Honeywell | Blowing Agents

SOLSTICE® LIQUID BLOWING AGENT

High Performance Refrigerator Insulation

A Near Drop-In Replacement, Energy-Efficient Blowing Agent

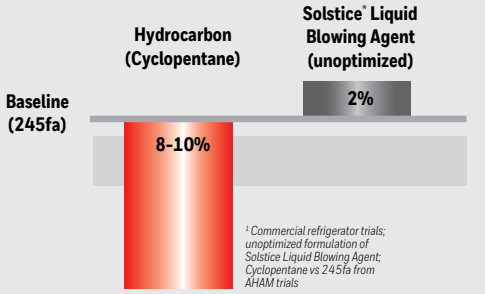
Where can you reduce weight?

Honeywell Solstice® Liquid Blowing Agent (LBA) is the latest advance in blowing agent technology. It is a low global warming potential (GWP), non-flammable, energy-efficient blowing agent for refrigerator and freezer insulation applications, and does not require platform design changes or process configuration modifications.

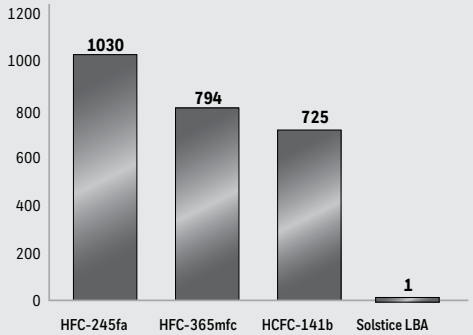
Performance

- Up to 10-12% better than hydrocarbon; 2% better than HFC-245fa. We expect even more as formulations are fine-tuned.
- Better energy efficiency performance at low temperatures.

% Energy Efficiency Improvement (refrigerator power consumption[1])



Honeywell Solstice LBA has a GWP of 1



Cost Effectiveness

Honeywell Solstice LBA cost-effectively delivers the lambda improvement to current, commercial PUR insulation, allowing OEMs to meet ever-increasing energy standards without the use of additional equipment such as vacuum insulated panels or variable speed compressors.

- A near drop-in replacement for liquid HCFC, HFC, hydrocarbons and other non-fluorocarbon blowing agents
- Does not require expensive hydrocarbon storage and handling or risk mitigation equipment

Value in Use

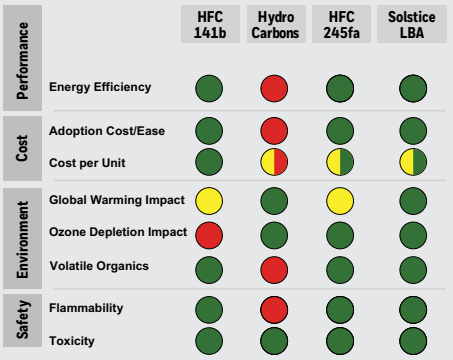
A recent refrigerator trial, comparing HFC-245fa with Solstice LBA, was performed in an existing operation, utilizing existing equipment/tooling, with no modifications to the foaming process.

- Minimum fill weights (which is a measure of flow characteristics) were nearly identical
- Cabinets and doors were overpacked such that the finished foam product density was in excess of 2 pounds/ft3
- Demold times for Solstice LBA PUR were equal to/improved over HFC-245fa PUR

Environmental Impact

Honeywell Solstice LBA is a promising replacement for foam insulation blowing agents currently in use, with the potential to make significant contributions to reductions in global warming. When substituted for HCFC-141b, HFC-245fa and HFC-365mfc, the use of Solstice LBA can yield substantial improvements in the environmental impact of foam blowing agents right away. With a GWP of 1, its widespread adoption could save about 60 million metric tons per year of CO2 equivalent, comparable to eliminating carbon dioxide emissions from more than 11.8 million cars every year.
(Source: GHG Equivalencies Calculator: http://www. epa.gov/cleanenergy/energyresourcescalculator.html)

Solstice Liquid Blowing Agent Outperforms the Competition



Environmental and Safety Properties

	Solstice LBA	HCFC-141b
Atmospheric Life	26 days	10.8 years
ODP	~0*	0.11
GWP100	1	725
Flammable	No	No
Exposure Limit (OEL)	800ppm	500ppm

*No impact on ozone layer depletion and is commonly referred to as zero (Wuebbles, Private communication)

Safety

Solstice LBA is a non-flammable liquid by ASTM E-681, exhibits no flashpoint or vapor flame limits, and has no limitation on hazards classification. Solstice LBA has a very low Maximum Incremental Reactivity (MIR) when compared to hydrocarbon blowing agent materials.

Regulatory

Honeywell Solstice LBA is:
- Listed under the EPA's SNAP program
- Listed on the TSCA inventory
- VOC-exempt

For More Information
call **1.800.631.8138**
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