

V. Side chain oxidation of para-nitrotoluene

- 1) Add 3.0 g of p-nitrotoluene and 3.0g of sodium carbonate to 225mL of water in a 500 mL round bottomed flask and reflux using Bunsen burner for 5 min.
- 2) To the refluxing solution add 9 g of potassium permanganate portion wise (**roughly** 1g for every 3 min) and continue reflux for 15 min.
- 3) The excess KMnO_4 is reduced by adding sat. aq. NaHSO_3 solution to the reaction mixture (You can detect traces of permanganate in solution by dipping a spatula into the reaction mixture and touching a filter paper – A pink color around the dark spot of manganese dioxide indicates the presence of permanganate ion); insoluble MnO_2 was removed by gravity filtration of the hot mixture into a 600 mL beaker.
- 4) After the filtrate attains room temperature acidify by the addition of 50% (9+M) aqueous sulfuric acid (check by litmus).
- 5) After the solution reaches room temperature cool in an ice-bath (if required) and collect the crystallized product by suction filtration.
- 6) Dispose off the aqueous filtrate by first bringing it to neutral pH by the addition of acid or base as required, and flush down the drain.