Solstice

SOLSTICE® LBA ADOPTED BY AL-ESSA OF SAUDI ARABIA FOR THEIR ENERGY EFFICIENT FREEZERS

CASE STUDY

When Saudi Arabian home appliance manufacturer Al-Essa required an energy efficient replacement for the HCFC 141b foam blowing agent it used to produce its freezers, the company turned to Solstice. By replacing HCFC 141b with Solstice® Liquid Blowing Agent (LBA), the company realized significant energy efficiency gains, achieving compliance with upcoming Montreal Protocol Kigali Amendment regulations and Saudi Arabian Standard Organization (SASO) standards.

BACKGROUND

Founded by Hamad Abdullah Alessa in 1935, Al-Essa Industrial Company is strategically focused on the cooling sector. The Riyadh-based company manufactures refrigerators, freezers, air conditioners, and air handling units, and serves as a distributor of these products within Saudi Arabia and throughout to Gulf Cooperation Council (GCC) countries. Al-Essa also provides installation services to ensure its products meet customers' application requirements.

For many years, Al-Essa used pre-blended polyurethane foam and hydrochlorofluorocarbon (HCFC) 141b blowing agent to create the insulation used in its freezers. However, in line with the Montreal Protocol, Saudi Arabia began to phase out HCFC 141b as it is an ozone-depleting substance. Al-Essa thus sought to replace HCFC 141b with a Montreal Protocol compliant solution which will also prepare them for future regulations under the Kigali Amendment. In addition, it required a blowing agent offering similar levels of performance to HCFC 141b and one that could be added to its existing production process without disruption. The new blowing agent should also help Al-Essa meet Saudi Arabia's new SASO energy-efficiency regulations.

In considering blowing agent suppliers, Al-Essa conducted a thorough safety evaluation, cost/benefit analysis, and appraisal of service and support capabilities. Solstice® LBA emerged as the clear leader and was duly chosen as Al-Essa's new blowing agent.

SOLUTION

To achieve compliance with future regulations and standards, some manufacturers in the region are transitioning to HFCs or HFOs. Instead of shifting to HFCs, Al- Essa decided to move directly to Solstice® LBA HFO-based solution.

Solstice® LBA offered Al-Essa all the performance benefits of HCFC 141b but with a significant safety advantage over alternative hydrocarbons (HC) since Solstice® LBA is non-flammable. In addition, Solstice® LBA's low Global Warming Potential (GWP) of 1—99.9% lower than HFCs used across the industry—ensured Al-Essa could meet the regulations Kigali Amendment which aims to phase out High GWP substances like HFC. Transitioning to LBA would require minimal changes to Al-Essa's manufacturing processes and plant layout; and comprehensive local Solstice service and support capabilities would enable Al-Essa to achieve a smooth and seamless transition to Solstice® LBA.

During Solstice® LBA's trial and ramp-up phases, Honeywell technical experts worked alongside Al-Essa engineers to ensure the blowing agent could achieve the desired results with minimal disruption to production. With this partnership, Solstice and Al-Essa are supporting the Kingdom's initiative of building up its local manufacturing capabilities and producing higher quality products through the adoption of state-of-the-art technology.

Today, Solstice® LBA is used throughout Al-Essa's freezer lineup. Its low GWP enables the company to look to the future with confidence, knowing it can meet future environmental regulations.

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For more information, click HERE or scan the QR code to contact us.

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