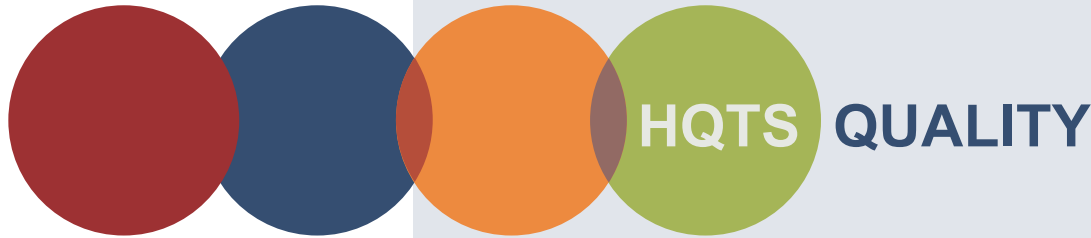


November 2017

Our monthly newsletter filled with the latest news about the quality assurance industry. Keep updated!



## San Francisco Becomes the First City in US to Restrict Flame Retardants

### News Updates

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On November 3, 2017, the mayor of San Francisco in the US state of California signed into law a landmark piece of legislation of the "Flame Retardant Chemicals in Upholstered Furniture and Juvenile Products Ordinance". The new Ordinance restricts all flame retardants in upholstered furniture, reupholstered furniture and juvenile products. The new restrictions will be implemented in two phases, starting January 1, 2019.

Highlights of the new Ordinance are summarized in below Table:

SAN FRANCISCO ORDINANCE NO. 211-17			
ENVIRONMENTAL CODE, SECTIONS 2801 THROUGH 2807			
CHAPTER 28: FLAME RETARDANT CHEMICALS IN UPHOLSTERED FURNITURE AND JUVENILE PRODUCTS			
Substance	Scope	Requirement	Effective Date
Flame retardants (FRs)	Upholstered furniture Reupholstered furniture Juvenile products for residential use	≤ 1000 ppm each FR	January 1, 2019
	Products above with electrical or electronic components	≤ 1000 ppm each FR	July 1, 2019

Keep informed about technical updates for international manufacturers & importers of consumer products



## California Proposition 65: 5 Substances Added to the Proposition 65 List

Also, On October 3, 2017, **Rhode Island's H5082** (companion S166) automatically became law without the governor's signature.

The new law regulates the use of (all) organohalogen flame retardants (OFRs) in residential upholstered furniture or bedding with the maximum limit of 100 ppm each OFR. This family of flame retardants includes any chemical containing a carbon-bromine or carbon-chlorine bond (C-Br or C-Cl bond) that is added to a plastic, foam or textile material.

The new restrictions will become effective on July 1, 2019.

On 27 October 2017, the Office of Environmental Health Hazard Assessment (OEHHA) of California added N,N-dimethylformamide, 2-mercaptobenzothiazole and tetrabromobisphenol A as chemicals known to cause cancer to Proposition 65 list.

On 10 November 2017, two more substances Perfluorooctanoic Acid (PFOA) and PerfluorooctaneSulfonate (PFOS) as chemical known to cause reproductive toxicity was added to the list under Proposition 65.

Chemical	CAS No.	Endpoint
Perfluorooctanoic acid (PFOA)	335-67-1	Developmental toxicity
Perfluorooctanesulfonate (PFOS)	1763-23-1	Developmental toxicity
N,N-Dimethylformamide	68-12-2	Cancer
2-Mercaptobenzothiazole	149-30-4	Cancer
Tetrabromobisphenol A	79-94-7	Cancer

HQTS provides quality control inspections, factory audits, supplier evaluations, consumer product testing, production control and management, and quality control consulting throughout greater Asia.

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## US Washington Adopted Amendment to Reporting Rule for Children's Products



The Washington State's Department of Ecology has adopted the rule to amend Children's Safe Products Reporting Rule under **WAC 173-334**. The amendment shall be effective from 31 October 2017.

The followings are the highlight of the amendments:

### 1. The date and the time period that manufacturers shall report are amended as follow:

a. On 31 January 2019, and annually thereafter, a manufacturer of a children's product sold or offered for sale in Washington that contains a CHCC listed in an amount above a de minimis level must submit the report with information needed (detailed in WAC 173-334-080) to the department.

- The report submitted on 31 January 2019, applies to children's products sold or offered for sale in Washington between 1 September 2017 and 31 December 2018.
- A manufacturer of a children's product containing a CHCC above the de minimis level may request an extension for submission of the report required on 31 January 2019, if this would be the first report required by the manufacturer and the manufacturer will be reporting more than one product or chemical.
- Reports submitted on 31 January 2020, and annually thereafter, apply to children's products sold or offered for sale during the prior calendar year.

b. If the reporting party determines that there has been no change in the information required to be reported since the prior annual report, the party must copy the prior year's report and resubmit the same data into the online reporting database.

c. Annual reporting for internal components will not be required, except by amendment of this rule.

