



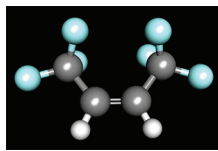
# Opteon™ 1100

## Foam Blowing Agent

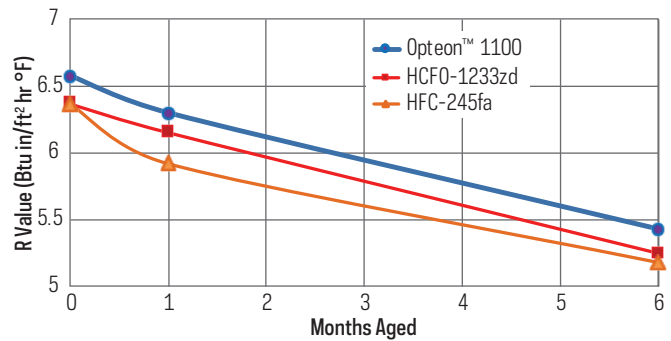
A Unique, Sustainable Foam Blowing Agent for Polyurethane Foam

Formacel™ 1100 from DuPont is now Opteon™ 1100 from Chemours, a new, 4th generation foam blowing agent offering both improved insulation performance and an excellent environmental profile.

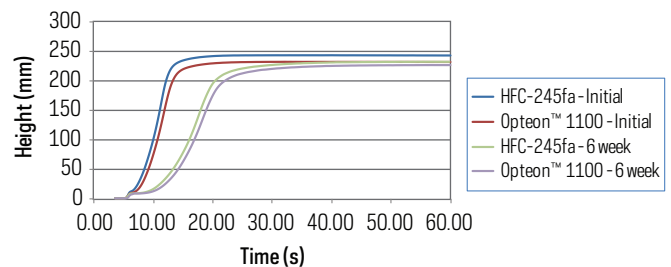
- The only foam blowing agent providing excellent environmental properties (ODP=0, GWP=2) while maintaining the most desirable characteristics of HCFC-141b
  - Boiling point >25 °C (77 °F)
  - Low vapor thermal conductivity
  - Nonflammable
  - Non-VOC
- The unique molecular structure of Opteon™ 1100 imparts superior chemical stability
  - Superior B-side shelf life stability compared to HCFOs
  - Compatible with amine catalysts – no stabilizers required
  - Improved R-value performance is attainable when compared to HFC-245fa, HFC-365mfc, pentanes and HCFOs
- A sustainable foam blowing agent for polyurethanes in a wide range of applications, including apparel, appliance, automotive, construction, electronics, furnishings, marine, medical, and packaging.



### Comparison of R-Values Over 6 Months for Generic SPF Foams (Equal Mole Loadings)



### Foam Rate of Rise Data for B-Sides Aged at 50 °C (122 °F)



### An Effective and Safe Alternative

Comparison of Opteon™ 1100 Exposure Limits With Other Commercial Foam Blowing Agents

Blowing Agent	Opteon™ 1100 <sup>a</sup>	HCFC-141b <sup>a</sup>	HFC-245fa <sup>a</sup>	HFC-365mfc <sup>a</sup>	Methyl Formate <sup>b</sup>
Exposure Limit (ppm)	500	500	300	1000	100

<sup>a</sup>Workplace Environmental Exposure Level (WEEL)

<sup>b</sup>Permissible Exposure Level (PEL)

## Proven Performance

Opteon™ 1100 has been successfully applied in residential wall, commercial cold storage, and commercial roofing applications, resulting in easy to apply, high R value installations.

### Residential Wall Insulation



### Commercial Roof



## Commercialization

Opteon™ 1100 is SNAP-approved for high pressure, two-component SPF applications. Semi-commercial quantities are available for scale-up and demonstration projects. A world class production facility is currently under construction with completion and product availability expected starting in second half 2017.

For more information on the Opteon™ family of refrigerants, or other refrigerants products, visit [opteon.com](http://opteon.com) or call (800) 235-7882.

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