



**espa**

EUROPEAN STABILISER PRODUCERS ASSOCIATION

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## **The Future of tin stabilisers in PVC applications**

PVC Formulation conference  
Cologne, 16-18 March 2010

Brigitte Dero

- ESPA – ETINSA mission/objectives
- Tin Stabilisers: market trends/applications
- Classification & labelling
- Restrictions of the marketing & use of organotins
- Summing up

- Pan-European trade association representing more than 95% of the stabiliser industry across Europe
- Affiliated to Cefic - the European Chemical Industry Council
- Member of [Vinyl 2010](http://www.vinyl2010.org) ([www.vinyl2010.org](http://www.vinyl2010.org))
- A unique organisation representing four sub-groups:
  - **ELSA (97%)** – **Lead** stabilisers major use in pipe and profiles
  - **ECOSA (90%)** – **Calcium organic** stabilisers for food contact & medical applications, plus all lead replacement systems
  - **ETINSA (100%)** – **Tin** stabilisers used primarily in rigid applications including food contact use
  - **ELISA (95%)** – **Liquid** stabilisers used in a wide range of flexible PVC, calendered sheets, flooring

# ESPA mission statement

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- Promote the use of PVC stabilisers
- Provide information to users, legislators and other interested parties on safety, health and environmental issues related to PVC stabilisers
- Work with industry partners, associations and other stakeholders to support the safety and sustainability of stabilisers and PVC
- Carry out research relevant to safety and sustainability
- To be an active partner in Vinyl 2010 ([www.vinyl2010.org](http://www.vinyl2010.org))

# Members

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## ESPA - sub group ETINSA

- Akcros
- Akdeniz Kimya
- Asua
- Arkema
- Baerlocher
- Chemson
- Dow
- Chemtura
- Floridienne Chimie
- Lagor
- Reagens

