



PINCH-OFF OF COMPLEX SUSPENSIONS DROPS

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The spraying of paint and the printing of ink involve the break-up of a liquid into droplets. Inertia or gravity stretches the liquid and surface tension makes it unstable. A neck joining two thicker parts appears and eventually breaks, and a drop detaches. Like many real-life fluids, ink and paint are **suspensions**. As the neck shrinks, the solid particles accelerate the break-up.

If the suspension contains **two sizes of particles** (bottom and right) the break-up accelerates even more than for a single size.

If **polymers** are dissolved in the liquid (top and left), a long viscoelastic liquid string delays the break-up. Particles speeds up the unwinding of polymer chains that leads to this string.

