CHEMICALS FOR THE GREEN DEAL
Cefic supports the European Green Deal and Europe’s ambition to become climate neutral by 2050.

Reaching Europe’s climate neutrality goal will only be possible with the help of chemicals. Take, for example, insulation panels and coatings which reduce energy consumption in buildings, composite materials for wind turbine blades, electric batteries extending the range of electric vehicles and chemical recycling processes that can convert plastic waste back into chemicals. The chemical industry is indispensable for a strong and sustainable European economy of the future, as chemicals are present in almost every strategic value chain.
This chart provides a snapshot of how substances we produce are used in some important products and technologies across various sectors.
CHEMICALS FOR THE EUROPEAN GREEN DEAL

RENEWABLE ENERGY

Solar panels
- A key element of solar cells and used in 90% of solar panels because of its special chemical properties.

Wind turbines
- Indispensable for producing carbon fibres for wind turbine blades.

Silicon

Solvents (1)
- A key component of thin film solar panel manufacturing.

Acrylonitrile

(1) Acetone, Isopropyl alcohol, Methanol, ButAc, Toluene, Xylene
CHEMICALS FOR THE EUROPEAN GREEN DEAL

CLEAN ROAD TRANSPORT

USE

- Convert agricultural residues into fuel
- Electric vehicle battery casing
- Low-carbon fuel
- Fuel cells

CHEMICALS

- Optimised enzymes
- Alumina Tri Hydroxide (P/H flame retardant)
- Fuel ethers
- Hydrogen

Protects electric vehicles from catching fire.

When we make chlorine and caustic soda, we can also make hydrogen at the same time.
While it may be easy to recycle cardboard or paper, recycling packaging made up of mixed materials is a more difficult – but not impossible – task.

One of the innovative solutions developed by the chemical industry to help recycle multi-layer packaging is the use of particular polymers or processes that make recycling easier.

Composites are used everywhere – from aviation to energy infrastructure because they are lightweight, resistant, durable and are not high maintenance. However, they are also difficult to recycle because the thermoset resins, a key component in composites, cannot be melted down or transformed.

To solve this problem the chemical industry developed a thermoplastic liquid resin, which makes it easier to recycle composites.
**CHEMICALS FOR THE EUROPEAN GREEN DEAL**

**PUBLIC HEALTH**

**USE**

- **Used to make a diabetes drug**
- **Waste water treatment**
- **Medicines**
- **Prosthetic limbs**
- **Blood bags**

**CHEMICALS**

- **Tetrahydrofurane and NMP (solvents)**
- **Coagulants**
- **Fine chemicals**
- **Silicones**
- **Plasticisers**

**Strategic Interest**

- Used as process solvents for the production of diabetes drugs.

- Small particles are not removed efficiently by filtration as they can pass through filters. They would be easier to remove if they clumped together (coagulated) to form larger particles.

- This is why we add a chemical, which produces positive charges to neutralise the negative charges on the particles. Then the particles can stick together, forming larger particles which are more easily removed.

- Active Pharmaceutical Ingredients (API) are used in a wide range of medicines from antibiotics to cancer drugs. APIs are the part of any drug that produces its effects.

- Resistant to bacteria; silicones are easy to sterilise, do not react with other materials and do not irritate the body.

  - They are hypoallergenic; closely resemble the texture and consistency of skin, have the durability to retain shape and resist bacterial growth.

- Essential to make sterile, heat-resistant and oxygen permeable blood bags.
Hydrogen fluoride is one of the raw materials for semiconductor material etching gas. One of the most widely used electronic chemicals in semiconductor manufacturing, used in everything from smartphones to vehicles.

Sulphuric acid is used to remove impurities during the manufacture of semiconductors. There is no suitable alternative cleaning agent to sulphuric acid.

Silicon tetrachloride is the primary ingredient used to make the glass cores of optical fibers. Silicon chips are the basis of modern electronics and computing. Used in the manufacturing process of lithium ion batteries.

Converted to a resin to hold computer components in place.
CHEMICALS FOR THE EUROPEAN GREEN DEAL

AEROSPACE

Aluminium alloys

Composite materials

Titanium components of an aircraft

Engines

Hydrogen fluoride

Formaldehyde-based polyols

Industrial chlorine gas

Polyoxy-methylene

Cleaning agent necessary to produce high quality aluminium alloys. Aluminium and aluminium alloys are essential for the manufacturing of aircrafts.

Formaldehyde based polyols like NPG (Neopentylglycol) are used to produce resins for composite materials (e.g. fiberglass, carbon fiber) replacing heavier metallic parts in last generation, fuel-efficient airplanes (e.g. Boeing 787, Airbus A350).

Separates titanium from the ores it is found in. Titanium metal is used to make various components of an aircraft.

Used to replace metallic parts of aircraft engines to make them lighter and therefore more fuel efficient.