

PHILIPS

sense and simplicity

Approach to EU REACH

Regulation (EC) 1907/2006

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Philips Consumer Lifestyle

19 Jan 2009

What is REACH?

Registration, **E**valuation, **A**uthorization and restriction of **C**hemicals

- An European Regulation => applies only to the EU, but reflects itself into all geographies!
- Into force on June 1st 2007; Will be implemented stepwise over 11 years
- Very broad scope (all prods & markets): chemical industry, EE, construction, aviation, food, automotive, etc.
- Few exemptions: medicinal products, food, cosmetics, waste, radioactive subst., polymers, etc. (Not exempted: base materials, monomers & additives)
- Comparing with previous legislations, REACH...
 - has wider scope
 - financial/management onus shifts from regulators to industry
 - much emphasis on substances of very high concern (SVHC) in products
 - flow of information throughout the whole supply chain

Scope of REACH

All Chemicals & Preparations & Materials (2-3 millions substances)



>100.000 substances in EU (import & production)
REACH expected to regulate ca. 30.000 substances



SVHC (>1.500 substances)

SVHC (500+ substances for PHILIPS)

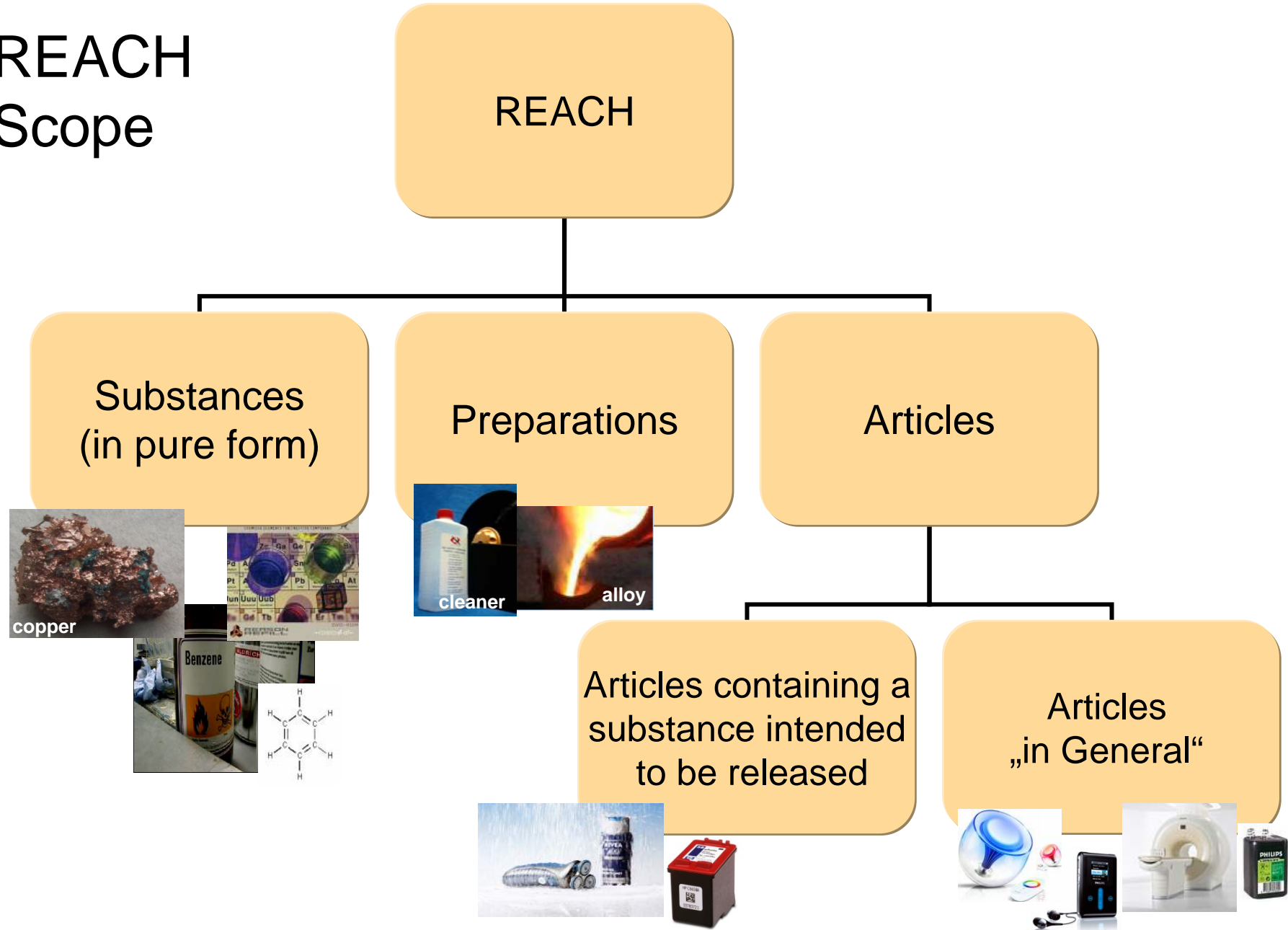
RoHS
(6 substances)

