



FOOTWEAR DISTRIBUTORS AND RETAILERS OF AMERICA

Chemical Compliance 2.0

Updates on;

- Ca. Prop. 65
- REACH
- FDRA's Chemical Test Report
- TÜV SÜD Risk Management

September 29, 2018



**Mehr Wert.
Mehr Vertrauen.**

**Add value.
Inspire trust.**





Chemical Compliance 2.0

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Introduction

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Chemical Compliance – State of States

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FDRA – QTRLY Chemical Test Report

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TÜV SÜD : Chemical Risk Management



Mr. Ben DeVito



Ben DeVito has been with TÜV SÜD since July of 2012 and is the Global Technical Director for the CPS Division. His responsibilities include Technical and Sales Support to TÜV SÜD constituents in matters of Testing, Inspections and Audits. In addition, he currently serves in various leadership roles in industry committees including the AATCC, AAFA, FDRA and IFIA.

Ben spent 6 years in the United States Coast Guard before entering the private sector. For the past 30 years Ben has held positions of increasing responsibility at Sara Lee Apparel, Charming Shoppes, UL and TUV SUD. This includes leadership roles in Product Engineering, Product Development, Finance, Production, Sourcing and Quality.

Ben has a depth of experience in supply chain management and is frequent speaker at industry events.

Mr. DeVito is a graduate of the United States Coast Guard Academy and has an MBA from Baldwin-Wallace University.

TÜV SÜD at a glance



150+
YEARS OF
QUALITY, SAFETY
& SUSTAINABILITY



1,000+
LOCATIONS
WORLDWIDE



€2.4
BILLION
IN ANNUAL
REVENUE



24,000+
EMPLOYEES*



42%
OF REVENUE
OUTSIDE GERMANY^



574,000
CERTIFICATES



100%
INDEPENDENT
& IMPARTIAL



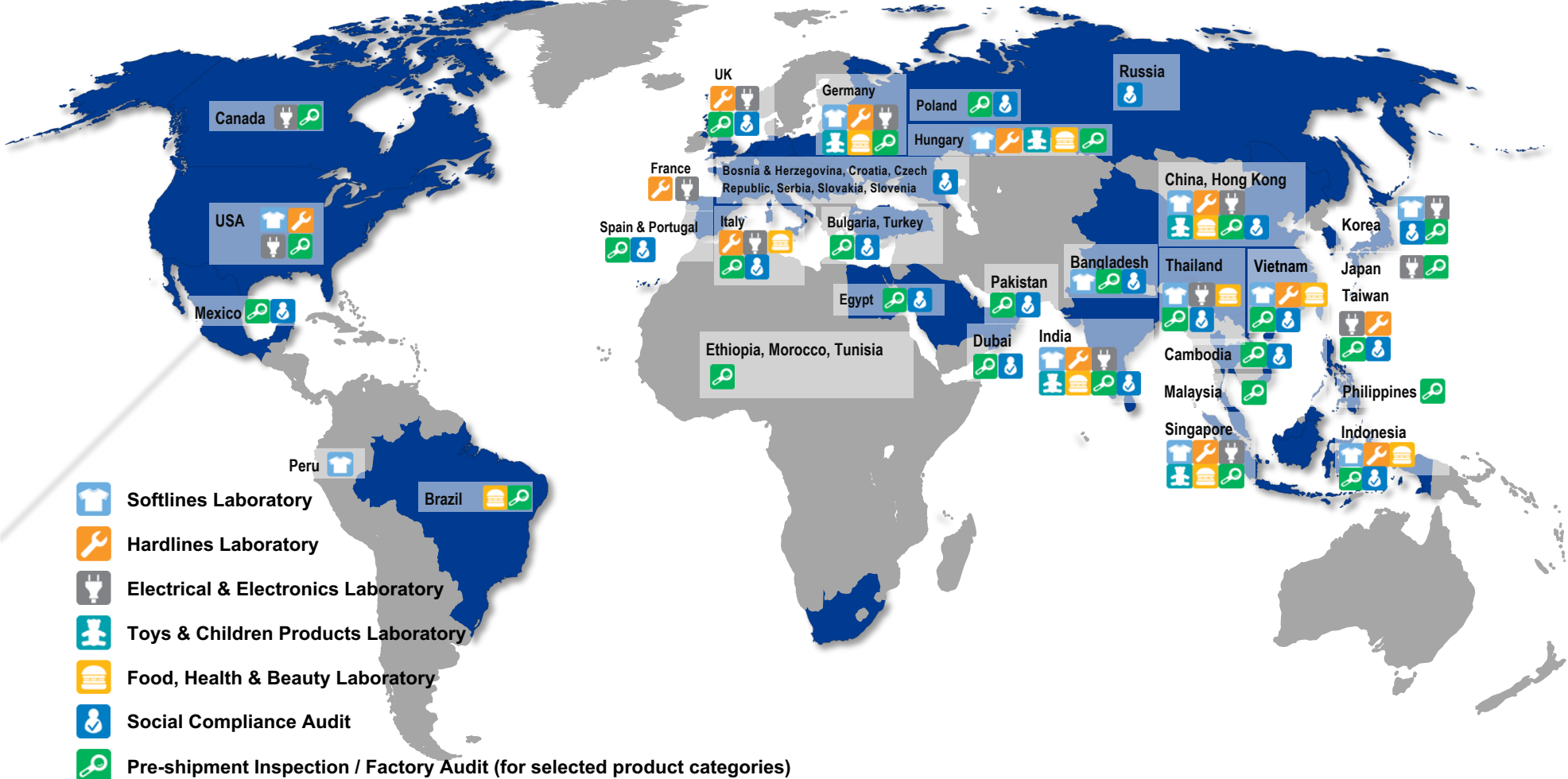
1-STOP
SOLUTIONS
PROVIDER

*As of 2017-12-31

^Based on clients' locations

Note: Figures have been rounded off.

Our expertise worldwide



Many countries like China, India, Germany have multiple locations for testing, inspection & audit

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TÜV SÜD : Chemical Risk Management

Current Patchwork: Federal and State Chemical Safety Laws

Washington recently expanded its list to **85 chemicals** under its chemical **reporting** law

