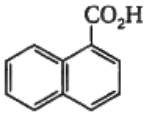
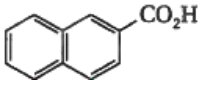
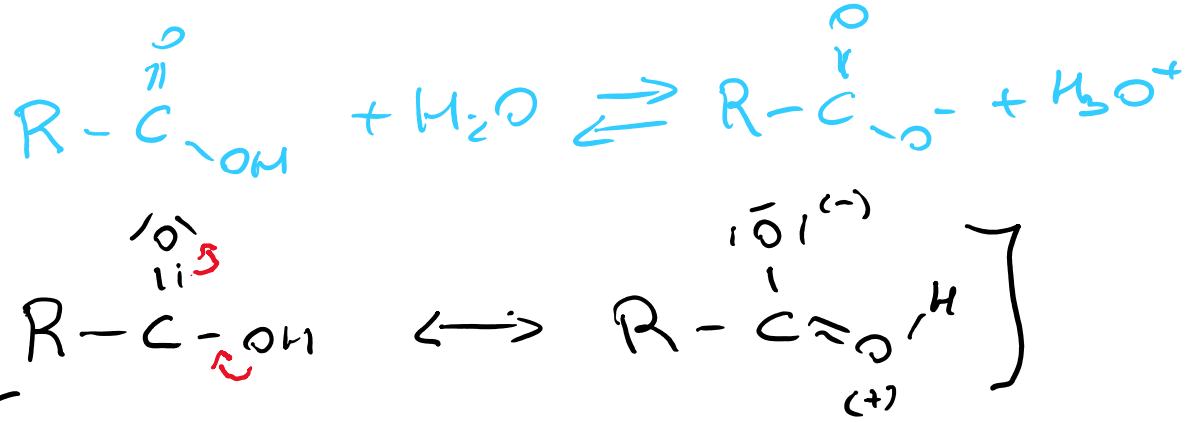
Acidi Carbossilici

lunedì 28 aprile 2025 08:22

Struttura	Nome sistematico	Nome comune	pf (°C)	pe[a] (°C)	Solubilità in acqua (g 100 mL^{-1} H_2O) 25 °C	pK_a
HCO_2H	Acido metanoico	Acido formico	8	100,5	∞	3,75
CH_3CO_2H	Acido etanoico	Acido acetico	16,6	118	∞	4,76
$CH_3CH_2CO_2H$	Acido propanoico	Acido propionico	−21	141	∞	4,87
$CH_3(CH_2)_2CO_2H$	Acido butanoico	Acido butirrico	−6	164	∞	4,81
$CH_3(CH_2)_3CO_2H$	Acido pentanoico	Acido valerianico	−34	187	4,97	4,82
$CH_3(CH_2)_4CO_2H$	Acido esanoico	Acido caproico	−3	205	1,08	4,84
$CH_3(CH_2)_6CO_2H$	Acido ottanoico	Acido caprilico	16	239	0,07	4,89
$CH_3(CH_2)_8CO_2H$	Acido decanoico	Acido caprinico	31	269	0,015	4,84
$CH_3(CH_2)_{10}CO_2H$	Acido dodecanoico	Acido laurico	44	179[18]	0,006	5,30
$CH_3(CH_2)_{12}CO_2H$	Acido tetradecanoico	Acido miristico	59	200[20]	0,002	
$CH_3(CH_2)_{14}CO_2H$	Acido esadecanoico	Acido palmitico	63	219[17]	0,0007	6,46
$CH_3(CH_2)_{16}CO_2H$	Acido ottadecanoico	Acido stearico	70	383	0,0003	
CH_2ClCO_2H	Acido cloroetanoico	Acido cloroacetico	63	189	Molto solubile	2,86
$CHCl_2CO_2H$	Acido dicloroetanoico	Acido dicloroacetico	10,8	192	Molto solubile	1,48
CCl_3CO_2H	Acido tricloroetanoico	Acido tricloroacetico	56,3	198	Molto solubile	0,70
$CH_3CHClCO_2H$	Acido 2-cloropropanoico	Acido α-cloropropionico		186	Solubile	2,83
$CH_2ClCH_2CO_2H$	Acido 3-cloropropanoico	Acido β-cloropropionico	61	204	Solubile	3,98
$C_6H_5CO_2H$	Acido benzoico	Acido benzoico	122	250	0,34	4,19
p-$CH_3C_6H_4CO_2H$	Acido 4-metilbenzoico	Acido p-toluico	180	275	0,03	4,36
p-$ClC_6H_4CO_2H$	Acido 4-clorobenzoico	Acido p-clorobenzoico	242		0,009	3,98
p-$NO_2C_6H_4CO_2H$	Acido 4-nitrobenzoico	Acido p-nitrobenzoico	242		0,03	3,41
	Acido 1-naftoico	Acido α-naftoico	160	300	Insolubile	3,70
	Acido 2-naftoico	Acido β-naftoico	185	>300	Insolubile	4,17