Restricted Substances List
(~40 substances)

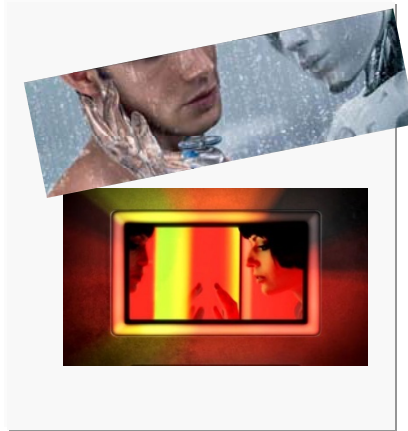


=> 15 SVHCs published on a first list

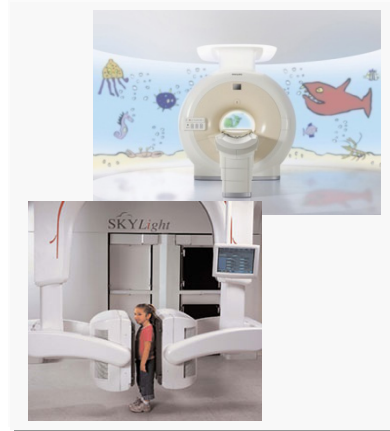
REACH Scope



Philips & REACH



Consumer Lifestyle
(CL)



Healthcare
(PH)



Lighting
(PL)

PHILIPS:

- Use Chemicals (CL, PH, PL)
- Make and Import Chemicals (CL, PH, PL)
- Make products containing chemicals intended to be released (CL)
- Make products (CL, PH, PL)

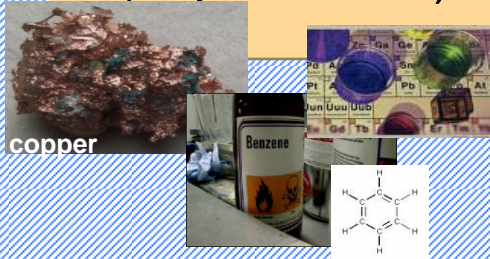
REACH:

- Downstream User
- (Pre-)Registration of chemicals
- Articles with intended release
- Articles

Approach

REACH

Substances
(in pure form)



Preparations



Articles

Articles containing a
substance intended
to be released



Articles
„in General“



CHEMICALS

- Downstream Use in manufacturing and subst. intended to be released from articles
- Produced Chemicals (Lighting)

ARTICLES

- products

“Chemicals”: Scope and Definitions

CHEMICALS Activities under REACH refer to:

- **Process Chemicals:** substances or preparations used in manufacturing processes (flux, solder paste, cleaning agents, etc.)
- **Chemicals with Intended release:** substances or preparations intended to be released from our products (e.g. perfume, ink)
- **Produced Chemicals:** substances or preparations produced by Philips (phosphor for TL lamps / LEDs, etc.)

DEFINITIONS:

“CHEMICALS”

- **Substance (*in pure form*):** is a chemical element or its compounds in the natural state or obtained by any manufacturing process (including any additive necessary to preserve its stability or impurity resulting from the process),
- **Preparation:** means a mixture or solution of two or more substances;
- **Manufacturer:** legal entity established in EU who **makes a substance** in EU
- **Importer:** legal entity established in EU who is **responsible for import**
- **Downstream User:** legal entity established in EU who **uses a substance** (in pure form or in preparation), in the course of his industrial activities. A distributor or a consumer is not a downstream user.

Chemicals: Obligations



STEP 1: PRE-REGISTRATION (*Jun-Dec 08*)

Manufacturer or importer of substances should submit limited information (name of the substance and use) to the European Chemicals Agency (ECHA).