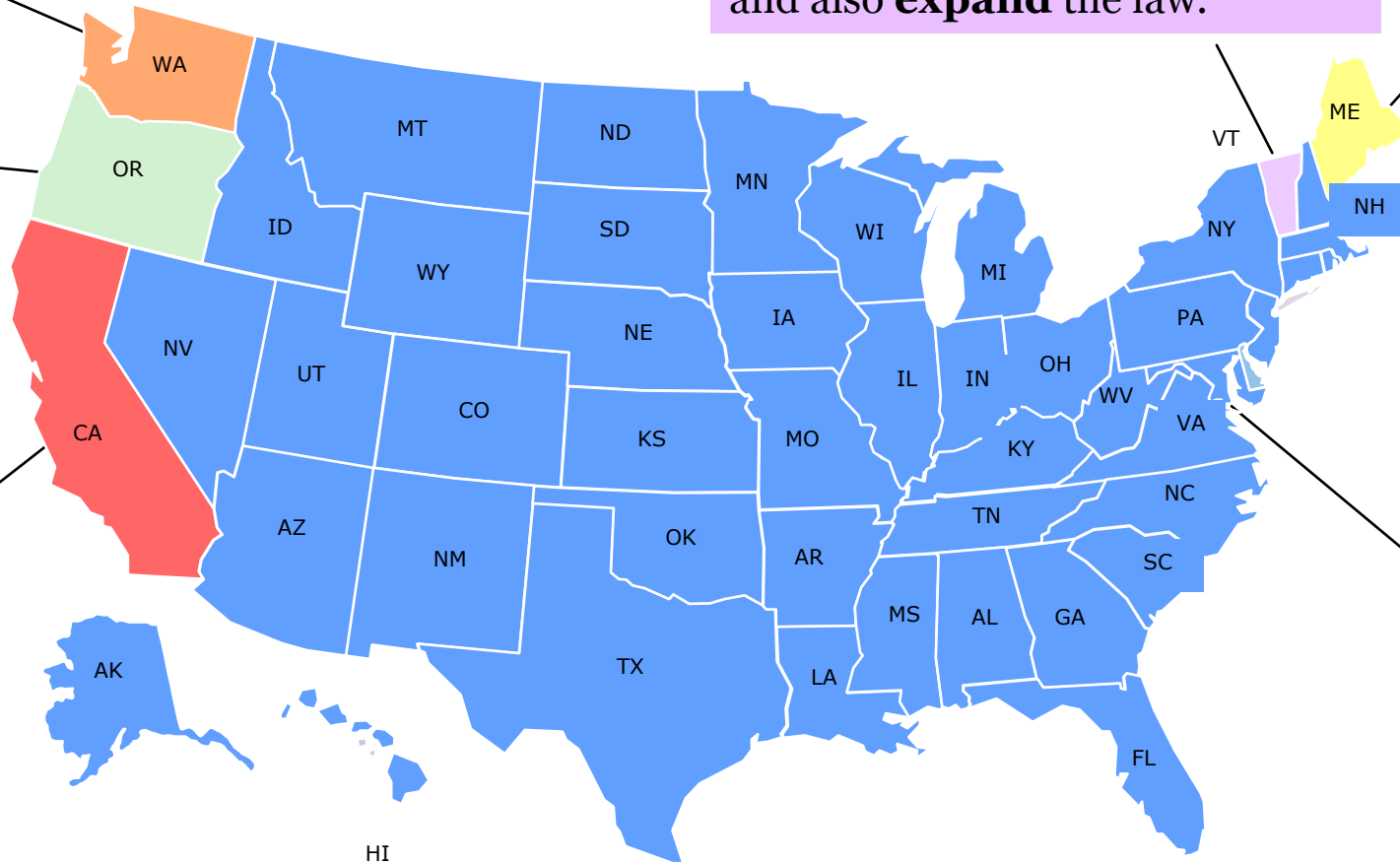
The first company reports under Oregon's chemical **reporting** law were due on **Jan 1, 2018**

California's well-known **labeling** law, Prop 65, has grown to close to 900 chemicals and now has **new warning label requirements** for companies

Vermont considers changes to chemical **reporting** law with proposals to **harmonize** the law and also **expand** the law.

Maine's law imposes different requirements on **classes of chemicals**; potential rulemaking draws from pool of over 1400 chemicals

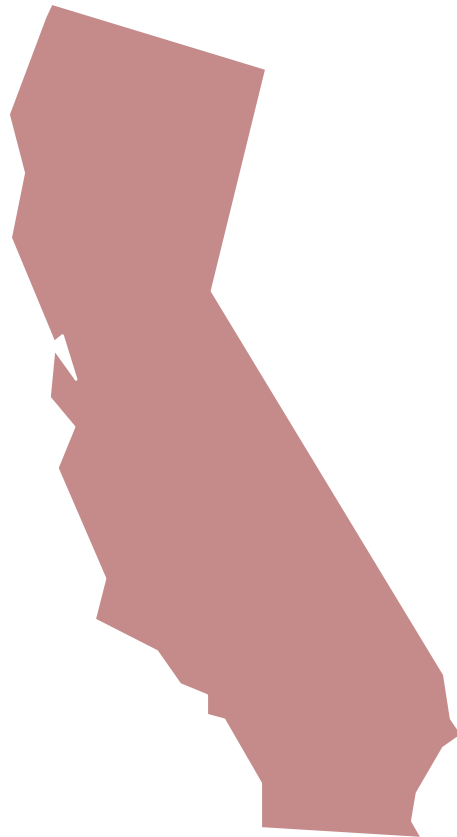
Federal: EPA implements new **Toxic Substance Control Act (TSCA) Reform** law passed by Congress in 2016



Current Patchwork: Federal and State Chemical Safety Laws



WARNING: This product can expose you to chemicals including formaldehyde which is known to the State of California to cause cancer. For more information go to: www.P65Warnings.ca.gov.



FDRA Prop 65 Tracking: Footwear Notices

Date	Plaintiff	Alleged Violator(s)	Source	Chemical(s)	AG No.
8/29/18	Consumer Advocacy Group, Inc.	Ross Stores, Inc. dba dd's Discounts; Ross Stores, Inc. dba Ross Dress for Less, Inc.; Ross Dress for Less, Inc.; Elegance Enterprise Corporation	Plastic Sandals	Di(2-ethylhexyl)phthalate (DEHP) Di-n-butyl phthalate (DBP)	2018-01643
8/29/18	Consumer Advocacy Group, Inc.	Dollar King Burbank; Dollar Kings, Inc.; Dollar Boys, Inc.; Daiso California LLC	Flip Flops With Polymer Components	Di-n-butyl phthalate (DBP)	2018-01628
8/22/18	Consumer Advocacy Group, Inc.	Dollar King; Dollar Kings, Inc.; Dollar Boys, Inc.; LA Double 7, Inc.	Flip Flops with Plastic Straps	Di-n-butyl phthalate (DBP)	2018-01535
8/22/18	Consumer Advocacy Group, Inc.	GMI Group, Inc. dba Crazy Q Bargain	Flip Flops With Polymer Components	Di-n-butyl phthalate (DBP)	2018-01512
8/22/18	SHEFA LMV, INC	Dean Street Group LLC	Stock # 21345; 653-12/2016 Floral Print Flip Flops; UPC: 847312051579	Di-n-butyl phthalate (DBP)	2018-01502
8/17/18	Consumer Advocacy Group, Inc.	Vernon Bargain Center; Daiso California LLC; Daiso Holdings USA Inc.; Vernon Bargain Inc.; Daiso Holdings USA Inc.; Daiso Industries Co., Ltd; Viva Bargain Center Inc.	Flip Flops with Polyvinyl Chloride	Di-n-butyl phthalate (DBP)	2018-01451
8/17/18	Consumer Advocacy Group, Inc.	Viva Bargain Center; Viva Bargain Center, Inc.	Plastic Sandals	Di(2-ethylhexyl)phthalate (DEHP)	2018-01446
8/15/18	Consumer Advocacy Group, Inc.	General Discount #5; General Discount Corporation	Children's Flip Flops with Plastic Components	Di(2-ethylhexyl)phthalate (DEHP)	2018-01417

Current Patchwork: Federal and State Chemical Safety Laws

NOTE: All three acts define Children as “under 12”



Law Name	Washington Children’s Safe Products Act (2008)	Toxic Free Kids Act (2015)	Toxic Free Families Act (2014)
What is Required?	Report if CHCC* intentionally added above the practical quantitation limit (PQL) OR above 100 ppm if contaminants	Same as WA and VT but phase-out or alternative assessment if CHCC reported in 3 cycles	Report if CHCC* intentionally added above the practical quantitation limit (PQL) OR above 100 ppm if contaminants
How Often Do You Report?	Annually	Every Two Years	Every Two Years (unless CHCC in new product)
When is Next Report Due?	January 31, 2019	January 1, 2018	Cycle One: Jan. 2017 Cycle Two: Aug. 2018 Then Every Two Years
What Are Fees?	There is no fee	\$250 fee per chemical; \$10,000 for manufacturing control program waiver	\$200 fee per chemical; Maximum \$13,200 if all 66 chemicals reported

