Honeywell | Performance Materials and Technologies

Solstice® Liquid Blowing Agent

Insulation Technologies for Polyisocyanurate (PIR) Boardstock

Solstice® Liquid Blowing Agent

A Solution for Increasingly Challenging Insulation Performance Requirements

Honeywell Solstice® Liquid Blowing Agent (LBA) is the latest advancement in foam blowing agent technology. It is ideal for a variety of PIR board applications including:

- Residential roofs, walls and floors
- Commercial construction

The blowing agent causes the polyurethane to expand, creating highly energy-efficient closed-cell PIR insulation. The choice of blowing agent directly impacts the performance of the finished product and the operating costs of the structure. Honeywell's technical team can work with you and/or your system provider to optimize a formulation for your specific application.

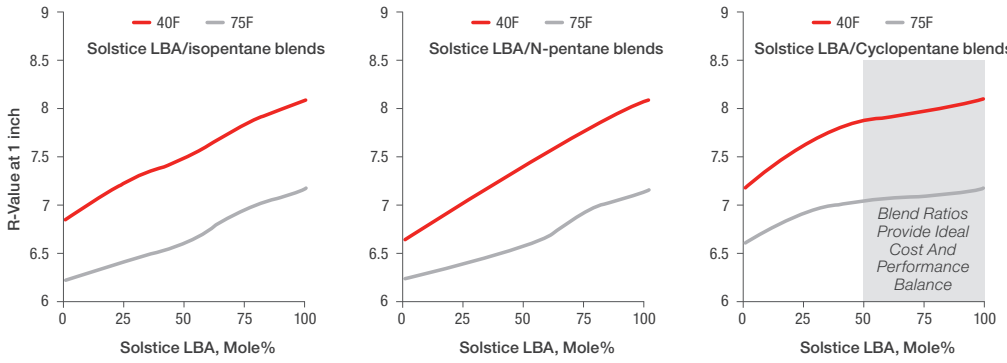
Benefits of using Solstice LBA

- Highest R-Value per inch at low temperatures[2]
- Increases insulating performance with LTTR Testing Method
- Ease of processing with better flowability
- Near drop-in when formulating a pentanes blend
- Improves miscibility of pentanes in polyols
- Global warming potential of 1 (90% reduction vs. pentanes)
- Nonflammable (ASTM E-681)

Better Performance

Solstice LBA increases insulation performance of conventionally processed PIR foam.[1] This can translate into a thinner board required to achieve the desired performance or improved insulation value with the same board thickness. When undergoing Long Term Thermal Resistance (LTTR) testing as required for the PIMA QualityMark[CM] certification program, optimizing the insulating performance of your PIR board product is essential. Solstice LBA can give you an edge.

R-Value* of Solstice LBA/Pentane Blends



- Solstice LBA/pentane blends can be optimized to minimize costs, while allowing you to reach specific insulating performance levels
- A Solstice LBA/cyclopentane blend (50/50 ratio) can deliver similar insulating performance as pure Solstice LBA, while providing an ideal balance of cost and performance
- Because Solstice LBA improves the miscibility of pentane in polyols, this can reduce blending time depending on processing method

Solstice LBA: Proven on the Production Line

For top notch performance, a pure Solstice LBA formulation for PIR boardstock can be considered. OEM trials using typical PIR boardstock production line conditions compared Solstice LBA to isopentane. As shown in the results, **Solstice LBA demonstrated an improvement in R-Value* at one inch thickness of 16% compared to isopentane.**[3]

Production Line Evaluation of PIR Foam with Solstice LBA

Properties	Solstice LBA	Isopentane
Density, pcf	31.9	32.0
Initial k-factor at 50°F, Btu.in/ft².h.°F	0.1186	0.1387
R-Value at 1 inch (50°F)	**8.4**	**7.2**

Regulatory

Honeywell Solstice LBA is:

- EPA SNAP-listed
- Non-ozone-depleting
- Ultra-low global warming potential (GWP) of 1 (equal to CO_2)
- Listed on the TSCA inventory
- VOC-exempt (U.S. EPA)

1. Field Trial Evaluations of Solstice LBA in Pour-in-place and Panel Applications. Ling, Jim Y.K., Qin, Ryan S.L., and Lu, Ben B. September 2013
2. Evaluation of Low Global Warming Potential Blowing Agent Solution in Pour-in-place and Panel Applications. Ling, Jim Y.K. and Qin, Ryan S.L. September 2011
3. Field Trial Evaluations of Solstice LBA in Pour-in-place and Panel Applications. Ling, Jim Y.K., Qin, Ryan S.L., and Lu, Ben B. September 2013

* The higher the R-value, the greater the insulating power. Ask your seller for the fact sheet on R-values.

Solstice is a registered trademark of Honeywell International Inc.

For more information or technical assistance, please call **1-800-631-8138** (Option 2).

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