- Pre-registration is an “in between solution”, until a substance is registered
- Chemicals that are not pre-registered, can not be used after 1 Dec ‘08, unless they are registered

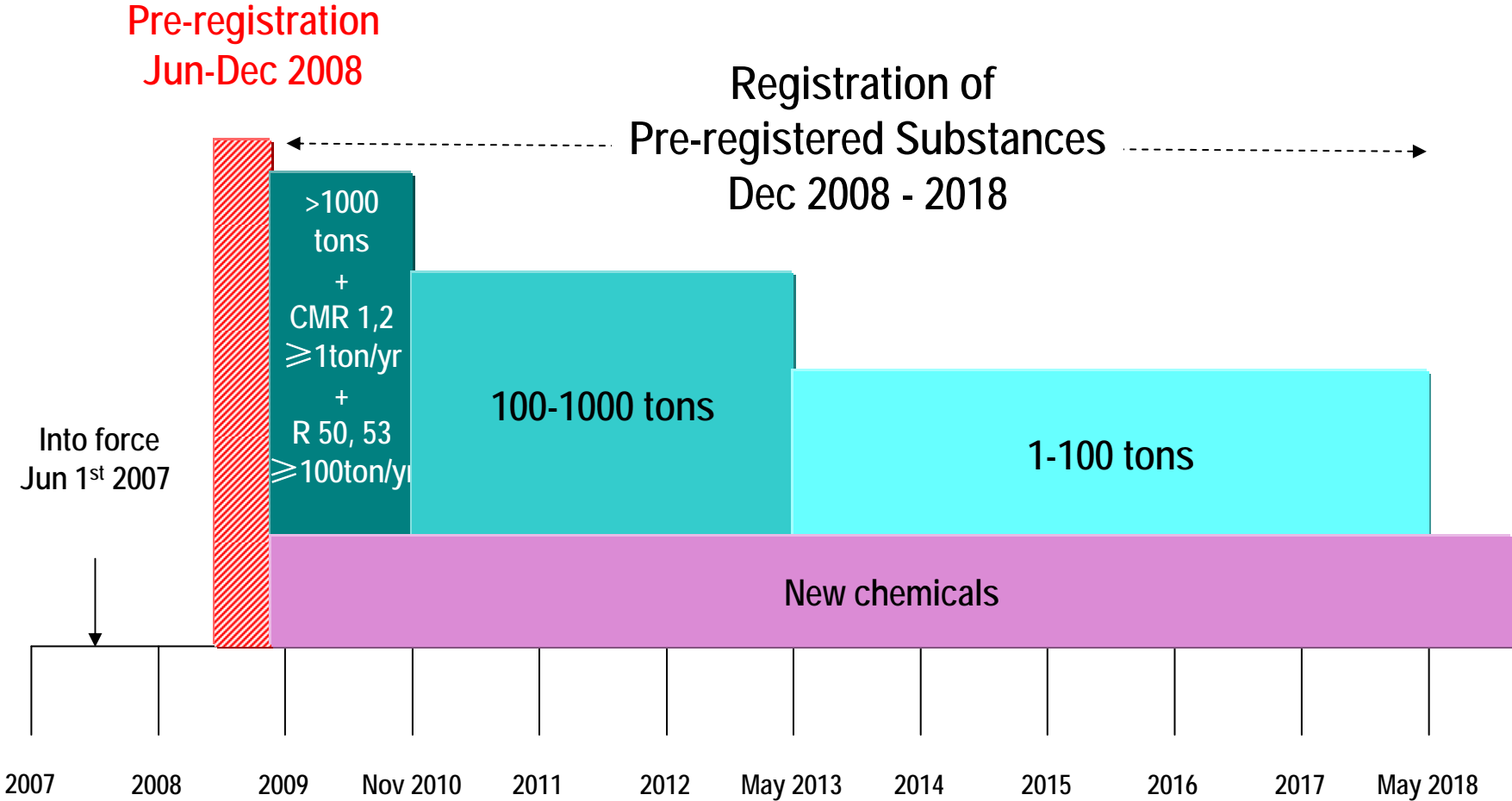
STEP 2: REGISTRATION (*From Dec onwards*)

Any manufacturer or importer of a substance (pure or in preparation), in quantities (weight) of 1 ton/year or more must register this substance for each specific use.

- Manufacturer/importer/(user) of a chemical creates an information dossier (physicochemical, toxicological and eco-toxicological properties) and submits to ECHA
- ECHA checks completeness of the dossier in 3 weeks.
- Only registered substances can be manufactured/imported/used in EU
- ECHA takes care of evaluation of the dossier, followed by Authorization or Restriction for each specific use.