* CHCC: Chemical of High Concern to Children

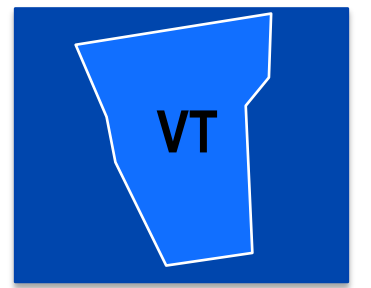
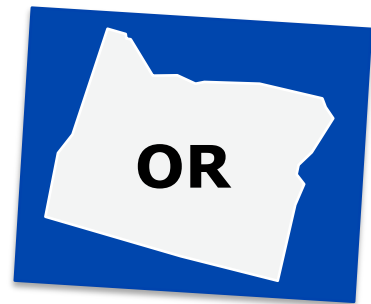
Current Patchwork: Federal and State Chemical Safety Laws

NOTE: All three acts define Children as “under 12”



Law Name	Washington Children’s Safe Products Act (2008)	Toxic Free Kids Act (2015)	Toxic Free Families Act (2015)
What is Included in the Report?	<ul style="list-style-type: none"> • product brick code • function of chemical in product • amount of chemical in product component 	<ul style="list-style-type: none"> • product brick code • function of chemical in product • amount of chemical in product component 	<ul style="list-style-type: none"> • product brick code • function of chemical in product • amount of chemical in product component • UPC or SKU • brand name • product name
What Are Exemptions?	Manufacturing control program exemption for contaminants	Manufacturing control program exemption for contaminants but <i>requires application</i> from state	Manufacturing control program exemption for contaminants

Current Patchwork: Federal and State Chemical Safety Laws



CAS #	Chemical	Which state?
50-00-0	Formaldehyde	WA, OR, VT
62-53-3	Aniline	WA, OR, VT
62-75-9	N-Nitrosodimethylamine	WA, OR, VT
71-43-2	Benzene	WA, OR, VT
75-01-4	Vinyl chloride	WA, OR, VT
75-07-0	Acetaldehyde	WA, OR, VT
75-09-2	Methylene chloride	WA, OR, VT
75-15-0	Carbon disulfide	WA, OR, VT
78-93-3	Methyl ethyl ketone	WA, OR, VT
79-34-5	1,1,2,2-Tetrachloroethane	WA, OR, VT
79-94-7	Tetrabromobisphenol	WA, OR, VT
80-05-7	Bisphenol A	WA, OR, VT
80-09-1	Bisphenol S	WA only (New)
84-61-7	Dicyclohexyl phthalate	WA only (New)
84-66-2	Diethyl phthalate	WA, OR, VT
84-69-5	Diisobutyl phthalate	WA only (New)
84-74-2	Di-n-butyl phthalate	WA, OR, VT
84-75-3	Di-n-hexyl phthalate	WA, OR, VT
85-68-7	Butyl benzyl phthalate	WA, OR, VT
86-30-6	N-Nitrosodiphenylamine	WA, OR, VT
87-68-3	Hexachlorobutadiene	WA, OR, VT
94-13-3	Propyl paraben	WA, OR, VT
94-26-8	Butyl paraben	WA, OR, VT
95-53-4	2-Aminotoluene	WA, OR, VT
95-80-7	2,4-Diaminotoluene	WA, OR, VT
99-76-3	Methyl paraben	WA, OR, VT
99-96-7	4-Hydroxybenzoic acid	WA, OR, VT
100-41-4	Ethylbenzene	WA, OR, VT
100-42-5	Styrene	WA, OR, VT
104-40-5	4-Nonylphenol	WA, OR, VT
106-47-8	4-Chloroaniline	WA, OR, VT
107-13-1	Acrylonitrile	WA, OR, VT
107-21-1	Ethylene glycol	WA, OR, VT
108-88-3	Toluene	WA, OR, VT
108-95-2	Phenol	WA, OR, VT
109-86-4	2-Methoxyethanol	WA, OR, VT

CAS #	Chemical	Which state?
110-80-5	Ethylene glycol monoethyl ether	WA, OR, VT
115-86-6	Triphenyl phosphate	WA only (New)
115-96-8	Tris(2-chloroethyl) phosphate	WA, OR, VT
117-81-7	Di-(2-ethylhexyl) phthalate	WA, OR, VT
117-82-8	Di-(2-methoxyethyl) phthalate	WA only (New)
117-84-0	Di-n-octyl phthalate	WA, OR, VT
118-74-1	Hexachlorobenzene	WA, OR, VT
119-93-7	3,3'-Dimethylbenzidine and Dyes Metabolized to 3,3'-	WA, OR, VT
120-47-8	Ethyl paraben	WA, OR, VT
123-91-1	1,4-Dioxane	WA, OR, VT
126-72-7	Tris (2,3-dibromopropyl) phosphate	WA only (New)
126-73-8	Tri-n-butyl phosphate	WA only (New)
127-18-4	Tetrachloroethene	WA, OR, VT
131-18-0	Dipentyl phthalate	WA only (New)
131-55-5	Benzophenone-2	WA, OR, VT
140-66-9	4-Octylphenol	WA, OR, VT
140-67-0	Estragole	WA, OR, VT
149-57-5	2-Ethylhexanoic acid	WA, OR, VT
335-67-1	Perfluorooctanoic acid	WA only (New)
608-93-5	Pentachlorobenzene	WA, OR, VT
620-92-8	Bisphenol F	WA only (New)
842-07-9	C.I. solvent yellow 14	WA, OR, VT
872-50-4	N-Methylpyrrolidone	WA, OR, VT
1163-19-5	Decabromodiphenyl ether	WA, OR, VT
1241-94-7	Ethylhexyl diphenyl phosphate	WA, OR, VT
1330-78-5	Tricresyl phosphate	WA only (New)
1763-23-1	Perfluorooctane sulfonic acid and its salts	WA, OR, VT
1806-26-4	4-Octylphenol	WA, OR, VT
5466-77-3	2-Ethyl-hexyl-4-methoxycinnamate	WA, OR, VT
7439-97-6	Mercury & mercury compounds including methyl mercury (22967-92-6)	WA, OR, VT

CAS #	Chemical	Which state?
7440-36-0	Antimony & Antimony compounds	WA, OR, VT
7440-38-2	Arsenic & Arsenic compounds including arsenic trioxide (1327-53-3) & dimethyl arsenic acid (75-60-5)	WA, OR, VT
7440-43-9	Cadmium & cadmium compounds	WA, OR, VT
7440-48-4	Cobalt & cobalt compounds	WA, OR, VT
13674-84-5	Tris (1-chloro-2-propyl) phosphate	WA only (New)
13674-87-8	Tris(1,3-dichloro-2-propyl)phosphate	WA, OR, VT
25013-16-5	Butylated hydroxyanisole	WA, OR, VT
25154-52-3	Nonylphenol	WA, OR, VT
25637-99-4	Hexabromocyclododecane	WA, OR, VT
26040-51-7	Bis (2-ethylhexyl) tetrabromophthalate	WA only (New)
26761-40-0	Diisodecyl phthalate	WA, OR, VT
28553-12-0	Diisononyl phthalate (unbranched)	WA, OR, VT
38051-10-4	Bis (chloromethyl) propane-1,3-diyl tetrakis-(2-chloroethyl) bis(phosphate)	WA only (New)
68937-41-7	Isopropylated triphenyl phosphate	WA only (New)
84852-15-3	4-Nonyl phenol branched	WA, OR, VT
84852-53-9	Decabromodiphenyl ethane	WA only (New)
85535-84-8	Short-chain chlorinated paraffins	WA only (New)
108171-26-2	Chlorinated paraffins	WA only (New)
183658-27-7	2-ethylhexyl-2,3,4,5-tetrabromobenzoate	WA only (New)

Current Patchwork: Federal and State Chemical Safety Laws

Federal: Toxic Substances Control Act (TSCA) Reform

**The House passed
bipartisan TSCA
reform and President
Obama signed the bill
into law in May 2016**

***Original House Vote:
398 to 1***





Hot Topics & Docs

KEY 2018 PRODUCT SAFETY RESOURCES

Prop 65 Resources

[FDRA Prop 65 Tracking Document](#)

[FDRA Member Alert – Key Changes to Prop 65](#)

