



Praise the Lord

MOUNT CARMEL MISSION MATRICULATION HIGHER SECONDARY SCHOOL

Mount Road, Carmel Nagar, Kallakurichi – 606 202



QUICK REFERENCE

12th standard organic chemistry

important compounds of Chemical properties of

Phenol, Benzene diazonium chloride, Glycerol,

Benzaldehyde, Glycol, Diethyl ether



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PHENOL CHEMICAL PROPERTIES

PHENOL

Zn / Δ	→ benzene + ZnO
NH ₃ / anhyd. ZnCl ₂ / Δ	→ Aniline
CH ₃ COCl / NaOH / Py	→ Phenyl ethanoate + HCl
C ₆ H ₅ COCl / NaOH / Py	→ Phenyl benzoate + HCl
NaOH / CH ₃ I / Δ	→ Anisole + NaI
K ₂ Cr ₂ O ₇ / Con. H ₂ SO ₄	→ 1,4- benzoquinone
3H ₂ / Ni / 160° C	→ Cyclohexanol
HNO ₂ / 278K	→ p-nitroso phenol
20% HNO ₃ / 298K	→ O-Nitro phenol + p-nitro phenol
Con.H ₂ SO ₄ / Con.HNO ₃ / 298K	→ 2,4,6- trinitrophenol(picric acid)
Con.H ₂ SO ₄	→ O-phenol sulphonic acid + p-phenol sulphonic acid
3Br ₂ / H ₂ O	→ 2,4,6- tribromophenol + 3HBr
Br ₂ / CCl ₄ / 278k	→ o-bromo phenol + p- bromo phenol
NaOH / CO ₂ / 400K / 4- 7 bar / H ⁺	→ Salicylic acid
NaOH / CHCl ₃ / H ⁺	→ Salicylaldehyde
phthalic anhydride / Con.H ₂ SO ₄ / Δ	→ Phenolphthalein
C ₆ H ₅ N ₂ Cl / NaOH / 273-278K	→ P- hydroxyl azobenzene

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BENZENE DIAZONIUM CHLORIDE CHEMICAL PROPERTIES

C₆H₅N₂Cl

H₃PO₂ / H₂O

→ Benzene

CH₃CH₂OH

→ Benzene

Cu₂Cl₂ / HCl

→ Chlorobenzene

Cu₂Br₂ / HBr

→ Bromobenzene

CuCN / KCN

→ Cyanobenzene

Cu / HCl

→ Chlorobenzene

Cu / HBr

→ Bromobenzene

KI

→ Iodobenzene

HBF₄ / Δ

→ Fluorobenzene

H₂O / Δ 283K

→ Phenol

HBF₄ / NaNO₂ / Cu / Δ

→ Nitrobenzene

C₆H₆ / NaOH

→ Biphenyl

CH₃COOH

→ Benzoic acid

SnCl₂ + HCl

→ Phenyl hydrazine

C₆H₅OH

→ P-hydroxy azobenzene

C₆H₅-NH₂

→ P-aminoazobenzene

p-Cresol

→ 2- phenylazo-4- methyl phenol

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BENZALDEHYDE CHEMICAL PROPERTIES

C₆H₅CHO	CH ₃ CHO / dil NaOH	→	cinnamaldehyde
	CH ₃ COCH ₃ / dil NaOH	→	Benzylidene acetone
	C ₆ H ₅ CHO / NaOH	→	Benzylalcohol + sodiumbenzoate
	HCHO / NaOH	→	benzyl alcohol + sodium formate
	alcKCN / Δ	→	Benzoin
	Acetic anhydride / CH ₃ COONa	→	Cinnamic acid
	Malonic acid / Pyridine	→	Cinnamic acid
	Aniline / H ⁺ / Δ	→	Schiff's base
	N,N-Dimethyl aniline / con H ₂ SO ₄	→	Malachite green dye
	conc.FeCl ₃ /Cl ₂	→	m-chlorobenzaldehyde
	Cl ₂ / No Catalyst	→	Benzoyl chloride
	Con.H ₂ SO ₄ / Con.HNO ₃	→	m-nitrobenzaldehyde
	Con.H ₂ SO ₄	→	m- benzaldehyde sulphonic acid

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GLYCEROL CHEMICAL PROPERTIES

