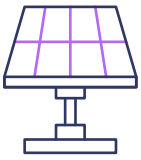
Silicones Europe
A sector group of Cefic

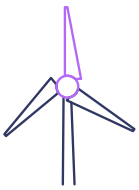
SILICONES IN THE EUROPEAN INDUSTRIAL ECOSYSTEM

Silicone monomers D4, D5, D6 are the key building blocks to create silicone polymers. Silicone polymers provide solutions that are crucial in the achievement of the EU's strategic objectives. They are a key enabler of the European Green Deal, supporting sustainable mobility, via their applications in batteries and electric vehicles, and the deployment of renewable energy sources, such as wind, solar and hydrogen. Silicones also contribute to the EU's Strategic Autonomy, fostering Europe's industrial competitiveness. They are vital in critical value chains such as those for semiconductors, optic fibres and space and defence technologies, such as satellites, drones, airplanes. They also play a key role in the healthcare sector due to their biological compatibility. Unconstrained transport of silicone monomers (D4, D5 and D6) is key for the production of silicone polymers which enable among others the below highlighted strategic applications.

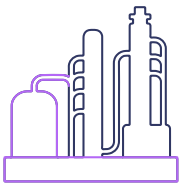
RENEWABLE ENERGY



Solar Panels
Encapsulants, Solar cells, Conductive adhesives in panels.

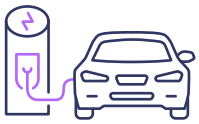


Wind Turbines
Sealants, Bonding agents, Lubricants and coatings.

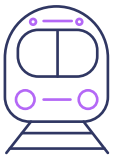


Hydrogen Plants
Silicone surfactants, Silicone sealants in electrolysers to produce green hydrogen.

SUSTAINABLE MOBILITY



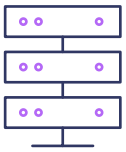
Electric Vehicles
Lubricants, External coating, Coatings and sealants in airbags, Thermal protection of electronics.



Trains
Encapsulation of electronic products, Foaming.

DIGITAL & ELECTRONICS

Laptops
LED arrays, Cable conductors.

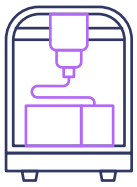


Data Centres
Semiconductors.

Smartphones
Adhesives to connect parts, Battery protection.

HEALTHCARE

Prosthetics & Joints
Prosthetic liners, Tailor-made artificial limbs.



Precision Medicine
Medical-grade silicone for 3D printing.

Pacemakers
Biocompatible coatings.

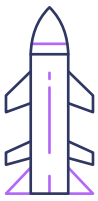
MRI Machines
CT & MRI machine parts.

CONSTRUCTION

Buildings
Glazing, Sealants.
Insulation, Caulking.

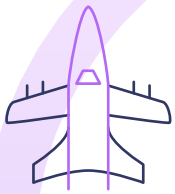
AEROSPACE & DEFENCE

Satellites
Thermal shield bonding, Avionics coating.



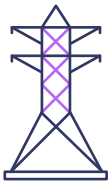
Space Shuttles
Rocket nozzle coatings, Encapsulants for electronic propellant firing devices.

Drones
Power conversion: sealing, bonding, potting, thermal management, Engine lubrication.



Aircraft
LED modules, Sensors, Glazing, Cockpit screens, Engine components, e.g. abradable joints; Sensor/ECU: Potting, encapsulation, sealing, bonding.

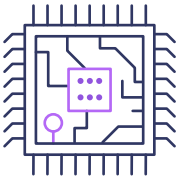
BATTERIES AND GRID TECHNOLOGIES



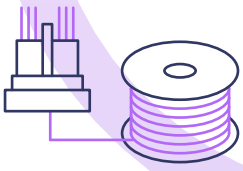
Grid tower
Highly resistant power linecable components, Insulators for underground cables and joints.

Batteries
Battery sealing, bonding and protection, Pouch, prismatic and cylindrical cells.

CRUCIAL DIRECT USES OF SILICONE MONOMERS



Semiconductors
Microprocessor bonds. PCB coatings, PCB seal and bond substrates, Semiconductor wafers.



Optic Fibre Cables
Wire bonds protection, Electric insulation, Protection, Conductors.

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