

cc: S. R. Miller

Wilmington, Delaware
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T. NOONE
F&F
SOUTHFIELD

GMA-TARRYTOWN SALES - CHROMIUM CONTENT

Attached is a list of all formulas examined for chromium content.

I. The following products contain chromium as lead chromate:

<u>Formula</u>	<u>Wt. % Cr on Solids</u>	<u>Wt. % Cr on Total</u>
199-082	4.70	2.72
199-EM332	2.62	1.42
199-EN082	0.31	0.14
199-75306	4.50	2.48
199-77161	1.29	0.63
199-99516	1.45	0.79
766-082	4.18	2.38
766-357	0.91	0.46
766-1021	5.21	3.13
766-1379	5.72	3.51
766-1442	3.00	1.67
766-1650	1.07	0.56
766-2015	1.18	0.61
766-2826	0.88	0.44
766-3421	5.70	3.43
766-99749	0.51	0.28
796-99712	0.01	0.01
16-1686	12.56	8.73
16-1687	13.01	9.27
766-5146	4.15	2.52
766-5887	3.63	2.13
766-6202	3.88	2.21
766-6282	5.10	2.95
766-6578	4.28	2.40
766-6808	5.75	3.47

N38466

<u>Formula</u>	<u>Wt. % Cr on Solids</u>	<u>Wt. % Cr on Total</u>
766-6969	6.11	3.60
766-BL888	5.73	3.37
766-BL962	5.28	3.10
766-BM036	3.09	1.77
766-BM077	0.69	0.34
766-BM273	6.33	3.73
766-BM315	3.41	1.78
766-BM332	1.98	1.14
766-29429	4.01	2.41
766-34740	0.16	0.08
766-55338	1.72	0.92
766-63809	0.90	0.45
766-72001	0.82	0.42
766-72213	0.95	0.49
766-74713	1.00	0.53
766-75128	5.59	3.36
766-75195	3.07	1.69
766-75306	4.38	2.50
766-BM475	7.25	4.59
766-BM833	1.96	1.03
766-BM927	2.18	1.13
766-BM958	2.31	1.32
766-BN082	0.24	0.12
766-BN284	0.29	0.16
766-23047	1.86	1.10
766-24441	5.31	3.19
766-24534	3.16	1.94
766-24592	3.69	2.03
766-28731	6.31	3.69
766-29056	0.21	0.12
766-76691	2.07	1.27
766-77161	0.60	0.29
766-77732	0.82	0.48
766-84155	0.93	0.46
766-91284	0.89	0.44
766-93306	6.85	4.21
766-94254	1.03	0.57
766-95826	6.77	4.19
766-95832	2.11	1.30
766-95840	4.80	2.70
766-95846	6.32	3.89
766-95852	1.92	1.17
766-99616	1.51	0.84
780-29056	0.14	0.07
926-91800	4.80	2.03
926-93253	3.22	1.29
926-93268	1.05	0.41
926-93284	2.31	0.94
926-93306	5.19	2.17
926-93449	7.33	3.19
926-93462	5.00	2.10
926-95907	6.11	2.63
926-99331	0.17	0.06

<u>Formula</u>	<u>Wt. % Cr on Solids</u>	<u>Wt. % Cr on Total</u>
926-99568	1.10	0.46
926-99730	0.79	0.29
926-93553	1.84	0.65
926-66496	1.55	0.64
926-94842	1.84	0.76
926-95832	2.44	1.12
926-91235	0.28	0.12
926-95840	6.61	2.95
766-71890	5.48	3.35
766-96532	1.59	0.98
766-AL361	3.63	1.89
766-5607	3.45	1.91
766-5452	5.21	3.07
766-5378	2.39	1.15
766-24567	6.23	3.66

II. The following products contain chromium as zinc chromate:

64-1948	0.59	0.33
764-1712	1.00	0.54
764-1751	0.49	0.33
196-55455	0.49	0.33
63-2029	2.81	1.69
63-2023	6.04	3.05
63-2022	6.00	3.03
63-1853	6.84	3.51

III. The following formulas were not checked because the formula or some intermediate was obsolete and could not be located. Most of these are probably one-run batches.

926-AF079	926-99074
926-AL113	927-99206
926-AL310	927-99339
926-24118	927-99480W
926-29198	864-94446
926-51592	796-99775
926-54030	799-99660
926-84155	VZ-4055
926-93758	16-0630
926-94839	167-42819
926-94857	766-AF079
926-95846	766-AL716
926-96416	766-29818
926-96732	766-78400
926-97054	767-99399

Since GM is concerned about the amount of chromium which actually gets into the waste water, the following facts may be pertinent. Lead chromate is very insoluble in neutral water. At equilibrium the amount of dissolved lead chromate at 25°C is about 0.5 ppm. It is insoluble in dilute acetic acid (moderate acidity), but soluble in dilute inorganic acid (nitric acid) or base (sodium hydroxide). Therefore, the amount of chromium derived from lead chromate would be a function of the pH of the settling pond.

Zinc chromate is considered slightly soluble in water, and soluble in dilute acid (including acetic acid) and base. Again, the amount of chromium derived from zinc chromate would be a function of the pH.

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