

LEAD INDUSTRIES ASSOCIATION

480 LEXINGTON AVENUE

NEW YORK 17, N. Y.

Pigments and Chemicals Division

SUBJECT TO REVISIONPIGMENTS AND CHEMICALS DIVISION

St. Louis, Mo.

April 25, 1956

A meeting of the Pigments and Chemicals Division of the Lead Industries Association was held on April 25, 1956 at the Hotel Statler, St. Louis, Mo., during the Annual Meeting of the Association.

MEMBERS PRESENTRepresenting

Miles M. Zoller, Chairman
C. E. Conard
Harold E. Lee
Raymond C. Roll
L. D. Turnbull
O. C. Wilson
C. R. Ince
Oscar L. Glasser
Leo L. Elsdess
R. H. Quenell

Anglo-Picher Co.
American Metal Co., Ltd.
The Banker Hill Co.
Consolidated Mining & Smelting Co. of
do Canada Ltd.
do
St. Joseph Lead Co.
United States Smelting Refining & Mining Co.
Western Lead Products Co.
do

GUESTS

J. O. Edwards
R. E. Neelands

Canadian Mines Branch
Canadian Department of Mines

LEAD INDUSTRIES ASSOCIATION

Robert L. Ziegfeld, Secretary-Treasurer
Manfred Bowditch
Dr. L. L. Carrick
Kempton H. Roll

The meeting was convened by Mr. Zoller at 9:00 A.M.

The minutes of the April 23, 1956 meeting, which had been circulated, were approved as submitted.

REPORT BY DR. CARRICK

A report on the activities of the Red Lead Technical Committee was presented by Dr. L. L. Carrick, Consultant to the Association and Chairman of the Committee. (Exhibit A)

REPORT BY DIVISION SECRETARY

Kempton H. Roll, Secretary to the Pigments and Chemicals Division,



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presented a report on activities of the Division during the period April, 1955 - April, 1956. (Exhibit B)

REPORT BY ASSOCIATION SECRETARY

Robert L. Ziegfeld, Secretary-Treasurer of the Association, presented a brief report on developments pertaining to the Pigments and Chemicals Division. He pointed out the objectives of the Red Lead Technical Committee in establishing case-history type Red Lead Technical Letters which would enable readers to determine readily which types of paint are being used for specific applications such as painting water tanks, highway bridges, etc., while at the same time providing actual performance data. Mr. Ziegfeld announced the addition of Mr. N. E. Adamson, for many years a leading paint technician with the Navy, as a part-time consultant to the Division. The expansion of Dr. Carrick's activities for the Division as well as with the Red Lead Technical Committee was outlined by Mr. Ziegfeld, emphasizing the continuing growth and effectiveness of the Division's activities.

NEW BUSINESS

Dr. Carrick suggested the possibility of combining zinc anodic protection with red lead priming and top coating on underground steel structures, such as storage tanks. He also discussed the excellent market potential of red lead primers in the automotive field, pointing out that by means of electrostatic spraying techniques it is now possible to eliminate the health hazard associated with red lead primers, thus permitting the superior performance characteristics of these materials to be utilized. Dr. Carrick indicated that some efforts were already being initiated in this direction and that the outlook was very promising.

The possibility of iron oxide-red lead pigmented formulations were discussed by Dr. Carrick, who felt that they might exhibit advantages in certain applications.

The inclusion of "Chemicals" in the name of the Division was questioned by those present. It was felt that the activities of the Division, at least at present, did not embrace lead chemicals.

Manfred Bowditch, Health and Safety Director of the Lead Industries Association, discussed the fact that the Humble Oil Company, in Houston, Texas, have been successfully and extensively using red lead paints in their metal priming applications and, in fact, strongly advocate their use. Mr. James M. Hammond of that company, a leading authority on industrial health, has stated to Mr. Bowditch that he not only advocates such use of red lead paints because of their protective qualities and consequent economy, but has succeeded in reducing the incidence of lead absorption among the painters to a point where it is no longer a major issue.

