How Does the European Chemicals Agency Propose That PVC Should Be Regulated?

At the end of 2023, the European Chemicals Agency (ECHA) released an investigation report on PVC and its additives. The report will serve as the scientific basis for how PVC will be regulated at the EU level in the future. In this Q&A document, we discuss the main conclusions of the report and look at what the next legislative steps are expected to be.

What does the report say about PVC resin?

The report states that European PVC production is safe. This is partly due to very strict EU requirements for chemical production and voluntary industry charters. ECHA also states that "the PVC industry has also taken an active role by phasing out those [harmful] substances, even before the regulatory measures were implemented."

What does the report say about rigid PVC?

The report does not seem to provide a scientific basis for introducing regulation that restricts the use of rigid PVC in the EU. The most used stabilisers are considered safe for humans and the environment. In addition, these stabilisers are tightly bound in the PVC matrix and only migrate negligibly.

What does the report say about flexible PVC?

When it comes to flexible PVC, the focus is particularly on phthalates. It is no longer just low molecular weight (LMW) phthalates such as DEHP that raise concerns, but also high molecular weight (HMW) phthalates such as DINP. The concern is whether HMW phthalates are also endocrine disruptors when they come into contact with humans. ECHA is also concerned about certain flame retardants that can be released and have harmful effects.

Are there any additives in PVC expected to be regulated?

Out of the approximately 470 additives used in rigid and flexible PVC, the report identifies 63 prioritised substances for further investigation. Most of these substances are plasticisers and flame retardants used in flexible PVC. For rigid PVC, organotin substances are particularly in focus. Unfortunately, ECHA's identification of these substances is unclear. For example, the plasticiser DOTP is included even though it is not considered to pose a risk. The same applies to phthalates, which are already regulated. See the matrix on the next page for an overview.

Does the report mention risks associated with recycling?

The report mentions the PVC industry's recycling initiatives for PVC waste, with a target of 1 million tonnes by 2030. However, ECHA is concerned about the microplastics that arise when PVC waste is granulated and processed in recycling facilities. The risk is related to the substances that microplastics may contain and release into the environment and to the people working in recycling plants. Regulation is considered necessary to minimise the release of PVC microparticles, especially from recycling facilities and landfills. Specific requirements may include exhaust systems, respiratory protection, and increased focus on cleaning.

What are the next steps?

Based on the conclusions of the report, the EU Commission will decide whether targeted regulation should be implemented for specific additives and PVC uses. The decision will depend on whether the EU Commission considers that the risks identified by ECHA cannot be adequately controlled. If the EU Commission requests ECHA to prepare regulations, it will only be possible by the end of 2024. Due to the complex legislative process in the EU, it will take many years before actual legislation is implemented in the member states.

What was the background for ECHA's PVC investigation?

The investigation report on PVC and its additives was commissioned by the EU Commission in 2022 following strong pressure from European green organisations and the EU Parliament. The report was conducted by the European Chemicals Agency (ECHA) to assess whether there are risks associated with the production, use, and disposal of PVC that cannot be adequately controlled.

Did the European PVC industry provide scientific evidence to the report?

VinylPlus actively contributed throughout the investigation by submitting approximately 1,800 pages of detailed data on PVC and its additives. This included information on use, migration, risks, exposure, and waste management, as well as information on alternatives and their environmental impact.

Did Danish PVC companies provide input to the report?

PVC Information Council Denmark coordinated a joint approach to ECHA, where Danish companies sent in individual letters, stressing why PVC cannot be replaced in many applications. We considered input from Danish companies to be important, as Danish authorities have called for the substitution of PVC for many years without success.

How does the European PVC industry assess ECHA's conclusions?

According to VinylPlus, the ECHA report is based on several unsubstantiated assumptions and lacks fundamental data. For this reason, the PVC industry expresses doubts about certain concerns raised in the report and emphasises the need for more data collection, thorough evaluation, and dialogue with stakeholders before reaching a final decision on regulatory measures.

What significance does the ECHA report have for Danish companies that process, trade, or recycle PVC?

If the EU Commission follows ECHA's scientific assessment, PVC plastic will continue to be used for the products currently made. In the long run, there will likely be changes in the composition of additives. This is especially true for flexible PVC, where all phthalates are now considered a risk due to endocrine-disrupting effects. For rigid PVC, it is particularly organotin that may need to be replaced with other stabilisers. Both recyclers and production companies that process their production waste will most likely need to introduce additional occupational safety measures to prevent worker exposure to microplastics.

Read report: https://echa.europa.eu/bg/-/echa-identifies-risks-from-pvc-additives-and-microparticle-releases

ECHA's recommendations on how the 63 prioritised additives should be regulated

From page 33 in the report.

Higher risk	Halogenated flame retardants		Organotin substances (except MOTE)	Ortho-phthalates (C4-C6)
Medium risk	Barium 4-dodecylphenolate	Phenyl 1,3-diones Benzoate	Dibutyl terephthalate (DBTP) Trimellitates	Ortho-phthalates (C7-C8) Organophosphates Zinc borates
Lower risk	Heat stabiliser list (pp. 10-11) Amines, N-(C16-18 (even numbered) and C18-unsatd. alkyl) trimethylenedi-, ethoxylated Mono-, di- and triphenylphosphites			Diantimony trioxide Ortho-phthalates (C9-C18)
Currently not identified		MOTE Zinc molybdate		DOTP
	Not identified in use	**Lower release**	**Medium release**	**Higher release**

As the matrix shows, the European Chemicals Agency (ECHA) has assessed that the regulation of phthalates DEHP, BBP, DBP, and DIHP should be prioritised the highest (marked in red). This is based on a combination of their high risk to human health and their significant release from products. It is important to note that these phthalates are already subject to strict regulation in the EU. Therefore, it appears surprising that ECHA has chosen to include them in their assessment.

The second priority (indicated in dark orange) includes phthalates DINP, DPHP, D79P, D711P, along with organotin substances, organophosphates, and zinc borate. These substances either have lower releases from products or pose a lower risk.