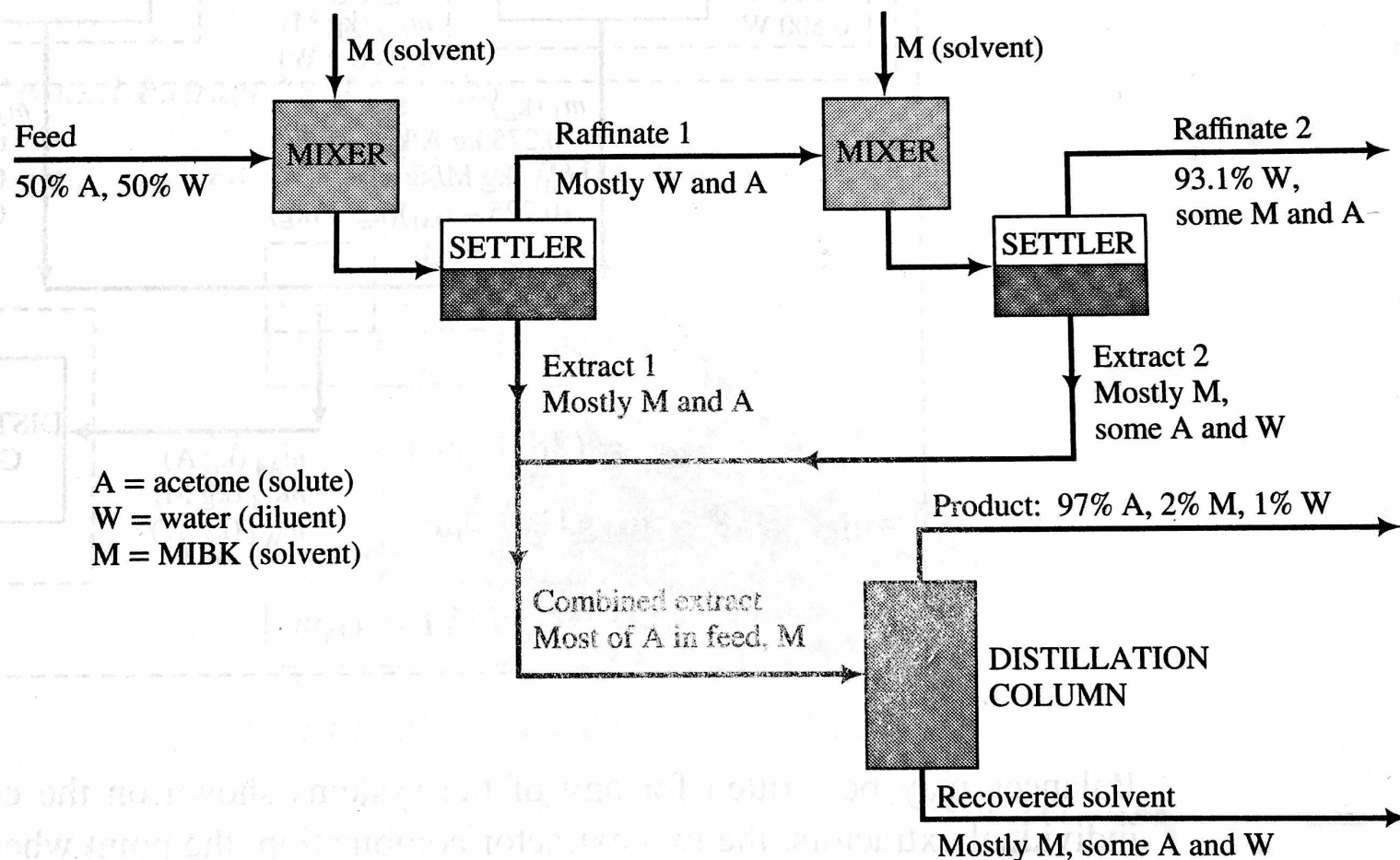


## An Extraction–Distillation Process

A mixture containing 50.0 wt% acetone (A) and 50.0 wt% water (W) is to be separated into two streams—one rich in acetone and the other in water. The separation process consists of extraction of the acetone from the water into methyl isobutyl ketone (MIBK or M), which has a much higher affinity for acetone than it does for water. The process is shown schematically below.



<sup>7</sup> For example, a solvent extraction process was a key development in the large-scale production of penicillin in the 1940s. (R. I. Mateles, Ed., *Penicillin: A Paradigm for Biotechnology*, Candida Corporation, Chicago, IL, 1998.)