

Guidance on the use of Trichloroethylene as a vapour degreasing solvent:

Introduction

The following guidance has been agreed by the Surface Engineering Association (SEA), EEF 'the Manufacturers' Organisation' and the Government Departments¹ responsible for environment and health and safety. It is intended to clarify the legal requirements placed on those currently using trichloroethylene (often known as 'Trike' or TCE) as a vapour degreasing solvent.

Background

Vapour degreasing of metal articles has been used as an industrial process since the 1930s and the most commonly used solvent has been TCE.

Health and safety controls on the use of TCE (enforced by HSE) have been in place for many years. More stringent restrictions on emissions for surface cleaning installations with a solvent consumption of more than 1 tonne a year have been introduced to protect the environment with new requirements applying from 31 October 2007. Because the environmental requirements are more stringent, compliance with them should also meet health and safety needs for worker exposure.

Environmental legislation

Restrictions on emissions from degreasing tanks have been introduced under the EU Solvent Emissions Directive² (SED) to protect the environment. In England and Wales, SED is enforced by Local Authority Inspectors and, for larger users, by the Environment Agency. In Scotland, SED is enforced by the Scottish Environment Protection Agency (SEPA).

SED currently takes effect at two levels:

- Lower risk solvents require regulation if consumption³ exceeds 2 tonnes/year.
- Higher risk solvents (known as "designated risk phrase materials") require local authority PPC regulation if consumption exceeds 1 tonne per year.

Higher risk solvents are those designated as:

- a halogenated volatile organic compound (VOC) which is assigned or needs to carry the risk phrase R40
- a substance which is a VOC and which is assigned or needs to carry one or more of the risk phrases R45, R46, R49, R60 or R61, and
- a preparation which, because it contains substances that are VOCs, is assigned or needs to carry one or more of the risk phrases R45, R46, R49, R60 or R61.

Consequently TCE (which has the risk phrase R45) is classed as a higher risk solvent.

If SED applies, the user has to substitute higher risk solvents in the 'shortest possible time' (see Defra Guidance Note AQ9(04)

[www.defra.gov.uk/environment/ppc/localauth/pubs/guidance/notes/aqnotes/aq09\(04\).htm](http://www.defra.gov.uk/environment/ppc/localauth/pubs/guidance/notes/aqnotes/aq09(04).htm)

For TCE the guidance specifies that substitution should normally be no later than 31 October 2007⁴.

The guide⁵ also advises on restrictions if using one of the above-listed risk phrase substances or preparations for the first time, for example, as a substitute for TCE.

Advice is available from organisations such as Envirowise (www.envirowise.gov.uk) on finding suitable replacements. There is an Alternative Suppliers List on the EEF website

www.eef.org.uk/UK/whatwedo/environment/services/online/publication23032004.htm

Other European Health and Safety Legislation affecting TCE

Trichloroethylene is a Priority Substance for consideration under the European Union's Existing Substances Regulation (EC/793/93).

¹ The Department for Environment, Food and Rural Affairs (Defra), the Environment Agency, (Scottish and Welsh Bodies) and the Health and Safety Executive (HSE)

² SED is implemented in the UK through the Pollution Prevention and Control [PPC] (England and Wales) Regulations 2000, SI 2000/1973, as amended in particular by SI 2004/107, and by the Pollution Prevention and Control (Scotland) Regulations 2000 SSI 2000/323, as amended in particular by SSI 2004/26.

³ Means the total input of organic solvents into an installation in the last calendar year, or previous 12-month period, less any VOC that are recovered for reuse

⁴ Decisions should be taken on the facts of each individual case, having regard to the factors in paragraphs 2 and 3 of AQ9(04).

⁵ Paragraph 4 of AQ9(04)



Following negotiations, a voluntary agreement ("Charter for the safe use of trichloroethylene in metal cleaning")

www.eurochlor.org/news/detail/index.asp?id=232) has been signed by all European producers of TCE with the commitment that:

- TCE will not be supplied for metal cleaning / degreasing after 2010 unless the user has a closed system (defined in terms of specific types of equipment by reference to Part 4 of European Standard EN 12921-4 "Safety of machines using halogenated solvents");
- User companies must give a written undertaking (by 31 Dec 2010) that TCE will be used only and exclusively in closed systems as defined above;
- The full co-operation of EU distributors of TCE in the Agreement will be secured; and
- Signatories will fully document the commitments made by suppliers, distributors and users, monitor the progress of the voluntary agreement and report annually to the Commission and Member States.

