The Eagle-Picher Lead Company
PRODUCERS OF
LEAD, ZINC AND ALLIED PRODUCTS

GENERAL OFFICES
CINCINNATI

TEMPLE BAR BUILDING
MAIN AND COURT STREETS
CINCINNATI

Thursday,
January 7, 1932.

Mr. Geo. K. Burgess, Director,
Bureau of Standards,
Washington, D.C.

Dear Mr. Burgess:

We are attaching a copy of our letter to Captain H.Williams of the Bureau of Construction and Repairs of the U.S. Navy Department, Washington, D.C. which letter will explain itself. We are also attaching the report referred to in our letter.

We know, of course, that this subject has been brought to your attention, but, with the ponderous details with which you are confronted, we do not expect you to have this subject foremost in your mind.

We are sending this information to Captain Williams with a desire to be of service.

Yours very truly,

THE EAGLE-PICHER LEAD CO.

D.C. Hubbard.

DOH:LH
Encl.

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JAN 11 1932

Thursday,
January 7, 1932.

Captain H. Williams,
c/o Bureau of Construction & Repair
U.S. Navy Department
Washington, D.C.

Dear Captain Williams:

I have recently read in the December issue of the "Industrial and Engineering Chemistry" of the changes which have been made in Navy paint specifications.

Considerable importance is attached to the danger of lead poisoning where lead paints are used, where the paint is applied in confined spaces.

As we have in our possession some very interesting information concerning relative solubility of pure white lead carbonate, old dutch process compared with basic lead sulphate (Sublimed White Lead and Sublimed Blue Lead) in human gastric juice, a copy of which is attached.

These tests were taken from the U.S. Bulletin of Labor #120, Hygiene of Painters Trade based on an article by A.J. Carlson and A. Woelfel of the Hull Physiological Laboratory, University of Chicago on page 22. This test was made to determine the relative toxicity of the two salts as shown by feeding experiments with dogs and cats.

It can be seen from this report that White Lead Carbonate, or, Dutch process lead is a little more than twice as soluble as the Lead Sulphate, such as, Sublimed White Lead and Sublimed Blue Lead, as you know, the more soluble the lead is in the system, the more poisonous it is to the human system. Therefore, Sublimed White Lead and Sublimed Blue Lead are much less poisonous than the Carbonate Dutch Process Lead or Red Lead.

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Captain H. Williams January 7, 1932.

A year or so ago I had the pleasure of meeting you in your office and hope to have the privilege of seeing you sometime again.

We are submitting this information with a desire to be Helpful rather than critical.

Very truly yours,

THE EAGLE-PICHER LEAD CO.

D.O. Hubbard.

DOH:LH
Encl.

cc- Mr. J.R. MacGregor
cc- Mr. R.H. Thompson
cc- Mr. Geo. K. Burgess

500061

EFFECTS OF FEEDING TO CATS 0.1 GRAM OF THE RESPECTIVE LEAD SALTS PER KILO (2.2046 POUNDS) BODY WEIGHT EVERY MORNING BEFORE BEING GIVEN THEIR USUAL FOOD.

ing Day	Cat I Fed Lead Carbonate	Cat II. Fed Lead Sulphate	Cat III. Fed Lead Carbonate Paint Dust	Cat IV. Fed Lead Sulphate Paint Dust
rst	Normal	Normal	Normal	Normal
ond	Vomited	"	"	"
rd	Did not eat	"	Vomited	"
rth	Did not eat	Vomited	Normal	"
th	Eats a little depressed	Seems normal	Vomited	"
xth	Eats a little depressed	Seems normal	Did not eat	Normal
enth	Vomited	Seems normal	Did not eat	Normal
hth	Did not eat	" "	Eats a little	Eats a little
th	" " "	Vomited	" " "	Did not eat
th	Greatly depressed (1)	Eats a little depressed	Greatly depressed	Eats a little

(1) This cat developed ataxia, parylysis and opisthetonos on the twelfth day

aken from the Bulletin of the United States Bureau of Labor Statistics No. 120 "Hygiene of the Painters' Trade")

rticle on page 22 by A.J. Carlson and A. Woelfel, Hull Physiological Laboratory, University f Chicago; "Solubility of Basic Lead Sulphate and Basic Lead Carbonate in Human Gastric Juice nd Relative Toxicity of the Two Salts as shown by Feeding Experiments with Dogs and Cats."