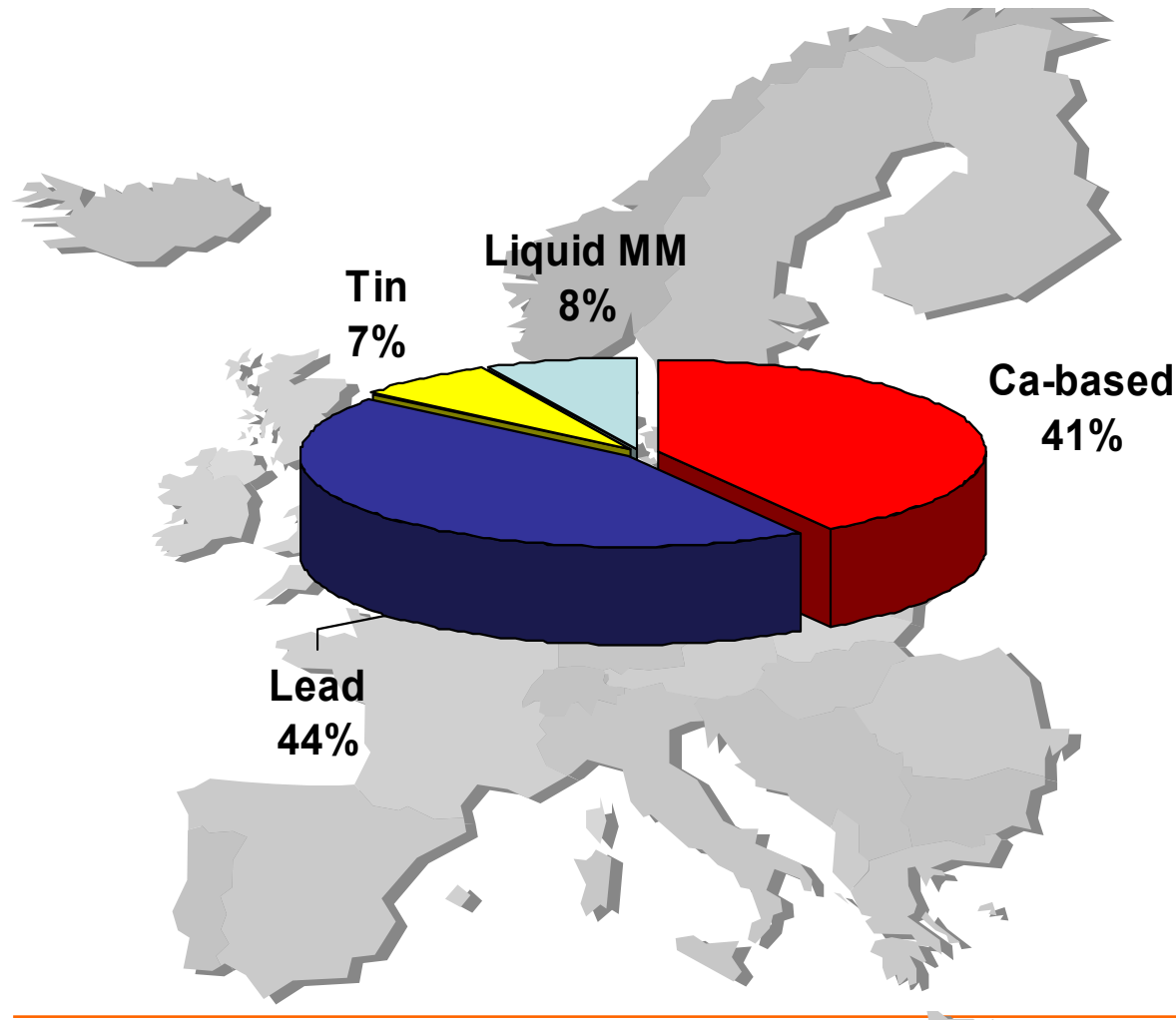
# **Tin Stabilisers**

## **Market trends & applications**

# 2009 consumption by stabiliser type Western + Eastern Europe



**Total 184.400 tons**



Stabiliser	Tons
Lead	82.000
Ca-based	76.000
Liquid MM	14.000
Tin	12.400
<b>TOTAL</b>	<b>184.400</b>

# Tin stabilisers applications in the EU



- Calendered rigid films
- Extruded rigid sheets and profiles (compact and foamed)
- Others
  - Pipes
  - Fittings
  - Bottles



## Tin stabilisers main applications in the EU



<b>type</b>	<b>Application</b>	<b>Total Tin Stab. %</b>	<b>Total Tin Stab. tons</b>
