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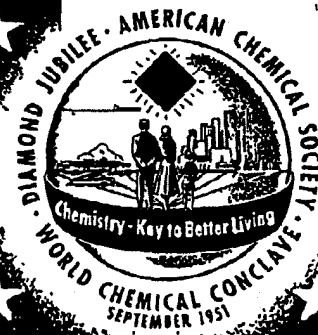
75 Years

Chemists . . . those resourceful people who perform near-miracles in transforming raw materials into the things we wear, purifying the water we drink, improving the food we eat, the houses we live in, bettering the health of the people we span . . . lengthening the life we span . . . this momentous milestone this month the American Chemical Society will mark its Diamond Jubilee. A huge conclave of chemists from all over the world is to be held in New York City from September 10 through September 13th.

Known as the World Chemical Congress, the New York City event will bring together the most prominent contemporary names in chemistry. Some 13,000 chemists are expected to attend, including delegations from at least thirty-two foreign countries.

To point up the magnitude of this event, the U. S. Post Office is issuing a special stamp this month to commemorate the Jubilee. We at Calco are happy to contribute to a science and an industry which

outproduces
which has
much to
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CHALKING

Anyone who has brushed against the powdery surface of the weathered paint on a house, or who has inadvertently used his clothing to wipe the surface of painted lawn furniture whose protective coating is starting to disintegrate, has developed first-hand contact with the phenomenon of chalking. Chalking is thus readily identified with the tendency of disintegrating pigmented coatings to shed portions of their pigment content in the form of a dry powder which resembles chalk, hence the name.

When pigmented protective coatings are formulated and manufactured, various types of organic binders are used to wet the pigments employed for decorative and protective purposes. After these liquid coatings are applied they convert to films having the characteristics of a solid. Such conversion takes place through chemical and/or physical changes in the binder. However, when these films are subjected to the weathering influence of temperature, solar energy and moisture, further changes take place in the binder producing deterioration or surface rupture of the film. The adhesion forces which bond the pigment to the converted liquid thus become dissipated and the pigment returns to a dry, un-wetted condition.

Chalking is a phenomenon of the outer surface of the film and proceeds in rate according to the rapidity with which the binder deteriorates. Fast breakdown of the film produces deep-

seated disruption of the film and another term, "Erosion," is applied to describe both the rate and the depth to which deterioration has developed. Polishing of the film so as to remove chalk and to reduce its thickness until a smooth, unbroken surface is obtained affords an index as to the depth to which chalking or erosion has penetrated. Thus chalking becomes associated with the film rate of wear or service life.

If the chalking film is colored, or tinted by admixture of color and white pigment, the reversion of the pigment to the dry form produces a change in color impression so that the surface appears faded, hence the term, "Fading." Thus mechanical fading of films is coincident with chalking.

Paint formulators employ the extremes of resistance to chalking breakdown in preparing coating compositions for various consumer needs. Thus white house paints are designed to be relatively free-chalking since a regulated, progressive film breakdown provides the means of keeping painted houses clean and pleasing in appearance. On the other hand the protective enamels on automobiles are planned to be as chalk-resistant as possible so as to give long service and maximum appearance when washed or polished. The pigment manufacturer, through research and application studies, constantly seeks to provide the range of pigment durability characteristics desired by the customer.



The first patent on record pertaining to the coloring of paper was issued in England in 1691. Holder was Nathaniel Gifford, who claimed it for "a new, better and cheaper way of making all sorts of blue, purple and other colored paper."



Waxes find their widest use as protective coatings for floors and automobiles. One of the main sources of wax is the carnauba palm tree which grows in Brazil. Nature applies it to the leaves of the palm to prevent the hot sun of the dry season from drawing out the moisture supply stored in the tree during the rainy season. A year's harvest from five trees usually averages one pound of wax.



Paint For Mount Vernon

When George Washington planned the exterior painting of the Mansion at Mount Vernon, he frequently ordered the paint material from England. It came, by sailing ship—direct to his Potomac wharf—in small neat kegs. Subsequently the white pigment was ground with oil and was carefully applied to the chambered wooden blocks that comprise the exterior surface. Before the final coat dried, white sand or powdered limestone was blown onto the surface to give the wood the appearance of stone, which General Washington wanted.

In researching General Washington's paint specifications for the preservation of his beloved estate, a member of the staff of the National

Paint Varnish and Lacquer Association discussed these 18th Century techniques with the Superintendent of Mount Vernon. Among the facts uncovered was that General Washington's directions to his manager in frequently stressed his desire for the adequate paint protection of all his buildings at Mount Vernon that a paint department is now set up in the storeroom, tight on the courtyard.

A sample of the kegs in which the paint was shipped from England is among the storeroom exhibits on the estate. It stands about twenty inches high and is fourteen inches in diameter at its widest point. The wooden staves are encircled, top and bottom, with seven rounds of sapling branches, the bark still on them.

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