

Table I. Viscosity and Compressibility Data

Press., P.S.I.G.	Relative Viscosity, η/η_0	Volume Change, $-\Delta V$, cc.	Compressibility, $-\Delta V/V_0 \times 100$	Press., P.S.I.G.	Relative Viscosity, η/η_0	Volume Change, $-\Delta V$, cc.	Compressibility, $-\Delta V/V_0 \times 100$
Acetaldehyde, 71.6° F., $\eta_0 = 0.3468$ cp.				Heptaldehyde, 71.7° F., $\eta_0 = 0.9543$ cp.			
2,000	1.0835	0.6774	1.86	2,000	1.0883	0.4210	1.16
4,000	1.1462	1.2725	3.49	4,000	1.1736	0.8103	2.24
6,000	1.2030	1.7789	4.87	6,000	1.2778	1.1490	3.18
8,000	1.2598	2.2252	6.10	8,000	1.3619	1.4687	4.06
10,000	1.3091	2.6145	7.16	10,000	1.4611	1.7631	4.87
12,000	1.3620	2.9880	8.19	12,000	1.5746	2.0321	5.62
14,000	1.4098	3.3267	9.11	14,000	1.6933	2.2853	6.32
16,000	1.4568	3.6306	9.99	16,000	1.8264	2.5164	6.95
18,000	1.5068	3.9186	10.74	18,000	1.9720	2.7380	7.57
20,000	1.5478	4.1877	11.47	20,000	2.1209	2.9501	8.15
Propionaldehyde, 74.3° F., $\eta_0 = 0.4293$ cp.				Caprylic Aldehyde, 69.3° F., $\eta_0 = 1.2527$ cp.			
2,000	1.0485	0.5064	1.40	2,000	1.1078	0.4052	1.12
4,000	1.0919	0.9812	2.71	4,000	1.2227	0.7597	2.10
6,000	1.1390	1.3896	3.83	6,000	1.3497	1.0794	2.98
8,000	1.1944	1.7726	4.89	8,000	1.4806	1.3927	3.84
10,000	1.2593	2.1113	5.82	10,000	1.6231	1.6713	4.61
12,000	1.3550	2.4373	6.72	12,000	1.7913	1.9340	5.34
14,000	1.4506	2.7475	7.58	14,000	1.9780	2.1777	6.01
16,000	1.5367	3.0260	8.35	16,000	2.1684	2.3993	6.62
18,000	1.6469	3.2856	9.06	18,000	2.3779	2.6177	7.22
20,000	1.7256	3.5388	9.76	20,000	2.6071	2.8171	7.78
Butyraldehyde, 84.0° F., $\eta_0 = 0.5486$ cp.				Benzaldehyde, 71.7° F., $\eta_0 = 1.386$ cp.			
2,000	1.0839	0.5666	1.57	2,000	1.0689	0.3070	0.84
4,000	1.1603	1.0540	2.92	4,000	1.1456	0.5761	1.58
6,000	1.2352	1.4750	4.09	6,000	1.2321	0.8135	2.23
8,000	1.3025	1.8359	5.09	8,000	1.3141	1.0477	2.87
10,000	1.3816	2.1746	6.02	10,000	1.4199	1.2630	3.46
12,000	1.4554	2.4943	6.91	12,000	1.5169	1.4719	4.03
14,000	1.5316	2.7855	7.72	14,000	1.6240	1.6681	4.57
16,000	1.6057	3.0640	8.49	16,000	1.7369	1.8549	5.08
18,000	1.6889	3.3109	9.17	18,000	1.8716	2.0226	5.54
20,000	1.7568	3.5420	9.81	20,000	2.0088	2.2030	6.03
Isobutyraldehyde, 82.8° F., $\eta_0 = 0.5382$ cp.				Anisaldehyde, 76.7° F., $\eta_0 = 3.3716$ cp.			
2,000	1.0753	0.5698	1.58	2,000	1.1217	0.2374	0.66
4,000	1.1589	1.0984	3.04	4,000	1.2064	0.4495	1.24
6,000	1.2411	1.5542	4.31	6,000	1.3531	0.6679	1.85
8,000	1.3170	1.9435	5.39	8,000	1.5103	0.8578	2.37
10,000	1.3970	2.3170	6.42	10,000	1.7141	1.0414	2.88
12,000	1.4771	2.6589	7.37	12,000	2.1277	1.2345	3.41
14,000	1.5528	2.9469	8.17	14,000	2.1511	1.3896	3.84
16,000	1.6289	3.2349	8.96	16,000	2.4274	1.5605	4.31
18,000	1.7021	3.4787	9.64	18,000	2.8247	1.7188	4.75
20,000	1.7801	3.7161	10.30	20,000	3.2857	1.8675	5.16
Isovaleraldehyde, 81.0° F., $\eta_0 = 0.6823$ cp.				<i>trans</i> -Cinnamaldehyde, 84.3° F., $\eta_0 = 3.6054$ cp.			
2,000	1.1009	0.7913	2.17	2,000	1.1813	0.3324	0.92
4,000	1.1788	1.2598	3.45	4,000	1.3540	0.6172	1.70
6,000	1.2703	1.6776	4.59	6,000	1.5731	0.8388	2.31
8,000	1.3462	2.0448	5.60	8,000	1.8286	1.0445	2.88
10,000	1.4235	2.3803	6.52	10,000	2.1453	1.2281	3.39
12,000	1.5459	2.6968	7.38	12,000	2.5460	1.4244	3.93
14,000	1.6207	3.0039	8.32	14,000	2.9569	1.5827	4.36
16,000	1.7141	3.2761	8.97	16,000	3.4255	1.7409	4.80
18,000	1.8033	3.5198	9.64	18,000	3.9394	1.8992	5.24
20,000	1.9109	3.7509	10.27	20,000	4.3505	2.0290	5.59

smaller clearances and larger lengths gave more accurate results than plummets of larger clearances and smaller lengths. Eventually, a plummet with outside diameter 0.43688 cm. and 2.5400 cm. long was selected. Test run data of benzene and carbon tetrachloride agreed to three decimal places with the previously reported values (4, 6).

The loading of the equipment was done with the help of a secondary pump. The sample liquid was pumped into

the apparatus from the secondary pump and allowed to flow out for a couple of minutes. All the joints were tightened slightly at this time and the liquid entrance from the secondary pump was closed tightly. The pump was closed to the atmosphere and a pressure of 2000 p.s.i. was built up in the apparatus. All the joints were now tightened and pressure brought back to atmosphere. The loading procedure took about 30 min.