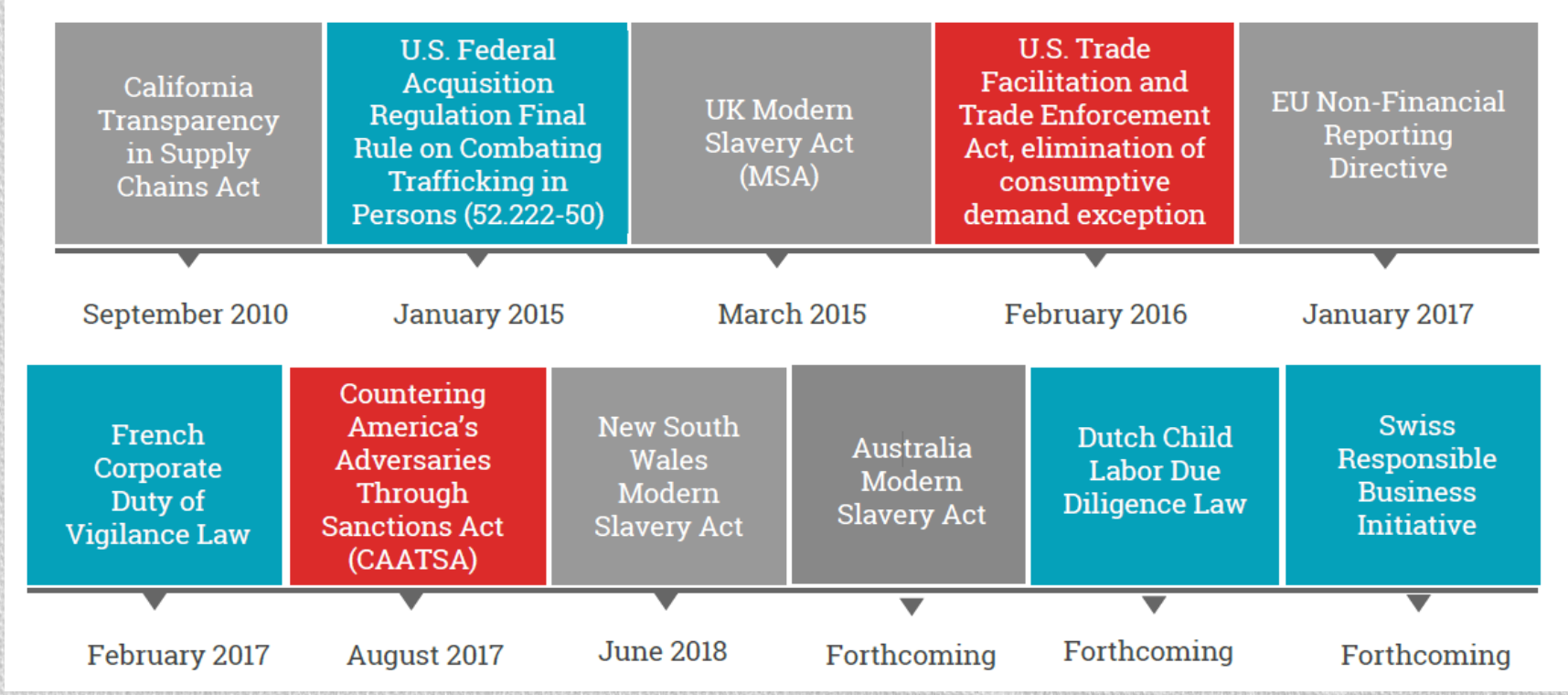
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Slavery & Human Trafficking

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Proliferation of Laws on Modern Slavery Due Diligence



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UK Modern Slavery Act

Coming in 2019: Penalties for companies that fail to comply with the UK Modern Slavery Act.

- UK Home Office will audit HTS statements on **March 31, 2019,** and will *name and shame* non-compliant companies.
- CEOs of 17,000 businesses received letters from the UK Home Office telling them to comply by March 31, 2019.
- Coming in 2019: Potential Amendments to the UK MSA.



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Various

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PRIO – A tool for Risk Reduction of Chemicals

- PRIO is a Swedish web-based tool that can help you to preventively reduce health and environmental risks from chemical substances.
- PRIO allows users to:
  - Create systematic procedures for environmental issues using the Step by Step Guide
  - Obtain information on prioritized health and environmental properties
  - Identify substances contained in certain substance groups and product types
  - Obtain help in developing routines for purchasing, product development, risk management etc.

KEMI
Swedish Chemicals Agency

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Any Question?



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Thank you!

Need further clarifications?
Need support in implementation?
Need general consultancy?

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