Recrystallization

Choice of solvent: substance moderately soluble in hot solvent & sparingly soluble in cold solvent.

Choose using rule of thumb: "LIKE DISSOLVES LIKE"

Sometimes a mixture of solvents is best.

[Should read "choosing a recrystallization solvent - Op. 23d"]

Main idea is that soluble impurities stay in solution while desired compound, typically the major component, crystallizes out.

In general have insoluble impurities < soluble impurities
Remove insoluble impurities by hot filtration:

1. Pour into a filter with fluted filter paper.
2. Place the insoluble impurities in the filter.
3. Let the filtrate cool slowly.
4. May need to hot-wash if a precipitate forms on the paper.
5. Ensure minimum volume after filtration.

No crystals? Scratch or seed.

Final cooling in ice bath.

Vacuum filter/wash with a few mL of cold solvent/air-dry.
Dry in desiccator.

Impurity could be trapped if cooled too fast.

In practice, often condense “mother liquor” to obtain a “second crop.”

Recrystallization is an art.