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LEVEL: 100

MATRIC NO: 19/MT501/073

COURSE: CHM 102

### Assignment

#### 1. Classification of Alcohols.

##### ① Primary alcohol:

In primary alcohol, the carbon which carries the -OH group is only attached to one alkyl group. Example: Ethanol.

##### ② Secondary alcohol:

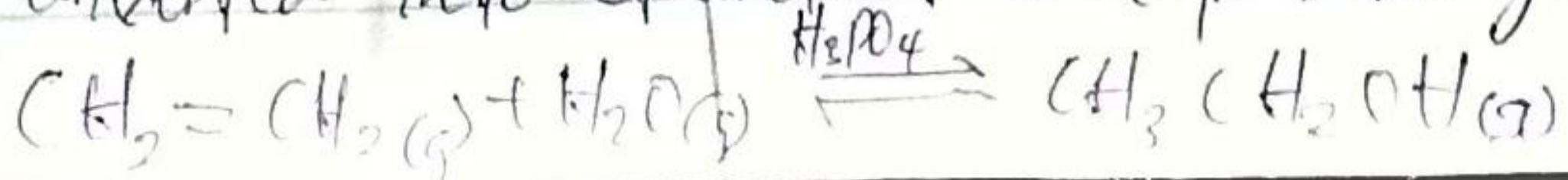
The carbon with the -OH group attached is joined directly to two alkyl groups, which may be the same or different. Example: Propan-2-ol.

##### ③ Tertiary alcohol:

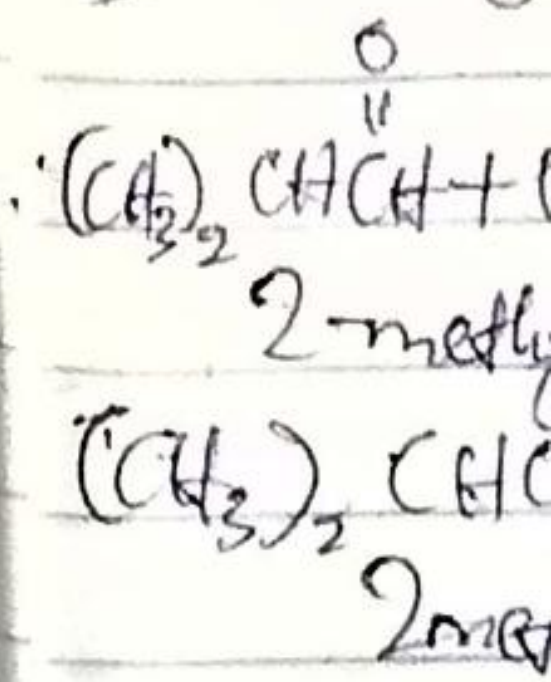
The carbon atom holding the -OH group is attached directly to three alkyl groups, which may be any combination of the same & different. Examples: 2-methylpropan-2-ol.

2. Alcohols are soluble in water. This is due to the hydroxyl group in the alcohol which is able to form hydrogen bonds with water molecules. Alcohols with a smaller hydrocarbon chain are very soluble. As the length of the hydrocarbon chain increases, the solubility in water decreases.

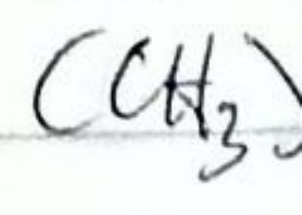
3. Ethanol is prepared industrially by reacting ethene with steam. The catalyst used is solid silicon dioxide coated with phosphoric(V) acid. The reaction only gives 5% of ethene converted into ethanol at each pass through the reactor.