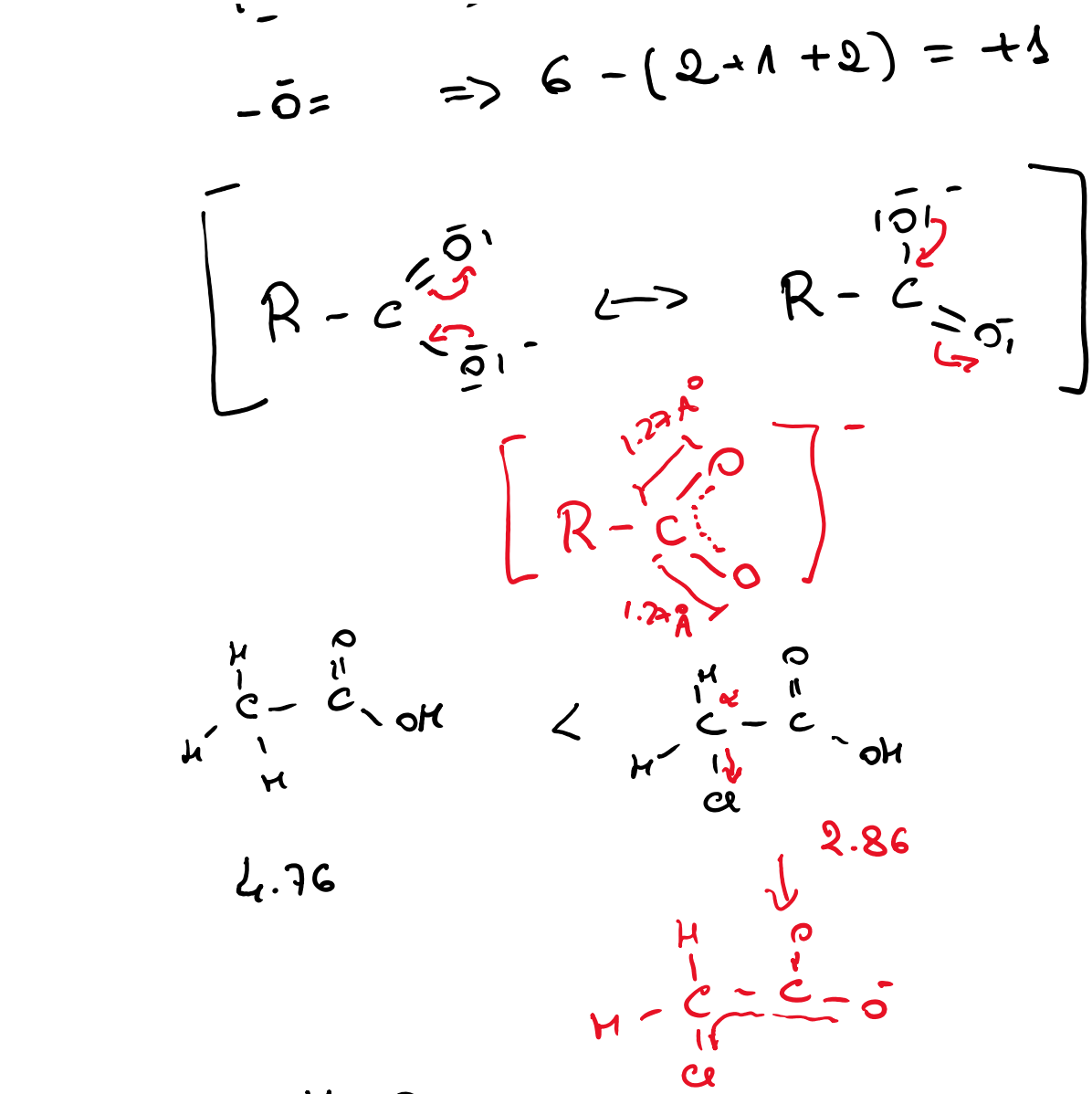


carica formale = # e^- valenza − (# legami + # e^- liberi)

