

Proposals of Initial, Immediate Interest
Warranting Early Consideration for Laboratory Work

Research

- A-1-R. Investigate more fully the organic inhibitors, ex.g., benzoates, phosphates, nitrites. (9)
- Investigate higher boiling homologs of 2 methyl-3-butyn-2-ol and 3 methyl-1-pentyn-3-ol. (79)
- A-2-R. Pigment - polymer combinations primarily for use in electro-deposition, wherein the single charge on each particle would allow both pigment and vehicle to move at the same rate to the electrode; such combinations could be either latex-pigment or oil (or alkyd)-pigment. (17)
- For electrostatic printing, pigments which can accept the charge under the influence of light and then leak the charge off to the substrate, ex.g., TiO_2 , ZnO ; also, pigment-polymer combinations having such properties. (24)
- Make use of a modified Schiff-base chelate reaction with low molecular weight polymers, to produce both organic and inorganic pigments. (50)
- Form block polymers from polyacrylonitriles to utilize their conductivity. (54)
- A-3-R. Combine core and coating by a dry electrostatic process in which the two components combine by neutralization of their opposite electrical charges; such combinations could include different physical or chemical forms such as (1) a solid core and an organic coating or (2) a solid core (ex.g., a chromate) enveloped by a water droplet, etc. (18)
- A-4-R. Pigment-gellant combinations, ex.g., Bentonite-PEI-lead chromate. (21)
- A-5-R. Reaction products of litharge and polyols introduced into alkyds, or M50 used to replace the PbO in such a reaction. (22)

Further react the products of metal oxides with polyols via the hydroxyl(s) to form esters, etc., which may have utility as easily wetted stabilizers for PVC as well as pigments. (57)

A-6-R. Investigate utility of the earlier lead azosalicylate to reinforce clear finishes, either as the straight compound or formed on a core, as of silica. (33)

Investigate lead azosalicylate in the ADM water-soluble linseed oil vehicle. (66)

A-7-R. Prepare Oncor-type materials having a mercury compound on the surface. (34)

A-8-R. Investigate both organic and inorganic compounds which can liberate chlorine at flame temperatures. (39)

A-9-R. Make use of the hydroxyl functionality present in some of our pigments (both lead and titanium) to introduce organic structures and thereby serve as pigmented film formers with improved properties of flexibility, bonding to substrates, etc. (46)

Chlorinate TiO_2 , PbO , etc. to permit the introduction of organic moieties to obtain advantages as in No. 46. (47)

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LIST A - CONT'D.

Development

A-1-D. Prepare the family or group of "true" lead silicates, i.e., not Oncors.

(27)

A-2-D. Improve our control of particle size of our present pigments, ex.g., by classification by the Sturtevant, for use in sand mills, Cowles or other high speed mills. (28)

A-3-D. Investigate anti-corrosion properties - in water systems - of lead chlorosilicate, Plumb-O-Sil B, a "dehydrated" Plumb-O-Sil B; investigate also in electrodeposition and in solvent systems. (30)

Investigate lead ferrites in present-day latex and other new vehicles. (61)

A-4-D. Prepare a very fine particle size M50 or S25 using stoichiometric quantities of PbO, chromic acid and a source of very fine silica (Cab-O-Sil) to make the required amount of $\checkmark$ -tri-basic lead silicate, and no core. (31)
Prepare a very fine particle combination pigment of Dyphos and lead silicate, also without a core. (32)

A-5-D. Investigate the value of additions of lead sulfate in M50 in order to improve color stability, as in 45X. (35)

A-6-D. Combine both antimony and chlorine in the same pigment to make a single flame retardant pigment. (38)

Make Oncor 23A with a flux such as zinc borate, to improve wetting and flame retardance. (59)

A-7-D. Extend the "pump circuit process" to other pigments to make finer particle size products or to introduce a desirable coating on the particles. (40)
Continuous grinding of silica, closed loop of pebble mill and hydraulic

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