

Topic Page: [Centrifuge](#)

Definition: **centrifuge** from *Dictionary of Energy*

Materials. **1.** a rotating device that uses centrifugal force to separate substances of different densities, to remove moisture, or to simulate gravitational effects. **2.** to separate substances by means of such a device. Thus, **centrifugation.**

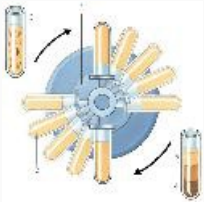


Image from: [A laboratory centrifuge has mounts \(1\) for test... in Philip's Encyclopedia](#)

Summary Article: **centrifuge**
From *The Columbia Encyclopedia*

(sĕn'trĕfyōj), device using centrifugal force to separate two or more substances of different density, e.g., two liquids or a liquid and a solid. The centrifuge consists of a fixed base or frame and a rotating part in which the mixture is placed and then spun at high speed. One type is used for the separation of the solid and the liquid parts of blood. Test tubes containing blood specimens are set in the rotating part in holders so arranged that when the rotary motion begins the test tubes swing into a slanted or a horizontal position with the open ends toward the axis of rotation; the heavier, solid part of the blood is thrown outward into the bottom of the tube and the lighter

liquid part comes to the top. Another common type of centrifuge called the cream separator is used to separate cream from whole milk. Uranium-235, which is found in nature mixed with uranium-238, must be separated to be used to produce nuclear energy. The separation can be done by a centrifuging process in which the uranium, contained in gas molecules, is rotated at high speed in a chamber so that the more massive molecules containing uranium-238 concentrate near the outer edge of the chamber and the lighter molecules containing uranium-235 concentrate near the axis. Several stages of centrifuging are needed to effect the required degree of separation. The first successful centrifuge was built in 1883 by Carl G. P. de Laval, a Swedish engineer, whose design was used chiefly for cream separators. The ultracentrifuge, devised in the 1920s by the Swedish chemist Theodor Svedberg, found wide application in scientific research. Using an optical system with it to observe sedimentation rates, Svedberg determined accurately the molecular weights of substances including proteins and viruses. Centrifuges are also used for such diverse purposes as simulating gravitational fields in space and for drying laundry.

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centrifuge. (2018). In P. Lagasse, & Columbia University, *The Columbia encyclopedia* (8th ed.). New York, NY: Columbia University Press. Retrieved from <https://search.credoreference.com/content/topic/centrifuge>



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