ecsa
european chlorinated solvents association

INFORMATION 05

All About "PER" … in a nutshell

Information for dry-cleaners

April 2016

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 still 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 because of its efficiency, applicability to almost all garments (investment into only ONE machine), easy recyclability, energy efficient use and most important it is a non-flammable solvent .Therefore PER protects workers clients and residents as it prevents fire and explosions.

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.

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 machines are generally cheaper or at least not more expansive than other solvents machines

PER WORKS AS "P" BECAUSE IT PROTECTS YOU

PER is the only universal non-flammable dry cleaning solvent, that can be used for almost all garments (the use of water is not suitable for all gar-

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ments or does not clean sufficiently). PER will not lead to combustion in contact with heat or ignition sources nor will it accelerate fire and lead to explosions. Sources of heat are often available in dry-cleaning shops, hence the use of a non-flammable solvent could be live saving especially in dry cleaning shops adjacent to inhabited buildings.

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

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. ECSA recommends to use the latest machine generations and safe-handling practices, which suffices to to meet the even more stringent German, Netherland and French national maximum air concentration limits for the general population of 100-250µgr, 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 has been evaluated by EU national authorities (Latvia) in 2013 and the conclusion has been drawn, that there is not further regulatory action needed based on this current REACH dossier. Hence the REACH dossier properly reflects the hazard of PER as well as describes related risk management measures (RMM's), these RMM's can be found in the exposure scenarios attached to your suppliers safety datasheet.

RECENT DEVELOPMENT IN FRANCE

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

In December 2012 France has updated its regulation (arrêté 2345) concerning the use of Perchlorethylene in dry-cleaning machines in shops adjacent to inhabited buildings. Until 2022 all machines located in workplaces adjacent to inhabited buildings have to be phased out. Such individual French activity ignores the principle of a harmonized internal market for chemicals as harmonized under REACH. As mentioned above, examples in Europe (Netherlands, France & 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 drydry-cleaning adjacent to inhabited buildings . No EU country has banned PER for use in dry-cleaning, as a proper enforcement of existing regu-

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lations 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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