LIST OF GRAPHS

Graph			Page
1a	Relative surface tension of soaps and synthetic detergents versus concentration	••	84
1 b	Surface tension in dynes/cm of soaps and synthetic detergents versus concentration	••	86
2	Percentage wettability of soaps and synthetic detergents versus concentration	••	89
3	Rate of wetting of soaps and synthetic detergent versus concentration	s ••	91
4	Emulsifying ability of soaps and synthetic detergents versus concentration	••	95
5	Foaming power of soaps and synthetic detergents versus concentration	• •	98
6	Stability of foam of soaps and synthetic detergents at different concentration	99	-101 [°]
7a	Relative surface tension of Combination I (501 b soap and Teepol) versus concentration	ar ••	105
7b	Surface tension in dynes/cm of Combination I (501 bar soap and Teepol) versus concentration	••	105
8a	Relative surface tension of Combination II (sodium oleate and Teepol) versus concentration	••	107
8 b	Surface tension in dynes/cm of Combination II (sodium oleate and Teepol) versus concentration	• •	107
9a	Relative surface tension of Combination III (501 bar soap and sodium lauryl sulphate) versus concentration		109
9b	Surface tension in dynes/cm of Combination III (501 bar soap and sodium lauryl sulphate) versus concentration	••	109
10a	Relative surface tension of Combination IV (501 bar soap and Lissapol N) versus concentrati	on.	111

Fraph		Page
10b	Surface tension in dynes/cm of Combination IV (501 bar soap and Lissapol N) versus concentration	111
11	Percentage wettability of Combination I (501 bar soap and Teepol) versus concentration	115
12	Percentage wettability of Combination II (sodium oleate and Teepol) versus concentration	115
13	Percentage wettability of Combination III (501 bar soap and sodium lauryl sulphate) versus concentration	117
14	Percentage wettability of Combination IV (501 bar soap and Lissapol N) versus concentration	117
15	Rate of wetting of Combination I (501 bar soap and Teepol) versus concentration	120
16	Rate of wetting of Combination II (sodium oleate and Teepol) versus concentration	120
17	Rate of wetting of Combination III (501 bar soap and sodium lauryl sulphate) versus concentration.	122
18	Rate of wetting of combination IV (501 bar soap and Lissapol N) versus concentration	122
19	Emulsifying ability of Combination I (501 bar soap and Teepol) versus concentration	126
20	Emulsifying ability of Combination II (sodium oleate and Teepol) versus concentration	126
21	Emulsifying ability of Combination III (501 bar soap and sodium lauryl sulphate) versus concentration	129
22	Emulsifying ability of Combination IV (501 bar soap and Lissapol N) versus concentration	129
23	Foaming power of Combination I (501 bar soap and Teepol) versus concentration	131
24	Foaming power of Combination II (sodium cleate and Teepol) versus concentration	131

Graph		Page
25	Foaming power of Combination III (501 bar soap and sodium lauryl sulphate) versus concentration	133
26	Foaming power of Combination IV (501 bar soap and Lissapol N) versus concentration	133
27a	Stability of foam of Combination I (501 bar soap and Teepol) at 1.25 g/l concentration	134
27 b	Stability of foam of Combination I (501 bar soap and Teepol) at 2.5 g/l concentration	134
27c	Stability of foam of Combination I (501 bar soap and Teepol) at 5.0 g/l concentration	135
28a	Stability of foam of Combination II (sodium cleate and Teepol) at 1.25 g/l concentration	136
28b	Stability of foam of Combination II (sodium oleate and Teepol) at 2.5 g/l concentration	136
28c	Stability of foam of Combination II (sodium cleate and Teepol) at 5.0 g/l concentration	137
29a	Stability of foam of Combination III (501 bar soap and sodium lauryl sulphate) at 1.25 g/l concentration	138
29b	Stability of foam of Combination III (501 bar soap and sodium lauryl sulphate) at 2.5 g/l concentration	138
29c	Stability of foam of Combination III (501 bar soap and sodium lauryl sulphate) at 5.0 g/l concentration	139
30a	Stability of foam of Combination IV (501 bar soap and Lissapol N) at 1.25 g/l concentration	140
30 b	Stability of foam of Combination IV (501 bar soap and Lissapol N) at 2.5 g/l concentration	140
30c	Stability of foam of Combination IV (501 bar soap and Lissapol N) at 5.0 g/l concentration	141

