

Acid	Ester	M. p. (cor.) °C.	Empirical formula	Analyses, % ^a			
				Calcd.		Found	
			C	H	C	H	
α -Hydroxy-caprylic	Phenacyl	55.5-56.5	C ₁₆ H ₂₂ O ₄	69.02	7.97	68.92	8.07
	<i>p</i> -Phenylphenacyl	88.0-89.7	C ₂₂ H ₂₆ O ₄	74.53	7.40	74.57	7.35
	<i>p</i> -Bromophenacyl	95.0-95.8	C ₁₆ H ₂₁ BrO ₄	53.81	5.93	54.02	5.81
α -Hydroxy-capric	<i>p</i> -Nitrobenzyl	Oil					
	Phenacyl	60.0-60.5	C ₁₈ H ₂₆ O ₄	70.54	8.54	70.29	8.42
	<i>p</i> -Phenylphenacyl	80.3-80.8	C ₂₄ H ₃₀ O ₄	75.35	7.91	75.32	8.01
	<i>p</i> -Bromophenacyl	93.0-93.5	C ₁₈ H ₂₅ BrO ₄	56.09	6.54	55.86	6.54
α -Hydroxy-lauric ^a	<i>p</i> -Nitrobenzyl	54.5-55.5	C ₁₇ H ₂₅ NO ₅	63.12	7.80	63.16	7.63
	Phenacyl	63.5-64.0	C ₂₀ H ₃₀ O ₄	71.81	9.05	71.80	9.06
	<i>p</i> -Bromophenacyl	91.0-91.5	C ₂₀ H ₂₉ BrO ₄	58.09	7.08	57.83	7.03
α -Hydroxy-myristic	<i>p</i> -Nitrobenzyl	59.0-59.5	C ₁₉ H ₂₉ NO ₅	64.91	8.32	64.94	8.36
	Phenacyl	69.0-69.5	C ₂₂ H ₃₄ O ₄	72.87	9.46	72.47	9.40
	<i>p</i> -Bromophenacyl	95.0-95.4	C ₂₂ H ₃₃ BrO ₄	59.84	7.54	59.72	7.40
α -Hydroxy-palmitic	<i>p</i> -Nitrobenzyl	67.0-68.0	C ₂₁ H ₃₃ NO ₅	66.45	8.77	66.32	8.99
	Phenacyl	69.8-70.1	C ₂₄ H ₃₆ O ₄	73.79	9.81	73.68	9.86
	<i>p</i> -Bromophenacyl	96.0-96.5	C ₂₄ H ₃₇ BrO ₄	61.38	7.95	61.78	7.86
α -Hydroxy-stearic	<i>p</i> -Nitrobenzyl	69.5-70.5	C ₂₃ H ₃₇ NO ₅	67.76	9.16	67.78	9.14
	Phenacyl	76.4-76.8	C ₂₆ H ₄₂ O ₄	74.58	10.12	74.25	10.00
	<i>p</i> -Bromophenacyl	98.0-98.5	C ₂₆ H ₄₁ BrO ₄	62.74	8.31	62.52	8.25
	<i>p</i> -Nitrobenzyl	76.5-77.0	C ₂₆ H ₄₁ NO ₅	68.91	9.49	69.20	9.32

^a The *p*-phenylphenacyl esters α -hydroxy-lauric, myristic, palmitic and stearic acids separated from aqueous alcohol as gelatinous masses. Repeated attempts to purify them for analysis met with failure.

their melting points are described in a previous communication.¹

(1) Price and Griffith, THIS JOURNAL, 62, 2884 (1940).

(2) Microanalyses carried out by Dr. Everette L. May of this Laboratory.

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DONALD PRICE
RICHARD GRIFFITH

RECEIVED MARCH 22, 1941

α -Naphthylcyclohexanol-1

To an ethereal solution of α -naphthylmagnesium bromide prepared from 50 g. of α -bromonaphthalene and 6.5 g. of magnesium were added, after one hour, 100 ml. of benzene and then during a fifteen minute period 25 g. of cyclohexanone dropwise with stirring. The alcohol was isolated in the usual way. The oil so obtained crystallized after several weeks. The crystals were washed with cold petroleum ether and then recrystallized three times from the same solvent. The substance formed transparent, colorless rhomboids; m. p. 66-68°, yield 40%.

Anal. Calcd. for C₁₆H₁₈O: C, 85.00; H, 7.96. Found: C, 85.14; H, 7.95.

The preparation of this substance was previously reported in the literature,¹ but it was not purified and no quantitative data regarding it were given.

(1) Sherwood, Short and Stansfield, *J. Chem. Soc.*, 1834 (1932).

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Some Chlorophenoxyacetic Acids

2,4-Dichlorophenoxyacetic Acid.—Equimolecular quantities of 2,4-dichlorophenol (5.0 g.) and monochloroacetic acid (2.9 g.) were heated with a slight excess (2.7 g.) of sodium hydroxide, and 15 cc. of water, until the solution was evaporated almost to dryness. The residue was then dissolved in 100 cc. of hot water, the solution cooled to room temperature and acidified with hydrochloric acid. A heavy oil separated which soon crystallized. The mixture was extracted with ether, the ether extract washed with water and evaporated to dryness on the water-bath. The yield of 2,4-dichlorophenoxyacetic acid was 5.9 g. (87%); recrystallized from benzene, m. p. 138°; white odorless crystals, almost insoluble in water.

Anal. Calcd. for C₈H₆O₂Cl₂: Cl, 32.08; neut. equiv., 221.0. Found: Cl, 32.10; neut. equiv., 221.

2,4,5-Trichlorophenoxyacetic Acid.—Equimolecular quantities of 2,4,5-trichlorophenol (5.0 g.) and monochloroacetic acid (2.4 g.) were heated with a slight excess (2.2 g.) of sodium hydroxide, and 30 cc. of water, until the solution was evaporated almost to dryness. The residue was then dissolved in 200 cc. of hot water and treated as described above. The yield of 2,4,5-trichlorophenoxyacetic acid was 5.5 g. (85%); recrystallized from benzene, m. p. 153°; white odorless crystals, almost insoluble in water.

Anal. Calcd. for C₈H₃O₂Cl₃: Cl, 41.63; neut. equiv., 255.5. Found: Cl, 41.57; neut. equiv., 256.

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