### 2. The list of chemicals of high concern to children (CHCC list) shall be amended as follows, making the latest list contain 85 entries:

a. 20 chemicals shall be added to the CHCC list:



<b>CAS No.</b>	<b>Chemical</b>
80-09-1	Bisphenol S (BPS)
84-61-7	Dicyclohexyl phthalate (DCHP)
84-69-5	Diisobutyl phthalate (DIBP)
115-86-6	Triphenyl phosphate (TPP)
117-82-8	Di-(2-methoxyethyl) phthalate (DMEP)
126-72-7	Tris (2,3-dibromopropyl) phosphate (TDBPP)
126-73-8	Tri-n-butyl phosphate (TNBP)
131-18-0	Dipentyl phthalate (DPP)
335-67-1	Perfluorooctanoic acid (PFOA) and related substances
620-92-8	Bisphenol F (BPF)
1241-94-7	Ethylhexyldiphenyl phosphate (EHDPP)
1330-78-5	Tricresyl phosphate (TCP)
13674-84-5	Tris (1-chloro-2-propyl) phosphate (TCPP)
26040-51-7	Bis (2-ethylhexyl) tetrabromophthalate (TBPH)
38051-10-4	Bis(chloromethyl)propane-1,3-diyl tetrakis-(2-chloroethyl) bis(phosphate)(V6)
68937-41-7	Isopropylatedtriphenyl phosphate (IPTPP)
84852-53-9	Decabromodiphenyl ethane (DBDPE)
85535-84-8	Short-chain chlorinated paraffins (SCCP)
108171-26-2	Chlorinated paraffins
183658-27-7	2-ethylhexyl-2,3,4,5-tetrabromobenzoate (TBB)

b. The entry for nonylphenol and its isomers shall be separated into three:

<b>CAS No.</b>	<b>Chemical</b>
104-40-5	4-Nonylphenol
25154-52-3	Nonyl phenol
84852-15-3	4-Nonyl phenol (NP) branched

c. 3 chemicals shall be removed from the lists of CHCCs:

<b>CAS No.</b>	<b>Chemical</b>
85-44-9	Phthalic anhydride
556-67-2	Octamethylcyclotetrasiloxane (D4)
7439-98-7	Molybdenum & molybdenum compounds

## EU Amends Directive RoHS to Restrict the Conditions of Use and Exemption Deadline

c). recovered from in vitro diagnostic medical devices placed on the market before 22 July 2016 and used in EEE placed on the market before 22 July 2026; (newly added)

d). recovered from industrial monitoring and control instruments placed on the market before 22 July 2017 and used in EEE placed on the market before 22 July 2027; (newly added)

e). recovered from all other EEE that was outside the scope of Directive 2002/95/EC and which is placed on the market before 22 July 2019, and used in EEE placed on the market before 22 July 2029; (newly added)

5. For the exemptions listed in Annex III as at 21 July 2011, unless a shorter period is specified, the maximum validity period, which may be renewed, shall be for category 11 of Annex I, 5 years from 22 July 2019, while the validity period of the category 1 to 10 of Annex I are unchanged; (newly added to Article 5, paragraph 2)

On 21 November 2017, Directive (EU) 2017/2102 in the Official Journal of the European Union was published to amend the EU RoHS Directive 2011/65/EU, which mainly modified the use conditions of electronic equipment and its recycling components and the limitation period of exemption list. The directive is effective from 11 December 2017.

The followings are the highlights of this Directive:

1. The definition of “non-road mobile machinery made available exclusively for professional use” is amended. (Article 3, point (28))
2. The requirements of restricted substances in Annex II shall also apply to all other electrical and electronic equipment (EEE) that was outside the scope of Directive 2002/95/EC and which is placed on the market from 22 July 2019. (Article 4, paragraph 3 is amended)
3. The requirements of restricted substances in Annex II shall not apply to all other EEE that was outside the scope of Directive 2002/95/EC and which is placed on the market before 22 July 2019. (new point (ea) is newly added to Article 4, paragraph 4)
4. Provided that reuse takes place in auditable closed-loop business-to-business return systems, and that the reuse of spare parts is notified to the consumer, the requirements of restricted substances in Annex II shall not apply to reused spare parts: (Point (b) to (e) are newly added to Article 5)
  - a). recovered from EEE placed on the market before 1 July 2006 and used in EEE placed on the market before 1 July 2016;
  - b). recovered from medical devices or monitoring and control instruments placed on the market before 22 July 2014 and used in EEE placed on the market before 22 July



## Application of UPLC-MS/MS in Product Testing

Liquid Chromatography with tandem mass spectrometry has become one of the most widely used chemical analysis techniques in the world, mainly focusing on molecular weight determination and combinatorial chemistry in biochemical, pharmaceutical, biological and other applications. The LC-MS data may be used to provide information about the molecular weight, structure, identity and quantity of specific sample components.

The UPLC-MS/MS used by HQTS QAI for testing delivers remarkable performance. Compared to LC-MS, LC-MS/MS is the combination of two mass analyzers in one mass spec instrument. The advantage of UPLC-MS/MS is the ultra resolution, ultra speed and enhanced sensitivity, as well as better performance of chemical identification and specificity, and more structural information on the analyte can be obtained by using UPLC-MS/MS.