OTHER: Downstream User must communicate use (application) of chemicals to producers

Chemicals: Timeline



Chemicals: Actions

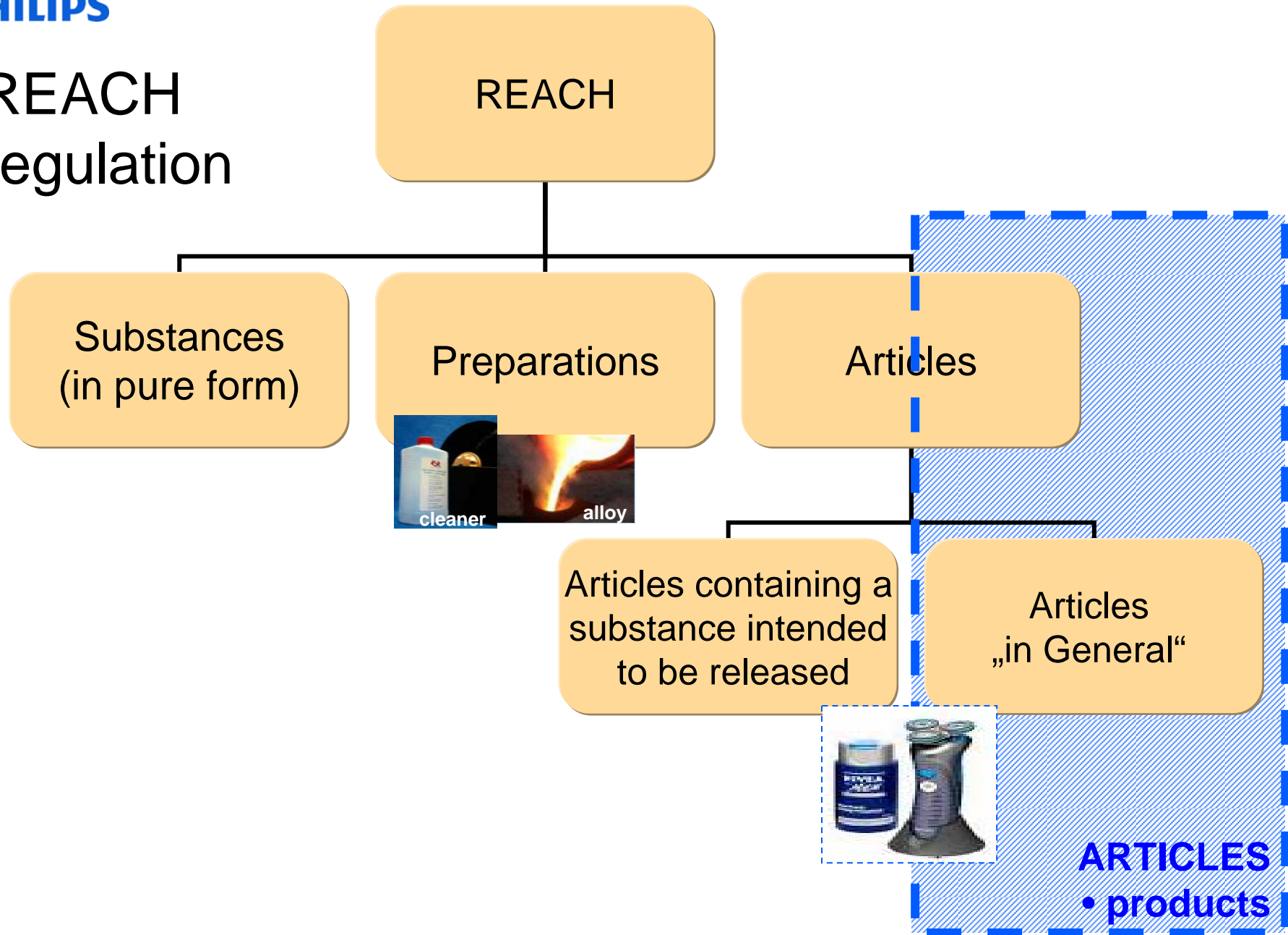
Actions on Process Chemicals:

If you are a supplier of “Chemical substances in its own or in preparations” to Philips

then, we need to know the following from suppliers:

- **Name of the REACH responsible**
- **What is the policy, in general, on REACH**
- **Provide a list of all Chemicals supplied to all EU Philips sites over the last 2 years**
- **What is supplier’s intent and status of (Pre-)Registration per 12NC for specific Philips use(s)**

REACH regulation



Articles Definition

Article means an 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



E.g. Final Products, Components, Sub-assemblies, Subsystems, Packaging material, Accessories, etc.



One product, 8 Articles!

