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## Fluoropolymers: Chemicals and Power

### Introduction

12 of the 30 largest chemical companies are in Europe, registering more than €550bn sales value in 2014. In addition, a turnover of €2.6tr was generated by the power industry. Fluoropolymer-enabled efficiency gains support both sectors.

The unique combination of properties of Fluoropolymers are used in corrosion, leak and emission prevention and tight process control in the chemical and power sectors. This combination of properties allows the European chemicals and power industries to be internationally competitive thanks to their high level of efficiency and environmentally safer operations in harsh environments.

In combined Heat and Power Plants, Fluoropolymers could contribute yearly to €8 billion in energy savings, based on 2013 Eurostat data and €3 billion in CO<sub>2</sub> emission allowance reduction, based on 2016 prices.

In corrosion prevention each percent corrosion reduction is estimated to deliver €150 million savings per year. Fluoropolymers play a major role in these savings.

### Applications

- Tanks, vessels, pipes, tubing, column packing, heat exchangers, pumps, filters, seals and/or the lining of these components
- Power and data cable insulation
- Coal burning and waste incinerator heat exchangers and desulfurization units
- Battery binders
- Chloralkali processes
- Nuclear industry fluid handling, filtration and gas sampling

### Benefits

- Corrosion prevention
- Leak prevention
- Chemical emission reduction
- Higher uptime, lower maintenance cost and increased component lifetime
- Cleaner power plant flue gasses and reduced CO<sub>2</sub> emission
- Higher efficiency and production yield



- Improved quality and purity of products
- Waste reduction
- People and environmental safety

## Innovations

- Air filtration for Gas Turbines: highly efficient in capturing virtually all particles even in challenging wet and humid conditions over a long lifetime in comparison to other filter systems.
- Mercury control System for coal-fired utilities: fixed sorbent system for capturing elemental and oxidized gas phase mercury from industrial flue gas containing SO<sub>3</sub>.
- Fluoropolymer membranes in fuel cells and vanadium redox flow batteries.

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