Governments around the globe wish to ensure the integrity and quality of products entering their market, as well as end-user safety. To this end, numerous regulations have been established to assist in controlling the quality of goods entering the market. It is vital that importers and exporters comply with these regulations. HQTS-QAI employs UPLC-MS/MS for enhanced testing of a variety of product components in accordance with REACH, RoHS, ASTM, CP65, EN71, etc., including fluorinated organic chemicals, flame retardants, alkyphenol/alkyphenoethoxylates (AP/APEO), allergenous disperse dyes, carcinogen dyes, and others.

### PFOA&PFOS testing

The California Office of Environmental Health Hazard Assessment (OEHHA) has added PFOA and PFOS to the list of chemicals known to the state to cause reproductive toxicity (developmental endpoint) under Proposition 65, which went into law on Nov. 10, 2017. Since then, PFOA was listed in the REACH Annex 17 in June of 2017. This stipulates that PFOA should not be manufactured or placed on the market as a substance, nor be used in the production or placed on the market in (a) another substance, as a constituent; (b) a mixture; (c) an article in a concentration equal to or above 25ppb of PFOA including its salts or 1000ppb of one or a combination of PFOA-related substances from Jul. 4, 2020.

PFOS and PFOA were used to coat a wide range of consumer goods, specifically those designed to be waterproof, stain-resistant or non-stick. Below are just a few of the products in which PFOS and PFOA have been used.

- Textiles
- Leather
- Stain-Resistant Carpets
- Polishes
- Fire-Retarding Foams
- Photographic Processing
- Paper and Packaging for Food
- Coating Additives for Non-Stick Cookware
- Cleaning Products
- Pesticides



There is now sufficient evidence to suggest that prolonged exposure to heightened levels of PFOS and PFOA pose the following health risks to humans:

- Developmental effects
- Cancer
- Liver damage
- Immune disorders
- Thyroid imbalance
- Cardiovascular concerns

### **AP&APEO testing**

Alkylphenolethoxylates (APEO) are common surfactants widely used in the apparel, home textile and shoe industry. Alkylphenols (AP) are by-products of APEO upon cleavage, and it is an intermediate in the production of other substances. AP and APEO can be present as residues in textiles, leather or even plastics. They are very persistent and non-degradable in the environment and are toxic to aquatic ecosystems. Their hormone disruptive properties may also impair human health.

The most important APEOs for the textile industry are NPEOs (nonylphenolethoxylates) and OPEOs (octylphenolethoxylates) due to their detergent properties. Alkylphenols (APs) like nonylphenol (NP) or octylphenol (OP) are breakdown products of the APEOs, which are formed during waste water treatment and in the environment.

### **Relevant regulations**

Since 1998 use of APEOs in detergents has been forbidden in Germany - and since January 2005 the EU directive 2003/53/EG has forbidden the use of NPEO in higher concentrations than 0.1% in formulations. The EU extends its bans of hazardous substances on imported textiles, starting with a prohibition of NPEO.

### **In REACH Annex XVII:**

NP and NPEO: the maximum limit of 0.1% by weight in the industries of:

- Industrial and institutional cleaning;
- Domestic cleaning;
- Textiles and leatherng processing
- Emulsifier in agricultural teat dips;
- Metal working;
- Manufacturing of pulp and paper;
- Cosmetic products;
- Other personal care products;
- Co-formulants in pesticides and biocides

NPEO: the maximum limit of 0.01% by weight in textile articles, effective from Feb. 3, 2021

### **In OEKO-TEX Standard 100:**

It is stipulated that the maximum limit for APEOs and their derivatives is 50mg/kg sum total.

As regards to the testing method of APEO, LC-MS is stipulated as the basic equipment used for detection and determination of APEO.

## Flame retardants testing

Flame retardant chemicals are used in a wide array of products to meet flammability standards. The major uses of flame retardant chemicals include electronics, building insulation, polyurethane foam, wire and cable, etc. However, many flame retardant chemicals were found to have toxic properties, and/or pose environmental and health hazards, mainly brominated and phosphorus flame retardants.

There have been laws and regulations restricting or prohibiting the use of flame retardant chemicals all over the world. Major flame retardant chemicals and related regulatory requirements are listed as below:

**PBB/PBDE:** banned in the RoHS Directive, and an upper limit of 1 g/kg for the sum of PBBs and PBDEs was set.

**TEPA and TRIS:** listed in REACH Annex XVII, prohibiting the use in textiles; banned by U.S. CPSC

**octaBDE and decaBDE:** listed in REACH Annex XVII for the maximum limit of 0.1% by weight; the limit on decaBDE will take effect from 2 March 2019.

**Tetrabromobisphenol A:** OEHHA has added tetrabromobisphenol A to the list of chemicals known to the State of California to cause cancer for purposes of the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), which has taken effect from Oct. 27, 2017.

## How can HQTS-QAI help?

HQTS-QAI is a professional testing lab dedicated to providing a wide variety of testing services to ensure product quality and regulatory compliance, including but not limited to:

- Chemicals
- Package Testing
- Toy Safety
- Footwear
- Softgoods
- Hardgoods
- Food Contact Materials

## STAY TUNED!