$\ddot{O}=$ $\Rightarrow 6-(2+4)=0$

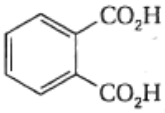
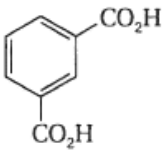
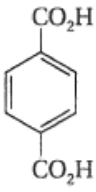
$\ddot{O}-$ $\Rightarrow 6-(1+6)=-1$

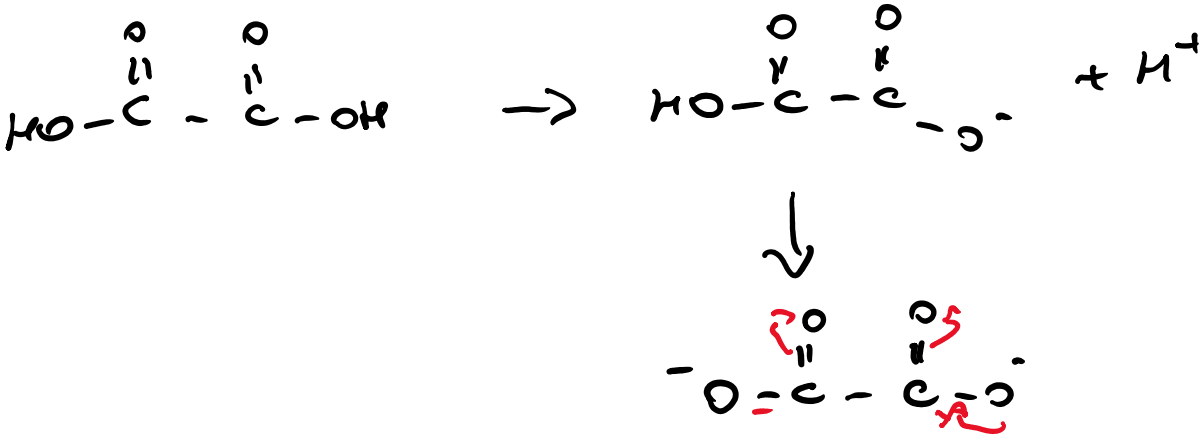
$-$ $\rightarrow 6-(2+1+2)=+1$

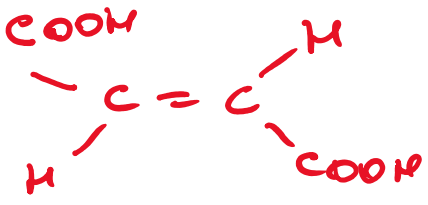

-Ō=
=> 6 - (2+1+2) = +1
1.27 Å
1.27 Å
4.76
2.86
1.48
0.70
4.81
2.85
4.05
4.50

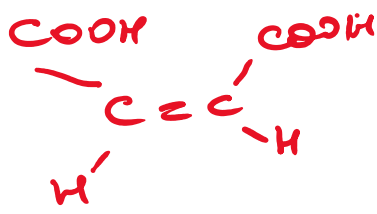
Acidi Dicarbossilici

lunedì 28 aprile 2025 08:47

Struttura	Nome comune	pf (°C)	(a 25 °C) pK_1	pK_2
$HO_2C—CO_2H$	Acido ossalico	189 dec	1,2	4,2
$HO_2CCH_2CO_2H$	Acido malonico	136	2,9	5,7
$HO_2C(CH_2)_2CO_2H$	Acido succinico	187	4,2	5,6
$HO_2C(CH_2)_3CO_2H$	Acido glutarico	98	4,3	5,4
$HO_2C(CH_2)_4CO_2H$	Acido adipico	153	4,4	5,6
cis-$HO_2C—CH=CH—CO_2H$	Acido maleico	131	1,9	6,1
trans-$HO_2C—CH=CH—CO_2H$	Acido fumarico	287	3,0	4,4
	Acido ftalico	206-208 dec	2,9	5,4
	Acido isoftalico	345-348	3,5	4,6
	Acido tereftalico	Sublima	3,5	4,8