ELECTION OF NEW CHAIRMAN

Mr. Zoller, in accordance with the precedent of electing the Division Chairman on an annual basis, called for nominations for this office. Mr. Zoller's name was placed in nomination from the floor and seconded. There being no other nominations, Mr. Zoller was thereupon unanimously reelected Chairman of the Division.

The meeting was adjourned at 10:00 A.M.

Kempton H. Roll
Secretary to the Division

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Exhibit A
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REPORT OF DR. L. L. CARRICK

The Red Lead Technical Committee has held four meetings during the year beginning April 1955 and ending April 24, 1956.

The atmospheric test program initiated in September, 1955 is being discontinued. The data is being studied for release in a Red Lead Technical Letter.

The galvanized iron painting project has developed two red lead mixed pigmentations which to date have shown equal or better exposure performance over galvanized iron than the present accepted standard paints for galvanized iron. This data has been released in Red Lead Technical Letter No. 10. The project has been extended to the study of the red lead paints which may be used on rusted galvanized iron. These have not been on exposure for a sufficient time to give any definite report. It might be stated that the trends point to a close relation between the completeness of removal of rust and grease-like material and the expected life service.

Project No. 23 is a new project which is just getting under way. It is a study of new vehicles for red lead. The new vehicles embrace little used isophthalic-castor oil alkyds, Hypalon, ethylene glycol methacrylate and others. Silicones could be used but are too expensive.

A new Technical Letter calling attention to surface preparation of structural steel, the type of red lead paint most suitable under various exposure conditions, and recommended paint systems is in the first stage of reading by the Red Lead Technical Committee.

Other Technical Letters are to be based on the case history of red lead on railroad bridges, state and federal highway bridges, steel athletic stadiums, and industrial structures which have been protected by red lead. Also some new construction will be cited.

The Red Lead Technical Committee is continuing to cooperate with the Steel Structures Painting Council in making paint recommendations for structural steel. The Council has found that red lead and lead chromate are at the top of the list of anti-corrosive pigments, and, as such, are recommended.

A new potential source of red lead consumption, which will equal the demand for red lead by the railroad construction expansion of the last century, is upon us in the form of structural steel for bridges used to construct overpasses, underpasses and cloverleafs for the new state and federal multibillion dollar superhighway program. Michigan has tentatively announced a 200,000,000 dollar program. This is in addition to express highways in the larger cities and toll highways.

Last year's structural steel production totaled 2,928,000 tons. If this were covered with only one coat of red lead paint having 15 lbs. of red lead per gallon, it would mean 7,320 tons of red lead powder or 976,000 gallons of paint. The demand for structural steel will continue for several years. The more structural steel used the greater will be the sustained demand for red lead.

The future of red lead is bright. We may be thankful for new methods of industrial application of appliance and automobile paints. The electrostatic method of primer application is now a reality. Paint is applied in uniform thickness over irregular and rough surfaces and on all edges. It improves the life

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Exhibit A
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service and mileage; it may be applied without health hazard; less help is required, and there is less touch up. Herein lies the return, under proper salesmanship, of red lead to the undercoat in a large number of uses where it has been excluded because of unhygienic application conditions. The electrostatic spray method does not employ an operator within the hazardous environment.

There is no hazard through inhalation, ingestion or contact. This type of red lead application should pave the way, not only to the recapturing of former red lead uses, but the development of new ones.

A modification of the conventional spray application methods which shows promise is the hot spraying of primers in which red lead is dispersed in a plastic vehicle. Since red lead is stable, in the absence of reducing agents, below 600°C. (725°F.), the anti-corrosive character of red lead may be combined with the elasticity, adhesion, solvent resistance, water resistance and impermeability to water and gases of the plastic. The increased film thickness per coat may reduce the cost of application and make red lead primers more attractive.