First SVHC List (official publication was 28th of Oct 08)

Substance	CAS	Application	
Bis (2-ethyl(hexyl)phthalate) (DEHP)	117-81-7	Softner (95% for PVC)	>0.1%
Benzyl butyl phthalate	85-68-7	Softner	
Dibutyl phthalate	84-74-2	Softner, Adhesive, Paint, Process regulator for paper coating	
9 Hexabromocyclododecane HBCDD	25637-99-4	HIPS, EPS, XPS	
Cobalt dichloride	7546-79-9	humidity (color) indicator, Intermediate for battery prod., catalyst	
Diarsenic pentaoxide	1303-28-2	Electronics, pigment, dye, glas, alloys, pesticide, wood preservative	
Diarsenic trioxide	1327-53-3	Electronics, pigment, dye, glas, alloys, pesticide, wood preservative	
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	Odorant, perfume	
Triethyl arsenate	15606-95-8	Defined arsenic doping in silicon substrates, ?	
2 4,4'- Diaminodiphenylmethane	101-77-9	Adsorbents, adhesives, hardening agents, paint, coloring agents, corrosion inhibitors, process regulators, rubber agent for epoxy resins and urethane elastomers, etc.	<0.1%
Chloro-Alkanes, C10-13, (Short Chain Chlorinated Paraffins)	85535-84-8	flame retardant plasticizers and additives. Flame retardant in rubber, textile, PVC and other polymers; paint, lubricants	
<i>Lead hydrogen arsenate</i>	<i>7784-40-9</i>	<i>Pesticide,</i>	
4 Bis(tributyltin)oxide	56-35-9	<i>Biocide, preservative, antifouling agent</i>	~0.0%
<i>Sodium dichromate, dihydrate</i>	<i>7789-12-0</i>	<i>Batteries, inks, oils, paint, corrosion inhibitors, glass</i>	
<i>Anthracene</i>	<i>120-12-7</i>	<i>Softener, adhesives, paint, coloring agents, pesticides, wood preserving</i>	

Articles: Two Obligations

1. COMMUNICATION OBLIGATION *(Started when SVHC List was published on the 28 of October)*

If weight of SVHC is **>0.1%** of the total article weight, then a supplier of an article must **provide sufficient information to allow safe use** of the article including, as a minimum, the name of that SVHC.

- A. For commercial recipients → **Proactive**
- B. For consumers (on request, within 45 days) → **Reactive**

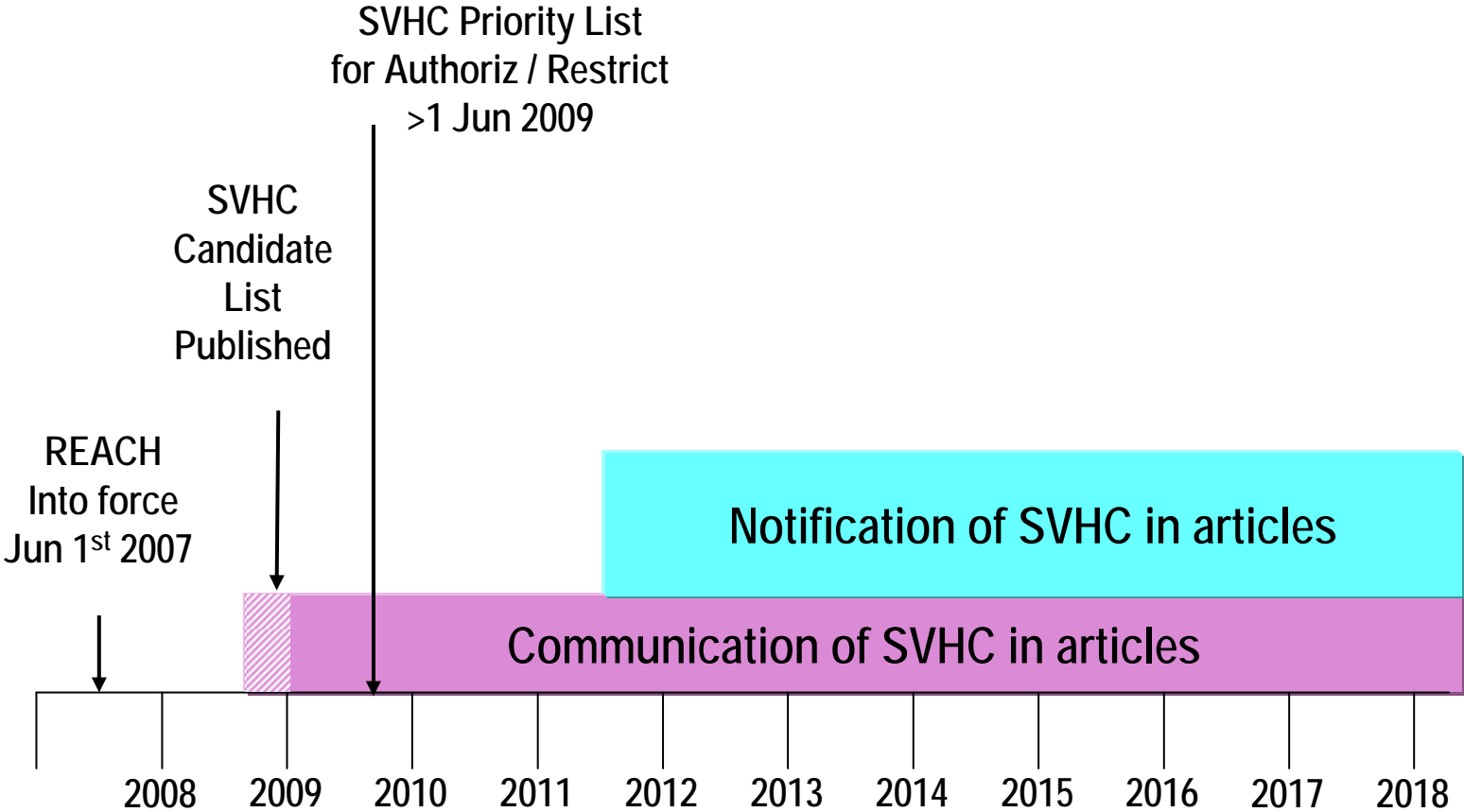
2. NOTIFICATION OBLIGATION *(from June 2011)*

