



Novec™
Brand

Why use 3M™ Novec™ 73DE Engineered Fluid to replace perchloroethylene?

Benefits of 3M Novec 73DE fluid:

- Excellent performance with high solvency and low surface tension
- Effective in cleaning heavy greases, oils, waxes, silicones and non-polar flux residues
- Easy to maintain and use in a vapour degreaser with stable bath composition during extended use
- Non-flammable with an excellent safety profile
- Environmentally sustainable with low global warming potential (GWP) and zero ozone depletion potential (ODP)

- 1** Perchloroethylene is classed as a category 3 carcinogen.
H351 risk phrase: Suspected of causing cancer.
Perchloroethylene is classed as CMR (Carcinogenic, Mutagenic or Reproductive Toxin) by the SED (Solvent Emissions Directive 1999-13-EC)

3M Novec 73DE fluid is not classed as a CMR and does not carry any of these Risk Phrases.

- 2** Exposure guidelines TLV 8h TWA:
perchloroethylene: 20 ppm

3M Novec 73DE fluid: 100 ppm

- 3** Why replace perchloroethylene with **3M Novec 73DE fluid** in vapour phase degreaser equipment.

Perchloroethylene needs to be used in closed equipment because of CMR classification whereas 3M Novec 73DE fluid can be used in standard vapour degreasers.

- 4** According to the Industrial Emission Directive 2010/75/EU, the stack emissions have to be limited to 20mg/m³. Perchloroethylene requires extraction of vapours and must comply with the emission limit of 20mg/m³.

3M Novec 73DE fluid does not require extraction and has a emission limit of 75mg C/Nm³.

- 5** Perchloroethylene requires a higher volume of solvent.

3M Novec 73DE fluid has beneficial properties (surface tension, vapour pressure, viscosity, heat of vaporisation & boiling point) which ensure far less solvent is used in a like-for-like comparison. In conjunction with Novec not requiring extraction, total solvent usage is reduced dramatically.

- 6** Perchloroethylene is recognised as a versatile cleaning fluid.

Repeated comparative trials with 3M Novec 73DE fluid have shown no loss of cleaning performance in the vast majority of applications. Particulate cleaning is much improved with Novec, as is cleaning of blind holes and fine features.

- 7** Acid acceptance and energy consumption should be considered when using perchloroethylene.

3M Novec 73DE fluid is inherently stable and does not need acid acceptance testing or maintenance of stabilisers. The thermal properties of 3M Novec 73DE fluid require less energy to operate the cleaning plant.



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