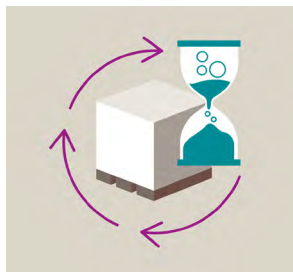


SILICA HELPS REDUCE THE ENERGY CONSUMPTION OF REFRIGERATORS

AEROSIL®



DEMAND FOR ENERGY-EFFICIENT HOUSEHOLD APPLIANCES

Energy-efficient household appliances contribute to climate protection by reducing greenhouse gas emissions from electricity generation. Legal requirements, such as the EU energy efficiency label (Regulation (EU) 2017/1369), encourage manufacturers to construct refrigerators and freezers with lower energy consumption.

At the same, consumers expect maximum storage space for fresh products. Thin, but highly efficient insulation enables manufacturers to meet both demands.

AEROSIL® FOR HIGHLY EFFICIENT AND ULTRA-FLAT INSULATION LAYERS

Vacuum insulation panels (VIPs) filled with silica from Evonik provide excellent insulation with ultra-thin layers. AEROSIL® fumed silica performs three tasks in VIPs: it functions as thermal insulating material, acts as a supporting structure and ensures that the vacuum is maintained over a long period of time.

AEROSIL® is vacuum packed and sealed inside a special multi-layered, airtight, and moisture-impermeable film. The vacuum increases the good insulation efficiency of AEROSIL® fivefold. The structure of fumed silica makes it an excellent core material for ultra-flat VIPs.

Thermal Insulation

Refrigerators equipped with vacuum insulation panels (VIPs) containing AEROSIL® fumed silica can achieve up to ten times better insulation values than conventional thermal insulation materials of the same thickness.

These achieve up to ten times better insulation values than conventional thermal insulation materials of the same thickness, as laboratory tests have proven. This allows the construction of refrigerators with better insulation values compared to conventional thermal insulation, more storage space and a long service life, as VIPs with AEROSIL® usually last around 30 years according to scientific trials.

BENEFITS OF VIPs WITH AEROSIL® FOR REFRIGERATORS

- High insulation values can contribute to lower energy consumption
- Insulating effect up to ten times better than that of conventional thermal insulation materials of the same thickness
- Ultra-flat VIPs for maximum storage space
- Expected service life of more than 30 years
- Silica is a mineral-based and recyclable* insulating material

Evonik provides comprehensive life cycle assessment (LCA) for silica products.

*AEROSIL® fumed silica is mineral-based and can be regained from used VIPs, depending on waste management infrastructure and legal requirements.

The Silica and Silanes experts at Evonik – From elements to excellence.

AEROSIL® 



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