



## Method to recycle drywall into plaster

1. Drywall, also called wallboard, gypsum panel, or Sheetrock, is typically over 85% gypsum, or calcium sulfate dihydrate ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ). Gypsum is a soft mineral that is water soluble. In order to create a usable powder similar to plaster of Paris, the calcium sulfate must be converted into a hemihydrate form.

2. The drywall is removed from the wall studs and cut into smaller pieces for ease of handling. Screws, tape, corner bead and the like must be removed. Painted drywall can be used.

3. Cut into even smaller pieces to expose more surface area, the drywall is heated to  $150^\circ\text{C}$  in order to create calcium sulfate hemihydrate, a dehydrated form of the mineral:



4. The drywall is then pulverized with a hammer or mortar and pestle, during which time the backing paper should separate fairly easily from the gypsum itself. The powder can now be used as plaster. Though stable as a hemihydrate, calcium sulfate prefers to revert to the dihydrate state and will do so when mixed with water. This entire process can then be repeated: the plaster cast can be broken down and dehydrated to create fresh plaster of Paris.