

HARTFORD, CONNECTICUT
STANDARD OIL COMPANY OF #2
NEW JERSEY



Reorder No. 912 1/3

PARK BRAND FOLDER
MEDIUM HEAVY WEIGHT

KW 0017187

Tank Incident #2

Brief History

Tank #8 - Socony Vacuum Oil Company, Hartford, Connecticut - September 1932

There appeared to be nothing unusual about the handling of this tank which could be correlated with dangerous conditions. It was neither steamed nor allowed to stand idle before cleaning. However, the analytical report on the sludge was 0.25% tetraethyllead which is very high.

There were three men on the job and all were ill and probably about equally so if the inherent psychologic nature of the men is considered. Apparently Zeboski spent the most time within the tank but deBernardi's urine contained the highest concentration of lead.

- 3 men involved on job
- 3 men used mask only part time
- 3 were ill

Factors responsible:

1. Failure to wear mask
2. High concentration of organic lead in sludge

11- 1-1963

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KE 0017188

The Analysis for lead of material scraped from Ethyl Gasoline Storage Tank #8, Standard Oil Company (New York) Terminal, Hartford, Conn. This tank had been used as an Ethyl Gasoline Storage tank for the past three years.

Material received

1. Dirt beneath manhole and pipe connection.
2. Bottom scale and sludge.
3. Wall scale.

Procedure

10 grams of each material were extracted three times with anhydrous ether. This fraction gave organic lead. The residue from the ether extraction was then extracted three times with 1:1 Nitric Acid. This fraction gave most of the inorganic lead. The residue of the Nitric acid extract was then dried and ignited in the Muffle furnace. The resulting ash was dissolved in 1:1 hot hydrochloric acid and gave the rest of the inorganic lead. After the preparation of the fractions, the lead determinations on each were made according to our usual procedure.

Results

A. Dirt beneath manhole and pipe connection.

1. Ether extract of 10.00 grams (Organic lead)

Pb found - 3.80 mgs.
% Pb found - 0.038%

2. Nitric Extract (10.00 grams) Inorganic lead.

Pb found - 46.00 mgs.
% Pb found - 0.46%

3. Residue (10.00 grams) Balance of Inorganic lead.

Pb found - 0.57 mgs.
% Pb found - 0.006%

Total lead found in sample - 50.37 mgs.

% lead - 0.50%

Lead calculated as lead tetraethyl (for 10 gms) - 78.5 mgs.

% lead tetraethyl - 0.79%

B. Bottom scale and sludge.

1. Ether extract (10.00 gms.) Organic lead.

Pb found - 25.00 mgs.
% Pb - 0.25%

2. Nitric Acid extract (10.00 gms.) Inorganic lead.

Pb found - 318.00 mgs.
% Pb - 3.18%

B . Bottom scale and sludge (cont)

3. Residue (10 grams) Balance of Inorganic lead.

Pb found - 0.97 mg.
% Pb - 0.01%

Total lead found (10 grams) - 343.97 mgs.

% lead - 3.44%

Pb. calculated as lead tetraethyl - 538.00 mgs.
% lead tetraethyl - 5.38 %

C. Wall Scale

1. Ether extract (10 grams) Organic lead

Pb found - 2.20 mgs.
% Pb - 0.02%

2. Nitric Acid Extract (10 grams) Inorganic lead

Pb found - 90.00 mgs.
% Pb - 0.90%

3. Residue (10 grams) Balance of Inorganic lead

Pb found - 1.63 mgs.
% Pb - 0.016 %

Total lead found - 93.83 mgs.

% lead - 0.94 %

Pb calculated as lead tetraethyl - 146.00 mgs.

% Pb tetraethyl - 1.46 %

Note These samples were taken at least 10 days after the tank had been cleaned. During these ten days the material had been exposed to the atmosphere and considerable amounts of lead tetraethyl had evaporated in the meantime. Large amounts also had been converted to inorganic salts, as shown by the analysis. It is safe to say that most of the inorganic lead, at the time of cleaning had existed as lead tetraethyl, and the results were therefore calculated on this basis. It is also within reason to assume that the amount of lead tetraethyl at the time of cleaning was several times the amount found when the samples were submitted.

Reported: 10-11-1932

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