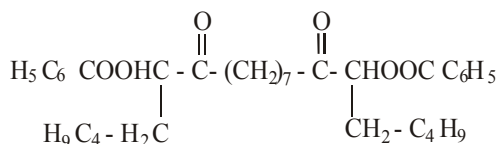
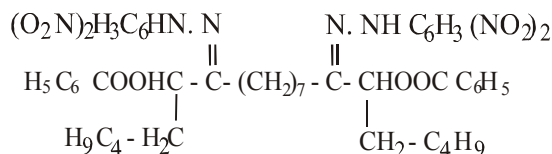


nitrophenyl hydrazine gave hydrazone. It was crystallised from ethanol as orange solid.



Nitrogen free compound (ester)



(Hydrazone)

Physical State – orange crystalline solid

M.P. - 222°C

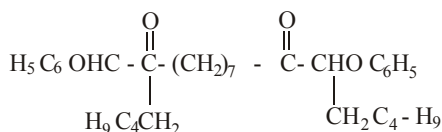
Elemental Analyses :

C= 61.03% (obs. 60.92), H= 6.06% (obs. 5.96), N=12.12% (obs. 11.98)

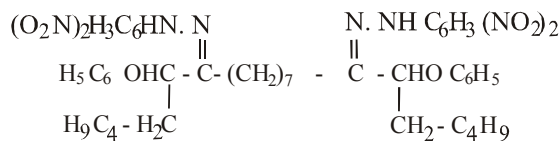
I.R. (KBr) : 3360 (-NH), 1622(C=N), 1580 (C₆H₅), 1335 (C-NO₂), 745 cm⁻¹ (CH₂ rock in - C₅H₁₁)

(c) Action of Phenol :

With phenol, it gave a reddish brown liquid. This on treatment with 2,4-dinitrophenyl hydrazine yielded an orange solid hydrazone.



Nitrogen free compound (Ether)



(Hydrazone)

Physical State – orange crystalline solid

M.P. - 222°C

Elemental Analyses :

C= 61.03% (obs. 60.92), H= 6.06% (obs. 5.96), N=12.12% (obs. 11.98)

I.R. (KBr) : 3360 (-NH), 1622(C=N), 1580 (C₆H₅), 1335 (C-NO₂), 745 cm⁻¹ (CH₂ rock in - C₅H₁₁)

Physical State—orange crystalline solid

M.P. - 254°C

Elemental Analyses :

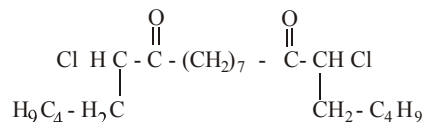
C= 62.21% (obs. 62.10), H= 6.45% (obs. 6.41), N=12.90%

(12.87)

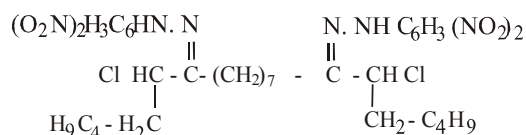
I.R. (KBr) : 3352 (-NH), 1625(C=N), 1590 (C₆H₅), 1335(C-NO₂), 1273(C-O-C), 725 cm⁻¹ (CH₂ rock in - C₅H₁₁)

(d) Action of dry HCl gas :

A red liquid was obtained, which possesses chlorine but no nitrogen. It was extracted as chloroketone. This on treatment with 2,4-dinitrophenyl hydrazine gave hydrazone.



Chloroketone



(Hydrazone)

Physical State – orange crystalline solid

M.P. - 210°C

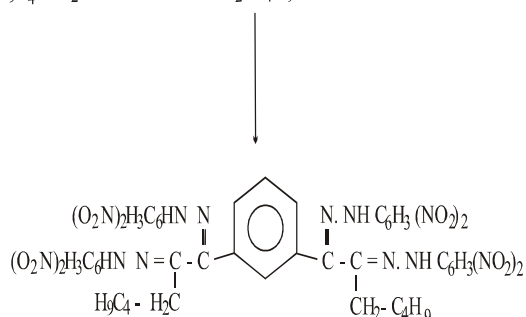
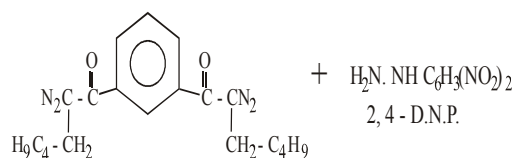
Elemental Analyses :

C= 52.58% (obs. 52.29), H= 6.10% (obs. 5.98), N=14.87% (14.80), Cl = 9.42% (obs. 9.39)

I.R. (KBr) : 3320 (-NH), 1633 (C=N), 1620 (C₆H₅), 1385 (C-NO₂), 720 cm⁻¹ (CH₂ rock in - C₅H₁₁), 645 Cm⁻¹ (C-Cl)

Characterization of 1,3-bis- -diazo-n-heptanoyl benzene :

(a) Formation of Osazone (Reaction with 2,4-dinitrophenyl Hydrazine :



It was treated with an aqueous alcoholic sulphuric acid solution of 2,4-dinitrophenyl hydrazine, then an osazone was obtained. This on crystallization from ethanol gave red product.

