



Filter Systems

# FACTS

Isocyanates

*For better workbench environment*

**FILTRONIC AB**

Box 2284, SE-531 02 LIDKÖPING  
Tel +46 510 208 10, Fax +46 510 201 40  
e-mail: [office@filtronic.se](mailto:office@filtronic.se)  
[www.filtronic.se](http://www.filtronic.se)



## ISOCYANATES - what is that?

### Background:

Isocyanates is a family name of a large amount of substances with an extensive use in the work life. There is a large number of different isocyanates with different characteristics but common for all these is that they cause health problems, especially when inhaling.

The largest area of use for isocyanates is when manufacturing polyurethane plastics (PUR). PUR appears as compact and soft foam, and is found in, coating and other chemical products. The usage of PUR is increasing and makes up approx. 5 % of all plastics used in Europe. When polymerising and heating of PUR a number of isocyanate combinations are formed. When heating fenylformaldehyd resin is methyl isocyanates formed.

### Danger of isocyanates:

Isocyanates cause health hazards especially when inhaled in form of gas, steam, dust or aerosol. Inhaling can cause irritation in eyes, mucous membranes and respiratory systems with symptoms resembling asthma or bronchitis and decreased lung function. The risk of hypersensitiveness is big. Isocyanates can also cause skin irritation. Repeated contact can cause eczema and in some cases skin allergy.

Isocyanates have a very low limit value. An allergic person can develop problems even when exposed to concentrations below the hygienic limit value. Isocyanates have such a low limit value that you may be exposed to dangerous proportions without noticing it as the isocyanates does not show nor smell at such low contents.

### Isocyanates in the electronics industry:

Recently new health hazards have been discovered with certain coatings, so called PUR coatings and some PUR glues used in manufacturing and repairing printed circuit cards. The same risks occur when working with coated optical cables that contains small amounts of PUR and coated wire. When these materials are heated isocyanates are formed in such high concentrates that it can cause asthma. It is believed that the thermal segregation starts at 150-200 °C. There is also strong reasons to suspect that isocyanates can be formed when heating resin products like fluxing materials.

Filtronic AB manufactures filters that are tested for isocyanates  
by IVL (Swedish Environmental Research Institute)