

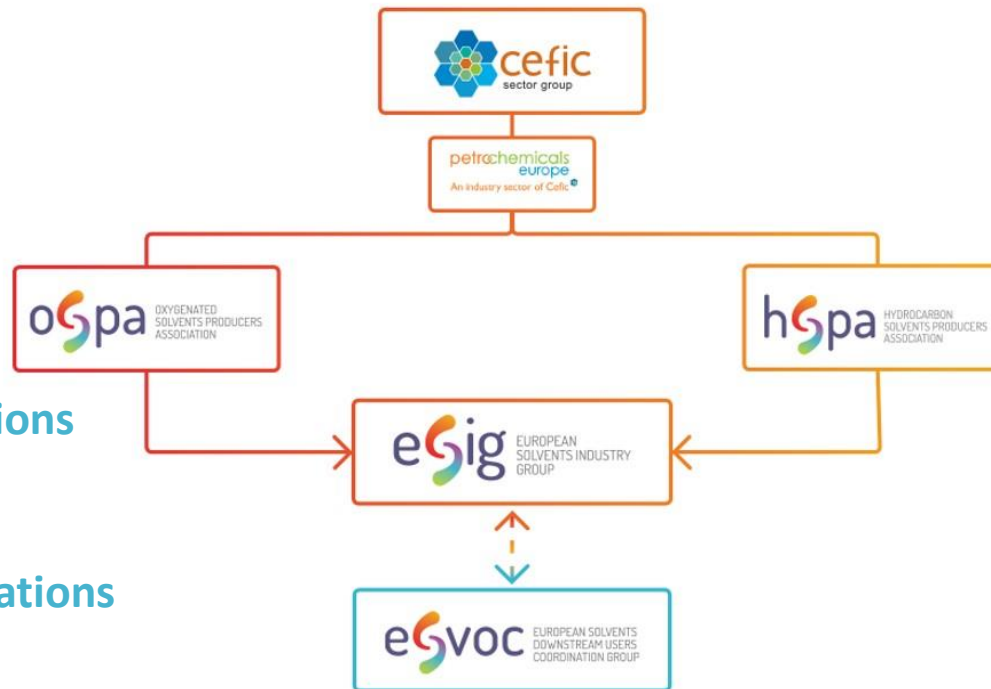
SOLVENTS & VOCS

TFTEI



EUROPEAN SOLVENTS INDUSTRY GROUP

OUR STRUCTURE



ESIG is a joint activity of OSPA (Oxygenated) and HSPA (Hydrocarbon) Solvents Producers Associations

30 Downstream User Associations in ESVOC



MEMBERS

MOST OF ESIG MEMBERS ARE GLOBAL CHEMICALS PLAYERS

- HSPA: 9 members
- OSPA: 18 members



HOW ARE SOLVENT VOC EMISSIONS REGULATED IN THE EUROPEAN UNION?

INTRO

- **Industrial emissions from solvent using plants**
- **VOC emissions from products # VOC CONTENT!**



HOW ARE SOLVENT VOC EMISSIONS REGULATED IN THE EU?

INDUSTRIAL EMISSIONS FROM SOLVENT USING PLANTS

Industrial Emissions Directive (IED) + dedicated Best Available Technique (BAT) reference document (BREF) for the surface treatment using organic solvents ([STS BREF](#))



In the scope : plants with an organic solvent consumption capacity of more than 150 kg per hour or more than 200 tonnes per year

- Reviewed version entered into force end 2020
- Companies need to comply until 2024
- Any effects of the STS BREF will only be sizable after 2024

*Additional policy option:
Member States to extend scope & apply the limit values to smaller installations in the scope of the STS BREF.*



HOW ARE SOLVENT VOC EMISSIONS REGULATED IN THE EU?

INDUSTRIAL EMISSIONS FROM SOLVENT USING PLANTS

- **printing** (by heatset web offset, flexography and packaging gravure, publication gravure)
- **painting and other coating activities** (winding wires, cars, trucks, buses, trains, agricultural and construction equipment, ships and yachts, aircraft, wood and mirrors, furniture, metal coil, metal packaging, and other metal and plastic goods)
- **waterproofing** (by painting and wood preservation)
- **adhesive application** (in the manufacture of abrasives and adhesive tapes)
- **cleaning and degreasing** in conjunction with other surface treatment activities
- impregnation for the **preservation of wood**.