Graph		Page
31	Relation between % solvent soil removed and concentration with soaps and synthetic detergents (cotton fabric)	148
32	Relation between % solvent soil removed and concentration with soaps and synthetic detergents (polyester/cotton blend)	151
33	Relation between % solvent soil removed and concentration with soaps and synthetic detergents (polyester fabric)	153
34	Relation between % solvent soil removed and concentration with commercial 501 bar soap (cotton fabric)	156
35	Relation between % solvent soil removed and concentration with commercial 501 bar soap (polyester/cotton blend fabric	156
36	Relation between % solvent soil removed and concentration with commercial 501 bar soap (polyester fabric)	157
37	Relation between % emulsion soil removed and concentration with soaps and synthetic detergents (cotton fabric)	· 161
38	Relation between % emulsion soil removed and concentration with soaps and synthetic detergents (polyester/cotton blend)	161
39	Relation between % emulsion soil removed and concentration with soaps and synthetic detergents (polyester fabric)	162
40	Comparison between % soil removed from solvent and emulsion soiled samples with soaps and synthetic detergents at 5.0 g/l concentration (cotton fabric)	163
41	Comparison between % soil removed from solvent and emulsion soiled samples with soaps and synthetic detergents at 5.0 g/l concentration (polyester/cotton blend fabric)	163

Graph	•	Page
42	Comparison between % soil removed from solvent and emulsion soiled samples with soaps and synthetic detergents at 5.0 g/l concentration (polyester fabric)	163
43	Relation between % solvent soil removed and concentration with Combination I (501 bar soap and Teepol) (cotton fabric)	166
44	Relation between % solvent soil removed and concentration with Combination II (sodium cleate and Teepol)(cotton fabric)	166
45	Relation between % solvent soil removed and concentration with Combination III (501 bar soap and sodium lauryl sulphate) (cotton fabric)	168
46	Relation between % solvent soil removed and concentration with Combination IV (501 bar soap and Lissapol N) (cotton fabric)	168
47	Relation between % solvent soil removed and concentration with Combination I (501 bar soap and Teepol) (polyester/cotton blend fabric)	170
48	Relation between % solvent soil removed and concentration with Combination II (sodium cleate and Teepol) (Polyester/cotton blend fabric)	172
49	Relation between % solvent soil removed and concentration with Combination III (501 bar soap and sodium lauryl sulphate) (polyester/cotton blend fabric)	174
50	Relation between % solvent soil removed and concentration with Combination IV (501 bar soap and Lissapol N) (polyester/cotton blend fabric)	174
51	Relation between % solvent soil removed and concentration with Combination I (501 bar soap and Teepol) (polyester fabric)	177
52	Relation between % solvent soil removed and concentration with Combination II (sodium oleate and Teepol) (polyester fabric)	177

Graph			Page
53	Relation between % solvent soil removed and concentration with Combination III (501 bar soap and sodium lauryl sulphate) (polyester fabric)	••	179
54	Relation between % solvent soil removed and concentration with Combination IV (501 bar soap and Lissapol N) (polyester fabric)	••	179
55	Relation between % emulsion soil removed and concentration with the optimum combinations (cotton fabric)	••	182
5 6 ·	Relation between % emulsion soil removed and concentration with the optimum combinations (polyester/cotton blend fabric)	••	182
57	Relation between % emulsion soil removed and concentration with the optimum combinations (polyester fabric)	••	183
58	Comparison between % soil removed from solvent and emulsion soiled samples with the optimum combination at 5.0 g/l concentration (cotton fabric)	••	184
59	Comparison between % soil removed from solvent and emulsion soiled samples with the optimum combinations at 5.0 g/l concentration (polyester/cotton blend fabric)	••	184
60	Comparison between % soil removed from solvent and emulsion soiled samples with the optimum combinations at 5.0 g/l concentration (polyester fabric)	••	184
61	Relationship between % soil removed and reduction in surface tension (cotton fabric)	••	187
62	Relationship between % soil removed and reduction in surface tension (polyester/cotton blend fabric)	••	187
63	Relationship between % soil removed and		188

F1

Graph		Page
64	Relationship between % soil removed and % wettability (cotton fabric)	189
65	Relationship between % soil removed and % wettability (polyester/cotton blend fabric)	189
66	Relationship between % soil removed and % wettability (polyester fabric)	190
67	Relationship between % soil removed and rate of wetting (cotton fabric)	191
68	Relationship between % soil removed and rate of wetting (polyester/cotton blend fabric)	191
69	Relationship between % soil removed and rate of wetting (polyester fabric)	192
70	Relationship between % soil removed and emulsifying ability (cotton fabric)	193
71	Relationship between % soil removed and emulsifying ability (polyester/cotton blend fabric)	193
72	Relationship between % soil removed and emulsifying ability (polyester fabric)	194
73	Relationship between % soil removed and foaming power (cotton fabric)	195
74	Relationship between % soil removed and foaming power (polyester/cotton blend fabric)	195
75	Relationship between % soil removed and foaming power (polyester fabric)	196
76	Comparison between % soil removed with soaps and synthetic detergents from the three test fabrics using the small washing machine	202
77	Comparison between % soil removed with soaps and synthetic detergents using a Launder-Ometer and the small washing machine from cotton fabric	203

Graph				Page
78	Comparison between % synthetic detergents the small washing machine fabric .	using a Lau hine from p	nder-Ometer and	l
79	Comparison between % synthetic detergents the small washing mac	using a Lau	nder-Ometer and	