

HCFC Phaseout: Be Prepared

Technical Information

The Situation: HCFC Phaseout Looming

As of January 1, 2015, HCFC-225 (a widely used cleaning solvent) has been banned from manufacture and import into the United States.

HCFC-225 (also known as AK-225) is used for cleaning, drying, and lubricant deposition applications. HCFC-225 is an EPA SNAP-approved replacement for CFC-113 and has similar cleaning performance and materials compatibility.

HCFC-225 belongs to a class of chemicals called hydrochlorofluorocarbons (HCFCs). These materials have been linked to the depletion of the earth's ozone layer, as have chlorofluorocarbons (CFCs). CFCs and HCFCs are regulated by the Montreal Protocol and the U.S. Clean Air Act and can no longer be produced or imported into the United States.

A similar ban will be enacted for HCFCs in 2015.

HCFC Alternatives

Here are some things to consider when retrofitting from HCFC-225 to an alternative solvent:

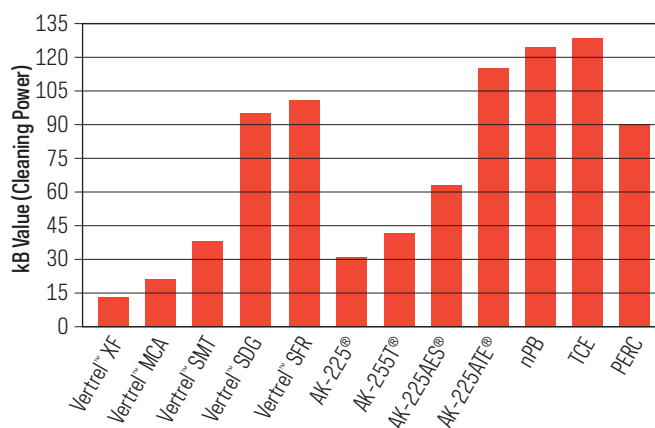
- **Cleaning Capability**

Any alternative solvent needs to be able to dissolve the soil/contaminant on the part.

Vertrel™ cleaning fluids have a broad range of cleaning power. kB values (a measure of cleaning power) for Vertrel™ solvents range from 11 to a high of 110 and are similar to HCFC-225.

- **Materials Compatibility**

A feature of HCFC-225 is broad materials compatibility. This compatibility is a result of the fluorine content in HCFC-225.



As a HCFC-225 replacement, Vertrel™ solvents have similar materials compatibility.

- **Equipment Suitability**

Any HCFC-225 replacement must work well with the cleaning equipment being used. Equipment elastomers and plastics need to be tested for compatibility. In addition, temperature set points for heaters and condensers should be checked and adjusted as needed.

Vertrel™ solvent has a boiling point very similar to HCFC-225 (55 °C [131 °F] vs. 54 °C [129 °F]) making it an ideal replacement.

- **Worker Safety**

HCFC-225 has a worker acceptable exposure limit (AEL) of 100 ppm 8-hr TWA. Vertrel™ solvents have better exposure AEL. Worker exposure should be evaluated to ensure that exposure limits are not exceeded. Vertrel™ solvents have exposure limits ranging from 190- 200 ppm 8-hr TWA.

Summary

In the areas of cleaning strength, compatibility, and safety, Vertrel™ is comparable, and in some instances, superior to HCFC-225. With its environmental profile and no use restrictions, Vertrel™ solvents are the ideal replacements for HCFC-225.

For more information on Vertrel™, please visit opteon.com or call (800) 235-7882.

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