The osazone, so obtained was characterized by elemental analyses and IR spectra.

Physical State – red crystalline solid

M.P. - 198°C

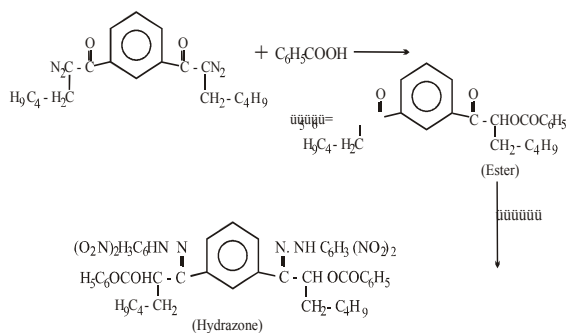
Elemental Analyses :

C= 50.28% (obs. 50.10), H= 4.00% (obs. 3.86), N=21.33% (Obs.21.12)

I.R. (KBr) : 3085 (C-H aromatic), 1620(C=N), 1340 (C-NO₂), 740 cm⁻¹ (CH₂ rock in- C₅H₁₁)

(b) Action of Benzoic Acid :

On treatment molten benzoic acid, a nitrogen free product was obtained, which on treatment with 2,4-dinitrophenyl hydrazine gave hydrazone.



Physical State – Reddish Yellow crystalline solid.

M.P. = 199°C

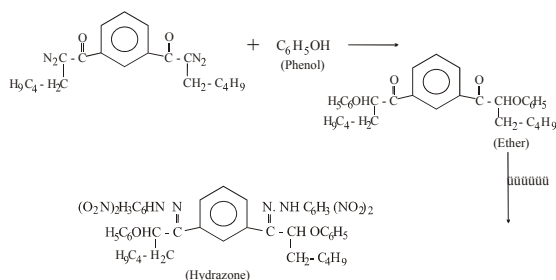
Elemental Analyses :

C= 61.20% (obs. 60.87), H= 5.10% (obs. 4.79), N=12.41% (Obs.12.76)

I.R. (KBr) : 1730 (C=O), 1620(C=N), 1275 (-E-O-C), 735 cm⁻¹ (-CH₂ rock in - C₅H₁₁)

(c) Action of phenol :

It produced nitrogen free red liquid, which reacted with 2,4-dinitrophenyl hydrazine to give hydrazone.



Characterisation :

Physical State – Orange crystalline solid

M.P. - 175°C

Elemental Analyses :

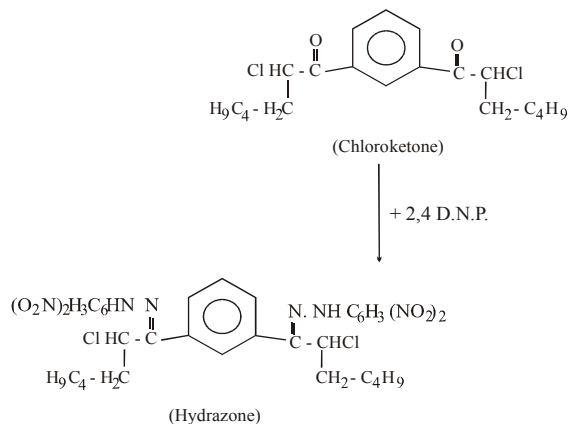
C= 62.41% (obs. 62.10), H= 5.46% (obs. 5.16), N=13.24% (Obs.12.95)

I.R. (KBr) : 1625 (C=N), 1260(C-O-C), 735 Cm⁻¹ (CH₂ rock in - C₅H₁₁)

(d) Action of dry HCl :

When treated with dry HCl gas it gave a nitrogen free

chloro-derivative, which on subsequent treatment with 2,4-dinitrophenyl hydrazine gave hydrazone.



Characterisation :

Physical State – Orange crystalline solid

M.P. = 175°C

Elemental Analyses :

C= 52.53% (obs. 52.20), H= 4.92% (obs. 4.54), N=15.32% (Obs.15.64)

Cl = 9.71(obs. 9.36)

I.R. (KBr) : 1635 (C=N), 1610 (C₆H₅), 1255 (C-O-C), 746 Cm⁻¹ (CH₂ rock in - C₅H₁₁)

Acknowledgement :

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