[FDRA Member Webinar: 2018 Prop 65 Changes](#)

FDRA Product Safety Guidebook (RSL)

[FDRA and TUV SUD Global Product Safety Guidebook](#)

[FDRA's Interactive Guide to Chemical & Physical Testing for Footwear](#)

State Chemical Safety Laws

[WA State Reporting: What Footwear Companies are Reporting](#)

[Patchwork of State Chemical Safety Laws Presentation](#)

OTHER RESOURCES

[Managing Chrome VI Challenges: Webinar by TUVSUD](#)

FDRA Member Memo: [CPSC's New Product Testing & Certification Program Regulations](#)

[CPSC Recall Handbook](#)

[Consumer Product Safety Commission \(CPSC\) Guidance on Recalls](#)

[Consumer Product Safety Improvement Act \(CPSIA\)](#)

[Consumer Product Safety Commission 3rd party Testing Information](#)

[California's Proposition 65 Law](#)

[Understanding California's Prop 65 & Footwear \(Background Sheet\)](#)

[FDRA's Quarterly Footwear Chemical Fail Rate Analysis Report Q3 2016](#)



Calls and Events

2018 CALLS/EVENTS

Working Group Call

September 20, 2018 at 2 p.m. EDT

[Click here to listen to the recording](#)

Working Group Call

July 26, 2018 at 2 p.m. EDT

[Click here to listen to the recording](#)

PAST CALLS/EVENTS

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TÜV SÜD : Chemical Risk Management

FDRA's New Risk Based Approach to Global Chemical Compliance



Footwear Chemical Fail Rate Analysis Top 10 Chemicals by Quarter 2nd Quarter 2018 (April - June)

Lab: TÜV SÜD

Test Item	Material	Test Method	Requirement	Number of Tests	Fail Rate
1 Dimethylformamide (DMFA)	Coated Textile	ISO 16189	Skin Contact:<50mg/kg Without Skin Contact:300 mg/kg	832	40.38%
2 Chromium VI - wet test	Leather	ISO 17075 BVL B 82.02-11	< 3.0 mg/kg	1059	11.14%
3 pH	Leather and Textile	ISO 4045 ISO 3071	Leather:3.5 - 9.0 Textile:4.0-7.5	6805	8.67%
4 Migration of certain elements	Textile, Plastic, and Coating	ASTMF963-11, EN 16711-2, ISO 17072-1	Pb<90, Sb<60, As<25, Ba<1000, Cd<75, Cr<200, Hg<60, Se<500ppm	970	5.36%
5 NP, OP, NPEO, OPEO	Textile and Leather	ISO 18254-1 ISO 18218-1	Each<100 mg/kg	5512	4.93%
6 Total Arsenic & Cadmium Content	Coating, Plastics, and Metal	Add digestion, Microwave digestion	Arsenic < 50 mg/kg; Cadmium < 100 mg/kg	2823	4.07%
7 Phthalates	Plastics and Coating	CPSC-CH-C1001-09.3 ISO/TS 16181	<1000 mg/kg	9943	3.44%
8 SCCP	Plastics, Textile, and Leather	ISO 18219	<1000 mg/kg	2408	2.70%
9 PAH	Plastics and Coated Material	AFFS GS 2014:01 PAH	Each PAH<0.2 mg/kg; Sum of 18 PAH<10 mg/kg	6292	2.62%
10 Formaldehyde	Leather and Textile	ISO 17226-1 ISO 14184-1	< 20 mg/kg for kids < 75 mg/kg for skin contact	8814	2.51%

1. DMFA
2. Cr VI
3. pH
7. Phthalates
10. Formaldehyde

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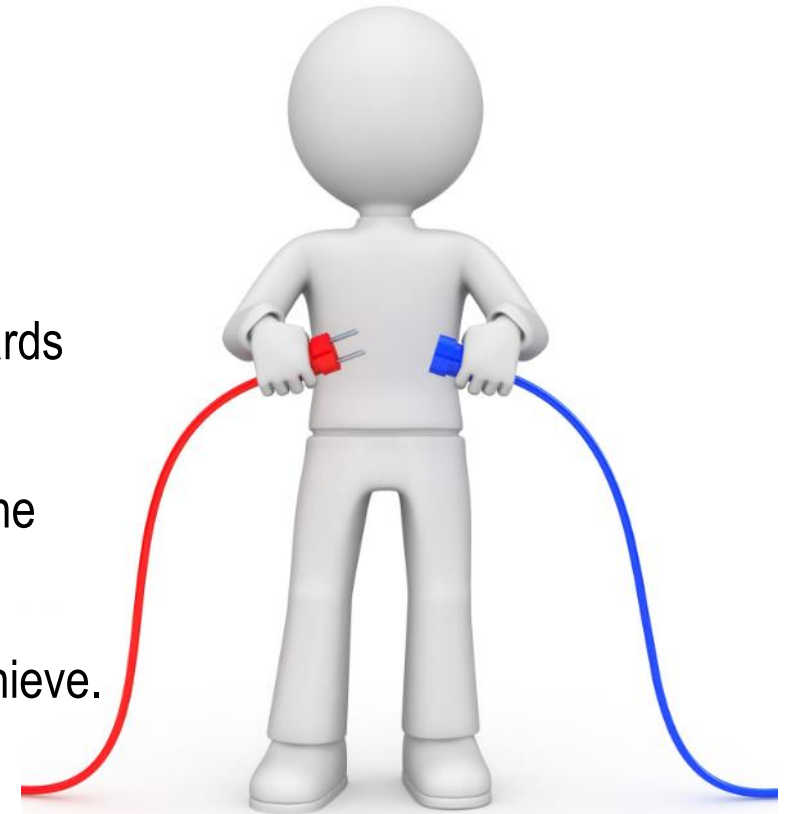
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TÜV SÜD : Chemical Risk Management

REACH - Legal Requirements on hazardous substances in Europe

EU regulations vs. EU directives

- **EU regulations** are directly applicable law in all EU countries.
 - A "regulation" is a binding legislative act.
 - It must be applied in its entirety across the EU.
 - For example, when the EU wanted to make sure that there are common safeguards on goods imported from outside the EU, the Council adopted a regulation.
- **EU directives** must be converted into national laws by the national parliaments of the member states.
 - A "directive" is a legislative act that sets out a goal that all EU countries must achieve.
 - It is up to the individual countries to devise their own laws on how to reach these goals.



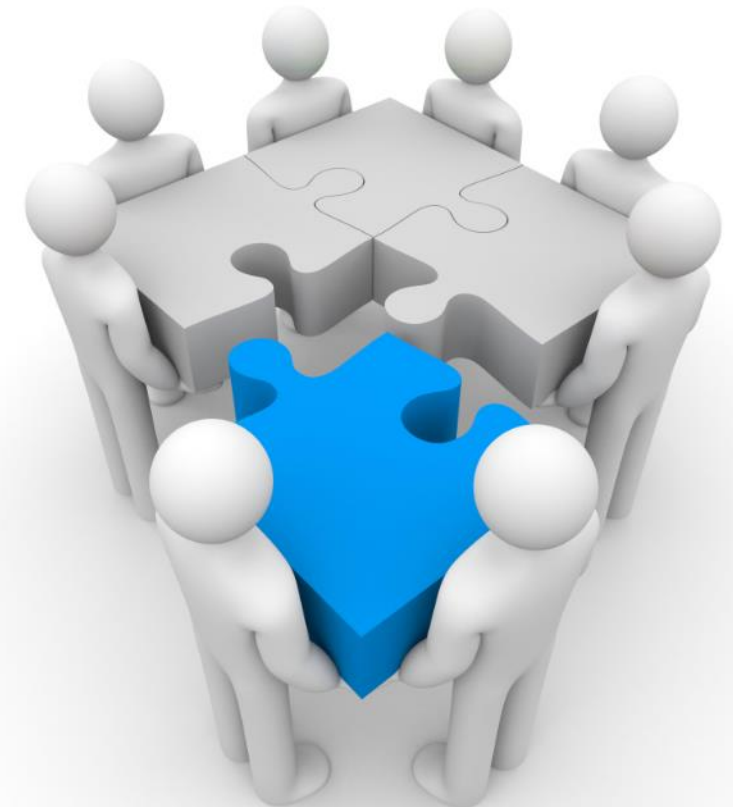
Legal Requirements on hazardous substances in Europe