Rigid	Calendered film	83,3	10.000
Rigid	Sheets & profiles	12,5	1.500
Rigid	Others	4,2	500
Flexible	Flooring, wall covering	0	0
Total rigid			12.000
Total flexible			0
Total		100	12.000

# **Tin Stabilisers**

## **Classification & labelling**

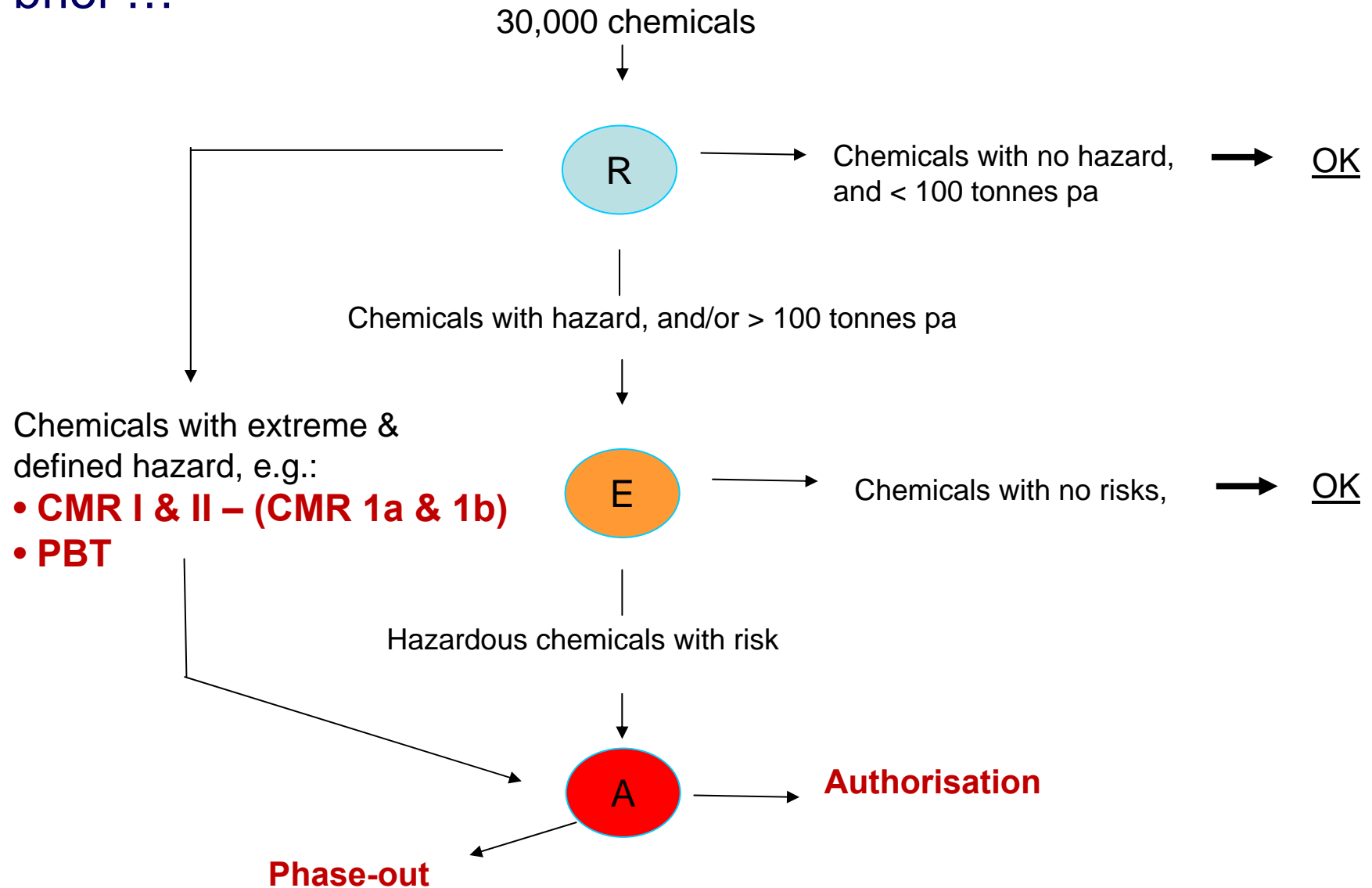
# Classification & Labelling



- REACH is determining tin stabiliser use
- New Classification Labelling Packaging Regulation (CLP)
- Confusion on the market
  - Official/voluntary/ provisional/ transitional classifications
  - Old labels /new labels



