

Supplementary materials

Tuning High and Low Temperature Foaming Behavior of Linear and Long-Chain Branched Polypropylene via Partial and Complete Melting

Mu Sung Kweon ^{1,†}, Mahmoud Embabi ^{1,†}, Maksim E. Shivokhin ², Anvit Gupta ², Xuejia Yan ², George Pehlert ² and Patrick C. Lee ^{1,*}

¹ Multifunctional Composites Manufacturing Laboratory (MCML), Department of Mechanical and Industrial Engineering, University of Toronto, 5 King's College Road, Toronto, ON M5S 3G8, Canada; mkweon@mie.utoronto.ca (M.S.K.); embabi@mie.utoronto.ca (M.E.)

² ExxonMobil Chemical Company, 5200 Bayway Drive, Baytown, TX 77520, USA; maksim.e.shivokhin@exxonmobil.com (M.E.S.); anvit.gupta@exxonmobil.com (A.G.); xuejia.yan@exxonmobil.com (X.Y.); george.j.pehlert@exxonmobil.com (G.P.)

* Correspondence: patricklee@mie.utoronto.ca; Tel.: +1-(416)-946-5407

† These authors contributed equally to this work.

Citation: Kweon, M.S.; Embabi, M.; Shivokhin, M.E.; Gupta, A.; Yan, X.; Pehlert, G.; Lee, P.C. Tuning High and Low Temperature Foaming Behavior of Linear and Long-Chain Branched Polypropylene via Partial and Complete Melting. *Polymers* **2022**, *14*, 44.

<https://doi.org/10.3390/polym14010044>

Academic Editor(s): Markus Gahleitner

Received: 10 November 2021

Accepted: 20 December 2021

Published: 23 December 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).



Figure S1. Photograph of Resin B foamed at temperatures above its end melting point under Method 1 (top) and Method 2 (bottom).

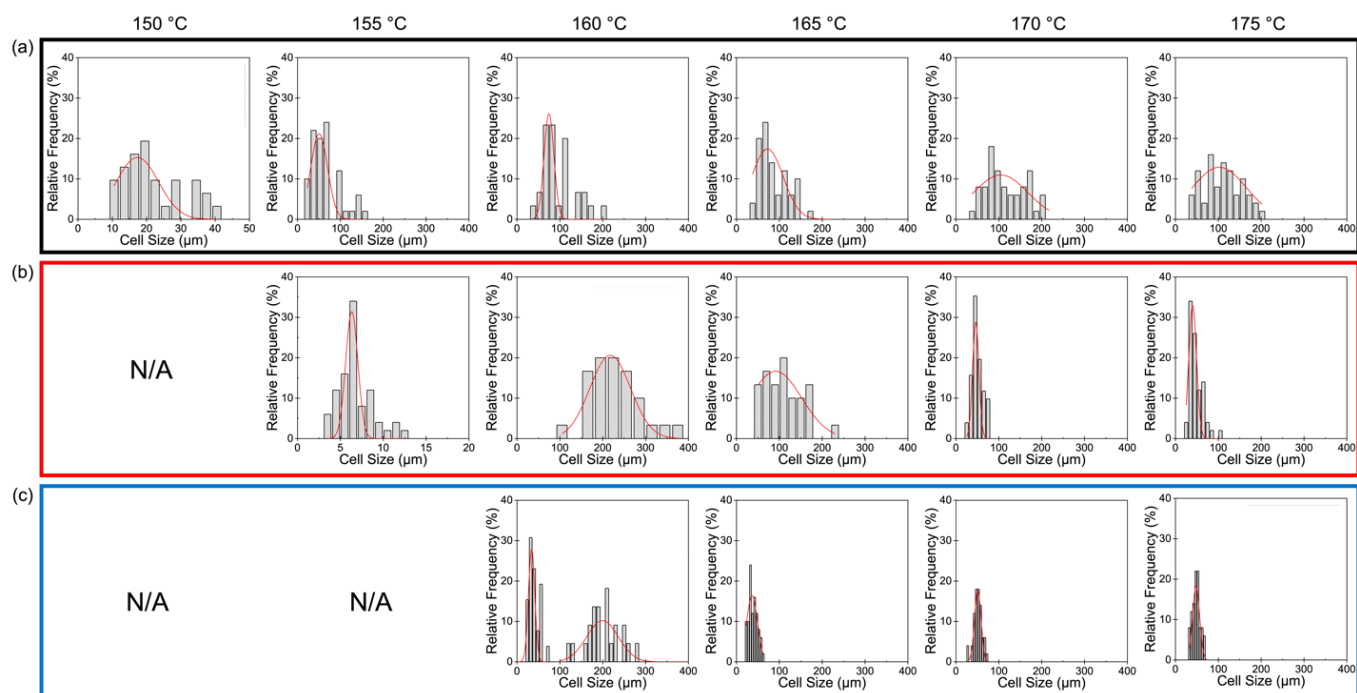


Figure S2. Cell size distribution of (a) Resin A, (b) Resin B, and (c) Resin C foams produced using Method 1 (i.e., partial melting of PP). End melting temperatures of the resins are 154 °C, 159 °C, and 165 °C, respectively.