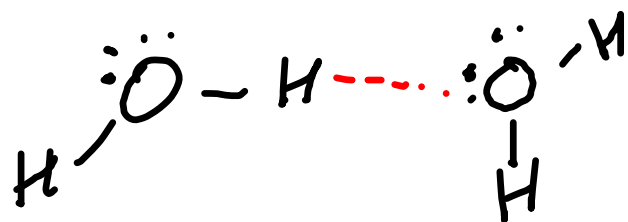
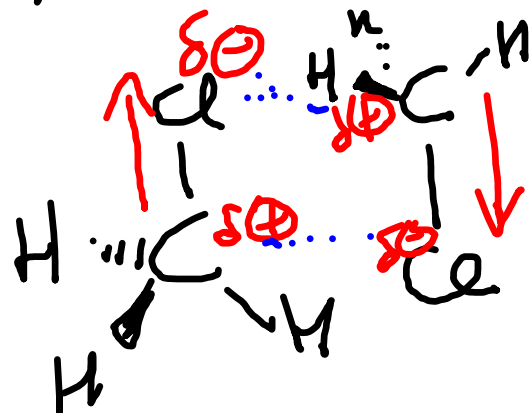


INTERMOLECULAR FORCES

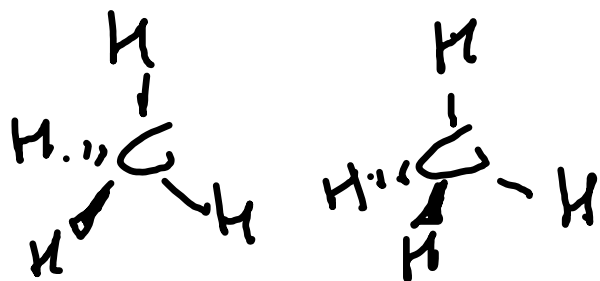
1) HYDROGEN BONDING



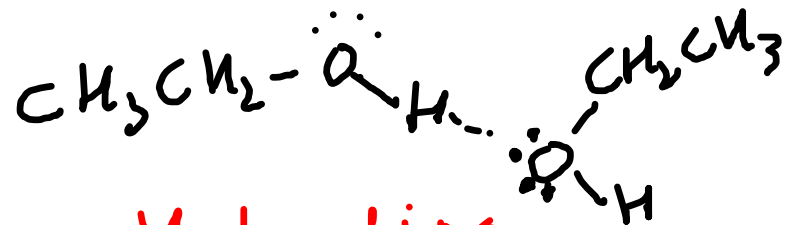
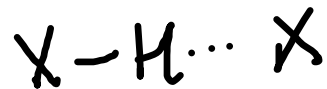
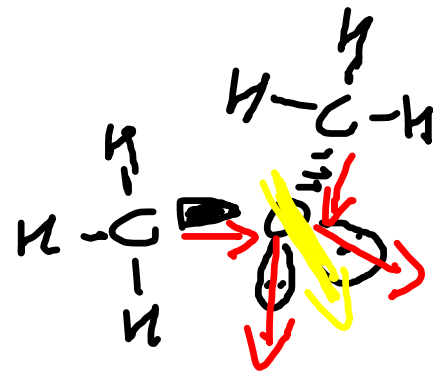
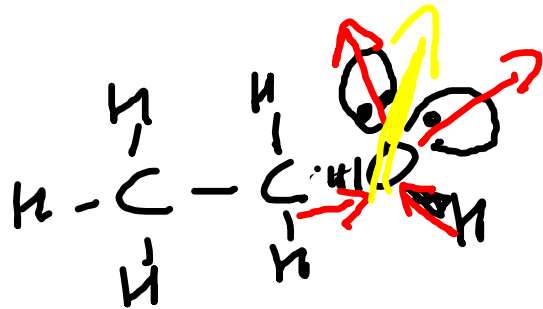
2) DIPOLE - DIPOLE



3) van der Waals



HIGHER BOILING?