What does this mean in practice?

The combined effect of the above changes on the use of TCE in vapour degreasing is that:

a) If a degreaser consumes more than 1 tonne of solvent per year it must have a PPC permit from the relevant local authority or from SEPA by 31 October 2007. The company will normally be expected to have replaced any TCE used by that date. Defra guidance on compliance standards is contained in guidance www.DEFRA.gov.uk/environment/ppc/localauth/pubs/guidance/notes/pgnotes/pdf/pg6-45.pdf.

In practice, it is expected that a company will need enclosed degreasing machines in order to comply, but it is, nevertheless, envisaged that a few existing open-topped vapour degreasing machines may be compliant, depending on their size and utilisation, and the nature of the cleaning work.

b) The European suppliers' Charter means that, from 1 January 2011 all existing open-topped vapour degreasing machines using TCE will need to be totally enclosed, even where the solvent consumption is below 1 tonne a year and therefore not caught by PPC. Consequently many engineering companies currently using open-topped degreasing tanks are looking for alternatives to TCE for degreasing. These could include alternative organic solvents or aqueous degreasing methods. Lower risk solvents should preferably be used. Any operator proposing to use specified risk phrase solvents as a substitute would be expected to provide strong justification (see Defra Guidance Note AQ9(04) referred to above).

Further advice

For queries relating to the environmental requirements under the Solvent Emissions Directive and Pollution Prevention and Control Regulations, operators should in the first instance contact the Environmental Health Department (pollution team) of their local district, borough or unitary council. In Scotland, operators should contact SEPA.

Defra and Welsh Assembly Government contact details are at

www.defra.gov.uk/environment/ppc/localauth/pubs/guidance/notes/aqnotes/pdf/aq20-06.pdf.

Further information on health and safety issues is available from Andrew Lake, HSE Manufacturing Sector (Tel 01342 334243 VPN 503 4243, email andrew.lake@hse.gsi.gov.uk)





Other references

Industry sources of help include:

Envirowise:

provides advice to regulated and non-regulated businesses about good environmental practices, and in particular those that can save businesses money. Booklet GG354 "Surface cleaning and preparation: choosing the best option" is available free from

www.envirowise.gov.uk/page.aspx?o=117661,

email helpline@envirowise.gov.uk or phone 0800 585794.



Carbon Trust

The Carbon Trust works with UK businesses and the public sector to identify cut carbon emissions and develop commercial, low-carbon technologies. It provides a wide range tailored support to businesses of all sizes, including an interest-free loan scheme for small - to medium-sized enterprises to fund approved energy efficient investments, free energy site surveys for businesses with energy bills of over £50,000 a year and a free telephone helpline (0800 085 2005). It also administers the Government's Enhanced Capital Allowance scheme for energy-saving investments and provides a variety of support to business seeking to develop and commercialise new low-carbon technologies. More information is available at the Trust's website www.carbontrust.co.uk



NISP

National Industrial Symbiosis Programme - NISP is an innovative business opportunity programme that brings together companies from all business sectors with the aim of improving cross industry resource efficiency through the commercial trading of materials, energy and water and sharing assets, logistics and expertise. Contact 0121 433 2650 or visit www.nisp.org.uk/.



Regional Development Agencies

RDAs can provide advice to businesses on resource efficiency. RDA contact details can be found at www.englandsrdas.com. They can also be reached via Business Links.



ENVIRONMENT AGENCY

NetRegs

on the Environment Agency website, is targeted at giving guidance to small businesses on compliance with the full range of environmental legislation.

More information

Other sources of business advice and support can be found on Defra's Brew pages (Business Resource Efficiency and Waste Programme).



Defra guidance

All relevant Defra guidance can be found at [www.defra.gov.uk /environment/ppc](http://www.defra.gov.uk/environment/ppc). Some of the existing guidance is likely to be incorporated in a revised version of the General Guidance Manual, due to be published in January 2008, which will also be found on this Defra website.



EEF

www.eef.org.uk



SEA

www.sea.org.uk

