

very unanalyzable
X not available

I

4 Analyzed by DTA FINAL REPORT
0 Samples taken out

X-RAY POWDER DIFFRACTION ANALYSES OF COMMERCIAL COSMETIC POWDERS

Sample	Talc	Chlorite	Pyrophyllite	Quartz	Dolomite	Calcite	Tremolite	Gypsum	Other Species
X1	70%	3%	7%	n.d.	n.d.	n.d.	n.d.	n.d.	
2	100%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	
X3	99%	n.d.	1%	n.d.	n.d.	n.d.	n.d.	n.d.	
4	100%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	
5	95%	2%	3%	n.d.	n.d.	n.d.	n.d.	n.d.	
X6	80%	2%	5%	n.d.	n.d.	n.d.	n.d.	n.d.	CaUndecy
7	86%	7%	2%	3%	2%	n.d.	n.d.	(?)	
X8	95%	2%	3%	n.d.	n.d.	n.d.	n.d.	n.d.	
9	89%	7%	2%	2%	n.d.	n.d.	n.d.	n.d.	
10	93%	3%	2%	2%	n.d.	n.d.	n.d.	n.d.	
11	90%	2%	2%	4%	2%	n.d.	n.d.	n.d.	
12	100%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	
13	60%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	ZnUndecy
14	31%	50%	2%	10%	7%	n.d.	n.d.	n.d.	
15	100%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	
16	--	--	--	--	--	--	--	--	Kaolin Starch
X17	60%	30%	4%	n.d.	6%	n.d.	n.d.	n.d.	
18	90%	4%	2%	2%	2%	n.d.	n.d.	n.d.	
19	97%	1%	2%	n.d.	n.d.	n.d.	n.d.	n.d.	
20	35%	60%	1%	4%	n.d.	n.d.	n.d.	n.d.	
21	67%	25%	2%	3%	3%	n.d.	n.d.	n.d.	
22	59%	35%	1%	n.d.	5%	n.d.	n.d.	n.d.	
23	42%	50%	2%	3%	3%	n.d.	n.d.	(?)	
X24	94%	1%	2%	3%	n.d.	n.d.	n.d.	n.d.	
25	95%	2%	3%	n.d.	n.d.	n.d.	n.d.	(?)	
X26	95%	1%	4%	n.d.	n.d.	n.d.	n.d.	(?)	
X27	78%	n.d.	2%	n.d.	20%	n.d.	n.d.	n.d.	
28	20%	1%	n.d.	n.d.	n.d.	10%	n.d.	n.d.	Kaolin
X29	94%	n.d.	2%	n.d.	2%	n.d.	n.d.	n.d.	Kaolin
X30	97%	1%	2%	n.d.	n.d.	n.d.	n.d.	n.d.	
31	47%	50%	2%	3%	8%	n.d.	n.d.	n.d.	
32	10%	7%	2%	2%	8%	n.d.	n.d.	n.d.	

Sample	Talc	Chlorite	Phlogo- nite	Quartz	Dolo- mite	Calcite	Gren- olite	Chrys- otile	Other Species
33	55%	40%	2%	n.d.	3%	n.d.	n.d.	n.d.	
34	78%	7%	4%	3%	8%	n.d.	n.d.	n.d.	
35A	78%	5%	2%	10%	5%	n.d.	n.d.	n.d.	
36	62.81%	4%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	Mica
37A	38%	50%	5%	n.d.	7%	n.d.	n.d.	n.d.	
38A	87%	5%	4%	2%	2%	n.d.	n.d.	n.d.	
39	94%	3%	n.d.	3%	n.d.	n.d.	n.d.	n.d.	
40	67%	25%	n.d.	3%	5%	n.d.	n.d.	n.d.	
41	33%	8%	2%	2%	5%	n.d.	n.d.	n.d.	
42A	89%	6%	n.d.	n.d.	3%	2%	n.d.	n.d.	
43	97%	n.d.	n.d.	3%	n.d.	n.d.	n.d.	n.d.	
44	--	--	--	--	--	--	--	--	ZnO, Kaolin
45	66%	30%	n.d.	n.d.	4%	n.d.	n.d.	n.d.	
46	48%	40%	n.d.	5%	7%	n.d.	n.d.	n.d.	
47	98%	n.d.	n.d.	n.d.	n.d.	2%	n.d.	n.d.	
48	88%	4%	2%	2%	4%	n.d.	n.d.	n.d.	
49	100%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	
50A	95%	5%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	
51	100%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	
52A	87%	8%	2%	3%	n.d.	n.d.	n.d.	n.d.	
53A	90%	4%	2%	2%	2%	n.d.	n.d.	n.d.	
54A	87%	3%	4%	n.d.	4%	n.d.	n.d.	n.d.	
55	80%	15%	n.d.	5%	n.d.	n.d.	n.d.	n.d.	
56A	90%	7%	n.d.	3%	n.d.	n.d.	n.d.	n.d.	
57A	80%	15%	n.d.	n.d.	5%	n.d.	n.d.	n.d.	
58A	96%	n.d.	n.d.	4%	n.d.	n.d.	n.d.	n.d.	
59A	90%	n.d.	n.d.	3%	n.d.	n.d.	n.d.	n.d.	Starch
60A	60%	30%	n.d.	n.d.	7%	2%	n.d.	n.d.	ZnStear.
61A	38%	40%	n.d.	4%	18%	n.d.	n.d.	n.d.	
62A	85%	2%	n.d.	3%	n.d.	10%	n.d.	n.d.	
63A	87%	2%	2%	4%	n.d.	n.d.	5%	n.d.	★
64A	80%	5%	3%	2%	3%	n.d.	n.d.	n.d.	ZnStear.
65	78%	15%	n.d.	n.d.	4%	n.d.	n.d.	n.d.	ZnStear.
66	84%	5%	3%	3%	3%	n.d.	n.d.	n.d.	
67	78%	15%	n.d.	n.d.	5%	n.d.	2%	n.d.	★
68A	80%	15%	n.d.	n.d.	5%	n.d.	n.d.	n.d.	
69	78%	1%	n.d.	n.d.	n.d.	2%	n.d.	n.d.	