H-bonding

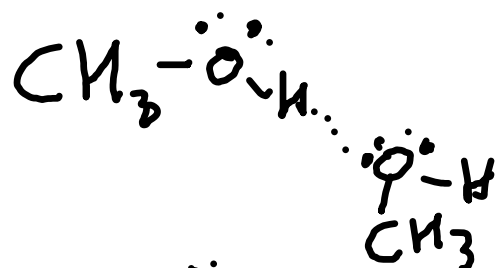
higher boiling
78°C

dipole-dipole

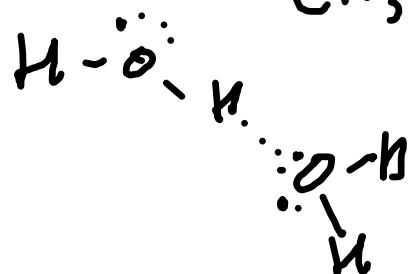
-25°C

SOLUBILITY

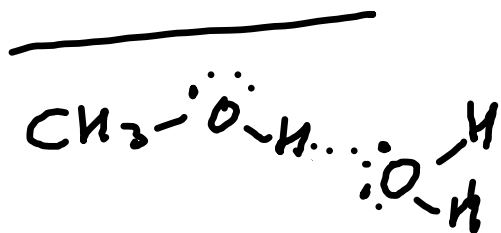
LIKE DISSOLVES LIKE



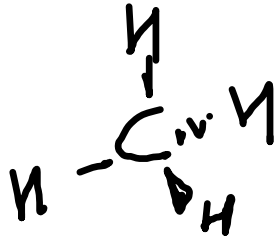
H-bonding



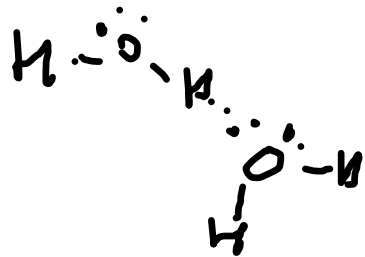
H-bonding



H-bonding



van der Waals



H-bonding

mixture

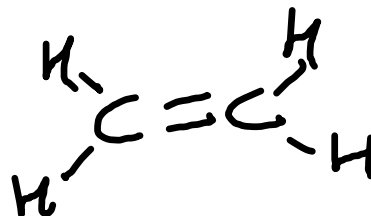
van der Waals
not soluble

FUNCTIONAL GROUPS

ALKANES



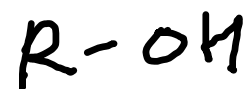
ALKENES



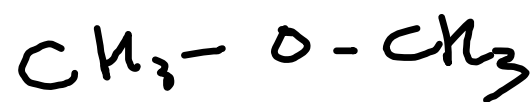
ALKYNES



ALCOHOLS

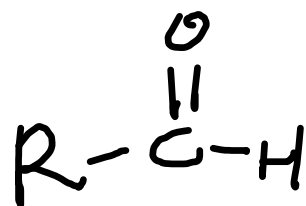
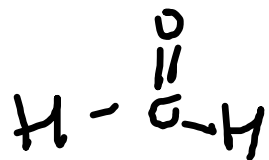
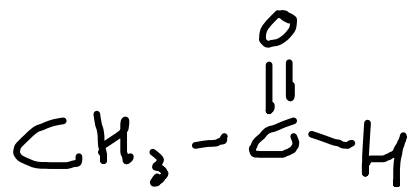


ETHER

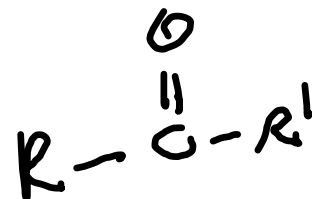
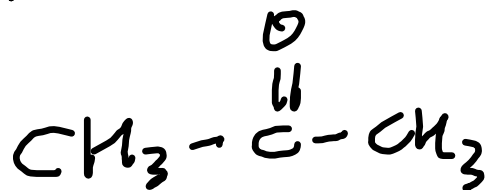


$\text{R}, \text{R}' = \text{alkyl}$
 or aryl

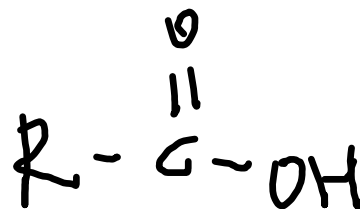
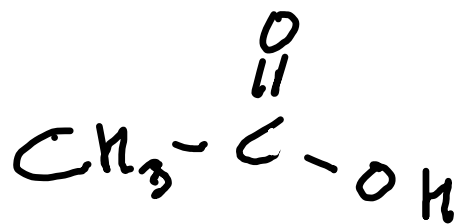
ALDEHYDES