# REACH procedure in brief ...



# Substances of very high concern under REACH



## CMR

- Substances which are carcinogenic, mutagenic, toxic for reproduction category 1 and 2 are substances of very high concern under REACH
- Cat. 1:
  - Substances known to cause effects in humans.
  - Based on human epidemiological data
- Cat . 2:
  - Substances to be regarded as if they cause effects in humans.
  - Based on clear evidence in animal studies

## PBT

- Substances which are persistent, bioaccumulative and toxic (PBT) - or very persistent and very bioaccumulative (vPvB) - are substances of very high concern under REACH
- Data allowing the PBT assesement of substances are required for each REACH registration dossier (by 2010)

# Tin stabilisers under REACH

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**Butyltins**

**Methyltins**

**Octyltins**


## Butyltins

### Monobutyltins



- No CMR classif.

REACH



### Dibutyltins



- Repro. Cat. 2
- Muta. Cat. 3

REACH

- **Authorisation**
- not an automatic process (need initiation of AnnexXV dossier)
- but sunset date already defined by COM Decision 2009/425/EC

# Tin stabilisers under REACH

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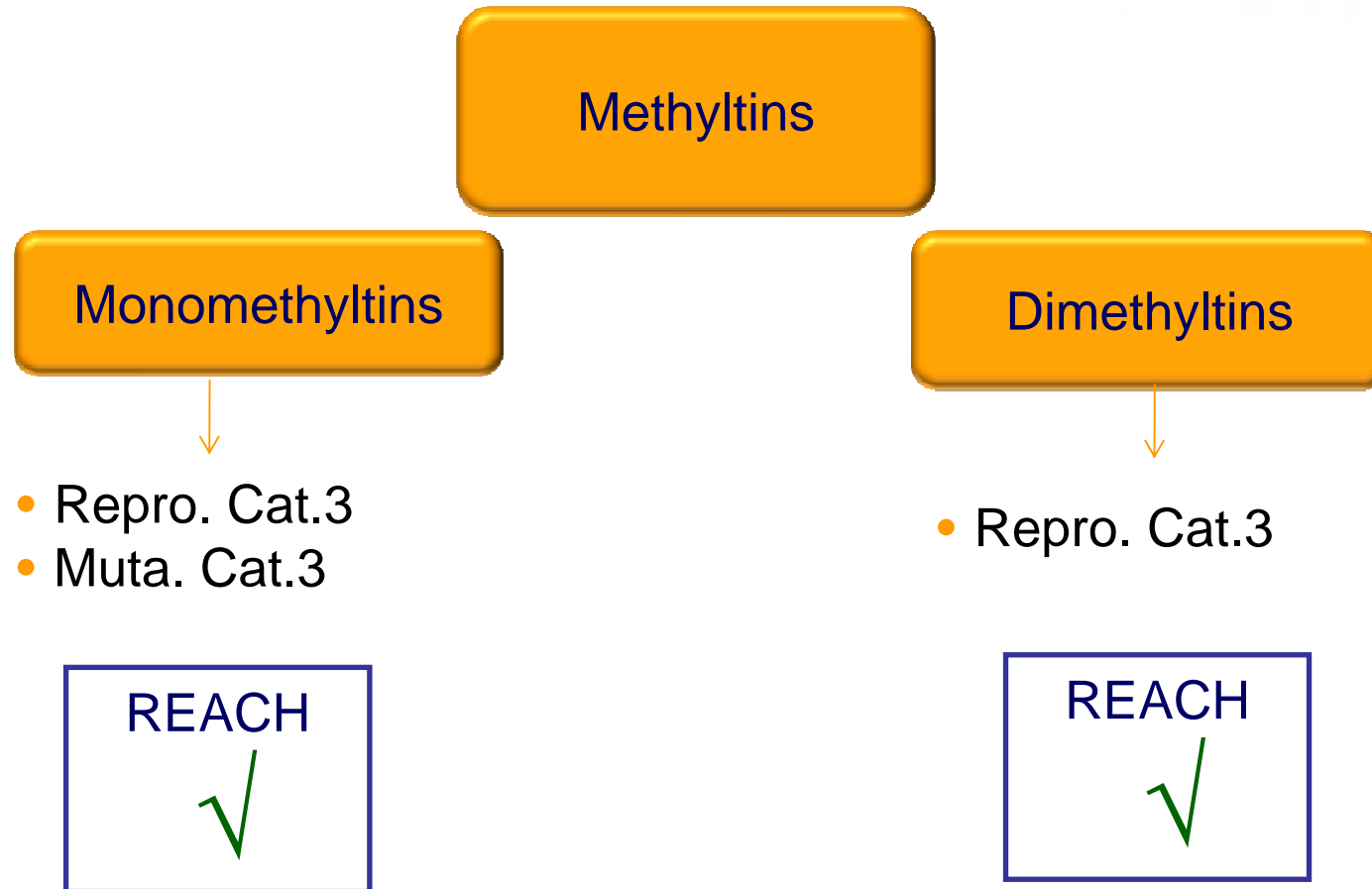


