Silicones play a crucial role in meeting EU policy ambitions

In addition to stringent chemical and environmental legislation, the EU chemicals industry – including silicones – needs to transition to a climate neutral, digital and circular economy by 2050, and contribute to the EU's strategic autonomy ambitions. Silicones Europe supports these policy goals and advocates for the crucial role silicones play in meeting them, backed up by science.

Silicones and EU Policy Goals

Silicones are a versatile material with benefits across all industrial ecosystems, paving the way for a more sustainable and technologically advanced future. They contribute significantly to reducing greenhouse gas emissions, with studies showing the potential of certain technologies to save almost 100 Mt of CO_2 emissions by 2030 compared to non-silicone alternatives and they are crucial for renewable technologies such as wind and solar. Through improvements in the product lifespan and durability they increase circularity, including increasing the lifespan of buildings and reducing maintenance costs. Silicones have also revolutionised the digital and ICT sectors. Their unique properties, being heat resistant, insulating and conductive, make them essential for high-performing and durable electronic devices, improving the reliability of devices such as semiconductors.

They also contribute to the EU's strategic autonomy, fostering Europe's industrial competitiveness. They play a vital role in critical value chains such as those for semiconductors and space and defence technologies: satellites, drones, airplanes.

EU Regulatory Framework for Silicones

Since 2020, the use of octamethylcyclotetrasiloxane (D4) and decamethylcyclopentasiloxane (D5) in wash-off personal care products has been restricted under REACH. An additional restriction published in May 2024, extends its scope beyond wash-off cosmetic applications. The main intention of EU regulators is to limit emissions of D4, D5 and dodecamethylcyclohexasiloxane (D6) from products which are used by consumers and professionals.

Silicones Europe appreciates the Member States' decision to support a number of derogations, which allow continued use of D4, D5, and D6 in specific industrial uses as well as the production of silicone polymers. D4, D5, and D6 are building blocks in the manufacturing of silicone polymers, representing about 98% of their uses. The remaining 2% represent the products responsible for 98% of D4, D5, and D6 releases to the environment, which are mainly cosmetic products, already regulated in the EU. Silicones Europe believes no further regulatory measures are needed.

CLH intentions

In February 2025, ECHA announced Norway's and Sweden's intention to submit a harmonised classification and labelling (CLH) dossier for Dimethylsilanediol (DMSD), focusing on Reproductive Toxicity, Very Persistent, Very Mobile (vPvM), and Persistent, Mobile, Toxic (PMT) classifications. In May, both countries followed with a CLH intention for dichloro(dimethyl)silane (DMDCS), with both dossiers expected to be submitted by December 1, 2025.

These proposals are, in our view, premature. Classification based on incomplete scientific evidence risks disrupting the use of silicone-based technologies that are vital to EU policy goals in clean energy, healthcare, and digital innovation. It also creates regulatory uncertainty, especially as DMSD is not registered under REACH, given its nature as transient degradation substance of certain types of silanes,

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siloxanes, and silicones. Ongoing studies—expected to deliver crucial data by early 2027—must be considered before any classification decisions are made. Regulatory clarity and meaningful stakeholder engagement are essential to ensure science-based policymaking and safeguard Europe's industrial competitiveness.

Science-led Decision Making

Silicones Europe is a strong advocate for science-led decision making and risk management of silicones. The silicone industry invests in science and research to show that silicones are safe for the environment and human health.

For instance, Silicones Europe and the Global Silicones Council have jointly commissioned a monitoring study in the Antarctic to gather robust scientific data on cyclic Volatile Methylsiloxanes (cVMS) concentrations in Antarctica's air, surface media and aquatic biota. Results will be available in Q4 2025.

More information on existing and ongoing studies can be found on our website.

Conclusion

Overall, the polyvalence and performance of silicones make them indispensable for innovation and technological advancement, playing a key role in several strategic EU industries. Silicones Europe believes that data-based policymaking is key to striking the right balance between ensuring EU policy goals – green, digital, and circular economy, as well as EU strategic autonomy – can be met on the one hand, and protecting human health and the environment from the risks that can be posed by chemicals on the other.

Background

About D4, D5, D6: D4, D5 and D6 are cyclosiloxanes, important building blocks of the broad family of silicone materials. They are building blocks in the manufacturing of silicone polymers, representing about 98% of their uses. D4, D5 and D6 are the main monomers in commercial production and their use has been proven safe for human health and the environment under current conditions of use. While they are all cyclosiloxanes, each substance has its own set of unique properties that make them the material of choice for countless essential applications in our day-to-day lives.
More here.

About DMSD and DMDCS: DMSD is an transient degradation substance of certain types of silanes, siloxanes, and silicones and is not a commercial substance and not registered under REACH. **DMDCS** is a fundamental intermediate for the production of siloxanes and ultimately for the majority of silicone polymers.

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About Silicones Europe

Silicones Europe, a Sector Group of Cefic, is a non-profit trade organisation representing all major producers of silicones and silanes in Europe. We aim to help you understand the essential role that silicones perform in almost every aspect of our lives. Silicones have been shaping European industry for decades, playing a key part in sectors such as energy, digital, transport or healthcare. Silicones keep our solar panels and wind turbines running, electric vehicles moving, and mobile phones connected. Find out more: www.silicones.eu

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