4) 2-methyl

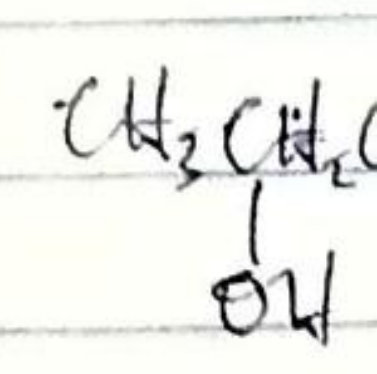


7) Rec

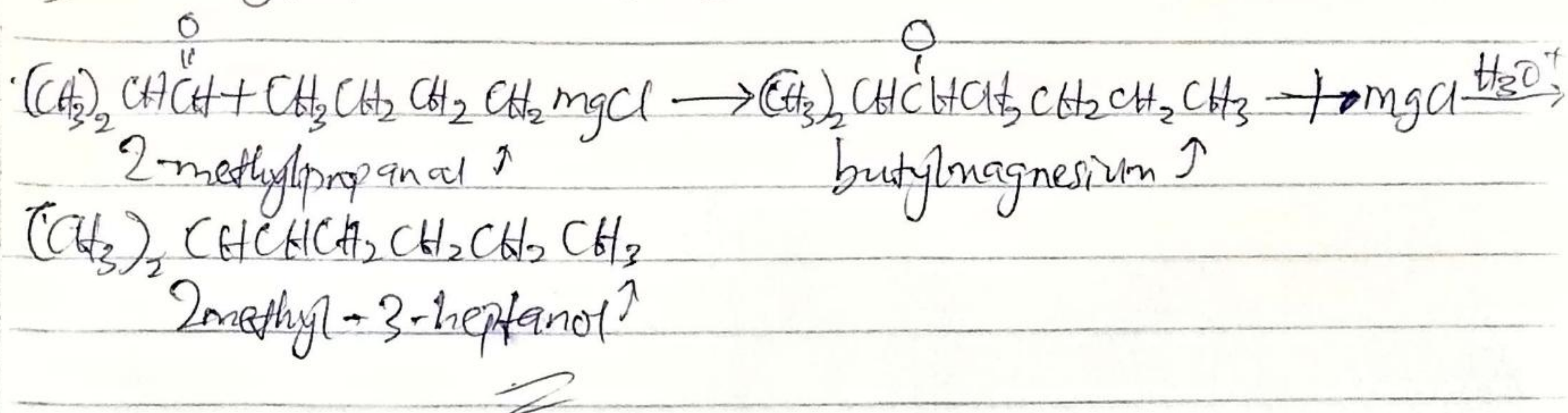


2-me

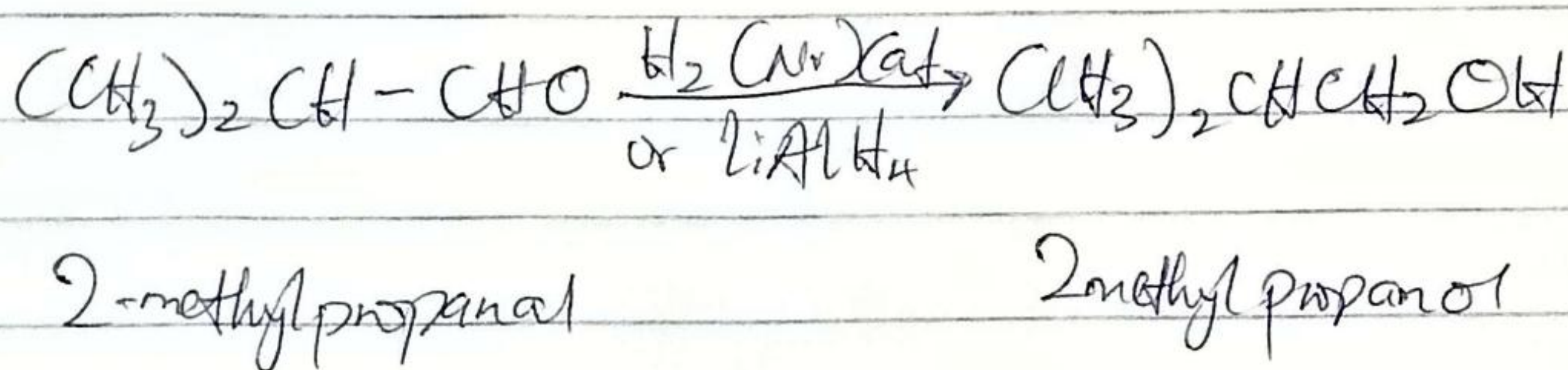
8) Ad



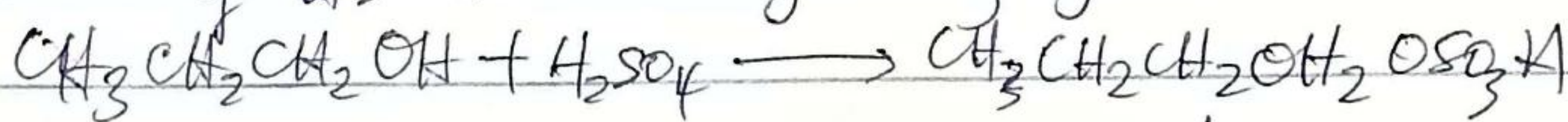
4) 2-methylpropanal + butylmagnesium



7) Reduction reaction of 2-methylpropanone:



8) Addition of  $\text{H}_2\text{SO}_4$  (as dehydrating agent)



↓ -H<sub>2</sub>O (Removal of water)