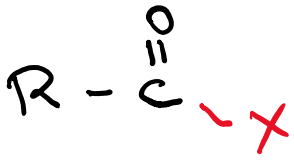
acido fumarico

pK_{a_1} 3.0 pK_{a_2} 4.4

cis acido maleico

pK_{a_1} 1.9 6.1 pK_{a_2}

DERIVATI

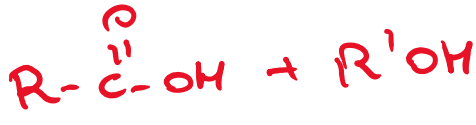


X = Cl, Br, I

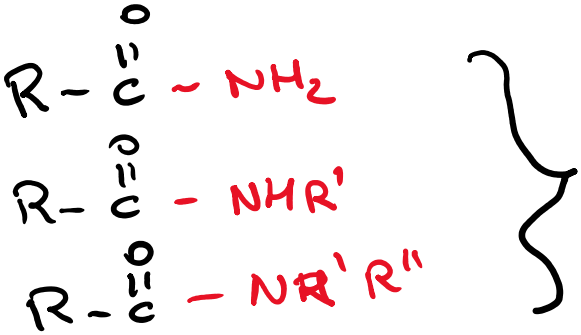
alogenuri acilici

x = Cl cloruro di acile

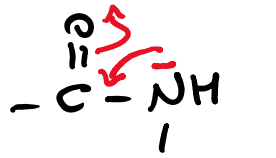
ESTERE



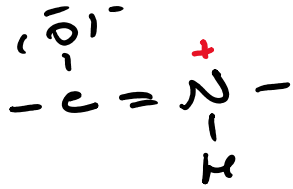
ANIDRIDI

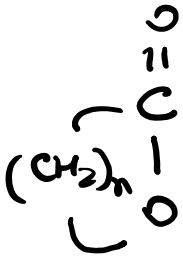


AMMIDE



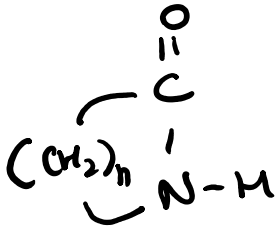
legame ammidico





n = 3,4 ESTERE CICLICO

LATTONE



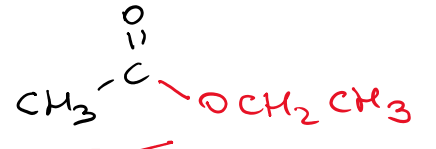
LATTAMI n = 3-4

Esteri

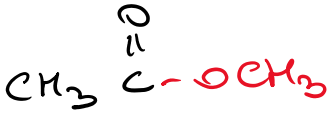
lunedì 28 aprile 2025 08:47

Nome	Struttura	pf (°C)	pe (°C)	Solubilità in acqua (g 100 mL^{-1} a 20 °C)
Formiato di metile	HCO_2CH_3	−99	31,5	Molto solubile
Formiato di etile	$HCO_2CH_2CH_3$	−79	54	Solubile
Acetato di metile	$CH_3CO_2CH_3$	−99	57	24,4
Acetato di etile	$CH_3CO_2CH_2CH_3$	−82	77	7,39 (25 °C)
Acetato di propile	$CH_3CO_2CH_2CH_2CH_3$	−93	102	1,89
Acetato di butile	$CH_3CO_2CH_2(CH_2)_2CH_3$	−74	125	1,0 (22 °C)
Propanoato di etile	$CH_3CH_2CO_2CH_2CH_3$	−73	99	1,75
Butanoato di etile	$CH_3(CH_2)_2CO_2CH_2CH_3$	−93	120	0,51
Pentanoato di etile	$CH_3(CH_2)_3CO_2CH_2CH_3$	−91	145	0,22
Esanoato di etile	$CH_3(CH_2)_4CO_2CH_2CH_3$	−68	168	0,063
Benzoato di metile	$C_6H_5CO_2CH_3$	−12	199	0,15
Benzoato di etile	$C_6H_5CO_2CH_2CH_3$	−35	213	0,08
Acetato di fenile	$CH_3CO_2C_6H_5$		196	Poco solubile
Salicilato di metile	*o*-$HOC_6H_4CO_2CH_3$	−9	223	0,74 (30 °C)