This idea is not altogether new. There is sufficient background of experimental data available since 1927 in Germany to warrant a thorough investigation by men of vision. Recent information, reaching us through emigrants, pertaining to the original fire spray method of Pahl or Antropahl or Pyre-Spray process indicates that resins like Hypalon, polyethylene, polychlorotrifluoro ethylene vinyl-phenol-alkyd, specially cooked castor oil alkyds, and similar thermoplastic resins, will either serve as an excellent carrier for red lead or be an excellent top coat vehicle. Such a system if composed of two coats of red lead and the hot spray plastic top coat vehicle should give, as a minimum, 15 years of service.

Another market which would be assured is the 175,000 gallon per year market for steel touch-up maintenance. The cost of application if fire spray method were employed is less as the entire operation of sanding, priming and top coating may be completed in one day, with one scaffold placement.

Of the five large metal paint consumers that use 50 percent of the total metal paints, one third, or 15,000,000 gallons of their requirement could be made available to the red lead primer paint market. I refer to the primers for

Motor vehicles-----	23.2%
Fabricated structural products-----	8.5
Tin cans-----	7.1
Agricultural machinery and tractors-----	6.2
Metal furniture-----	5.8

The Mackinac Bridge across the Straits of Mackinac, estimated cost of \$100,000,000, has a total length of 26,114 feet, will use approximately 50,000 tons of structural steel which will require 190 tons of red lead for the primer coat. As now intended, the Michigan State Highway Department No. 14 Red Lead Specification is to be used. It is a pure red lead-linseed oil primer requiring 16.8 lbs. red lead per gallon. Each of the suspension cables for the 8614 ft. suspended spans will carry 12,876 wires enclosed in a 24 1/4 in. diameter sheath. The voids in the two cables, if packed with red lead, would require about 725 tons of red lead.

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REPORT OF KEMPTON W. ROLL

Red Lead Technical Letter No. 10, L.I.A. FORMULA 3-7, A RED LEAD ALKID VEHICLE PRIMER FOR INDUSTRIAL AND MARINE ENVIRONMENTS, was issued, with about 11,400 sent to various mailing lists, 1,000 copies sold to Reichhold Chemicals, Inc. (Reichhold wished to bring it to the attention of their sales representatives and also wanted it for customer requests.) In addition about 300 individual requests for the Technical Letter have been filled by the Association, making the total distribution about 15,700. Formula 3-7 has been adopted as a standard primer by a major oil company.

An article entitled "Red Lead Paints for Galvanized Surfaces," prepared by a staff member, was published in the May, 1955 issue of "Paint and Varnish Production." Reprints were obtained and sent to members of the Pigments and Chemicals Division. Requests for about 60 additional copies were filled.

An article entitled "Paint Galvanized Surfaces?" appeared in the April, 1956 issue of FACTORY MANAGEMENT AND MAINTENANCE. Reprints were obtained and distributed to members of the Lead Industries Association and the Pigments and Chemicals Division. Additional copies are available to fill requests. This article was prepared by the editors of the magazine based on detailed information furnished by the L.I.A.

In addition to the above the following red lead literature was distributed on request. (figures are approximate)

Red Lead Technical Letter No. 3	60 copies
Red Lead Technical Letter No. 5	75 copies
Red Lead Technical Letter No. 6	75 copies
Red Lead Technical Letter No. 7	150 copies
Red Lead Technical Letter No. 8	25 copies
Red Lead Technical Letter No. 9	250 copies
Metal Protective Red Lead Paints	50 copies
Federal Specification TT-P-86a, PAINT,	
RED-LEAD-BASE, READY-MIXED	40 copies
An Investigation of Primers for Marine	
Atmospheric Environments	15 copies

Monthly listings of persons requesting red lead literature were distributed.

Technical inquiries on red lead were handled by the offices of the Association.

Staff-prepared articles on red lead appeared in each issue of the Association publication, "Lead." There have been three issues since last April.

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