Phenol Esters of 2,3,5-Triiodobenzoic Acid

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The 2,3,5-triiodobenzoic esters of thirty-seven phenols have been prepared by reacting the various phenols with 2,3,5-triiodobenzoyl chloride.

PHENOL ESTERS of 3,4,5-triiodobenzoic acid were reported (*2*) and the phenol esters of 2,3,5-triiodobenzoic acid have now been prepared.

EXPERIMENTAL

The phenols were used as obtained from commercial sources. The acid chloride was prepared by the method of Klemme and Hunter (*1*) except that cyclohexane was used for crystallization.

The method described in (*3*) was used except that 2 ml. of pyridine was added to the reaction mixture. Unless otherwise indicated in Table I, 1-butanol was used as the solvent.

LITERATURE CITED

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Table I. Phenol Esters of 2,3,5-Triiodobenzoic Acid

Phenol Used	M.P., °C.	Yield, %	Formula	Iodine, % Calcd.	Iodine, % Found
2-Aceto-1-naphthol	181.5–182.0	27	$C_{19}H_{11}O_3I_3$	57.0	57.02
Acetyl-*p*-methylaminophenol	172.4–173.8[a]	19	$C_{16}H_{12}O_3NI_3$	58.85	59.30
p-Benzylphenol	147.4–148.2	50	$C_{20}H_{13}O_2I_3$	57.16	57.44
p-Bromphenol	162.8–163.8[b]	36	$C_{13}H_6O_2BrI_3$	58.14	57.73
Catechol	174.6–175.2[a]	42	$C_{20}H_8O_4I_6$	70.92	71.01
2-Chloro-5-hydroxytoluene	156.6–157.4	58	$C_{14}H_8O_2ClI_3$	60.98	61.43
o-Chlorophenol	139.3–140.6[b]	64	$C_{13}H_6O_2ClI_3$	62.39	62.10
m-Chlorophenol	130.6–132.3[b]	21	$C_{13}H_6O_2ClI_3$	62.39	62.17
p-Chlorothymol	124.8–125.4[c]	52	$C_{17}H_{14}O_2ClI_3$	57.14	57.52
2,4-Dichloro-1-naphthol	234.0–235.2[d]	37	$C_{17}H_7O_2Cl_2I_3$	54.81	54.48
2,6-Dichloro-4-nitrophenol	157.0–158.6	30	$C_{13}H_4O_4NCl_2I_3$	55.19	54.96
2,4-Dichlorophenol	170.8–172.2[b]	32	$C_{13}H_5O_2Cl_2I_3$	59.05	59.12
2,4-Dihydroxybenzaldehyde	175.5–176.2	27	$C_{21}H_8O_5I_6$	69.10	68.58
2,2′-Dihydroxybinaphthyl-1,1′	259.4–260.4[d]	42	$C_{34}H_{16}O_4I_6$	60.92	61.25
2,7-Dihydroxynaphthalene	218.0–220.8[e]	31	$C_{24}H_{10}O_4I_6$	67.76	67.87
2,5-Dihydroxytoluene	268.0–269.8[f]	25	$C_{21}H_{10}O_4I_6$	70.00	69.90
3,5-Dinitro-*o*-cresol	171.0–171.8	18	$C_{14}H_7O_6N_2I_3$	56.00	56.49
2,4-Dinitrophenol	154.6–155.8[b]	31	$C_{13}H_5O_6N_2I_3$	57.18	57.40
Eugenol	123.5–125.0[b]	45	$C_{17}H_{13}O_3I_3$	58.94	58.81
Hydroquinone monobenzylether	137.7–138.6	45	$C_{20}H_{13}O_3I_3$	55.85	56.01
Hydroquinone monomethylether	152.0–154.0[b]	36	$C_{14}H_9O_3I_3$	62.84	63.01
4-Hydroxy-1,2-dimethylbenzene	137.0–137.6	49	$C_{15}C_{11}O_2I_3$	63.05	63.34
4-Hydroxy-1,3-dimethylbenzene	125.0–126.4	47	$C_{15}H_{11}O_2I_3$	63.05	62.90
2-Hydroxy-1,4-dimethylbenzene	112.6–113.4[c]	55	$C_{15}H_{11}O_2I_3$	63.05	62.80
o-Hydroxydiphenyl	143.0–145.0	56	$C_{19}H_{11}O_2I_3$	58.39	58.50
p-Hydroxydiphenyl	169.8–170.6	64	$C_{19}H_{11}O_2I_3$	58.39	58.87
o-Iodophenol	183.6–185.6[b]	70	$C_{13}H_6O_2I_4$	72.32	72.13
1-Naphthol	145.2–147.2	42	$C_{17}H_9O_2I_3$	60.82	60.82
2-Naphthol	157.2–158.0[b]	33	$C_{17}H_9O_2I_3$	60.82	60.80
o-Nitrophenol	192.8–193.6	67	$C_{13}H_6O_4NI_3$	61.34	61.01
m-Nitrophenol	176.2–177.2[b]	34	$C_{13}H_6O_4NI_3$	61.34	61.21
p-Nitrophenol	179.4–180.4	42	$C_{13}H_6O_4NI_3$	61.34	61.48
Phenol	132.4–133.3[c]	71	$C_{13}H_7O_2I_3$	66.11	66.22
Pyrogallol-1,3-dimethyl ether	147.2–148.0	57	$C_{15}H_{10}O_3I_3$	59.87	59.74
Resorcinol monoethyl ether	106.0–106.8	29	$C_{15}H_{11}O_3I_3$	61.41	61.30
Thymol	98.6–100.6	29	$C_{17}H_{15}O_2I_3$	60.24	60.40
2,4,6-Trichlorophenol	148.4–149.8[b]	46	$C_{13}H_4O_2Cl_3I_2$	56.05	56.05

[a] 50% Dioxane and 50% water. [b] Ethyl acetate. [c] Ethanol. [d] Benzene. [e] Toluene. [f] 75% Dioxane and 25% water.