Dr. H. J. Kiefer

PRODUCT DEVELOPMENT REPORT

COATINGS AND RESINS GROUP LABORATORIES

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TRADE SALES

RESEARCH CENTER

House Paint History Leaded Zinc Oxide vs. Zinc Oxide

For a good many years, Y-1800 Endurance House Paint has contained cofumed leaded zinc oxide. Our exposures have always given the edge on durability to cofumed leaded zinc oxide over the blending of lead sulfate with zinc oxide. The cofumed leaded zinc is also a slightly yellower pigment and has a lower oil demand.

In 1956 the Y-1804 Endurance Tint Base was changed from leaded zinc to straight zinc oxide. We obtained less chalking and better color retention. Cracking and durability have been equal. The leaded zinc tint base gives quick fading due to the lead sulfate chalk masking. This was more noticeable in the deeper tints. However, a leaded zinc tint base would show less dirt retention and cleaner tints on prolonged exposure over the straight zinc oxide type tint bases.

There has been a definite trend toward lead-free type chalking paints in the industry as well as our own company. Y-1850 has grown in popularity, particularly in the South. The main advantages for a lead-free or titanium-zinc oxide paint are as follows:

1. Whiter paints
2. Lower cost, allowing higher levels of TiO_2 and thereby producing higher hiding paints
3. Fume resistant
4. Greater stability - more freedom from gelling
5. Non-toxic

Recently Y-1800-C has been issued as a titanium-zinc oxide, lead-free paint. Our history and background has been with the Y-1850 formula. Our exposure results have shown us that we can equal the durability and crack resistance of a leaded paint with a straight zinc oxide type formula by using higher levels of rutile titanium, higher ratios of bodied linseed oil, and through careful selection of inerts. We have also learned that in straight zinc oxide formulas, cracking can result when you use more than three pounds of zine oxide per gallon.

Therefore, Y-1800-C has been formulated with 2.6 lbs. zinc oxide per gallon and with 31% of the linseed oil as Z_2 bodied oil instead of the previous level of 25% bodied oil. The extender used is W-188 which disperses easily yet is not too fine so as to cause cracking.

It is our hope that, with the added quality features, the new Y-1800-C will show an excellent growth rate in sales volume.

J. E. SOUTHWICK