General EU regulations

- REACH regulation (Regulation (EC) No 1907/2006)
regulates the **R**egistration, **E**valuation, **A**uthorisation and **R**estriction of **C**hemicals
- POP regulation (**P**ersistent **O**rganic **P**ollutants, Regulation (EC) No 850/2004)
restricts certain persistent chemicals compounds in articles and mixtures
- BPR regulation (**B**iocidal **P**roducts **R**egulation, Regulation (EU) No 528/2012)
regulates the use of biocides in articles and mixtures

Product group specific EU directives

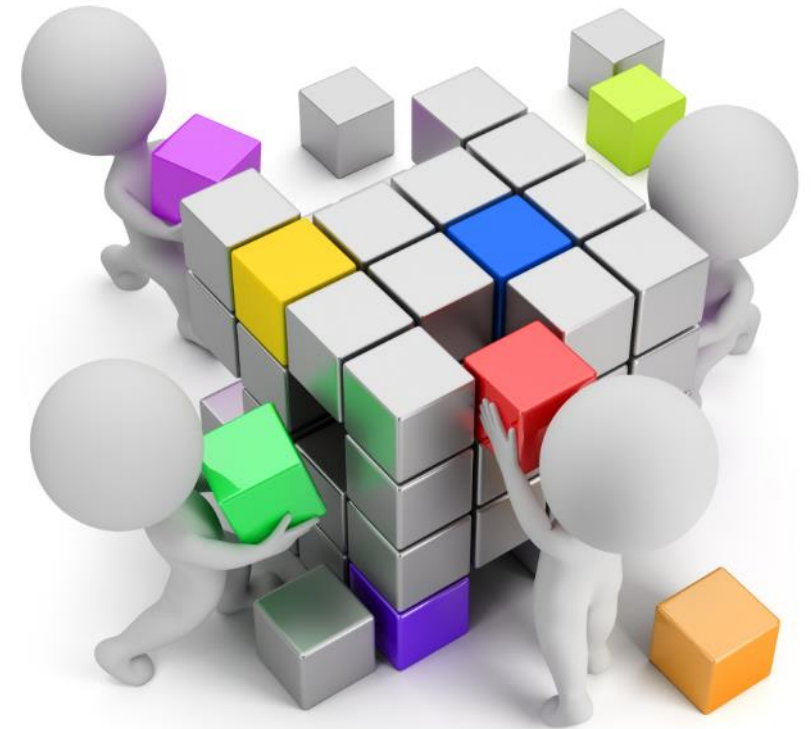
- ROHS directive (DIRECTIVE 2011/65/EU)
restricts the use of certain hazardous substances in ENE equipment
- Toys directive (DIRECTIVE 2009/48/EC)
restricts hazardous substances in toys etc.
- Packaging directive (DIRECTIVE 94/62/EC)
restricts the concentration of certain heavy metals in packaging



Legal Requirements on hazardous substances in Europe

National laws and regulations

- National regulations covers articles which are not or not completely covered by harmonized EU directives or regulations, e. g.
 - Food contact materials
 - Materials in contact with drinking water
 - Textiles, Shoes
 - Furniture
 - Construction products ...



REACH – Title VIII and Annex XVII – Restrictions on dangerous substances and mixtures

Article 67 General provisions

- A substance on its own,
in a mixture or in an article,
for which [Annex XVII](#) contains a restriction
shall not be manufactured, placed on the market or used
unless it complies with the conditions of that restriction.
- Annex XVII includes **71 substances**



REACH – Draft amendment of restrictions in Annex XVII

DRAFT: Restriction of CMR substances in textile articles and clothing for consumer use

- Expected publication: 3rd quarter 2018
- Expected enter into force: 3rd quarter 2020
- Proposed scope of restrictions:
 - Clothing or related accessories
 - Textiles other than clothing
 - which, under normal or reasonably foreseeable conditions of use, come into contact with human skin to an extent similar to clothing
 - Footwear

Further information: <https://www.tuv-sud.com/home-com/resource-centre/publications/e-ssentials-newsletter/consumer-products-e-ssentials/e-ssentials-4-2018/eu-reach-wto-draft-restriction-on-cmrs-in-textiles>



REACH – Title VIII and Annex XVII – Restrictions on dangerous substances and mixtures

Examples of restricted substances, highly relevant for textile, footwear and accessory

- 4. Tris (2,3 dibromopropyl) phosphate
- 6. Asbestos fibres
- 7. Tris(aziridiny)phosphin oxide
- 8. Polybromobiphenyls; Polybrominatedbiphenyls (PBB)
- 20. Organostannic compounds
- 23. Cadmium
- 27. Nickel
- 43. Azocolourants and Azodyes
- 45. Diphenylether, octabromo derivative
- 46a. Nonylphenol ethoxylates (from 2021-02-03)
- 47. Chromium VI compounds
- 50. Polycyclic-aromatic hydrocarbons (PAH)
- 61. Dimethylfumarate (DMF)
- 63. Lead
- 67. Bis(pentabromophenyl)ether (Decabromodiphenylether, DecaBDE) (from 2019-03-02)
- 68. Perfluorooctanoic acid (PFOA) (from 2020-07-04)

REACH - SVHC

SVHC -Substances of Very High Concern (Article 57)

- Substances which are
 - Carcinogenic
 - Germ cell mutagenic
 - Reproductive toxic
 - Persistent, bioaccumulative and toxic
 - Endocrine disruptors
- SVHC candidate list established acc. to Article 59 includes **191 substances** (as at 2018-06-27)
<https://echa.europa.eu/candidate-list-table>
- SVHC candidate list is usually updated every 6 month



REACH – Information obligations on SVHC

Article 33 Duty to communicate information on substances in articles

- 1. Any supplier of an article
 - containing a SVHC in a concentration above 0,1 % weight by weight (w/w)
 - shall provide the recipient of the article with sufficient information, available to the supplier,
 - to allow safe use of the article including, as a minimum, the name of that substance.

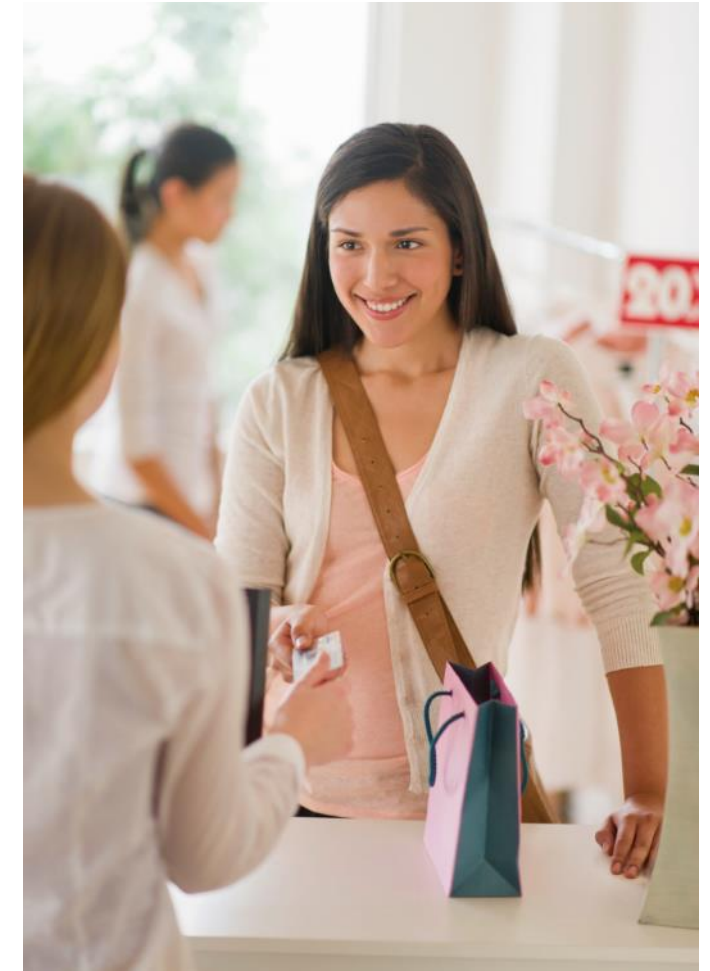
Each dealer, importer, supplier, etc. must inform his business partner within the supply chain without being asked if his products contain SVHC with more than 0.1% (w/w).



