Course 343-3 Lecturer Barta (Gellman)

Day Friday Date 11/2/12

Notes Taken By Matt Aronoff Total # of Pages 3

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Quantitative Deprotonation:

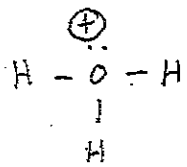
$CH_3CH_2\ddot{O}H$ + NaH → $CH_3CH_2\ddot{O}^{\ominus}\ Na^{\oplus}$ + H-H pka ≈ 37

pka ~ 16

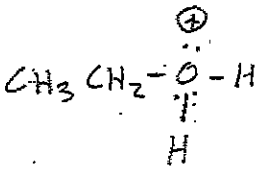
$CH_3CH_2\ddot{S}H$ + $CH_3CH_2\ddot{O}^{\ominus}\ Na^{\oplus}$ ⇌ $CH_3CH_2\ddot{S}^{\ominus}\ Na^{\oplus}$ + CH_3CH_2OH

pka ~ 10 pka ~ 16

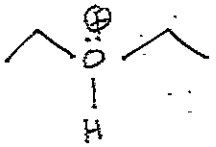
- Chem Connection Tues 5:00 RM 9341



pka ≈ -2



pka ≈ -2

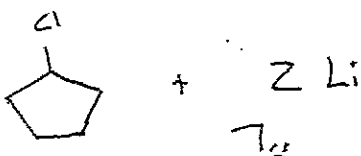


pka ≈ -2

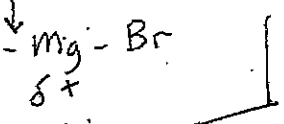
Organometallic Compounds – Compounds w/ a carbon-metal bond

1. Grignard rxn (Mg)
2. Organolithium (Li)

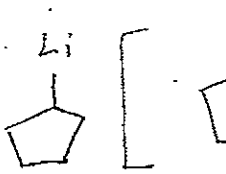
$CH_3CH_2Br + Mg^{\circ} \xrightarrow{Et_2O} CH_3CH_2\overset{\delta-}{-}Mg\overset{\delta+}{-}Br$ ← carbon-metal bond(s)



ether 'O'(s) stabilizes grignard reagent



carbocation ~~carbene~~ *



* very strong Brönsted bases

CORRECTION 11/8 MRA

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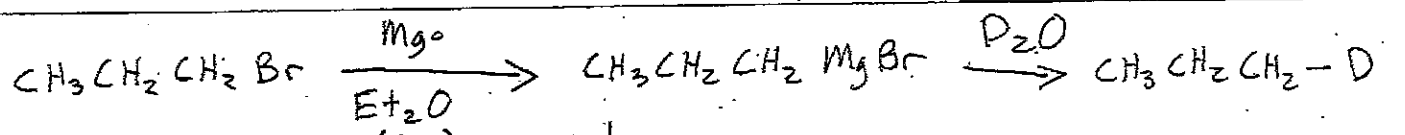
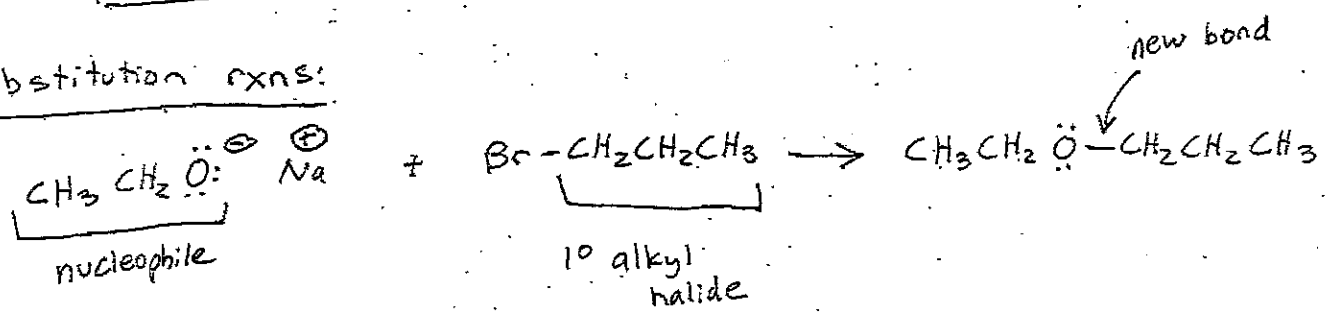


* water sensitive
* inert conditions (N_2 or Ar)

