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)

![Graph showing R-Values Over 6 Months for Generic SPF Foams](image)

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

![Graph showing Foam Rate of Rise Data](image)

### An Effective and Safe Alternative

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

<table>
<thead>
<tr>
<th>Blowing Agent</th>
<th>Opteon™ 1100*</th>
<th>HCFC-141b*</th>
<th>HFC-245fa*</th>
<th>HFC-365mfc*</th>
<th>Methyl Formate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure Limit (ppm)</td>
<td>500</td>
<td>500</td>
<td>300</td>
<td>1000</td>
<td>100</td>
</tr>
</tbody>
</table>

*Workplace Environmental Exposure Level (WEEL)

*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.