**Butyltins**

**Methyltins**

**Octyltins**

# Tin stabilisers under REACH



# Tin stabilisers under REACH

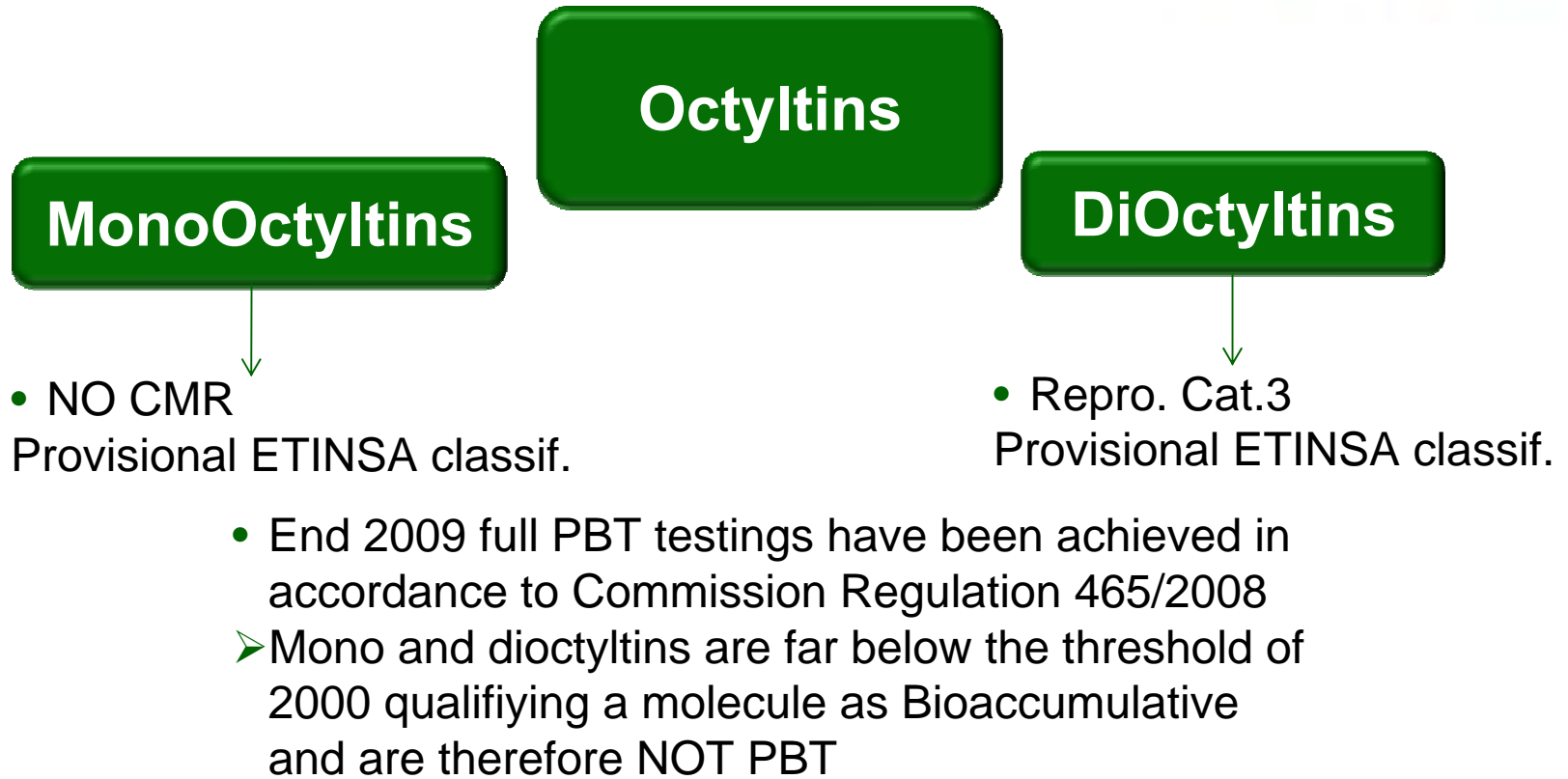
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**Butyltins**