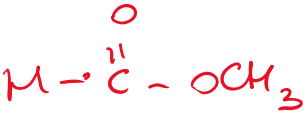
ACIDO CARBOSSILICO + ALCOOL



acetato di etile



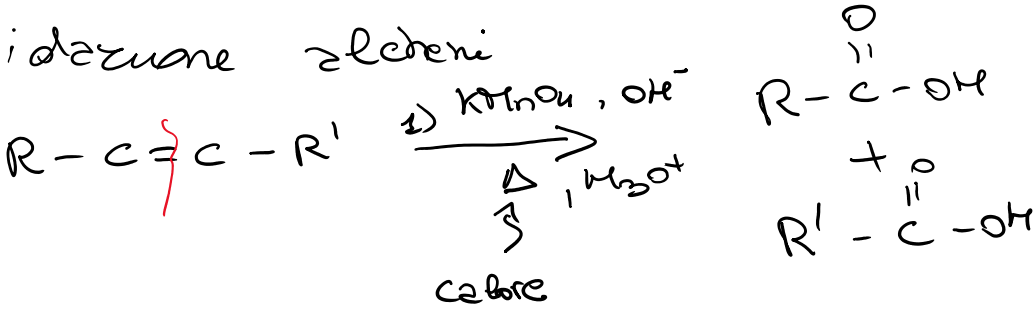
acetato di metile



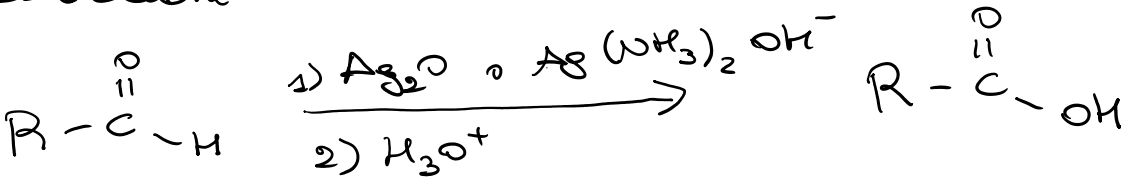
formiato di metile

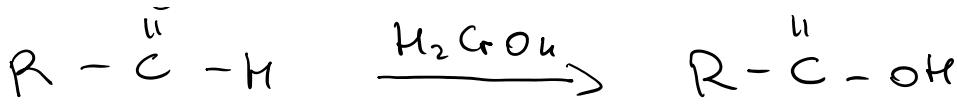
SINTESI ACIDI CARBOSSILICI

1) ossidazione alcheni

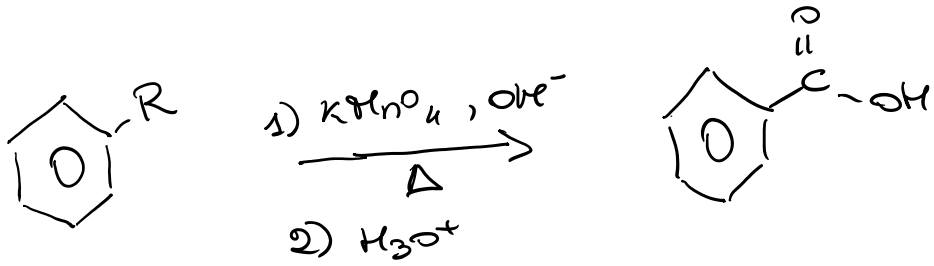


