

Standard Operating Procedure: Rotovaps

Last Updated: 06/06/2016 by C.Tichnell

General Operation Description:

The rotovaps are used to remove solvents from reaction mixtures, crude products, final products, etc. by applying a vacuum occasionally with heat. Before using the rotovap, operator should be familiar with the various rotovap components and definitions.

First take your sample solution (in round bottom flask—volume half full) to the rotovap you wish to use. A bump trap (located in the drawer next to the rotovap hood) should be placed between the rotating vapor duct and your flask of sample solution (Keck clamps should also be equipped for the ground glass joints). Prior to turning on the pump, the rotation should be turned on and the stopcock valve located at the top of the instrument should be in the closed position to ensure you do not accidentally apply vacuum to your system. Select the pump you wish to use and power it on. Then slowly apply vacuum to your rotovap system by regulating the stopcock valve at the top of the rotovap. If the flask contents bubble vigorously, you should cease applying direct vacuum to prevent bumping up into the system. When solvent is trickling into the collection reservoir (under the condenser) and no signs of vigorous evaporation/bubbling are observed full direct vacuum can be applied. After all solvent is removed, SLOWLY open the vacuum release valve and run the pump open to the atmosphere for 60 seconds to purge the pump from any solvent prior to turning off the pump (if using the belt drive pump, this step is not required—simply close off the vacuum control valve at the top and power down the pump as per the lab's accepted procedure for belt drive pumps). Empty the collection reservoir into the solvent waste bottle located in the rotovap hood, remove your sample from the system and if you bumped into the bump trap remove it from the hood and subject it to the typical cleaning method employed by the lab.

Step by step instructions located in rotovap hood area if further information is required.

Personal Protective Equipment:

Safety glasses, gloves and lab coat

Hazards:

Solvents and samples could be dangerous to you.

Rotovaps are systems under vacuum—implosions could occur

Waste Disposal:

Dispose of collected solvent into the solvent waste bottle located in the rotovap hood

Material Safety Data Sheets:

Call the ORCBS (355-0153) or see lab copy for sample in question if available