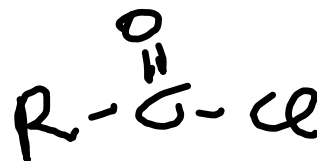
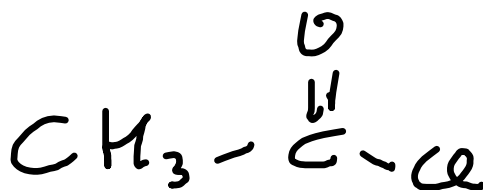
KETONES



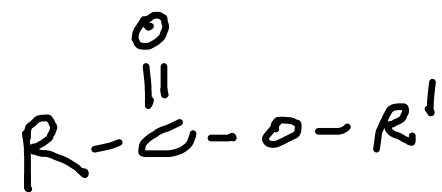
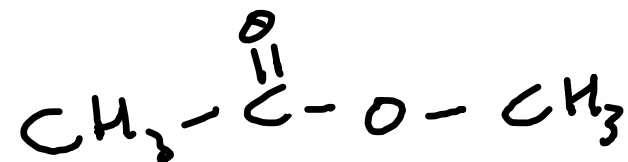
CARBOXYLIC ACIDS



ACID CHLORIDES



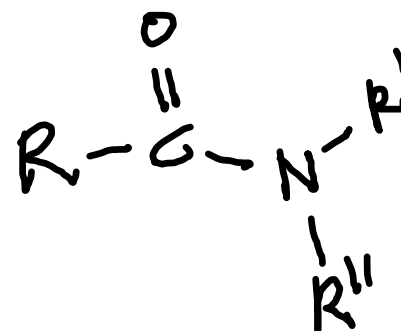
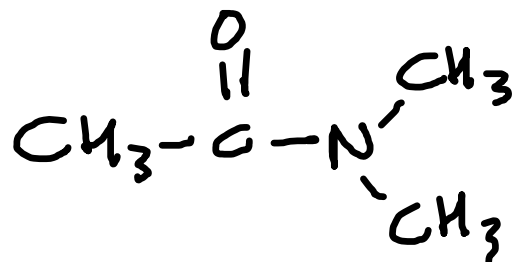
ESTERS



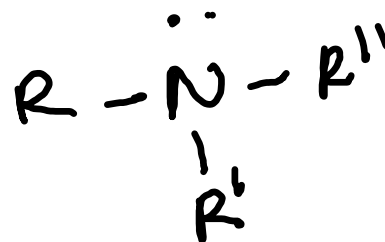
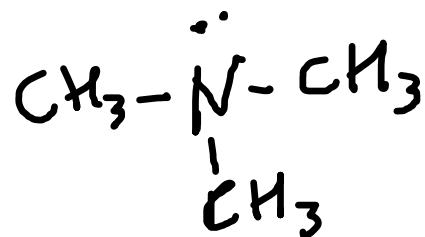
$\text{R}' =$ alkyl
aryl

$\text{R} =$ H, alkyl
aryl

AMIDES



AMINES



HYDROCARBONS

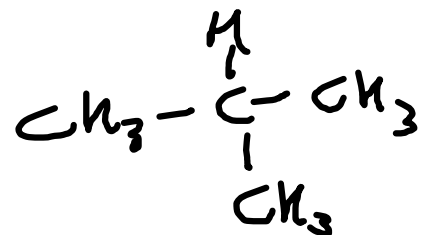
ALIPHATIC, AROMATIC, ALKENES
(=alkane)

COUNT TO 10

#	<u>C</u>		
1	CH_4	METHANE	
2	CH_3CH_3	ETHANE	
3	$\text{CH}_3\text{CH}_2\text{CH}_3$	PROPANE	
4	$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$	n-BUTANE	
5	$\text{CH}_3(\text{CH}_2)_3\text{CH}_3$	n-PENTANE	
6	$\text{CH}_3(\text{CH}_2)_4\text{CH}_3$	n-HEXANE	
7	$\text{CH}_3(\text{CH}_2)_5\text{CH}_3$	n-HEPTANE	
8	$\text{CH}_3(\text{CH}_2)_6\text{CH}_3$	n-OCTANE	
9	$\text{CH}_3(\text{CH}_2)_7\text{CH}_3$	n-NONANE	
10	$\text{CH}_3(\text{CH}_2)_8\text{CH}_3$	n-DECANE	