HOW ARE SOLVENT VOC EMISSIONS REGULATED IN THE EU?

VOC EMISSIONS FROM PRODUCTS

“Paints Directive” 2004/42/CE (= annex XI of GP)

- Annex II A to the Directive sets out two sets of limit values for the maximum **contents of VOCs** (in grammes per litre of the product ready for use) 2007/2010
- Contributed significantly to **reduced emissions**, BUT
- Content limit of what is **technically possible** is reached
 - = limit values cannot be further reduced if you still want paint to stick
 - = even if small reductions would be achievable the effect for the actual emissions is negligible

[\(Report on Implementation & Review 2009\)](#)



only product regulation in the EU



HOW ARE SOLVENT VOC EMISSIONS REGULATED IN THE EU?

VOC EMISSIONS FROM PRODUCTS

What about other sectors?

CONSTRUCTION

- Lowest Concentration of Interest (LCI) values for emissions from construction products to become a delegated act under the Construction Product Regulation (CPR) , but ...*how to handle Total VOC?*



OTHER

- Several voluntary schemes (e.g. EU ecolabels) that specify VOC emissions for some product categories



ARE SOLVENTS STILL NEEDED?

CONCLUSION

- **YES, because**

- they are fulfilling FUNCTIONS in processes & provide solutions in many sectors
- in many applications their volatility is key
 - industrial – professional – consumer



ARE SOLVENTS STILL NEEDED?

CONCLUSION

- Solvent VOC emissions are stable since +/- 10 years
- VOC emissions have already been optimized in processes and products

- Solvent sales have not been declining
 - solvents are used in those applications that need them
 - at the same time emission have declined and now stabilized



ARE SOLVENTS STILL NEEDED?

EXAMPLE CONSTRUCTION CHEMICALS

- VOC emissions by using solvents are today insignificant, as most of Construction Chemicals are **water-based formulations or powders to be mixed with water.**
- Very limited amount of solvents still used in Construction Chemicals Industry
- Example: formulation of certain curing agents for concrete or of certain bituminous products
 - only for decorative or for protecting reasons
 - the surfaces treated with these products show excellent penetration properties such as waterproof, resistance to washing with water and are highly economical



ARE SOLVENTS STILL NEEDED?

EXAMPLE ADHESIVES

- VOC emissions are minor
 - the solvent content in adhesives has been reduced steadily over the last decades
 - alternative technologies have replaced solvent-based adhesives in most applications.
- Certain sectors use labelling schemes, such as the flooring adhesives
 - the EMICODE label is awarded based on strict emission requirements (<https://www.emicode.com/the-label/>)
- Solvent-containing adhesives may be necessary for certain niche applications where additional surface treatment of substrates is difficult to manage (for example metal with rubber).



ARE SOLVENTS STILL NEEDED?

EXAMPLE PAINTS

- Role of the solvent: facilitate the transfer of the paint film to a surface that requires protection and/or beautifying
- Following the Paints Directive, substantial efforts have been made to switch to waterborne paints or, where possible, to eliminated the use of solvents altogether by new technologies like powder or UCVB coatings

High solids solvent borne products are being used

- applications or products, where for reasons of special properties of the painted surface, waterborne coatings are not suitable: bridges, ships, aircrafts , the top layer of cars ...
- where the surface to be coated cannot resist high temperatures



AIR QUALITY

ESIG'S COOPERATION WITH THE AIR CONVENTION

- EMEP Steering Body
 - TFEIP: Solvent VOC inventories ([Chapter EMEP/EEA guidebook](#))
 - TFMM: contribution to intensive measurement period dedicated to ozone periods
- WGSR
 - TFTEI: contribution to meetings



CONCLUSION

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Coatings with solvents protect critical infrastructure like bridges and dams from corrosion and rust. Solvents evaporate faster than other solutions, resulting in higher productivity and less energy use.

eSig
EUROPEAN SOLVENTS INDUSTRY GROUP



www.esig.org
cti@cefic.be

