

# Honeywell Solstice™ Liquid Blowing Agent



**Spray Foam Insulation**

**Honeywell**

# Non-flammable and Low GWP Blowing Agent for Spray Foam Insulation

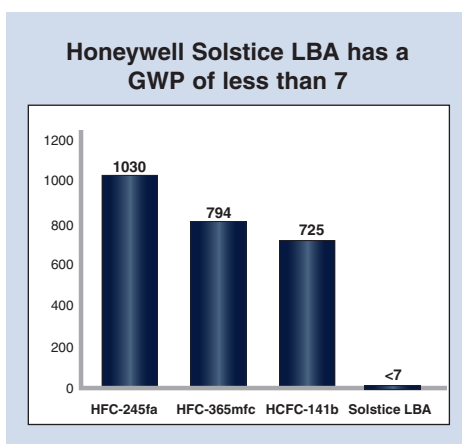
Honeywell Solstice™ Liquid Blowing Agent is the latest advance in blowing agent technology and, with a GWP of <7, is a superior choice for use in spray foam insulation.

Spray foam is used to insulate, provide air sealing and improve structural strength in buildings. The insulation potential of spray foam is dependent upon the insulating gas in the cells of the polyurethane foam. Solstice LBA provides the greatest insulation value.

## Performance

Solstice Liquid Blowing Agent for spray foam offers:

- improved k-factor – 2-4% better than foams made with HFC-245fa
- higher solubility in polyol blends – as much as 20% higher in polyols tested
- lower vapor pressure in polyol blends – as much as 60% lower in formulations tested



## Cost Effectiveness

- Lower molecular weight than HFC-245fa and HFC-365mfc means less blowing agent needed to do the job
- Better R-value / inch means improved k-factor (thermal insulation value)
- More consistent foam processing over wide range of application conditions

## Environmental Impact

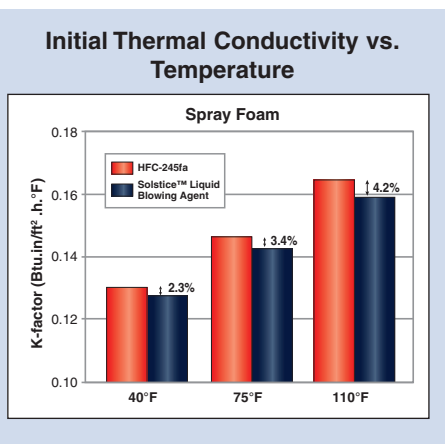
Solstice LBA is a promising replacement for foam insulation blowing agents currently in use, with the potential to make significant contributions to reductions in global warming. When substituted for HCFC-141b, HFC-245fa and HFC-365mfc, the use of Solstice LBA can yield substantial improvements in the environmental impact of foam blowing agents right away. With a global warming potential (GWP) of less than 7, its widespread adoption could save about 60 million metric tons per year of CO<sub>2</sub> 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/energy-resources/calculator.html>)

## 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.



## Environmental and Safety Properties

	Solstice LBA	HCFC-141b
Atmospheric Life	26 days	10.8 years
ODP	~0*	0.11
GWP <sub>100</sub>	<7	725
Flammable	No	No
Exposure Limit (OEL)	300ppm**	500ppm

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

\*\*Internal HON OEL

## Solstice Liquid Blowing Agent Outperforms the Competition\*

	HCFC 141b	Water	HFC 245fa	Solstice LBA
<b>Performance</b>				
Lambda	Red	Red	Green	Green
Using Existing Equipment	Red	Green	Green	Green
<b>Cost</b>				
Yield	Yellow	Yellow	Green	Green
Application Window	Yellow	Red	Green	Green
<b>Environment</b>				
Global Warming Impact (direct and indirect)	Yellow	Green	Yellow	Green
Ozone Depletion Impact	Red	Green	Green	Green
Volatile Organics**	Green	Green	Green	Green
<b>Safety</b>				
Toxicity	Meets Requirements			

\*Based upon field trial data

\*\* VOC-exemption pending in U.S.

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## Honeywell Solstice Blowing Agents

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