n-butane

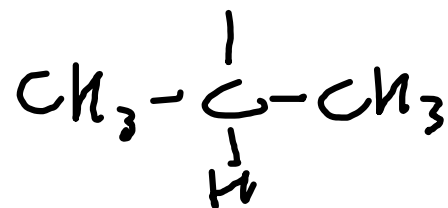


isobutane

FRAGMENTS



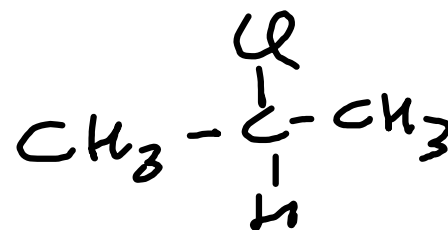
n-propyl



iso-propyl



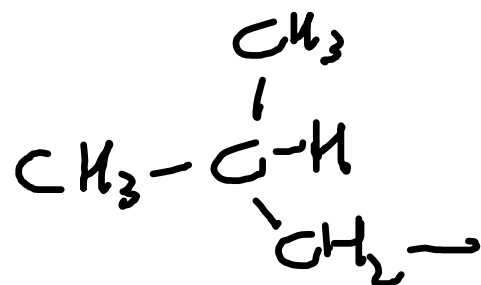
n-propanol



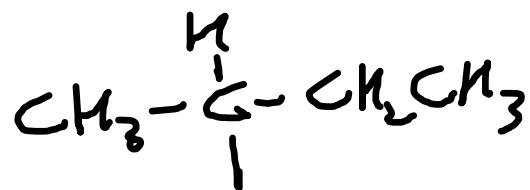
iso-propyl chloride



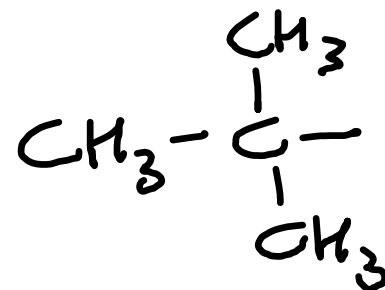
n-butyl



iso-butyl

