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Inverse coarsening and the bubble-bursting cascade JAMES C. BIRD, LAURENT COURBIN, HOWARD A. STONE, SEAS, Harvard University — When a bubble ruptures, often smaller, secondary bubbles form. This transformation provides a mechanism for the size of the bubbles on the surface of foams to become smaller, or to coarsen inversely. This sequence should be contrasted with the more familiar Ostwald ripening process, where large bubbles grow at the expense of smaller ones. Using high-speed cameras (20,000 frame/s), we both document the mechanics and propose a mechanism for this inverse coarsening phenomenon. We also develop a numerical model which is consistent with the experimental observations. The implications of this phenomenon range from foam-based products to oceanography to the pure ascetics of a bursting bubble.

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