If weight of SVHC is **>0.1% w/w**, **AND** if the importer / producer **imports / produces >1 ton/year** of that SVHC in products into the EU, then the producer/importer of an article must

C. NOTIFY that use to ECHA

- per legal entity in EU and
- all articles containing more than 0,1% of the same SVHC must be taken into consideration

Articles: Timeline



NGO's help consumers to inquire about SVHCs

5.4 SAMPLE LETTER FOR CONSUMERS TO REQUEST INFORMATION ABOUT SUBSTANCES IN ARTICLES

Date

Dear Sir/Madam

In accordance with the new European regulation on Chemicals, REACH, I am writing to ask you to inform me about the presence in the product XX or its packaging of any chemical from the group of "substances of very high concern" as specified by REACH.


Should any of these substances be present in the product XX or its packaging, I wish to be informed about the name of this substance, and receive sufficient information on how I can protect myself and the environment from it.

I would be grateful to receive this information within 45 days as required by REACH.

I would also be grateful if you would inform me about steps you are taking to provide products intended for the same use but which do not contain such potentially hazardous chemicals.

Yours faithfully,

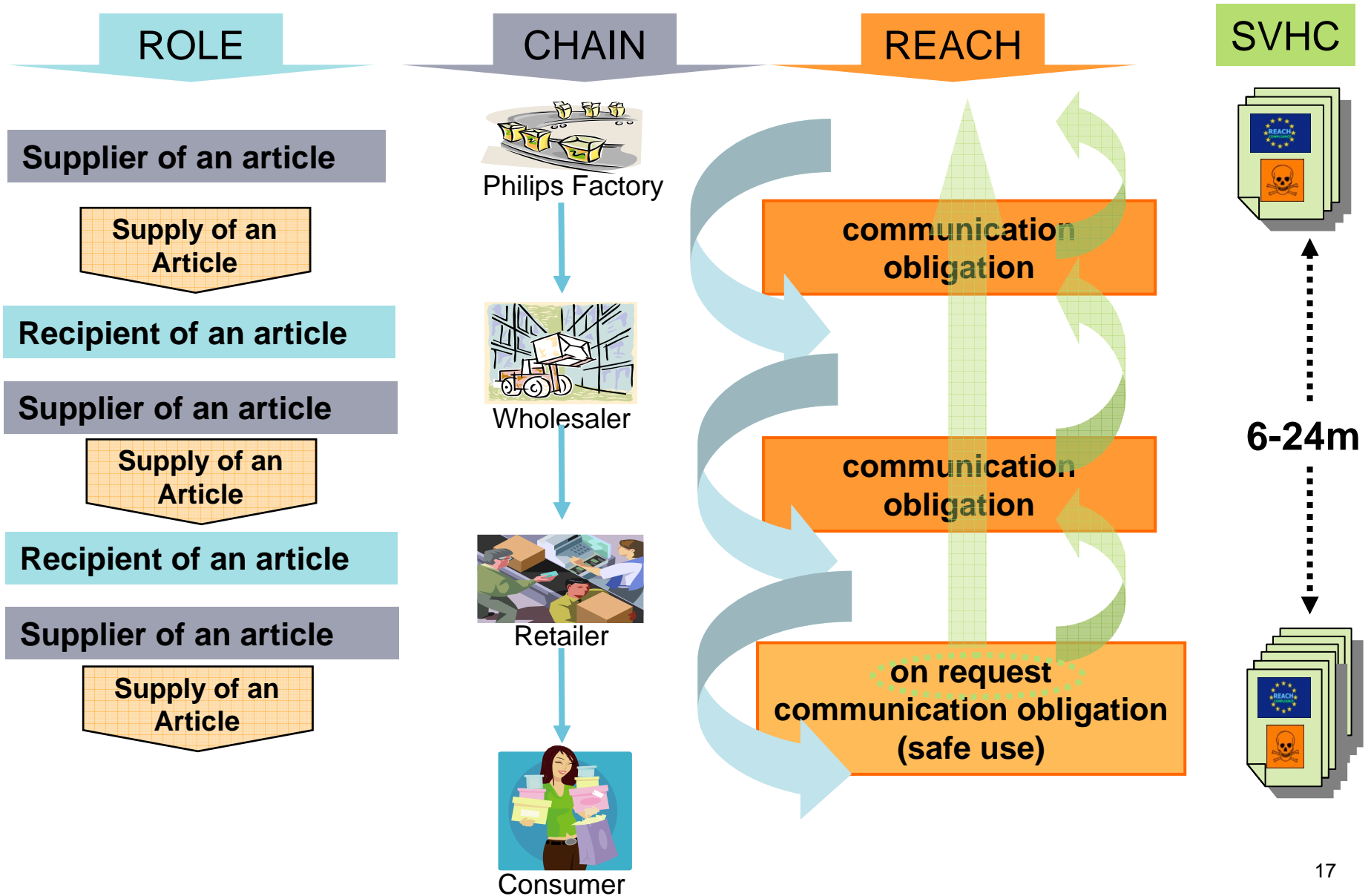
SAMPLE LETTER FOR CONSUMER TO REQUEST INFORMATION ABOUT SUBSTANCES IN AN ARTICLE.



