



Homework n° 02

Problem:

In a single-stage leaching operation for the extraction of oil from flaked soybeans using hexane, **100 kg** of soybeans containing **22 wt. %** oil are contacted with **80 kg** of solvent. The solvent feed is not fresh; it contains **3 wt. %** soybean oil.

Assume that the slurry underflow retains solution at a constant ratio **$N = 1.5$ kg** of insoluble solid per kg of solution retained.

Determine the amounts and compositions of the overflow extract **E_1** and the underflow slurry **R_1** leaving the leaching stage.

Deadline: 31th of December, 2025