**Methyltins**

**Octyltins**



REACH  
✓

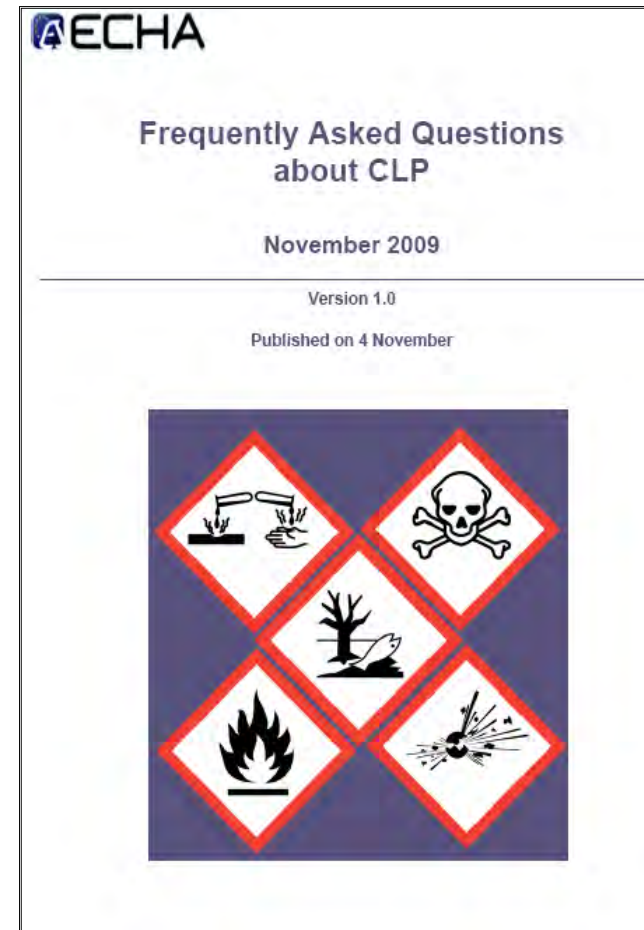
# New Classification Labelling Packaging Regulation (CLP)



- Came into force on 20 January 2009
- Replace the DSD\* and the DPD\*\* in a stepwise approach during a transitional period
- Implements the Globally Harmonised System of classification and labelling (GHS) into EU law
- Frequently Asked Questions brochure available on ECHA's website at <http://echa.europa.eu/>





\*DSD: *Dangerous Substances Directive 67/548/EEC*

\*\*DPD: *Dangerous Preparations Directive 1999/45/EC*



# CMR under CLP (GHS)

- CMR cat. 1 and 2 are translated in GHS as CMR cat. 1a and 1b
- CMR cat. 3 is translated in GHS as cat. 2  
=> **always specify to which legislation cat. 2 refers** to avoid confusion on this important point
- In GHS a new pictogram is associated to chronic toxicity instead of the *Skull & cross-bones* (previously applicable to both acute and chronic)

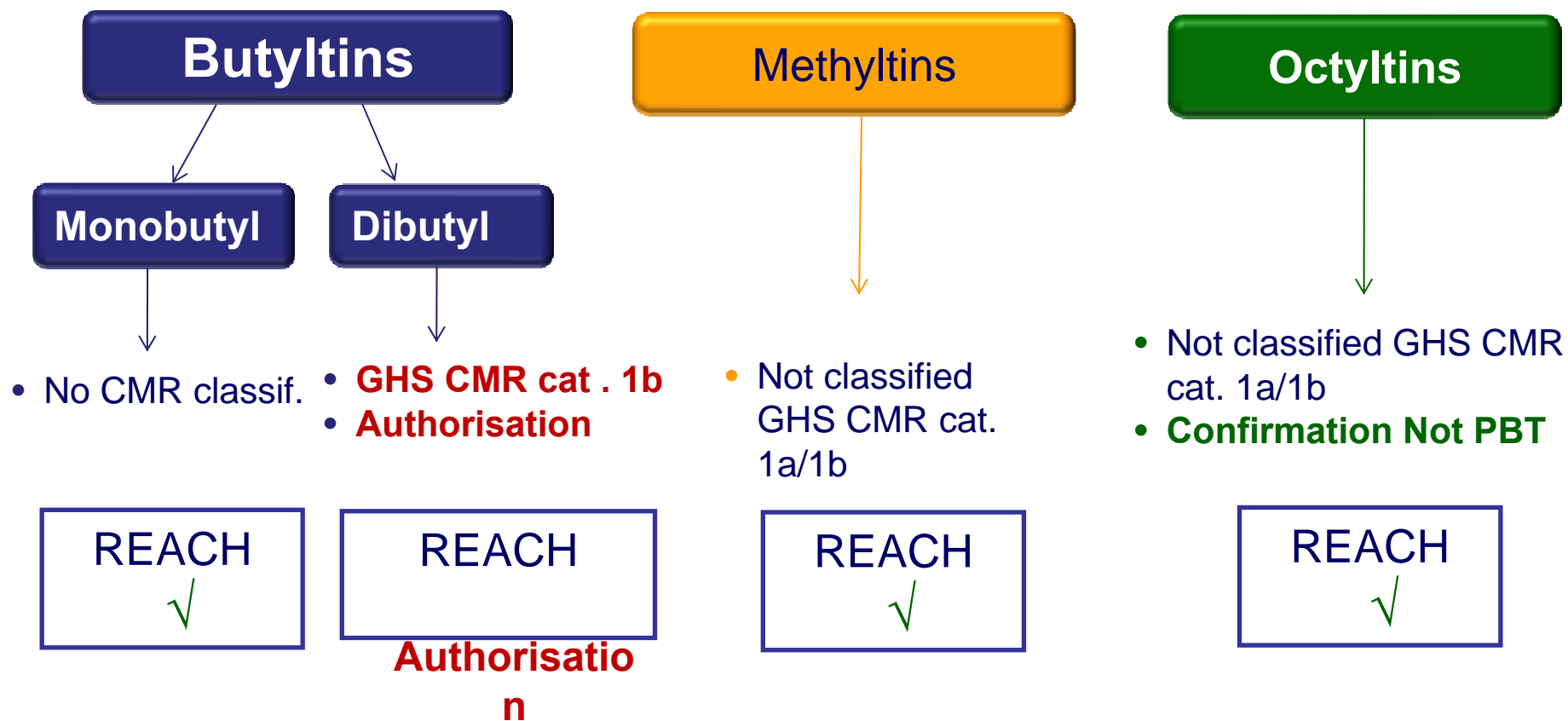
Classification : Comparaison with GHS		
CMR		
CMR (EU now)	GHS	Signal Word
 Repro Cat 2	 Repro cat 1.B	<b>Danger</b>
 Repro Cat 3	 Repro cat 2	<b>Warning</b>

