

HEALTH

Manufacturing of pharmaceuticals

Disinfectants & cleaning products



Manufacturing of pharmaceuticals



Essential medicines such as antibiotics, blood thinners and pain relievers require solvents in their manufacture. Solvents are used as the medium in which the chemical reaction takes place to make active pharmaceutical ingredients. They help separate the desired chemical products from unwanted ones, maximising drug purity. In short, solvents can be used either as part of reaction, as a carrier or for purification (re-crystallisation). As product quality requirements for this sector are amongst the most stringent of all, the purity of the solvents used, and the consistency of the impurity profile, are paramount.

Butyl acetate is used to purify penicillin by keeping impurities in the solution whilst the penicillin is selectively removed from the reaction mixture by extraction. Further purification of the penicillin is achieved through the method of crystallisation.

Glycol ethers are used as process chemicals in the production of active

pharmaceutical ingredients for contrast media that enable cancer to be detected at an early stage, contributing to saving the lives of millions of patients every year.

A large pharmaceutical production plant can use 100 kilotonnes per year of solvents. Although most of the solvents can be recycled by being recovered after the reaction and reused, a gradual deterioration in quality occurs with each reuse. Once the solvents are no longer suitable for use in pharmaceutical applications, they can be recycled through distillation processes and sold to other industries where the solvent purity is not so critical.

The administration of many essential medicines would not be possible without solvents. Sometimes a drug must be applied as an ointment, swallowed as a syrup or injected as a liquid. Solvents are uniquely able to dissolve drugs safely and effectively into these medical formulations.

EUROPEAN SOLVENTS INDUSTRY GROUP

Tel: +32 2 436 94 88 www.esig.org
esig@cefic.be

A sector group of Cefic

European Chemical Industry Council - Cefic aisbl
 EU Transparency Register n° 64879142323-90



Disinfectants & cleaning products



Alcohols such as Isopropyl Alcohol (IPA), ethanol or propanol are the active ingredients in disinfectants, hand gels and sprays. These solvents have played a large role in COVID19 pandemic.



Personal care & sun protection



People want to look and smell good in their everyday lives. Solvents act as a carrier in cosmetics and personal care products, perfumes and fragrances (ethanol). They are uniquely able to dissolve the essence of flowers and other sweet-smelling plants, transforming them into aerosol fragrances. Solvents also dissolve pigments, oils and more, creating products such as lipsticks, eye shadows

or nail polish (acetate) that accentuate your best features. Solvents are also used to remove nail polish. And if you want to change the colour of your hair, the dyes will contain glycol ethers.

Finally, aliphatic hydrocarbon solvents are added into sun creams and massage oils. Due to their low surface tension, they allow a uniform spread onto the skin.