2) ossidazione aldeidi e chetoni



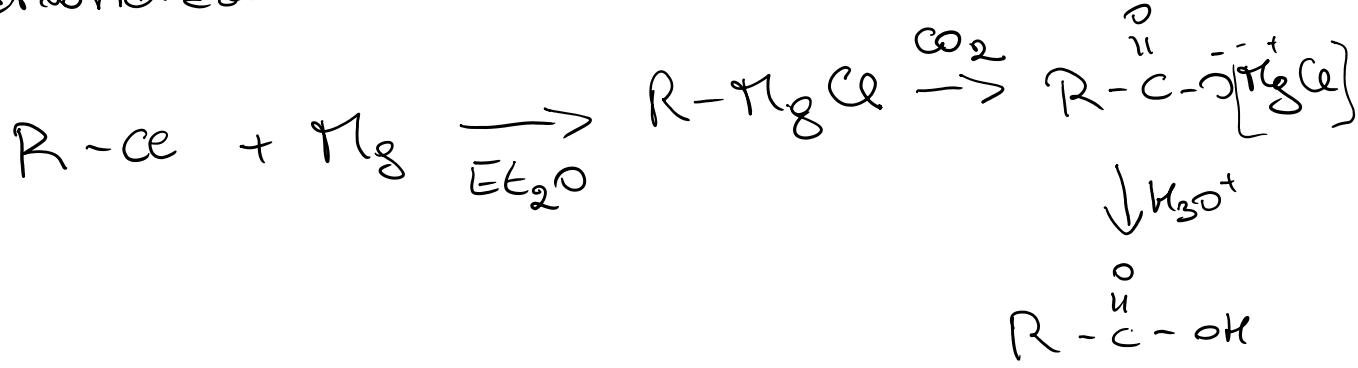


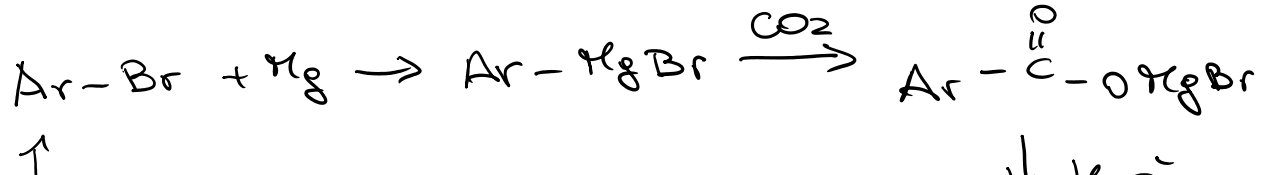
c) ossidazione alchilbenzeni

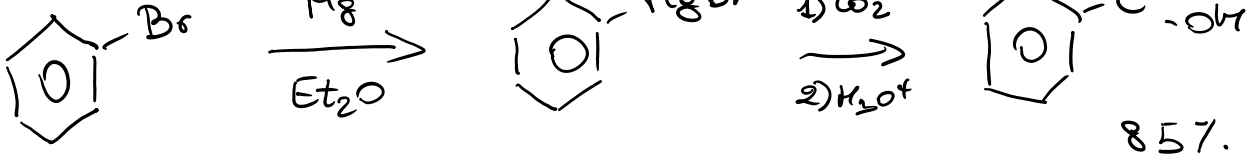


$$HA + OH^- \rightleftharpoons A^- + H_2O$$

Carbonatazione dei Reattivi di Grignard





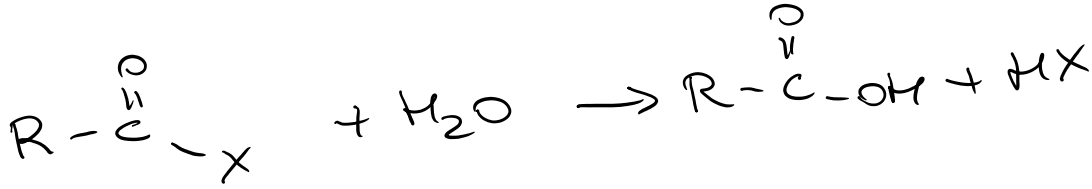


857.