# Timeline GHS-EU



Substances		01/2009	01/12/2010	01/12/2012	01/06/2015
Placed on Market before 01/12/2010	Classification	<u>67/548</u> (or GHS)	<u>67/548</u> and GHS		<u>GHS</u>
	Labelling Packaging	<u>67/548</u> (or GHS)	<u>GHS</u>		

# Summary Tin stabilisers under REACH



# Tin Stabilisers

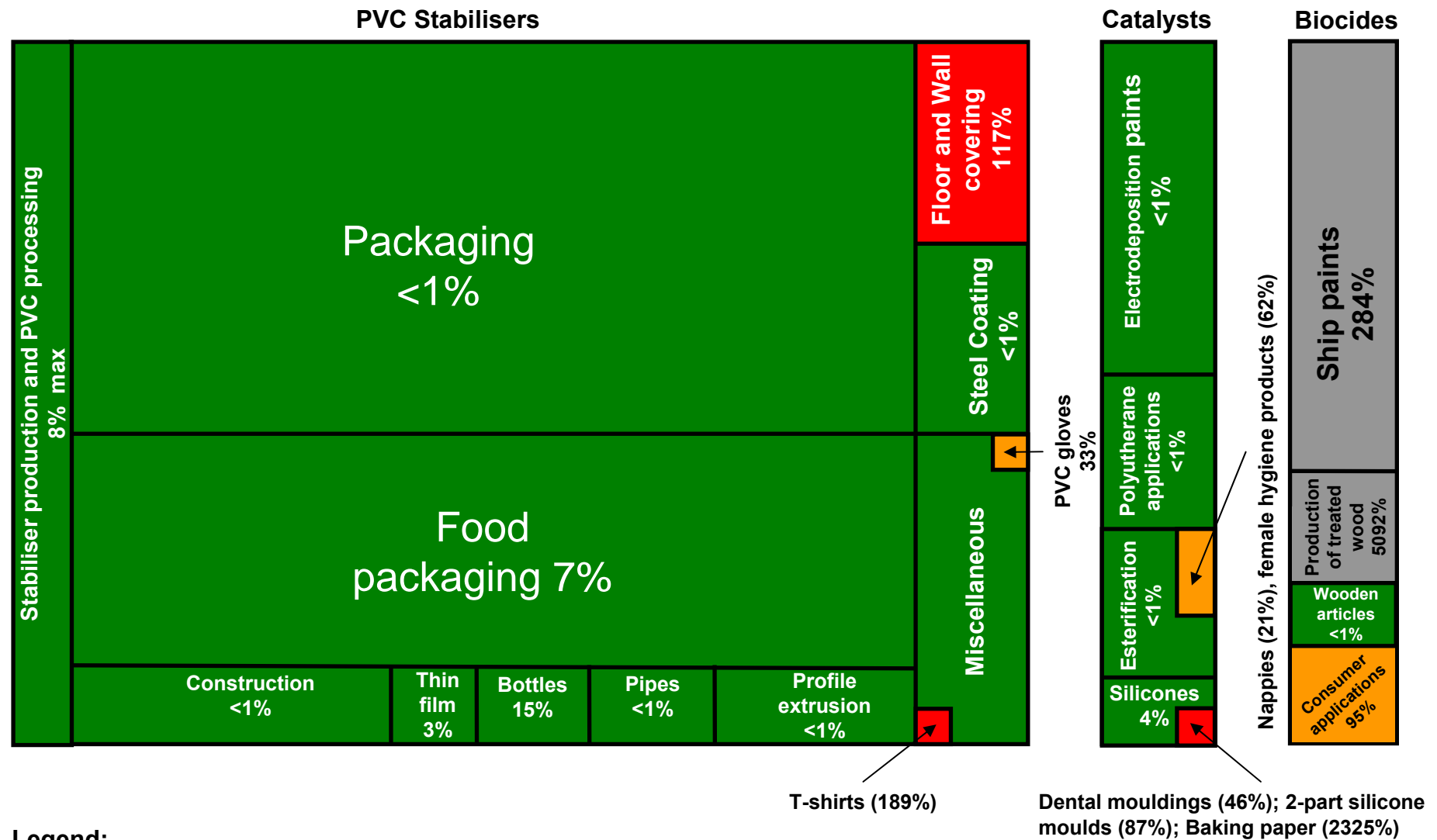
## Restrictions of the marketing & use

Commission Decision 2009/425/EC amending Directive 76/769/EEC  
(now REACH Annex XVII)

## ■ Background

- Tributyltins issues (antifouling paints on ships)
- EU Green paper on PVC in 2001
- Risk Assessment on « organotins » commissioned by DG Enterprise in 2002 and finalised in 2008
- One of the most complicated undertaken in the EU:
  - “Organotins” comprise a wide variety of substances
  - Selection of **Tributyltins**, **Dibutyltins**, **DiOctyltins** (**Methyltins** not evaluated)
  - Used as biocides, catalysts, **stabilisers**
  - In a wide variety of consumer applications
- No risks identified for the use of **DBT** & **DOT** in tin stabilised rigid PVC

# “Organotin” applications as judged by the Risk Assessment / Consumer exposure as percentage of Tolerable Daily Intake



# Restrictions adopted

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**Tributyltins**

- Total Ban after 1 January 2010 in articles
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**Dibutyltins**

**Diocetylins**

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## Dibutyltins

- Restriction of Dibutyltin in all applications within 3 years (until 1 January 2012)
- But with an exemption within 6 years for certain applications (until 1 January 2015), like in:
  - in soft PVC profiles whether by themselves or coextruded with hard PVC
  - fabrics coated with PVC containing DBT compounds as stabilisers when intended for outdoor applications
  - outdoor rainwater pipes, gutter and fittings, covering material for roofing and façades

## Diocetylins

- **All Diocetylins applications allowed** for use except specific restrictions for supply to, or use by the general public (after 1 January 2012) like in:
  - textile articles intended to come in contact with the skin
  - gloves
  - footwear or part of footwear intended to come into contact with the skin
  - wall and floor coverings

# Practical implementation



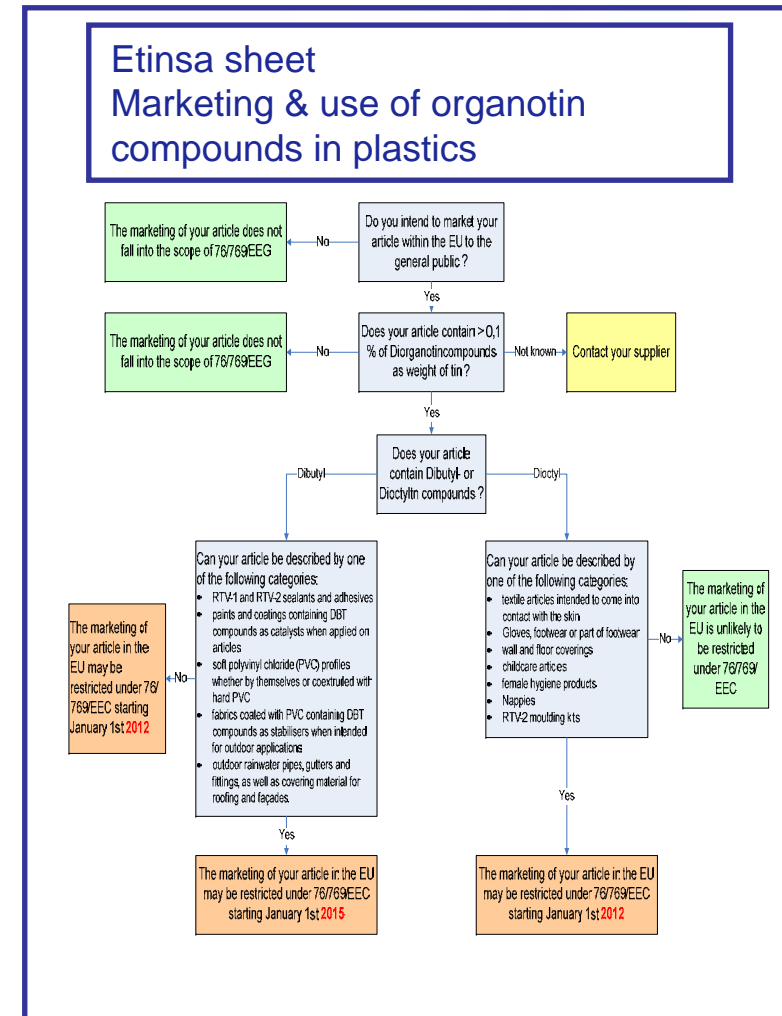
- Complex interpretation – giving rise to questions and “green marketing”