REACH – Information obligations on SVHC

Article 33 Duty to communicate information on substances in articles

- 2. On request by a consumer
 - any supplier of an article
 - containing a SVHC above 0,1 % weight by weight (w/w)
 - shall provide the consumer with sufficient information, available to the supplier,
 - to allow safe use of the article including, as a minimum, the name of that substance.
 - The relevant information shall be provided, free of charge, within 45 days of receipt of the request.



REACH – Title II Notification obligations concerning SVHC

Notification – How, Who & What?

- Notification submissions are free-of-charge. It must be submitted to the ECHA in the IUCLID format via the REACH-IT platform on the ECHA website by one of the following parties:
 - i. EU article producer;
 - ii. EU importer;
 - iii. EU Only Representative (OR) on behalf of a non-EU company.

- The list of information required for a notification include:
 - i. Identity and contact details of the EU producer/importer
 - ii. Registration number(s), if available
 - iii. Substance identity
 - iv. Substance classification
 - v. Substance uses
 - vi. Tonnage range



REACH – Title II Notification obligations concerning SVHC

Article 7(2) Registration and notification of substances in articles

- Any producer or importer of articles shall notify the ECHA, if both the following conditions are met:
 - an SVHC is present in those articles in quantities totalling over one tonne per producer or importer per year;
 - an SVHC is present in those articles above a concentration of 0,1 % weight by weight (w/w).



Testing solutions for Sustainability

Supporting sustainability

Testing verification with reference to the following regulations, directives and guidelines as part of environmental services:

- The number of man days required depends on number of employees in the factory
- REACH Regulatory Testing (EC 1907/2006)
- Detox MRSL
- ZDHC MRSL
- ZDHC waste water guidelines
- Packaging and packaging waste (Directive 94/62/EC)
- RoHS testing (Directive 2011/65/EU)
- WEEE (Directive 2012/19/EU)
- Energy Efficiency (ErP Directive 2009/125/EC)

Higg Facility Environmental Module (FEM) 3.0

Developed by the Sustainable Apparel Coalition (SAC), the Higg FEM 3.0 allows facilities to standardise how they measure and evaluate the environmental performance of their facilities.

- A facility-level self-assessment tool that enables rapid learning through identification of environmental sustainability hot spots, existing level of performance and improvement opportunities.
- A way to inform organizations of their strengths and weakness, drive business value throughout the value chain by presenting opportunities for cost-saving and innovation, and catalyse sustainability education and collaboration.
- Higg Facility Environment Module measures
 1. Environmental Management System
 2. Energy Use & Greenhouse Gas
 3. Water Use
 4. Wastewater/ Effluent
 5. Emissions to Air
 6. Waste Management
 7. Chemicals

Our Services

With our SAC approved verifiers, we can support the validation of the Higg Index self-assessment accuracy for apparel and footwear manufacturing facilities before the facilities can post and share its Higg index verification results with SAC members on the online platform Higg.org

Finishes

Metals titanium dioxide and titanium compounds

- silicates and silicon compounds
- vanadium (catalyst)
- aluminum and copper (process water)
- mercury in dyeing
- Cadmium (in leather)

Coatings/Finishes

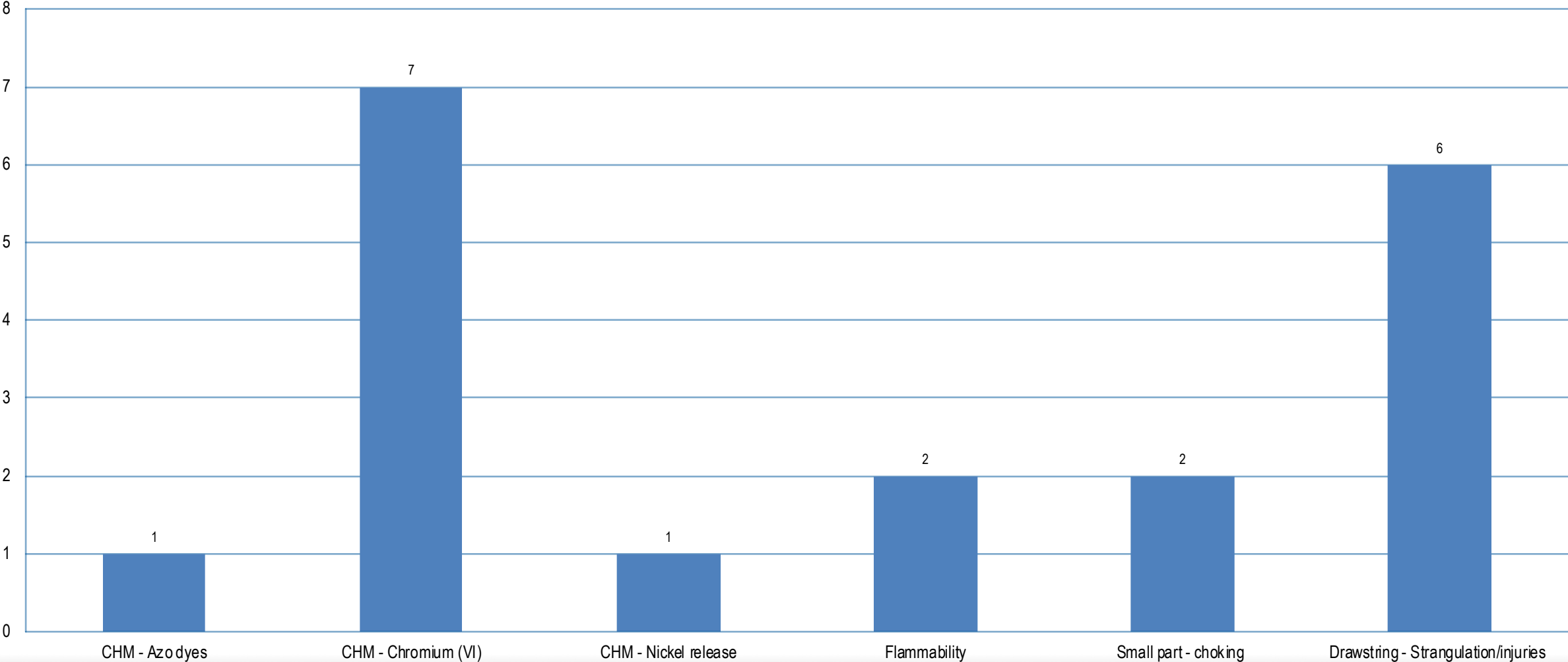
- **graphene / nanoparticles**
- flame retardants
- Antimicrobials
- Anti-wrinkle/Anti - stain