cc: European Chemicals Agency - P.O.Box 400,
00120 Helsinki, Finland, phone: +358-9-686180
email: info@echa.europa.eu, www.echa.europa.eu
(visiting address: Annankatu 18, 00120 Helsinki)
Your national consumer and/or environmental organisation

**navigating REACH - AN
ACTIVISTS' GUIDE TO
USING AND IMPROVING
THE NEW EU CHEMICALS
LEGISLATION**

Articles: Commun. obligation at each supply moment



Articles: Issues related to the SVHC List...

- SVHC's will not and can not be banned from use in all our products
- SVHC List is expected to be large: >1000 (500+ relevant to EE prod.)
- Candidate SVHC list will be periodically reviewed (at least 2/yr)
- Short period to request info from suppliers (consultation period of 2m)
- Product changes require new check on SVHC

CONCLUSION:

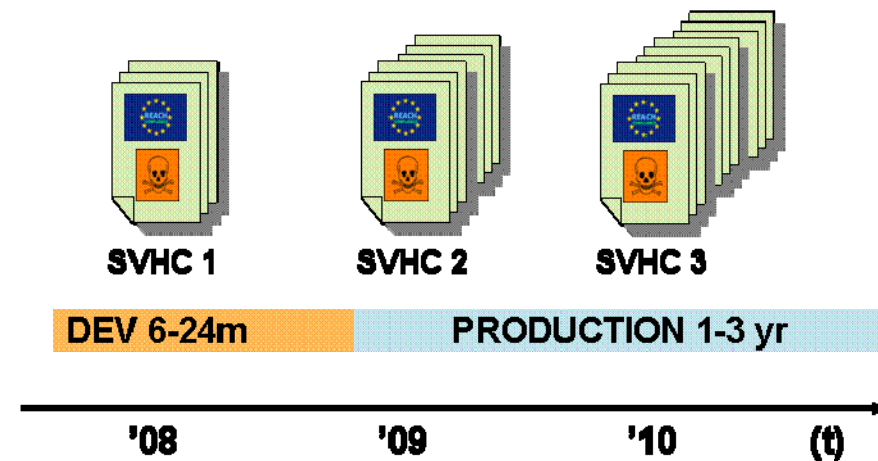
- ⇒ REACH compliance would entail continuous chasing of suppliers to receive data (first time AND repetition with every change of the Candidate SVHC List or product change)
- ⇒ Industry don't have enough time to request new info from suppliers every time a new substance is added
- ⇒ Systematic (periods of) non-compliance will exist...

Full Material Declaration is the only “future proof” solution for REACH and other legislations

... knowing the chemical composition of our Articles today will ensure we are prepared for any future (REACH, RoHS-2, ..., HazMat, NGOs, ...)

