



New Solvent Technology Cleans Effectively with Favorable Environmental Properties

Replace AK-225 with Confidence

Users of industrial solvents are currently faced with finding a balance between effective cleaning and favorable environmental properties when seeking an alternative to AK-225 (HCFC-225ca), a popular solvent used for cleaning, drying and lubricant deposition applications in a variety of end-use markets. Beginning January 1, 2015, most uses of AK-225 will be prohibited in the United States.

Providing alternatives to products with high ozone-depletion potential and high global warming potential continues to be a key environmental focus for Honeywell.

Hydrofluoro-olefin Technology

Honeywell has developed a new platform of fluorinated solutions – refrigerants, foam blowing agents, aerosols and solvents – based on hydrofluoro-olefin (HFO) technology. The HFOs developed and commercialized by Honeywell have a very low GWP and are highly effective in a variety of applications. Solstice® Performance Fluid (PF) is the latest advancement in solvent technology developed by Honeywell.

Introducing Honeywell Solstice® Performance Fluid

Solstice PF is a highly effective cleaning solution that is nonflammable, has favorable toxicity properties (OEL of 800 PPM), a low-global-warming-potential of 1, negligible ozone depletion, does not contribute

to ground-level smog, and is not a volatile organic compound (VOC) as determined by the U.S. EPA. It has low surface tension, and is suitable for electronics, metal, medical and precision cleaning. It can be used in vapor degreasing equipment and aerosols. Honeywell is working with aerosol manufacturers to develop formulations that can be used with Solstice PF.

Solstice PF has broad range compatibility with a host of plastics, elastomers and metals including high Ni and Al alloys. As with any product, compatibility testing is recommended prior to use.

Soils that can be cleaned with Solstice PF

Mineral Oils	Heavy Grease
Silicone Oils	Vacuum Oils
Silicone Grease	Refrigerant Oils
Cutting Oils	Fluorinated Oils

Benefits of Honeywell Solstice® Performance Fluid

- Cleaning performance similar to AK-225
- Superior wetting – cleans tight spaces
- Compatible with a large number of commonly used polymers and elastomers (e.g PET, PTFE, Polycarbonate, Viton, Neoprene)
- Compatible with metals (e.g. aluminum, copper, titanium, magnesium/aluminum alloy)
- Recovered or recycled by simple flash distillation or through carbon absorption with stream desorption
- Very stable – it has not required stabilization in any applications tested

- Resistant to thermal and hydrolytic breakdown
- Nonflammable
- Can be used in vapor degreasing and aerosols

Status: Solstice PF is commercially available. It has received approval under EPA's Significant New Alternatives Policy (SNAP) program for use as an aerosol solvent (Federal Register, August 2012), in metal cleaning, electronics cleaning, precision cleaning, and as a carrier solvent in adhesives, coatings and inks (Federal Register, May 2013). It has also been added to the TSCA inventory (August 2012). Contact your Honeywell representative for more details.

Comparison of Physical Properties*		
Property	Solstice® PF	HCFC-225ca
Boiling Point °C	19	54
Heat of Vaporization at Boiling Point (kJ/kg)	194	145
Liquid Density @ 20°C gm/mL	1.26	1.55
Surface Tension @ 20°C dyne, cm	12.7	16.2
Flash Point	None	None
OEL, ppm	800	100
GWP (100-Year)	1	370
VOC (U.S.)	Exempt	Exempt

*As replacement solvents must satisfy a complex set of properties, physical properties are only one consideration in the analysis.

Honeywell Fluorine Products
101 Columbia Road
Morristown, NJ 07962-1053
Phone: 1-800-631-8138
www.honeywell-solvents.com

The information provided herein is believed to be accurate and reliable, but is presented without guarantee or warranty of any kind, express or implied. User assumes all risk and liability for use of the information and results obtained. Statements or suggestions concerning possible use of materials and processes are made without representation or warranty that any such use is free of patent infringement, and are not recommendations to infringe any patent. The user should not assume that all safety measures are indicated herein, or that other measures may not be required.



Solstice is a registered trademark of Honeywell International, Inc.
August 2014 version18
© 2014 Honeywell International Inc.

Honeywell