Other

- • microfibers

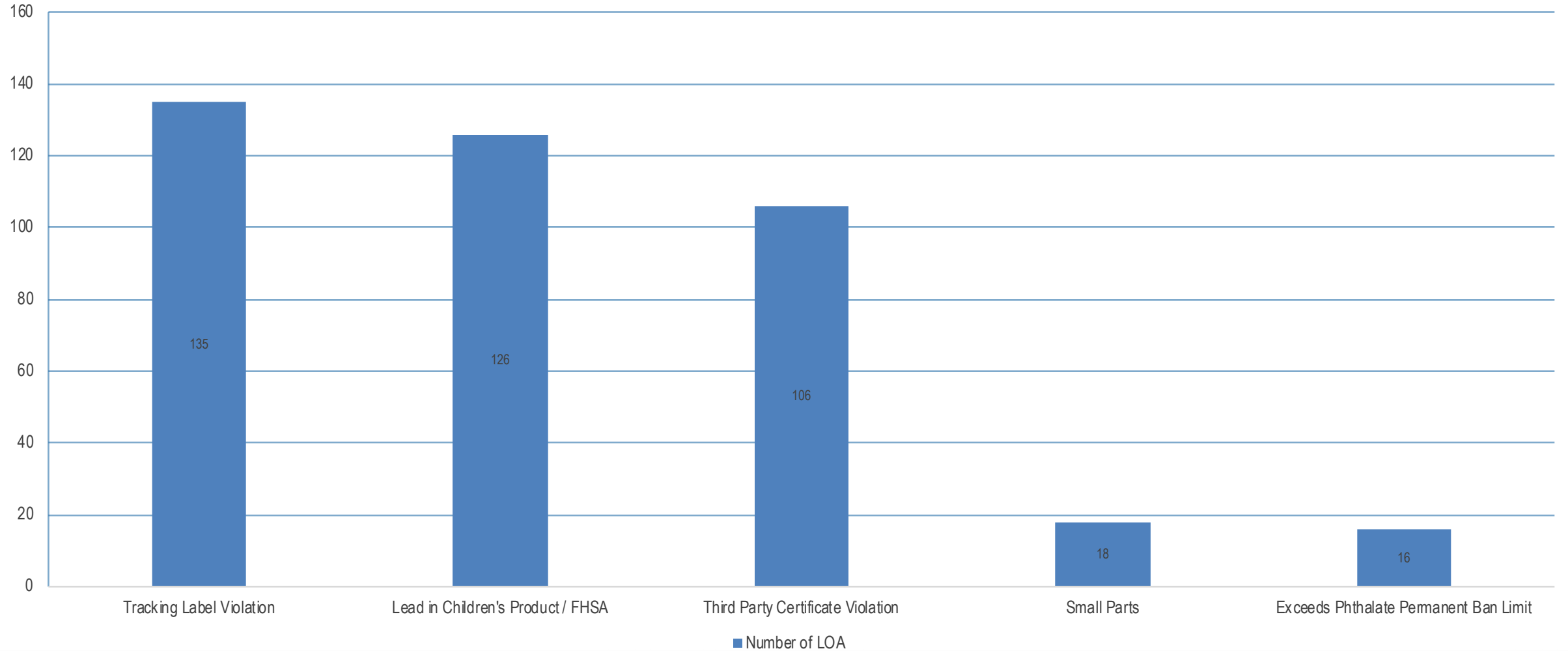
RAPEX ANALYSIS

2018 Apr to Jun - Notification cases for clothing, textiles and fashion items



CPSC RECALL ANALYSIS

2018 Apr to Jun - Top 5 Violations



Chemical Compliance 2.0

1

Introduction

2

Chemical Compliance – State of States

3

FDRA – QTRLY Chemical Test Report

4

FDRA – Chemical Test Report

5

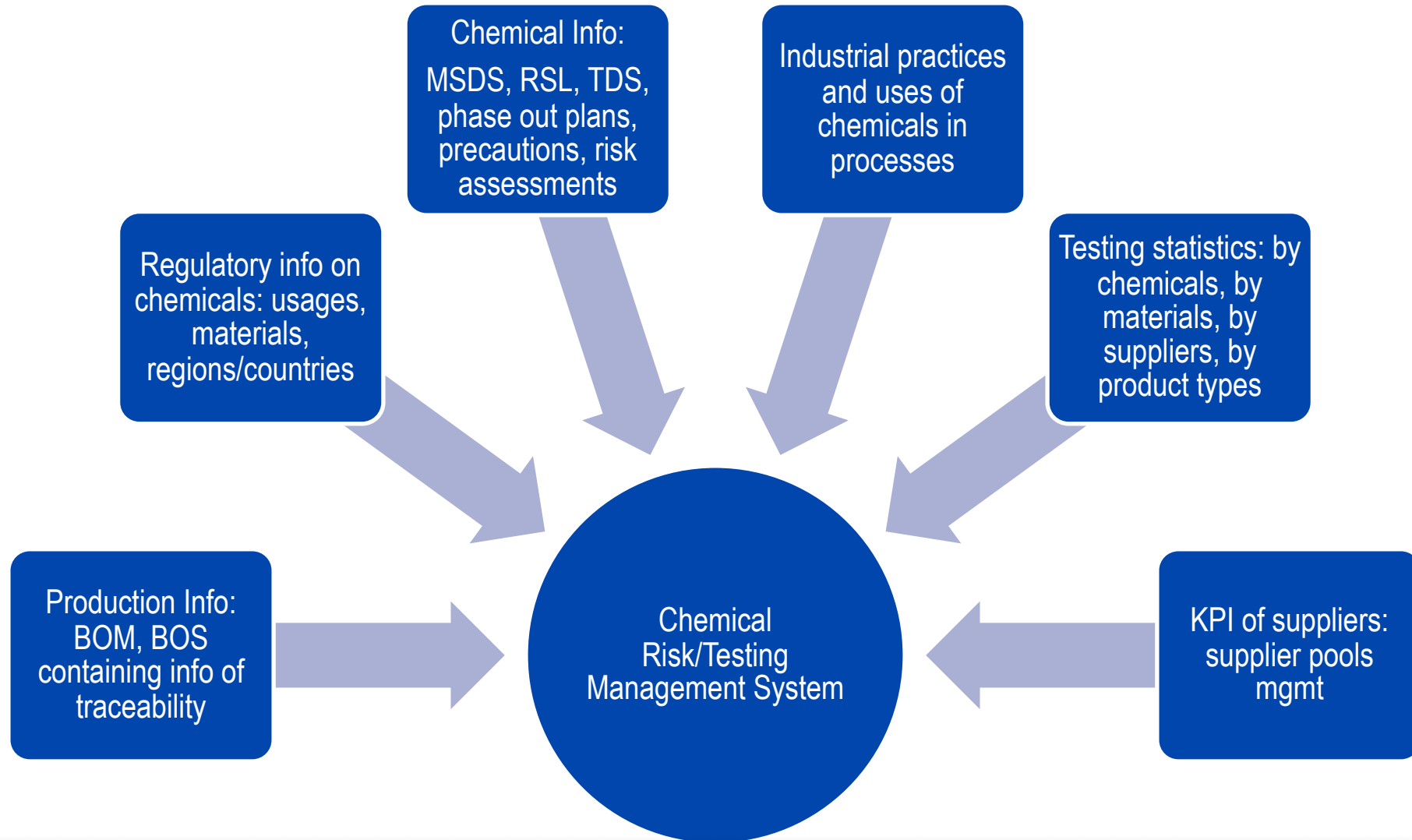
TÜV SÜD : Chemical Risk Management

TÜV SÜD - Chemical Data Management System (CDMS)

The CDMS is an intelligent database and possesses the following features:

- a) an automatic BoM-comparison algorithm to return advices on testing activities by taking supplier performance into consideration.
- b) a mathematical model for uncorrelated data to compute the passing probabilities of materials and final products subject to predefined acceptance limits;
- c) a time-evolving probability calculation making use of a rolling time-frame concept to reflect dynamically the performance of suppliers;
- d) a predictive power to forecast the passing rates of raw materials or/and final products upon acceptance limit or evaluation criteria changes – The Risk Cube.