FMD

- “Declare everything that is knowingly found in the product”.
- Higher initial cost to implement, but lower on the longer term
- Other industries are also considering FMD



Articles: FMD is complete insight in the products chemical build-up

We will use an Industry Standard format for FMD, e.g. IPC1751/52 ver 2.0 or IEC62474

Breakdown of component (e.g. chassis, transformer, lead frame, encapsulation, etc.)	Material Name. (e.g. Sn alloy)	Substance Name (e.g. Copper (Cu))	CAS No.	Substance Mass. (g)	Substance Mass (mg)
Epoxy material	Epoxy base material 1	Bisphenol A (C15H16O2)	80-05-7		22
Epoxy material	Epoxy base material 2 (hardener)	Epichlorohydrin (C3H6ClO)	106-89-8		8
Epoxy material	Colorant - Pigment red 22	Nitrogen containing azocompound (C	6448-95-9		0.16
Epoxy material	Colorant -Anthraquinone	9,10 - anthraquinone (C14H8O2)	84-65-1		0.15
Epoxy material	Colorant - Cobalt	Cobalt (Co)	7440-48-4		0.005
Epoxy material	Antioxidant - Hydroquinone	Hydroquinone (C6H6O2)	123-31-9		0.0004
Epoxy material	Filler - Pure silica	Silicon oxide (SiO2)	7631-86-9		6.3
Epoxy material	Flame retardant - Brominated	TBBPA (C15H12Br4O2)	79-94-7		2.7
Epoxy material	Flame retardant - Antimony trioxide	Antimony trioxide (Sb2O3)	1309-64-4		0.8
Epoxy material	Organic solvent	Diethylene glycol (C4H10O3)	111-46-6		0.0001
Epoxy material	Organic solvent	Methyl ethyl ketone (C4H8O)	78-93-3		0.0001
Epoxy material	Heat stabilizer - Barium powder	Barium (Ba)	7440-39-3		0.0004
Epoxy material	UV stabilizer - Carbon black	Carbon (C)	1333-86-4		0.0004
Epoxy material	2nd alternative UV stabilizer - Carbon	Carbon (C)	1333-86-4		0.0004
Example plastic part				Total mass (g)	0.040

Articles: Impact for Philips and Actions

→ **FIRST Deadline was 28th October** (Communication SVHCs present in our products >0.1% to customers)

Actions on Articles:

- **Supplier Account Manager** send **Information Letter to Suppliers** and requesting REACH/FMD contact person from suppliers
- **REACH Team** is inquiring presence of 9 high risk SVHCs in high risk components / products / materials from relevant suppliers
- **REACH Team** will request FMD for all our products (as soon as one of the standards IPC/IEC is close to final)
- **REACH IT team**: Philips IT System to cope with REACH is in definition
- **Product Management / Sales**: Communication to customers: SVHC in Articles (Philips/REACH website)

Articles: Impact for Philips and Actions cont'

RISKS:

- Supplier stops production of certain chemical(s), disrupting production of certain components or products
 - Find alternative technology or material
- Supplier does not want to (pre-)register chemicals supplied to us for production in EU:
 - Find alternative technology or material on short term
 - (Pre-)register for your use <Dec08
 - Move production to outside Europe

Articles: FMD vs. Restricted Substances List (RSL)

- RSL sets the conditions for product design (what substance may or may not be added into our products)
- FMD shows (demonstrates) that suppliers followed our requirements in RSL
- For liability reasons, a declaration of “non-use of restricted substances” is still important together with the FMD
 - Both, RSL and FMD will continue to be used in the future

Consequences of REACH implementation

Consequence	Business Impact	Consequences
Some chemicals will not be allowed anymore -> alternatives needed	Very Large	2009 onwards
Limitations in use of chemicals (Not registered use as down stream user)	Large	2009 onwards
Ban on chemical content in products (like RoHS)	Very Large	2011 onwards
Information requests from NGOs & Customers /Stakeholders	Large	2008? Possible 2009 onwards

basically
NO DATA ⇒ NO MARKET

Additional information found at

ECHA (European Chemicals Agency):

- The link to the ECHA website is: http://echa.europa.eu/home_en.html
- ECHA has developed an IT-tool to help industry determine its obligations under REACH,
- called “Navigator”. It is available at: <http://reach.jrc.it/>.
- Guidance on Requirements for Substances in Articles
http://reach.jrc.it/docs/guidance_document/articles_en.pdf

European Commission helping tools:

- DG Enterprise webpages on REACH:
http://ec.europa.eu/enterprise/reach/index_en.htm
- DG Environment webpages on REACH:
http://ec.europa.eu/environment/chemicals/reach/reach_intro.htm
- Question and Answers on REACH”
<http://ec.europa.eu/environment/chemicals/pdf/qa.pdf>
- REACH in brief (in various languages)
http://ec.europa.eu/environment/chemicals/reach/pdf/2007_02_reach_in_brief.pdf

Orgalime web site:

- Orgalime Practical Guide for downstream users, article producers and article importers for understanding REACH):
<http://www.orgalime.org/publications/guides.htm>

