cc: Dr. J. V. Hunn, Cleveland

Chicago

Auxiliaries Research

Cleveland

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S. B. Coolidge, Jr.

- Lithopone -
Super Kem-Tone Formulation

June 10

As per your request, we have made a rather thorough study of the effect on cost of further increasing the lithopone content in Super Kem-Tone for the new price of lithopone. All calculations are based on the estimating costs used by SW to calculate formula costs. For lithopone, the cost becomes $7.80/100#, based on the market price of lithopone of $7.50.

In increasing lithopone in the formula, titanium is removed and the adjustment of pigment formula is made by changing the inert, usually clay, but some formulas require changes in the Lorite content, also.

Since, in all cases, the binder cost is the same for the two respective formulas, calculations are based on the pigment only. The pigment cost, together with the lithopone content of the 17 Super Kem-Tone formulations are listed below in tabular form for both regular formula and the titanium-dioxide conservation formula.

You will note that the average increase in cost of the 17 formulas when increasing the lithopone content from the regular formulas to the conservation formula, amounts to $2.066/100 gallons. This means that the average increase in cost per gallon per lb. of lithopone added, will amount to 2.066 cents. Since the present regular formula contains an average of 0.815 lbs. of lithopone per gallon, on the same basis, then, the cost of the regular formula containing lithopone will be 1.68¼ cents per gallon more than the corresponding formula containing no lithopone. The total increase in cost, therefore, of the titanium conservation formula over the formula containing no lithopone would, on this basis, be 3.750 cents per gallon.

If we made calculations on the basis of market prices, about the same differences would result as when using the estimating costs, since each one is increased the same, for handling charges, etc.

To get an actual cost of what effect increasing the lithopone content would have on a yearly basis, we would need to know the number of gallons of each formula produced. However, since most of the formulas average out pretty close to 2.066, it is easy to see that on a yearly basis, the cost of increasing the lithopone on the average of 1 lb./gallon over that used at the present time, would increase the cost of Super Kem-Tone, on the basis of 1 million gallons per month, of $247,920.00, which is rather close to the figures given by Dr. Van Stone based on 4-5 formulas. If we make this calculation compared to the formula containing no lithopone, the increase in cost on the same basis, would be $450,000.00 per year.

I have discussed with Mr. Kehr the effect on the quality of the paint by increasing the lithopone content from that used in the regular formula to that used in a conservation formula, and he is of the opinion that they would gain nothing by doing this and would sacrifice some hiding.

Incidentally, our work that we have done to promote the use of lithopone in latex formulas, likewise shows that we gain nothing particular by increasing the lithopone content to a high figure, but do increase the cost appreciably. This is the reason why we set 75# of lithopone as a good starting point for a basic white formula, with the lithopone to be increased for the light tints and dark shades.

I personally believe that we can show some advantage in using lithopone, and that when used in limited amounts can be justified in the formula; and that the properties gained will be worth the slight increased cost in using 3/4 to 1 lb. per gallon.

As you can see from the table below, the present Super Kem-Tone Shasta White formula contains 1/2# of lithopone/gal., with all the formulas averaging out to .815# per gallon. You will note, also, that to equalize the cost of the conservation formula with the regular formula, it would be necessary to put the lithopone in the formula at 7.60 minus 2.066, or 5.73¼ cents per lb.

	PIGMENT COST SUPER KEM-TONE/100 GAL.				
	Titanium Conservation Formula		Regular Formula		
	# Lithopone	Pig't. Cost	# Lithopone	Pig't. Cost	Difference
Shasta White	150	66.45	50	64.41	2.04
Princess Ivory	150	62.35	75	60.77	1.58
Sunbeam Yellow	135	68.78	60	67.17	1.61
Camellia Pink	200	58.70	100	56.66	2.04
Glenwood Gray	200	50.30	100	48.23	2.07
Ripple Green	200	59.22	100	57.18	2.04
Skyline Blue	200	56.63	100	54.59	2.04
Meledie Green	200	56.83	100	54.76	2.07
Wedgewood Blue	200	57.15	100	54.97	2.18
Monterey Red	200	92.55	100	90.47	2.08
Colony Blue	200	51.44	100	49.28	2.16

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	PIGMENT COST SUPER KEM-TONE/100 GAL.				
	Titanium Conservation Formula		Regular Formula		
	# Lithopone	Pig't. Cost	# Lithopone	Pig't. Cost	Difference
Pinehurst Green	200	55.56	100	53.51	2.05
Spanish Brown	75	33.97	None	32.50	1.47
Chartreuse	175	54.79	100	53.17	1.62
Bermuda Turquoise	200	56.58	50	53.90	2.68
Sunset Rose	200	53.29	50	50.09	3.20
Parklane Green	200	60.18	100	57.99	2.19
Average # Lithopone/Gal.	1.815		0.815		

Average Difference in Cost of the 17 Formulas $2.066

Average Difference in Lbs. Lithopone 100

Average Increase in Cost per Gallon per Pound of Lithopone Added 2.066 cents

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