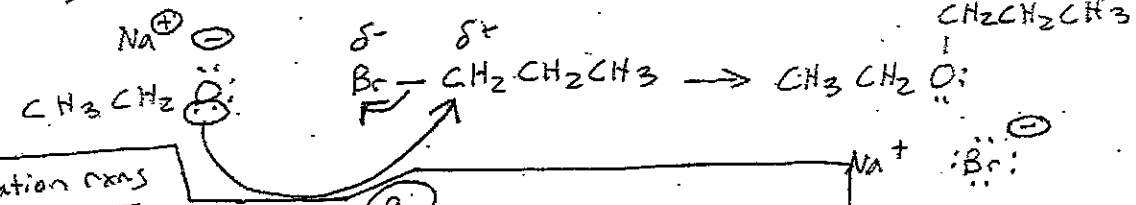
Ch 9 → substitution + elimination reactions of alkyl halides

Problems: 1-5, 8-18, 20-71

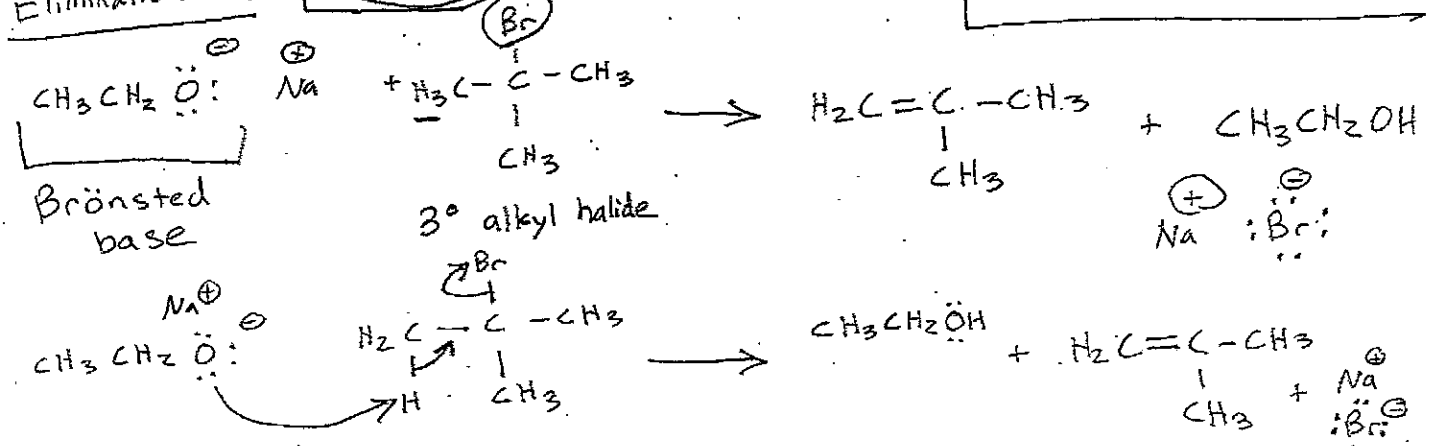
Substitution rxns:



→ "nucleophilic displacement" rxns



Elimination rxns



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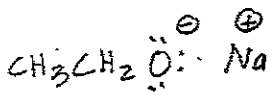
Substitution

Elimination

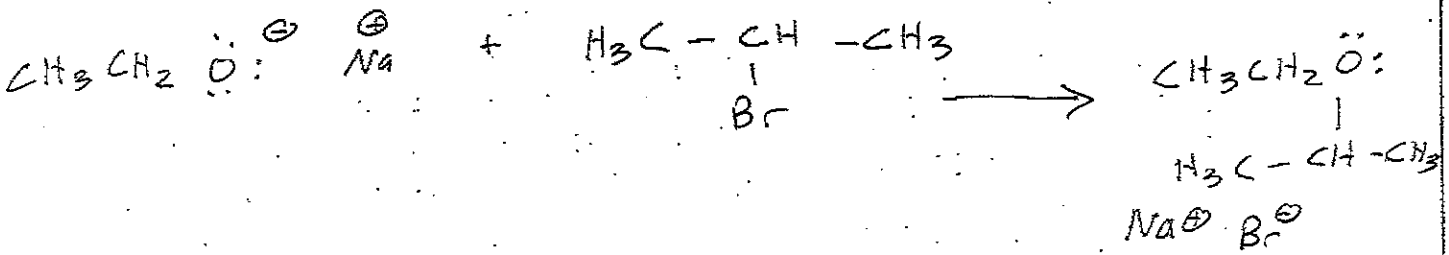


nucleophile

Bronsted base

alkyl halide 1° 3°

$2^\circ \Rightarrow$ mixture of both types of rxn's



and

$H_2C=CH-CH_3$

$+ \; CH_3CH_2OH$

$Na^\oplus \; Br^\ominus$