RELATIVE SOLUBILITY OF LEAD CARBONATE (OLD DUTCH PROCESS) AND BASIC LEAD SULPHATE (SUBLIMED WHITE LEAD) IN HUMAN GASTRIC JUICE

Experiment Number	Lead Sulphate — Digestive Mixture		Lead dissolved (Grams)
[illegible]ent [illegible]r	[illegible]c. gastic juice; 25 cc. [illegible]; 0.5 g. lead sulphate [illegible]° C. (100.4° F.) for [illegible]ours	(a)	0.1260
		(b)	.1210
	[illegible]c. gastric juice; 25 cc. [illegible]; 0.5 g. lead sulphate [illegible]. peptone (a) 0.5 g. [illegible]ne (b) at 38° C. (100.4°) [illegible]0 hours.	(a)	.1376
		(b)	.1284
	[illegible]. gastric juice; 0.5 g. sulphate, at 38° C. (100.4°F.) [illegible]0 hours.		.1500

Experiment Number	Lead Carbonate — Digestive Mixture		Lead dissolved (Grams)
1-	25 cc. gastric juice; 25 cc. water; 0.5 g. lead carbonate at 38° C. (100.4° F.) for 10 hours.	(a)	0.2940
		(b)	.3044
2-	25 cc. gastric juice; 25 cc. water; 0.5 g. lead carbonate; 0.1. g. peptone (a) 0.5 g. peptone (b) at 38° C. (100.4°F.) for 10 hours.	(a)	.3302
		(b)	.3100
3-	50 cc. gastric juice; 0.5 g. lead carbonate, at 38° C. (100.4°F.) for 10 hours		.389

		Grams	Per Cent
[illegible] - - - - - - - - -	(1)	0.1235 =	24.7
	(2)	.1330 =	26.6
	(3)	.1500 =	30.0

		Grams	Per Cent
Average - - - - - - - - - -	(1)	0.2992 =	59.8
	(2)	.3201 =	64.0
	(3)	.3896 =	77.9

[illegible]e seen, therefore, that the lead carbonate is a little more than twice as soluble as the [illegible].

(Taken from Bulletin of the United States Bureau of Labor Statistics No. 120 - "Hygiene of the Painters' Trade)

Article by A.J. Carlson and A. Woelfel, Hull Physiological Laboratory; University of Chicago, on page 22-: "Solubility of Basic Lead Sulphate and Basic Lead Carbonate [illegible] Human Gastric Juice and Relative Toxicity of the two Salts as shown by Feedi[illegible] periments with Dogs and Cats."

EFFECT OF DAILY FEEDINGS OF LEAD SULPHATE AND LEAD CARBONATE PAINT DUSTS TO DOGS IN QUANTITIES OF 0.1 GRAM PER KILO (2.2046 POUNDS) BODY WEIGHT.

	BASIC LEAD SULPHATE PAINT DUST				BASIC LEAD CARBONATE PAINT DUST			
	Dog A: Weight 6.8 K. (15 lbs.)	Dog C: Weight 12.5 K. (27.6 lbs.)	Dog E: Weight 10.2 K (22.5 lbs.)	Dog C: Weight 12.3 K (27.1 lbs.)	Dog B: Weight 7.0 K (15.4 lbs.)	Dog D: Weight 13.4 K (29.5 lbs.)	Dog F: Weight 10.3 K (22.7lbs)	Dog H: Weight 14.2 K (31.3 lbs
	Normal Normal	Normal Normal	Normal Normal	Normal Normal	Normal Severe diarrhea; vomiting; eats a little.	Normal Diarrhea; feces bloody; great thirst; vomits; Eats a little.	Normal Slight diarrhea; otherwise normal; eats well.	Normal Seems normal.
	Normal	Normal	Seems normal, but does not eat as much as usual	Normal	Diarrhea; depression; vomiting; eats a little	Diarrhea; vomiting; does not eat.-	Diarrhea; vomiting; eats a little.	Depressio: some tremors, vomiting; eats a little
	Some depression; eats less than normally	Some depression; eats less than normally	Had vomitted during night; eats eagerly.		Diarrhea; does not eat; great thirst	Condition fair; does not eat.	Diarrhea; vomiting; eats a little.	Diarrhea; vomiting; does not eat.
	Refuses food; otherwise in good condition; weight, 6.9 K (15.2 lbs)	Slight depression; vomiting; weight, 11.9 K (26.2 lbs)	Slight depression; weight, 9.8 K (21.6 lbs.)	Slight depression; eats less than normally; weight, 12.4 K (27.3 lbs)	Condition fair; eats a little; weight 12.8 K (28.2 lbs)	Condition fair; eats a little; weight 12.8 K (28.2 lbs)	Diarrhea; vomiting; does not eat; weight, 9.9 K (21.8lbs)	Diarrhea; depression; eats a little; weight, 13.1 K (28.9 lbs)