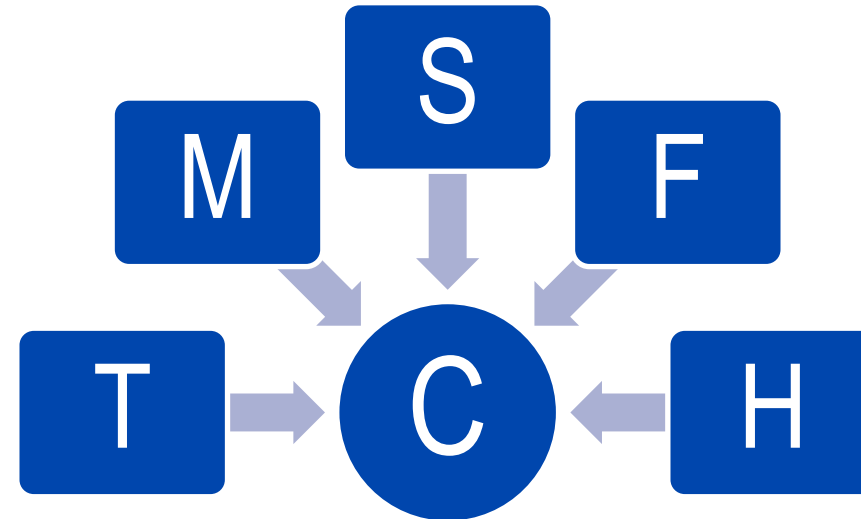
The Chemical Data Management System (CDMS)



Quantitative Risk Assessment and Sensible Testing

Confidence level (C) of passing a test for a test point

- Test parameter (T)
- Material type (M)
- Raw material supplier (S)
- Manufacturing factory (F)
- Test History (H)



$$C = f(T, M, S, F, H)$$

$$C \approx g(T, M, \text{testing statistics in StarLIMS})$$

Quantitative Risk Assessment and Sensible Testing

- Test Matrix

		Material type				
		M_1	M_2	.....	M_{j-1}	M_j
Parameters	P_1	$C(1,1)$	$C(1,2)$	.....	$C(1,j-1)$	$C(1,j)$
	P_2	$C(2,1)$	$C(2,2)$	.....	$C(2,j-1)$	$C(2,j)$

	P_{i-1}	$C(i-1,1)$	$C(i-1,2)$	.....	$C(i-1,j-1)$	$C(i-1,j)$
	P_i	$C(i,1)$	$C(i,2)$	.....	$C(i,j-1)$	$C(i,j)$

- $C(i,j)$ could be computed from the database of LIMS and managed in CDMS

Applications



- a) Fixed the percentage points of testing – fixed budget
- b) Quantify confidence level – fixed and known risk
- c) Prioritization of testing in case of insufficient samples
- d) Spot testing – supply chain management and in certification activities

Stay informed and updated

Sign-up for **Consumer Products and Retail E-ssentials**, TÜV SÜD's complimentary newsletter that delivers updates on the latest regulations and standards, at www.tuv-sud.com/e-ssentials.



Increased focus of impact of chemicals

- Growing concerns on the impact of chemicals used in production on environment and human health
- Manufacturers and retailers must minimise the impact of hazardous chemicals on their supply chains, environment and consumers.



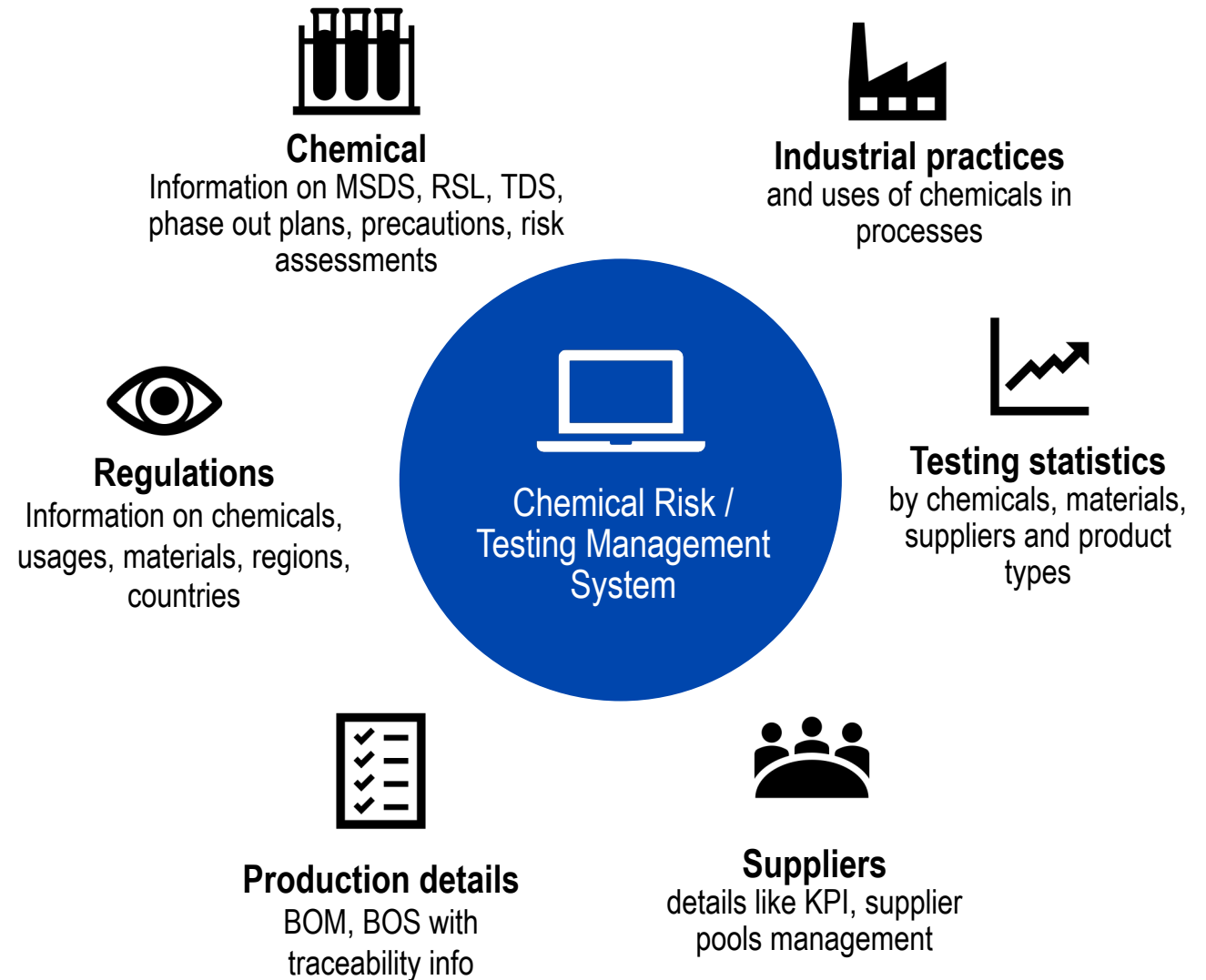
How to address the supply chain challenge?

- Establish a successful chemical management process integrated with a Chemical Management Data System (CDMS).
- This will allow you to compile and analyse data to increase the efficacy of your testing program.



What is a Chemical Data Management System (CDMS)?

- The CDMS is “a smart system”, with a core database, that collects and analyses your chemical test results in one space.
- It also makes specific recommendations to you to improving your testing program while reducing costs.



What are the CDMS' key features?

- An automatic BoM-comparison algorithm to return statistically significant “advice” by taking supplier chemical testing performance into consideration.
- A mathematical model for uncorrelated data to compute the passing probabilities of materials and final products subject to predefined acceptance limits; a time-evolving probability calculation making use of a rolling time-frame concept to reflect dynamically the performance of suppliers;
- A predictive power to forecast the passing rates of raw materials or/and final products upon acceptance limit or evaluation criteria changes – The Risk Cube.

Thank you for your attention!

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