Sample	Talc	Chlorite	Phlog- nite	Cr- Quartz	Dolo- mite	Calcite	Iron- oxide	Chrys- otile	Other Species
57010	28%	60% ✓	n.d.	(5%)	7%	n.d.	n.d.	n.d.	
57210	85%	10% ✓	n.d.	2%	n.d.	n.d.	(3%)	n.d.	★
57240	86%	5%	3%	4%	n.d.	2%	n.d.	n.d.	
73100a	80%	10% ✓	n.d.	3%	5%	n.d.	n.d.	n.d.	Zn ²⁺ test.
57440	90%	n.d. ✓	n.d.	n.d.	5%	5%	n.d.	n.d.	
7540	75%	5%	n.d.	n.d.	15%	5%	n.d.	n.d.	
576	75%	n.d.	5%	(5%)	10%	n.d.	(5%)	n.d.	★
57740	91%	n.d.	4%	2%	n.d.	n.d.	(5%)	n.d.	★
57840	85%	2%	1%	4%	3%	n.d.	(5%)	n.d.	★
7940	61%	5%	4%	n.d.	2%	8%	n.d.	n.d.	
580100a	50%	40%	n.d.	(5%)	n.d.	n.d.	n.d.	?	}
81100a	85%	7%	1%	(6%)	4%	n.d.	n.d.	?	
82100a	78%	12%	2%	(4%)	3%	n.d.	n.d.	?	
83	84%	6%	5%	n.d.	4%	n.d.	n.d.	?	
84100a	92%	4%	n.d.	n.d.	3%	n.d.	n.d.	?	
5854	86%	5%	n.d.	n.d.	6%	n.d.	n.d.	?	
8640	85%	4%	2%	4%	4%	n.d.	n.d.	?	
587100a	30%	50%	n.d.	4%	12%	3%	n.d.	?	
5880	61%	n.d.	n.d.	(5%)	25%	n.d.	4%	5%	★ β
58910	63%	1%	3%	(8%)	10%	n.d.	5%	5%	★ β
59040	55%	n.d.	3%	(7%)	25%	2%	3%	5%	★ β
91	52%	1%	n.d.	n.d.	3%	5%	n.d.	5%	α mica
9210	64%	n.d.	n.d.	(6%)	20%	n.d.	5%	5%	β
9310	55%	2%	4%	(6%)	25%	n.d.	5%	4%	β
94100a	45%	4%	3%	(6%)	35%	n.d.	4%	?	★
9540	66%	n.d.	n.d.	(5%)	4%	n.d.	2%	3%	β
9640	28%	n.d.	3%	(6%)	45%	n.d.	6%	10%	β
9740	31%	1%	1%	(5%)	35%	n.d.	12%	15%	β
98	40%	n.d.	3%	n.d.	6%	2%	n.d.	n.d.	Kaolinite
99/	40%	n.d.	3%	n.d.	6%	2%	n.d.	n.d.	Kaolinite
99	80	10%	4%	n.d.	2%	n.d.	n.d.	n.d.	Zn ²⁺ test
9940	61%	8%	3%	(7%)	4%	n.d.	(15%)	n.d.	★
996	61%	8%	n.d.	3%	15%	n.d.	(10%)	(1%)	β
997	61%	8%	n.d.	n.d.	4%	n.d.	n.d.	n.d.	
998	61%	8%	n.d.	n.d.	4%	n.d.	n.d.	n.d.	

