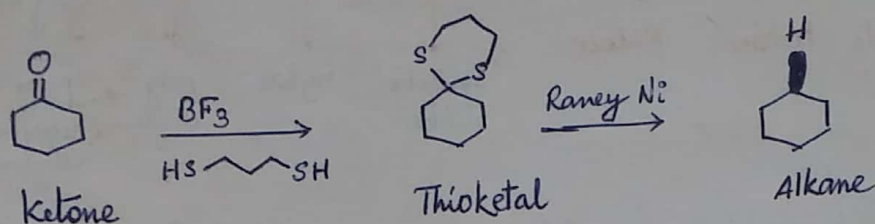
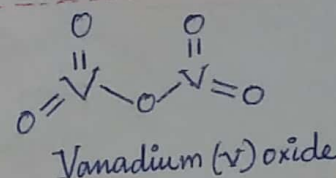


Like palladium on carbon (Pd/c) and platinum on carbon (Pt/c), Raney Nickel can be used for hydrogenation of alkenes and alkynes. But Raney Nickel is mostly used for its **unusual property** of reducing C-S bonds to C-H bonds.



Vanadium pentoxide:

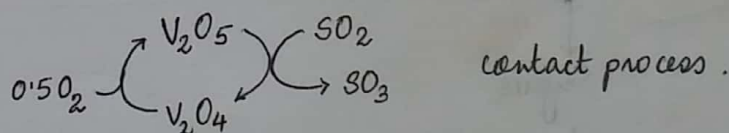
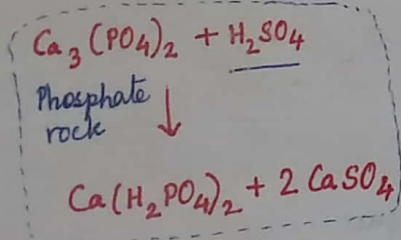
V_2O_5 , brown/yellow solid



- Oxidation state of Vanadium (V)
- amphoteric - can act both as an acid and base
- act as an oxidizing agent.
- most important compound of vanadium from industrial perspective
- Precursors to alloys of vanadium.

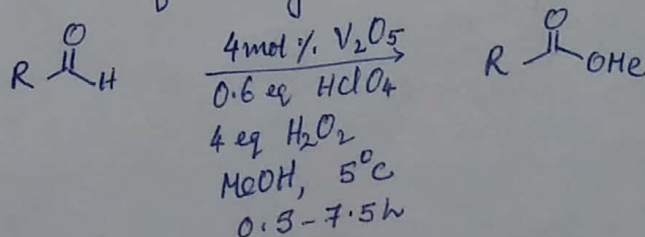
Industrial application: (1) V_2O_5 is used as a catalyst in different industrial processes

(2) In contact process of sulfonic acid production V_2O_5 serves as a catalyst for the oxidation of SO_2 to SO_3 with O_2 at 440°C



(3) It is also used as a catalyst for oxidation of ethanol to ethanal, production of phthalic anhydride, polyamide, oxalic acid and further products.

In organic synthesis (a) Conversion of aldehyde to ester (V_2O_5 cat, H_2O_2 oxidant)



- (b) Oxidation of 1° alcohol to carboxylic acid,
 (c) Epoxidation of allylic alcohols etc.