



# Example of a Downstream User Chemical Safety Report

**REACH Information and Experience Exchange Forum (RIEF) III**

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# Topics



Use of styrene at Axalta Coating Systems

Registration scope of manufacturers and shortcomings

- Monomer for resin synthesis
- Use in other UP applications
- Assessment based on ECETOC TRA ver. 2 rather than ver. 3
- Limitations of scaling

Sector specific knowledge, expert judgement

Company notification

Accompanying activities

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# Use of Styrene at Axalta Coating Systems



Use as **monomer** for resin synthesis AND

Use as **reactive diluant** in combination with unsaturated polyesters in certain mixtures for industrial and professional end users

- Putties applied with a knife, styrene content 14 – 17 %
- Putties and other fillers applied by spraying, styrene content 30 – 35 %
- Impregnation resins for electric devices, styrene content 40 – 50 %
- Viscosity adjuster for spray putties and impregnation resins, 100 %

Duration of activity (DOA) 4 to 8 hours per day

Local exhaust equivalent and respiratory protection for PROC 7/11

Enhanced technical room ventilation (+ dermal protection) for other PROC

DNEL 20 ppm inhalative longterm syst.; 406 mg/kg.d dermal longt. syst.

# Registration Scope of Manufacturers, Shortcomings 1



Axalta Coating Systems has 7 approved suppliers for styrene :

- Some were limiting exposure scenarios to use for **resin synthesis**
- Some included use for manufacturing of **fibre-enforced plastic articles**
- Latter confirmed explicitly that our **customer uses are covered** by this exposure scenario and allowed to „waive“ suitable PROCs

We documented internally that required SUs and PROCs are covered.

We are convinced that this kind of allowance is sufficient and helps **avoiding** some downstream user chemical safety assessments.

# Registration Scope of Manufacturers, Shortcomings 2



Registrations of styrene were **due in 2010** because of the very high marketed volumes.

In those days, worker exposure assessment was performed based on ECETOC TRA **version 2** which entailed a distinction between local exhaust ventilation and no ventilation only. This resulted in limited styrene concentration, local exhaust ventilation, limited duration of activity, respiratory protection equipment or combinations of measures.

ECETOC TRA **version 3** included good and enhanced technical room ventilation as further options. This would allow to resolve all limitations for industrial use and most limitations for professional use.

We asked for according exposure scenario **updates** (see attachment). However, most registrants explained that it would be **too complicated** for the SIEF to rework the 2010 registration.



Styrene\_TRA 3

# Registration Scope of Manufacturers, Shortcomings 3



Due to consideration of local exhaust ventilation or respiratory protection equipment, many assessments based on ECETOC TRA version 2 resulted in **unreasonably low risk characterisation ratios (RCR)**.

Application of ECETOC TRA version 3 with regard to technical room ventilation would offer **appropriate risk control (RCR < 1)**, however with higher than original RCRs.

Setting	PROC	Concentration	Duration	Ventilation	RMM	RCR Inh.
Industrial	5	25%*	8h	LEV 90 %*	Filter 90 %**	0.25 or 0.15
Industrial	8a	25%*	8h	LEV 90 %*	Filter 90 %**	0.25 or 0.15
Industrial	10	25%*	8h	LEV 90 %*	Filter 90 %**	0.25 or 0.15
Industrial	13	25%*	8h	LEV 90 %*	Filter 90 %**	0.25 or 0.15
Professional	4	25%**	8h	LEV 80 %**	Filter 90 %**	0.5 or 0.25
Professional	5	25%**	8h	LEV 80 %**	Filter 90 %**	1 or 0.5
Professional	8a	25%**	8h	LEV 80 %**	Filter 90 %**	1 or 0.5
Professional	10	25%**	8h	LEV 80 %**	Filter 90 %**	1 or 0.5
Professional	13	25%**	8h	LEV 80 %**	Filter 90 %**	1 or 0.5

\*) Either LEV OR limitation to 25 % PLUS filter mask for industrial use

\*\*) Either LEV PLUS limitation to 25 % OR use of filter mask for professional use

Industrial	all	100%	8h	TRV 70 %		≤ 0.75
Professional	ex 10	25%	8h	TRV 70 %		≤ 0.90

# Sector Specific Knowledge, Expert Judgement



In putties, fillers and impregnation resins, styrene is used as a reactive diluant of which only a **minor part is released** to worker environment.

Gravimetric measurements indicate that only 1 to 3 % of substance is released from **putties** during application and curing whereas substance content is 14 to 17 %.

Gravimetric measurements indicate that only 10 to 15 % of substance is released from **impregnation resins** during application and curing whereas substance content is 40 to 50 %.

In both cases release rates are in a lower range than concentration bands. This is in line with **default value for environmental release** which assumes a release to environment of maximum 35 % for ERC 6d.

Based on this kind of **expert judgement**, sector groups may align on conclusions for a downstream user chemical safety assessment.

# Company Notification



Axalta **notified** EChA about its downstream user chemical safety assessment of use of styrene in professional applications on April 7, 2014 (preliminary submission number GH 484639-23).

**Professional uses** are covered for substance concentration > 25 % and PROC 5, 8a, 10, 13.

This notification may be withdrawn if more clarity can be achieved that professional use means non-industrial **setting** (no technical controls applicable, only PPE available) rather than **use by craftsmen**. Operators in refinish body-shops are craftsmen by definition, however are using coatings in a close-to-industrial setting.

**Draft chemical safety report** has 135 pages due to multiplications in the reporting form, has been elaborated with support of EasyTRA by a chemist with a total spent working time of about two months and is to be finalised before September 2014 depending on a.m. decision.

# Accompanying Activities



Axalta shared notification background information early with **Resin Technical Platform** (RTP) in order to achieve a joint approach of resin manufacturers and formulators with regard to manufacturers and SIEF.

Axalta proposed an **exchange network on notifications** at business association level in order to reduce workload for individual companies and to increase acceptance for expert judgement in case of substances with a shared and broad interest.

Many members of business associations who are **buying only mixtures** or are **buying from distributors** and have not yet received exposure scenarios are still reluctant and are not yet under pressure to assess and forward received information.

# Additional Option for Certain End Users



Practically all users of putty in refinish body shops consume much **less than 1 ton per year** of styrene.

Even if their use of styrene would not be covered by an exposure scenario resp. safe use information for the substance in mixtures, they would not be urged according to **REACH article 37 (4 c)** to prepare a downstream user chemical safety assessment.

The safe use information provided by formulators is a service to overcome any ambiguities; it is anyhow necessary for all end users not covered by **exemptions** according to REACH article 37 (4).

# Further Examples for Potential Future Notifications



Dimethyl ethanolamine, dimethyl isopropanolamine, triethyl amine used as neutralizing agents in waterborne coatings

Ethylene diamine used as activator in epoxy primers

Diisocyanate polymers for 2K coatings (if polymer exemption not applied)

Acrylic acid and methacrylic acid monomers used in UV cured coatings

Synthetic quartz / crystalline silica (natural quartz exempt from REACH)

Kresol used in certain wire enamels at high concentrations

**Low number of components (~ 20 out of 4,000 raws), however high number of affected mixtures**



**Thank you**