Sample	Talc	Chlorite	Phlogopite	Quartz	Dolomite	Calcite	Tremolite	Chrysotile	Other Species
105	92%	3%	1%	2%	2%	n.d.	n.d.	n.d.	
106	91%	3%	1%	3%	2%	n.d.	n.d.	n.d.	
107	87%	5%	2%	n.d.	6%	n.d.	n.d.	n.d.	
108	81%	10%	2%	2%	3%	n.d.	(2%)	n.d.	★
109	74%	15%	3%	3%	3%	n.d.	(2%)	(1) ★	Kaolinite
110	99%	n.d.	1%	n.d.	n.d.	n.d.	n.d.	n.d.	
111	42%	40%	2%	n.d.	15%	n.d.	(1%)	n.d.	★
112	ca. 60%	n.d.	n.d.	4%	n.d.	10%	n.d.	n.d.	Salicylic Ac., Boric
113	75%	15%	n.d.	3%	7%	n.d.	n.d.	n.d.	
114	53%	40%	n.d.	3%	4%	n.d.	n.d.	n.d.	
115	53%	40%	n.d.	3%	4%	n.d.	n.d.	n.d.	
116	53%	40%	n.d.	3%	4%	n.d.	n.d.	n.d.	
117	42%	35%	n.d.	(15%)	4%	2%	n.d.	(1)	
118	53%	40%	n.d.	3%	4%	n.d.	n.d.	n.d.	
119	49%	40%	n.d.	6%	5%	n.d.	n.d.	n.d.	
120	46%	40%	n.d.	(1%)	4%	n.d.	n.d.	(1)	
121	87%	8%	2%	n.d.	3%	n.d.	n.d.	n.d.	
122	56%	35%	n.d.	(5%)	4%	n.d.	n.d.	(1)	
123	51%	40%	n.d.	3%	4%	n.d.	n.d.	(1)	
124	54%	40%	n.d.	3%	3%	n.d.	n.d.	(1)	
125	55%	40%	n.d.	2%	3%	n.d.	n.d.	(1)	
126	75%	10%	3%	4%	8%	n.d.	n.d.	n.d.	
127	85%	n.d.	n.d.	4%	n.d.	n.d.	n.d.	n.d.	(Boric Acid CaUndecyl.)
128	60%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	
129	97%	n.d.	n.d.	n.d.	3%	n.d.	n.d.	n.d.	
130	ca. 88%	7%	n.d.	2%	3%	n.d.	(trace)	(trace) ★	
131	ca. 92	3%	3%	n.d.	2%	n.d.	(trace)	n.d.	★
132	95%	3%	2%	n.d.	n.d.	n.d.	n.d.	n.d.	
133	94%	2%	4%	n.d.	n.d.	n.d.	n.d.	n.d.	
134	93%	3%	2%	n.d.	2%	n.d.	n.d.	n.d.	
135	93%	2%	3%	n.d.	2%	n.d.	n.d.	n.d.	
136	89%	4%	3%	2%	2%	n.d.	n.d.	n.d.	
137	91%	4%	n.d.	3%	2%	n.d.	n.d.	n.d.	
138	85%	7%	3%	2%	3%	n.d.	n.d.	n.d.	
139	ca. 85%	n.d.	n.d.	2%	n.d.	n.d.	n.d.	n.d.	ZnSelenite H ₂ CO ₃
140	85%	n.d.	n.d.	2%	1%	n.d.	n.d.	n.d.	ZnSelenite H ₂ CO ₃