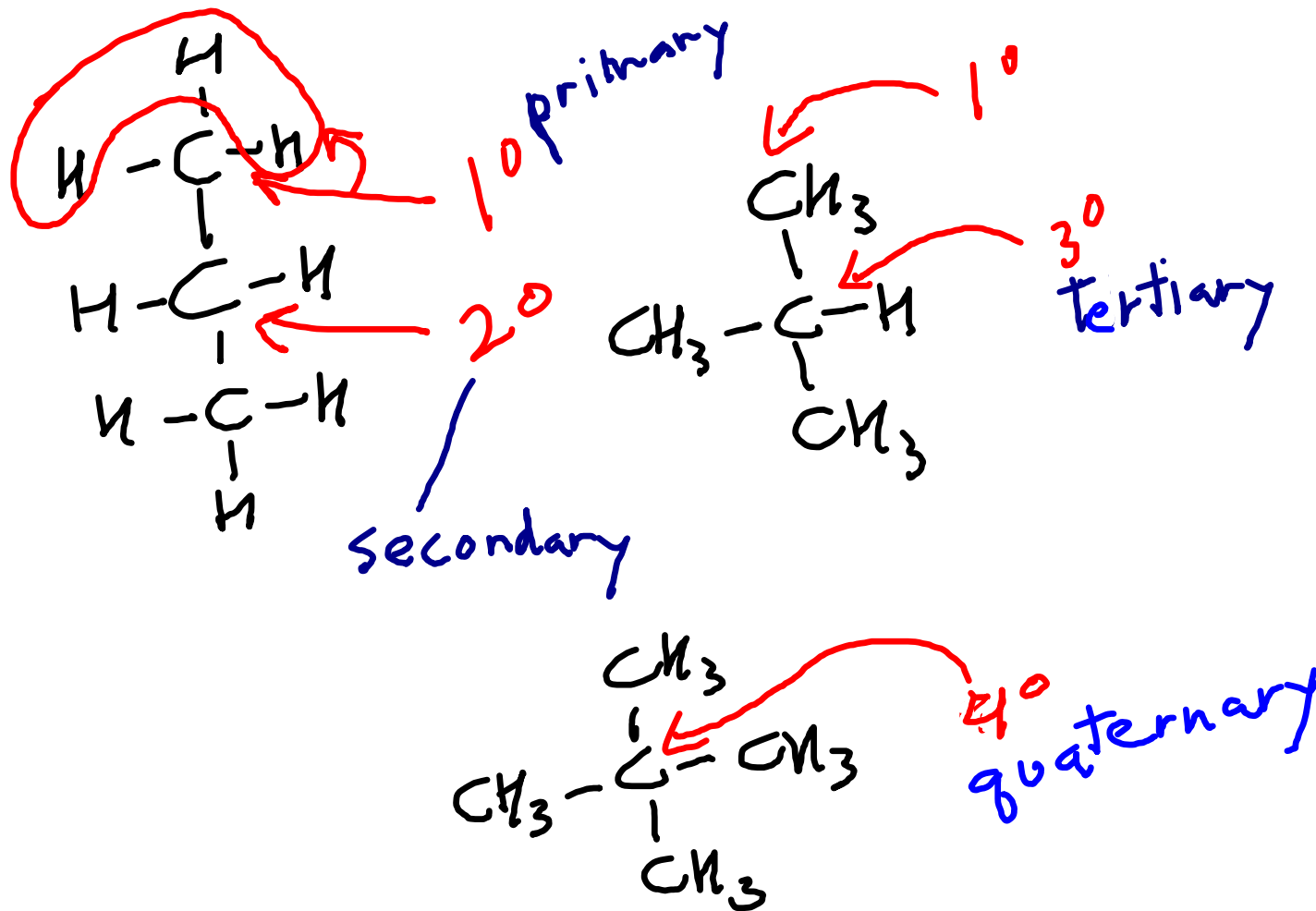


sec-butyl



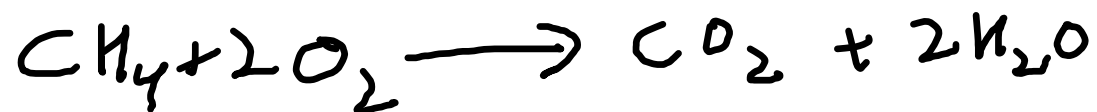
tert-butyl

t-butyl

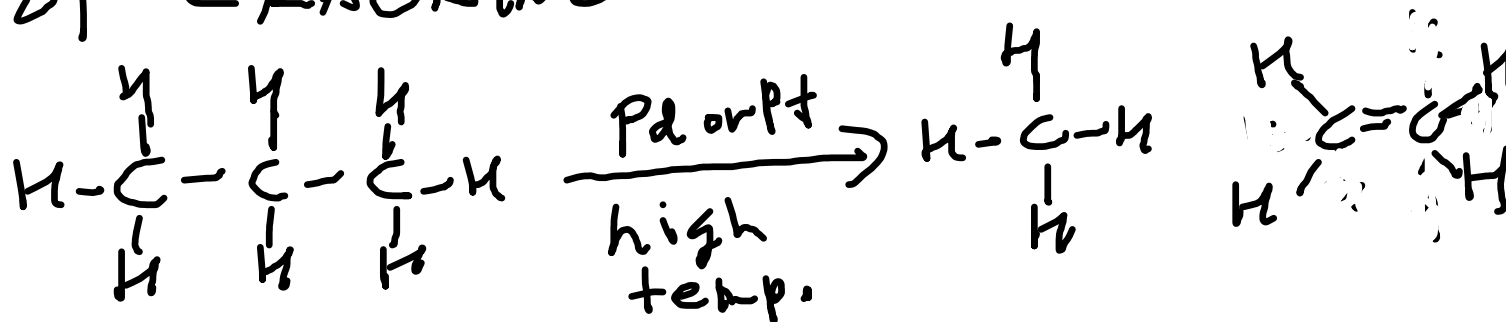


REACTIONS OF ALKANES

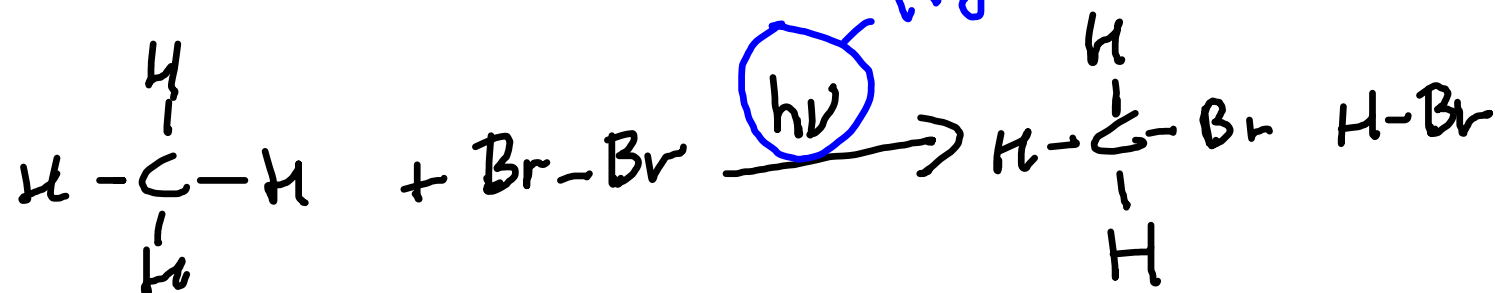
1) COMBUSTION

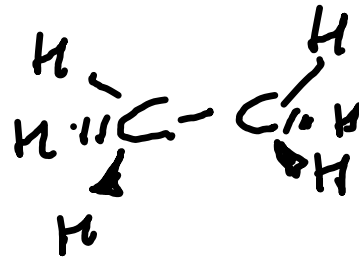
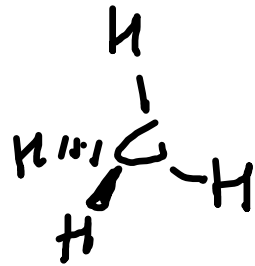