- ETINSA sheet**

To help Downstream Users to find their way through the COM Decision (available upon request)

- Official Journal of the European Union

COM Decision 2009/425/EC of 28 May 2009 amending Council Directive 76/769/EEC as regards restrictions on the marketing and use of organostannic compounds



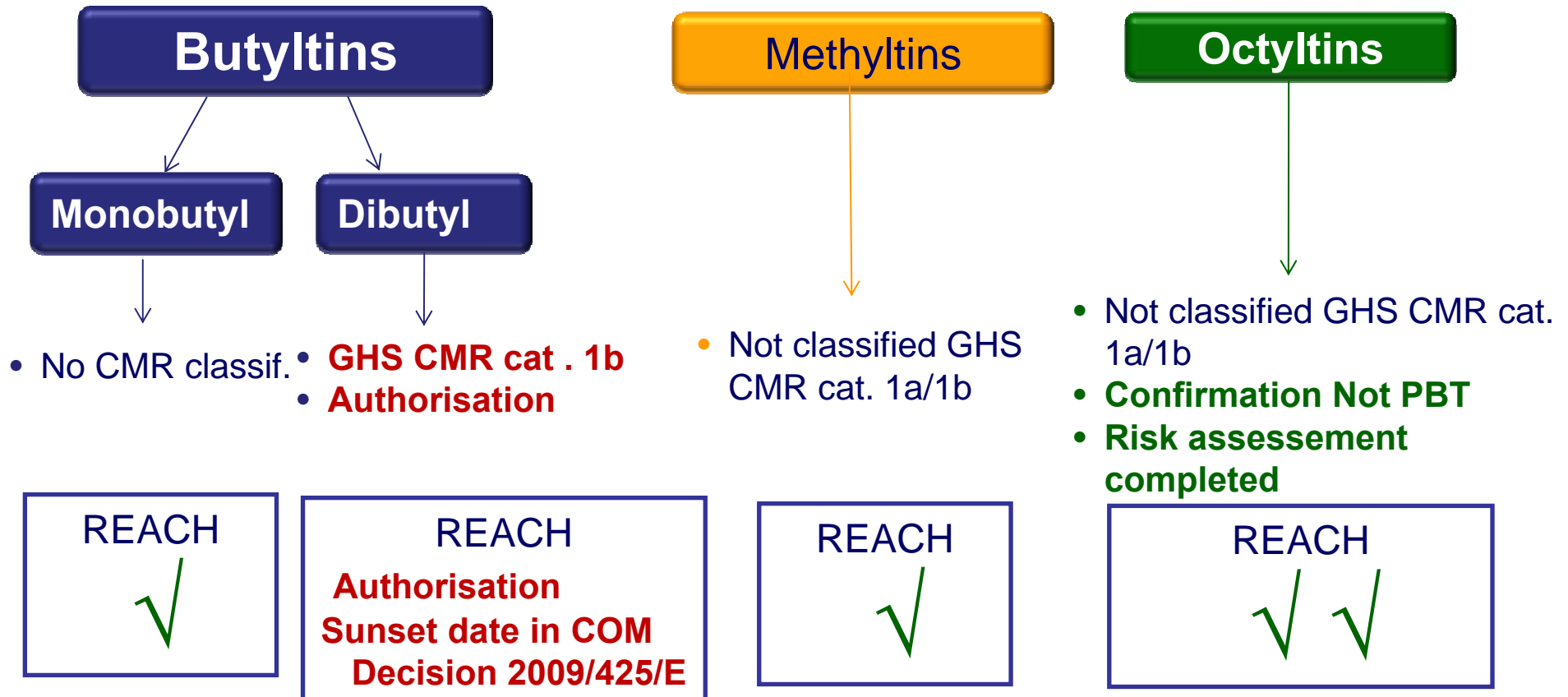
## Example Q&A

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- Q : I understand that diOctyltin cannot be used in application like wall covering after 1 January 2012 – does this cover siding?
- A: No, it does not. Wall covering is a flexible PVC application. Siding is not listed as it is a rigid PVC application. The risk assessment has shown that there is no risk for use of diOctyltin in rigid PVC applications and there is therefore no restriction.

# Summary Tin stabilisers under REACH + COM Decision 2009/425/EC



## The Organotin Reach Consortium

was formed in 2008 with all the major stakeholders of organotins compounds  
Is on track to complete the registration dossiers within the deadlines

- Organotin as a group had to suffer the effects of the Tributyltin issues (biocides) but the results of the risk assessment and the restrictions of the M&U clarified the situation and is very helpful to stabilisers moving forward
- Need to help DU implementing the EU Com decision – ETINSA can provide support
- Regulatory certainty : No further actions are foreseen by EU Authorities on tin substances used in PVC stabilisers. Tin substances part of the three groups (Butyl, Methyl, Octyl) will be registered on time. Some are data rich (e.g. Octyltins).
- The move to GHS might introduce confusion especially during the transition period:
- Always specify ***to which legislation the classification used refers*** (CMR cat. 3 is translated in GHS as cat. 2 )
- For many tin substances skull and crossbones will disappear



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***Thank you***

**For further information**  
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