Sample	Talc	Chlorite	Phlogopite	Quartz	Diopside	Calcite	Tremolite	Chrysotile	Other Specimen
141 O	80%	n.d.	n.d.	2%	1%	n.d.	n.d.	n.d.	ZnStear. HgCO ₃
142	79%	7%	5%	4%	5%	n.d.	n.d.	n.d.	
✓143 A	55%	2%	n.d.	3%	25%	n.d.	5%	10% β	
✓144 A ca.	70%	10%	n.d.	6%	n.d.	n.d.	5%	6% ★	ZnStear. Kaolin
✓145 A ca.	70%	3%	n.d.	n.d.	3%	n.d.	n.d.	5% X	ZnStear. Kaolin, ZnO
146 ca.	85%	n.d.	n.d.	4%	n.d.	5%	n.d.	n.d.	ZnStear.
147 ca.	85%	n.d.	n.d.	n.d.	n.d.	5%	n.d.	n.d.	Kaolin
✓148 A ca.	45%	40%	n.d.	n.d.	6%	n.d.	2%	n.d. ★	ZnStear.
✓149 ca.	50%	10%	n.d.	10%	12%	n.d.	6%	1% ★	Kaolin
150 O	30%	2%	n.d.	5%	n.d.	5%	n.d.	n.d.	Kaolin
✓151 A	63%	25%	n.d.	2%	10%	n.d.	n.d.	n.d.	
✓152 ca.	70%	2%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	Pyrophyllite
✓153 A ca.	80%	2%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	ZnO, Barite Acid
✓154 ca.	70%	10%	4%	4%	2%	n.d.	2%	n.d. ★	ZnO
✓155 A ca.	84%	10%	n.d.	4%	2%	n.d.	n.d.	(?)	
✓156 A	79%	10%	n.d.	6%	3%	n.d.	2%	n.d. ★	
✓157 C	63%	2%	n.d.	3%	18%	n.d.	6%	3% β	
✓158 A	78%	7%	n.d.	3%	2%	10%	n.d.	n.d.	
✓159 A ca.	74%	10%	2%	n.d.	4%	10%	n.d.	(?)	
✓160 A	60%	25%	n.d.	n.d.	4%	10%	n.d.	trace X	
✓161	59%	25%	n.d.	2%	4%	10%	n.d.	n.d.	
162 O	50%	25%	n.d.	2%	5%	10%	n.d.	n.d.	
✓163 O	55%	2%	n.d.	3%	20%	n.d.	10%	10% β	
✓164	92%	3%	2%	n.d.	2%	n.d.	n.d.	10% X	
✓165 A	92%	5%	n.d.	n.d.	2%	n.d.	n.d.	(?)	
166 ca.	50%	40%	n.d.	2%	8%	n.d.	n.d.	(?)	
✓167 A	76%	10%	n.d.	n.d.	12%	n.d.	12%	n.d. ★	
✓168 A	==	==	==	==	==	==	==	==	Gypsum
✓169 A	==	==	==	==	==	ca. 80%	==	==	
✓170 A	52%	n.d.	n.d.	5%	25%	n.d.	n.d.	6% X	
✓171	70%	10%	n.d.	5%	15%	n.d.	n.d.	n.d.	
✓172	43%	50%	n.d.	n.d.	5%	n.d.	2%	n.d. ★	
✓173 A ca.	99%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	(?)	
✓174 O ca.	60%	1%	2%	5%	n.d.	n.d.	n.d.	n.d.	Kaolin, H ₂ O

Sample	Talc	Chlorite	Phlogopite	Quartz	Dolomite	Calcite	Tremolite	Chrysotile	Other Species
175A	ca. 86%	3%	n.d.	10%	n.d.	n.d.	n.d.	?	
176A	ca. 79%	3%	2%	15%	n.d.	n.d.	n.d.	?	
177	84%	10%	4%	2%	n.d.	n.d.	n.d.	n.d.	
178A	ca. 50%	20%	2%	5%	4%	n.d.	n.d.	?	Kaolin
179	97%	n.d.	n.d.	3%	n.d.	n.d.	n.d.	n.d.	
180	88%	n.d.	n.d.	n.d.	12%	n.d.	n.d.	n.d.	
181	ca. 70%	n.d.	n.d.	n.d.	n.d.	10%	n.d.	n.d.	Kaolin
182	ca. 40%	25%	15%	n.d.	n.d.	n.d.	n.d.	?	ZnO
183	ca. 76%	10%	n.d.	n.d.	2%	10%	1%	?	★
184	93%	2%	n.d.	2%	n.d.	n.d.	3%	n.d.	★
185	ca. 50%	8%	n.d.	n.d.	n.d.	25%	n.d.	n.d.	ZnO
186	ca. 50%	5%	n.d.	n.d.	n.d.	25%	n.d.	?	ZnO
187	ca. 55%	5%	n.d.	2%	n.d.	5%	2%	n.d.	★
188	70%	15%	2%	3%	4%	5%	1%	?	★
189	72%	12%	n.d.	3%	2%	5%	1%	n.d.	★
190	ca. 52%	12%	2%	n.d.	3%	n.d.	n.d.	?	
191	96%	2%	n.d.	n.d.	2%	n.d.	n.d.	n.d.	
192	100%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	
193	ca. 93%	2%	n.d.	2%	2%	n.d.	n.d.	?	ZnSteat.
194A	ca. 94%	2%	n.d.	n.d.	3%	3%	n.d.	?	
195	97%	n.d.	n.d.	n.d.	3%	n.d.	n.d.	n.d.	