



# All About “PER” ... in a nutshell

Information for dry-cleaners  
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Today’s number one dry-cleaning solvent in Europe

The substance perchloroethylene, simply called PER, has been a dry-cleaning solvent in Europe for more than 70 years. Today, it even is the number one substance for this application. There are many good reasons for that. We explore them in this Information Sheet under the light of current legislative developments in Europe.

## PERCHLOROETHYLENE

PER is the solvent of choice for most dry-cleaners. For all the good reasons. And this has been going on for more than 70 years now.

## PER WORKS ON THE “P” FOR PEOPLE

PER is one of the most studied solvents.

- It has been risk assessed under the existing chemicals regime in 2007 and from 2010 under the European legislation on the safe and environmental use of chemicals, called REACH.
- Numerous epidemiological studies - these study very large number of people - over many years have shown that PER is safe in dry-cleaning when properly used.
- PER showed no clear association between its exposure and subsequent cancer morbidity in approx. 10,000 workers in dry-cleaning and laundry over more than 20 years in a recent study in Sweden.

PER is recognized as hazardous substance but workers exposure today to PER is much better controlled due to closed machine technology.

There now exists a dedicated training module for working with PER, especially for dry-cleaning shops under **E-DryClean**. This is a European web-based training tool for ‘sustainable dry cleaning processing’ funded by the European Commission.

And ECSA, the European Chlorinated Solvent Association, has developed recommendations for the safe handling of PER. Everyone can find them online in

the ECSA Product&Application toolbox for safe and sustainable use of chlorinated solvents.

## PER WORKS ON THE “P” FOR PERFORMANCE

PER labelling: 95% of all garments are labelled for the use of PER cleaning technology.

PER has a unique performance profile and is non-flammable.

It is seen as the **best choice for cleaning fine, delicate or sensitive garments**.

Perchloroethylene also remains to be the benchmark for **high quality dry-cleaning**. It rapidly penetrates fibres to dissolve soils, stains, fat and oils without shrinkage or damage of garments.

PER has also **triggered technology progress**: new closed machines have been implemented with on-site recycling technology resulting in significant reduction of transport costs and related CO2 emission.

And PER, combined with modern cleaning machines leads to **very high cleaning efficiency**: less than 10g PER per kg garment is used in latest machine technology.

## PER WORKS ON THE “P” FOR PLANET

- PER use in modern machines is designed to fulfil all emission requirements of the EU Solvent Emissions Directive and REACH.
- PER’s overall eco-efficiency is currently unmatched because of its unique recycling properties when used in modern equipment.





- PER's use in professional textile cleaning compared to domestic washing reduces the greenhouse effect and environmental impact by more than half!

## PER AND ITS LEGAL SITUATION IN EUROPE

PER use in dry-cleaning is covered by the European Solvents Emission Directive and by the EU Regulation on Registration, Evaluation and Authorization of Chemicals (REACH).

- The use of PER in dry-cleaning has been registered under REACH in 2010. The Risk assessment for the use of PER in dry-cleaning under REACH could demonstrate safe use in this application with modern closed equipment.
- The use of PER in modern closed equipment used in dry-cleaning fulfil the emission requirements of the EU Solvents Emission Directive.

ECSA strongly recommends the use of modern closed equipment of Best Available Technology.

For details see the ECSA Guidance on Storage and Handling : [www.chlorinated-solvents.eu](http://www.chlorinated-solvents.eu)

The EU recommendation for an OEL by the Scientific Committee on Occupational Exposure Limits (SCOEL) is 20 ppm for workers and is supported by ECSA.

Within the REACH registration dossier, all risk assessments are based on this peer-reviewed OEL and on this basis an OEL for the general public was derived as being a quarter of the worker OEL.

In conclusion, new machines allow adequate control of emissions and exposure; Together with properly trained personnel PER can be used in the same safe way as other solvents.

The REACH dossier for PER will be evaluated in 2013 by EU national authorities in order to review all data that reflect the hazard of the substance as well as related risk and risk management for the different uses.

## RECENT DEVELOPMENT IN FRANCE

PER is used by more than 90% of dry-cleaners in France.

The French Ministry of Environment and the French Health & Labour Ministry issued recently a press release calling for a phase-out of existing installations in dry-cleaning using PER.

Such individual French activity ignores the principle of a harmonized internal market for chemicals as harmonized under REACH. The purpose of REACH is to ensure a high level of protection of human health and the environment.

Examples in Europe (Netherlands, Germany) exist with stringent national regulations enforcing the use in modern closed equipment, so that very low emission limits can be achieved. Requirements on formation of personal and safe handling add to the proper risk management. With these high standards no need for a total phase out of PER for the use in dry-cleaning has been seen so far by these countries.

## Is PER BANNED else where in Europe?

Amongst EU countries, a majority have implemented stringent requirements for the use of PER in dry-cleaning. No EU country has banned PER for use in dry-cleaning, as a proper enforcement of existing regulations is seen as sufficient to ensure safe handling and protection of workers and the general public around dry-cleaning shops. Also **Denmark** implemented measures, which are often mentioned as a ban on PER, while it also implements strict measures for all solvents used in dry-cleaning. **Two Thirds of Danish dry-cleaners use PER** according to the Danish Dry-Cleaning Association.

## Is PER BANNED else where in the world?

In the US, according to the US EPA, the dry cleaning machines located in residential areas (i.e. in buildings co-located with residents) will be phased out by 2020. To the contrary of Europe, this ban only affects a smaller no. of dry-cleaning shops and only some big cities. For instance, dry-cleaning machines in the majority of the US federal states, that are located in commercial centres, industrial areas and serving "cold-shops", do not face prohibition.

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