2) CRACKING



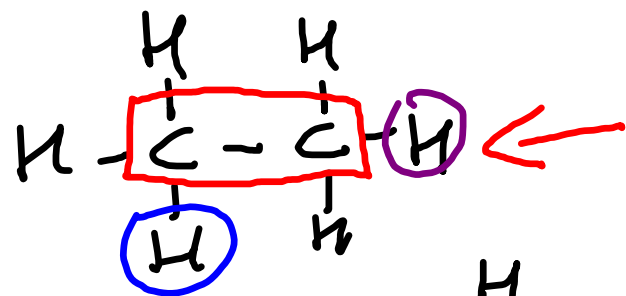
3) HALOGENATION



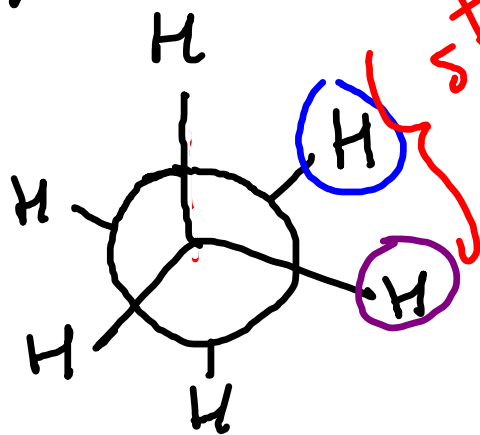


one
conformation

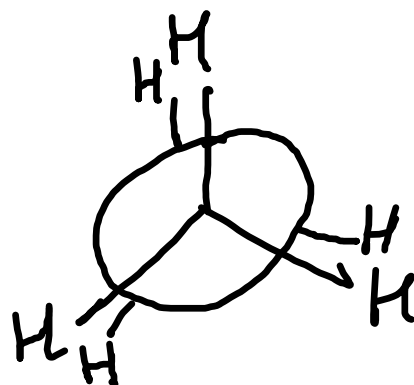
NEWMAN PROJECTION