Acido Benzoico

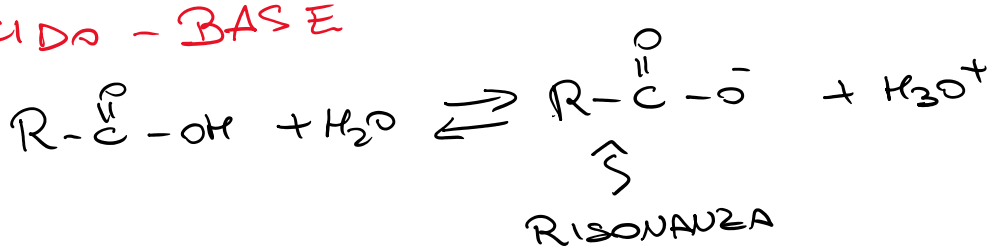
IDROLISI DI ESTERI, ANIDRIDI e ALOGENURI ACILICI

IDROLISI DI ESTERI, ANIDRIDI E ALOGENURI ACILICI



REAZIONI ACIDI CARBOSSILICI

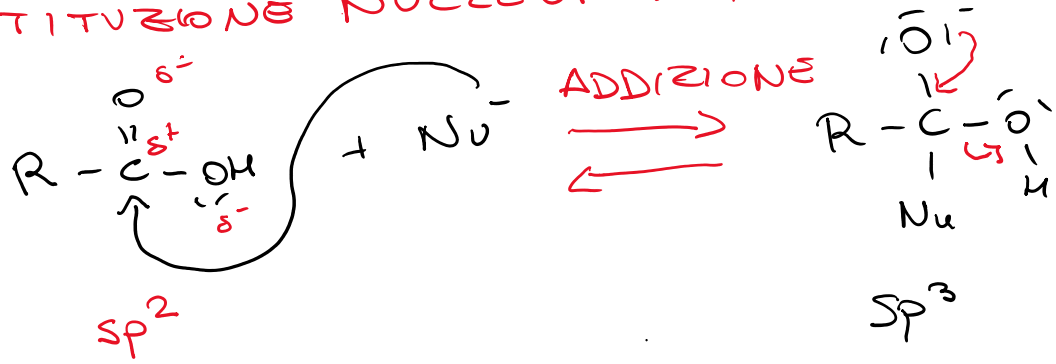
a) ACIDO - BASE



$\bar{O}H$

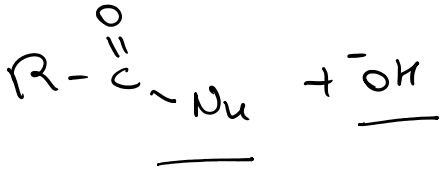
$R-O^-$

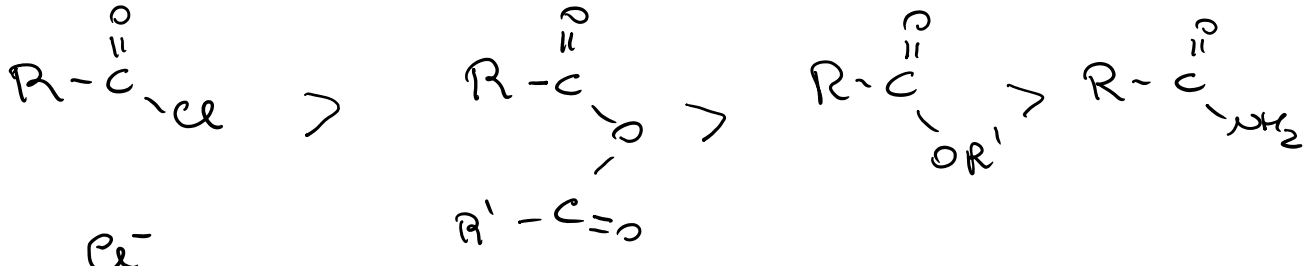
b) SOSTITUZIONE NUCLEOFILA ACILICA



INTERMEDIO TETRAEDRICO

ELIMINAZIONE





Cl^- $R'-C(=O)$

base debolissima $R'-C(=O)O^-$ $-OR'$ $\bar{N}H_2$

MEDIA FORTE FORTISSIMA

$R-C(=O)-Cl + H_2O \rightarrow$ immediata / esplosiva

ANIDRIDE $+ H_2O \rightarrow$ qualche ora

ESTERE $+ H_2O \rightarrow$ giorni

AMMIDI $+ H_2O \rightarrow$ non reagiscono