GLYCEROL	$\text{HNO}_3/\text{H}_2\text{SO}_4$	→ 1,2,3 trinitroxy propane
	KHSO_4/Δ	→ acrolein (prop-2-enal)
	(O) dil. HNO_3	→ glyceric acid + tartronic acid
	(O) Con. HNO_3	→ glyceric acid
	(O) $\text{Bi}(\text{NO}_3)_3$	→ mesoxxlic acid
	$\text{Br}_2/\text{H}_2\text{O}$ (or) NaOBr (or) Fenton's reagent ($\text{FeSO}_4 + \text{H}_2\text{O}_2$)	→ glycerose (glyceraldehyde + dihydroxy acetone)
	HIO_4 (or) (LTA) Lead tetra acetane ($\text{Pb}(\text{CH}_3\text{COO})_4$)	→ formaldehyde + formic acid
	KmnO_4	→ oxalic acid

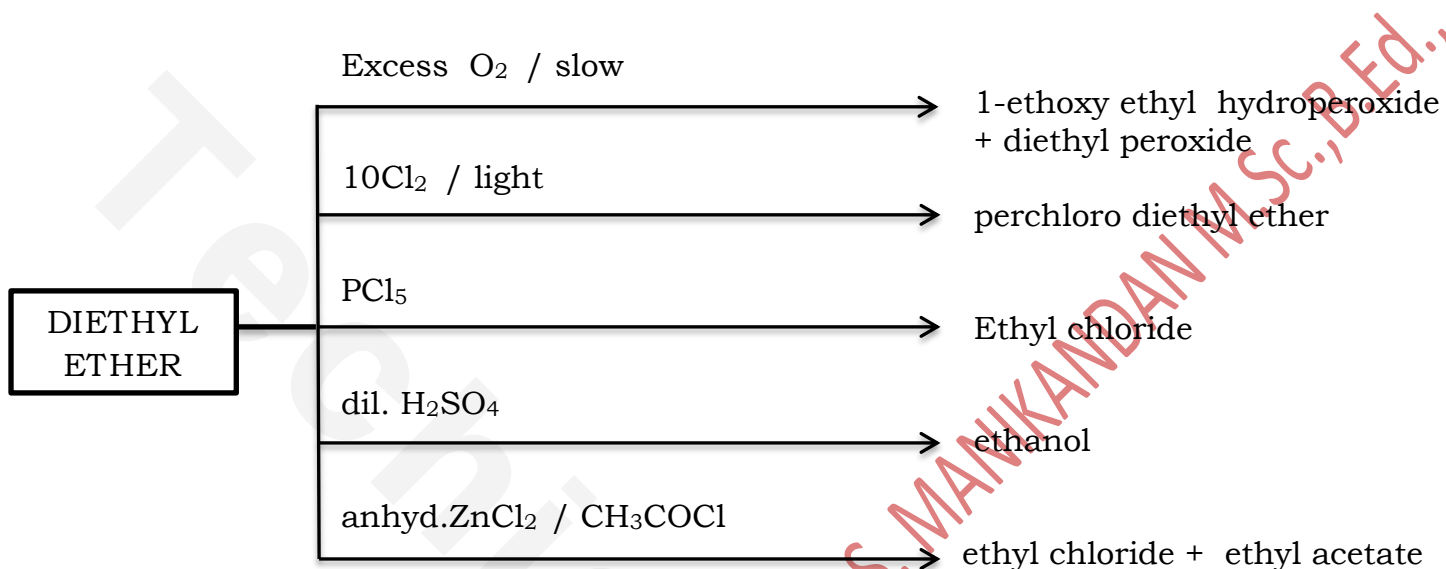
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GLYCOL CHEMICAL PROPERTIES

GLYCOL	PI_3	→ Ethene
	$2\text{HNO}_3 / \text{Con. H}_2\text{SO}_4$	→ 1,2 Dinitroxyethene (dinitroglycol)
	$773\text{K} / \Delta$	→ 1,2 epoxyethene (oxirane)
	anhyd. ZnCl_2	→ Ethanal
	$\text{Con. H}_2\text{SO}_4$	→ 1,4 dioxane
	$\text{HIO}_4 / \text{H}^+$	→ Formaldehyde
	HNO_3 (or) KMnO_4	→ Oxalic acid

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DIETHYL ETHER CHEMICAL PROPERTIES



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“Life is nothing without chemistry.”

All are made up of atoms and molecules”

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