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Why strictly controlled conditions cannot be technically applied to polymeric precursors

The European Commission proposed an exemption for polymeric precursors but only if they are handled as intermediates and strictly controlled conditions (SCC) are warranted along the supply chain.

FEICA would like to bring to the attention of the stakeholders that SCC cannot be applied to polymeric precursors used by downstream users for the following reasons:

1. Under strictly controlled conditions, REACH requires for transported and isolated intermediates **(not comparable to reactive adhesives and sealants) a confirmation from the different users whether a substance is used under strictly controlled conditions**. While intermediates are intended to be used in a limited number of industrial applications, polymeric precursors are used in a large number of industrial but also professional applications. **Getting confirmation from all users would generate a much more significant bureaucratic burden than what is currently the case for intermediates.**
2. Strictly controlled conditions (encapsulated systems) can't be technically realised for professional and industrial processing of polymeric precursors (reactive adhesives and sealants) **because of the particularities of the application**
3. The application of an (adhesive/sealant) product involves transferring the adhesive/sealant from the packaging onto the surface or substrate where it is needed. **This transfer will always involve an 'open process step' where the adhesive/sealant can never be fully enclosed and where strictly controlled conditions cannot be achieved.**

Why is it not possible to implement strictly controlled conditions for polymeric precursors used in the adhesives and sealants industry?

The following is a technical process in which polymeric precursors are involved. The example of direct glazing of windshields is given. Though the professional and industrial uses are different (replacement versus manufacturing), the adhesive and the containing polyurethane precursor are the same:

	Professional use	Industrial use
Polymeric precursor utilized for	Window replacement	Car manufacturing
Working steps prior to the adhesive application process	Operator opens the cartridge and connects the application nozzle	Operator opens the drum and installs the transfer pump
Adhesive application and assembly	Manual application with the help of a cartridge gun to push the adhesive out of the package onto the windshield, and manual assembly to the car body	Application of the adhesive and assembly by an automated system
Working steps after the assembling	None of the tools utilised require cleaning; any leftover adhesive not applied remains in the cartridge and will be utilised later	No working steps for continuous operations; manual cleaning of the application equipment if it breaks between jobs; transfer pump remains in the adhesive reservoir
Required for SCC	Enclosed, automated application in the repair shop without human interaction	Complete enclosure of application (car body); fully enclosed, automated changing of drums and cleaning system

If strictly controlled conditions have to be applied for working steps highlighted in **blue**, the **short-time handling** by an operator would require full automation, which would put a disproportionate burden on industry, especially SMEs.

Refer to the FEICA presentation on polymeric precursors applications to learn more about how human health and the environment are protected. The presentation is [available here](#). Please, refer to Annex 1 on the differentiation between intermediates and polymeric precursors.

Conclusion

The implementation of SCC and expensive technical automation would be impossible for **professional** types of applications and also disproportionate in consideration of the small quantity of polymeric precursors applied.

Automation of working steps prior to the application and the cleaning in **industrial** applications is technically very challenging and entails investments disproportionate to any potential risk.

The above example is representative of all type of professional and industrial applications utilising reactive adhesives and sealants based on polymeric precursors.

In terms of the polymeric precursors represented by FEICA, we are not aware of a single case in which a polymeric precursor would meet the definition for strictly controlled conditions.

FEICA experts remain available to provide more examples and would welcome interested representatives of stakeholders to visit FEICA member's plants and see onsite the process described.

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Annex 1

Definition of an Intermediate according to Article 3(15) of ECHA's Guidance on Intermediates:

- Intermediates are manufactured for or used for chemical processing to be themselves converted into another substance or polymer on one (or more than one) industrial site
- The outcome of the chemical processing is another manufactured substance or polymer
- Intermediates due to their hazard profile require strictly controlled conditions

Any substance formed either during the production of an article and not intended to be released or in any activity other than the manufacturing of a substance on its own is not subject to (REACH) registration

Polymer Precursors are different to ECHA's intermediates:

- Polymeric precursors are polymers used to manufacture other polymers or articles.
- After application in the production of an article, polymeric precursors cure and become integrated part of an article.
- The chemical process of curing the adhesive results into high molecular weight or crosslinked polymers and the reactive functional groups are consumed, while the polymer building blocks itself remain. The aim of curing is to achieve another function or specific property, or a chemical reaction in the production of an article.
- Polymeric Precursors are designed to be used up and disappear after curing. Thus, the high molecular or crosslinked polymeric adhesive film in an article has no negative effect to the environment.
- Polymeric precursors are based on already registered monomers, while intermediates are not
- Polymeric precursors, like reactive polyurethane adhesives are of much lower toxicological concern compared to the monomers. Often, the most significant hazard components within polymeric precursors are the unreacted monomers. Therefore, applying strictly controlled conditions would be disproportionate
- Due to the higher molecular weight vs their REACH registered monomeric building blocks, polymeric precursors are liquids or solids with a low vapor pressure under conditions of use causing no inhalation risk.
- The resulting polymers after the polymeric precursor has cured are non-PRR polymers based on the proposed PRR flowchart.