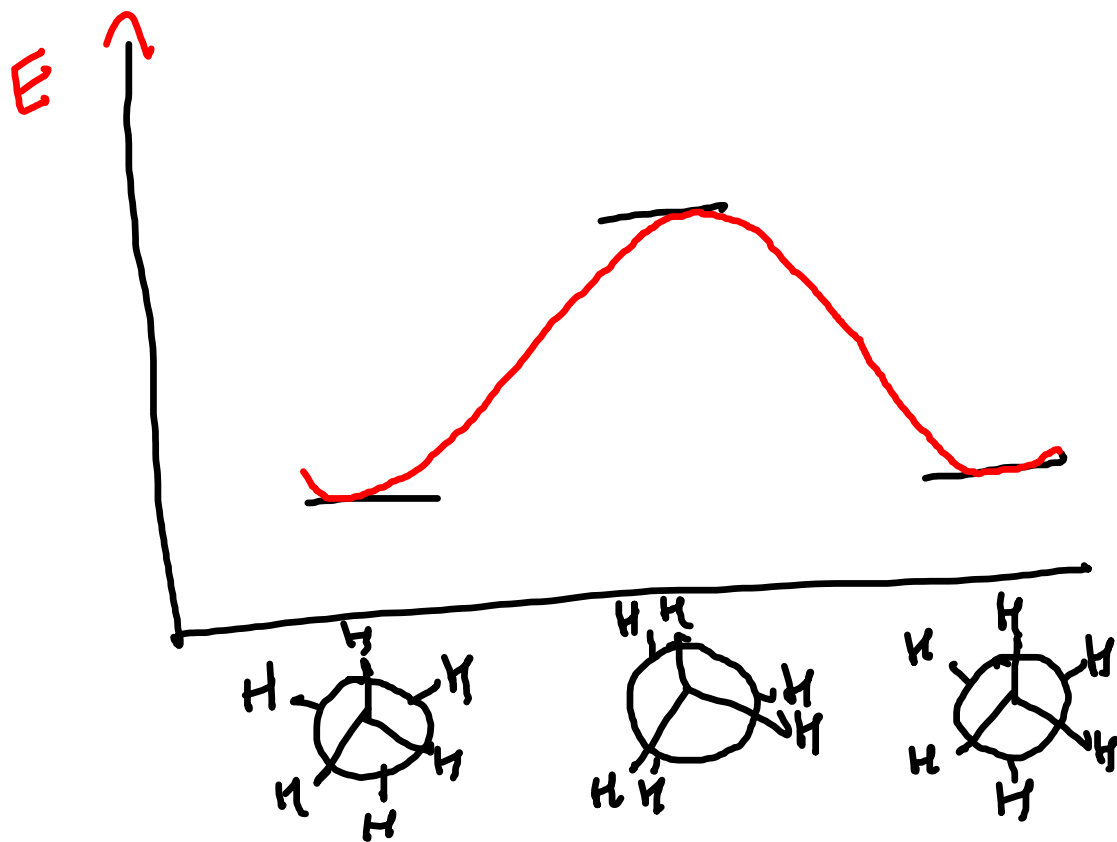
steric hindrance less

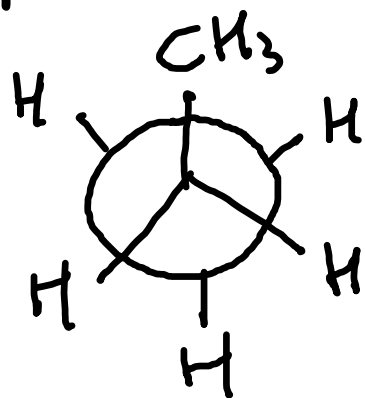
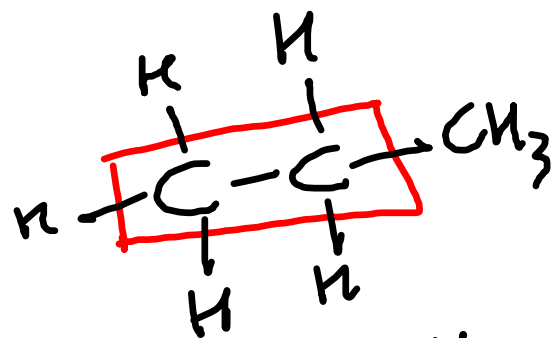


STAGGERED

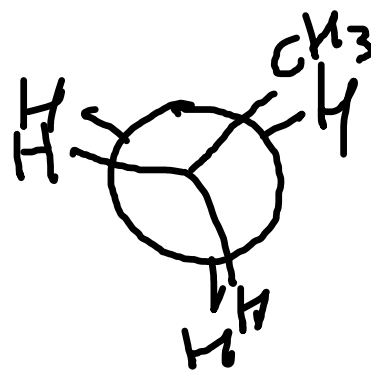


ECLIPSED





STAGGERED



ECLIPSED