

EFFECTS OF DISTILLED WATER UPON GALVANIZED BUCKETS

October 14, 1949

The following articles were submitted for observations:

Two galvanized buckets (each half full of distilled H_2O).
One beaker (600 cc) with fibre board cover upon which
was attached a dye or metal casting.

To be observed for:

Oxidation and electrolytic action between the solution
and metallic surfaces; especially the castings suspended
above the solution on which is to be observed effects of
any fumes which may arise from the solution.

The buckets were marked as follows:

Bucket #1 (an ordinary pail)

Bucket #2 (an ordinary pail with a metal casting)

Attached to interior approximately three inches
of above solution. The beaker (with cover) was
marked "beaker" and all observations of same are
under that heading.

October 14, 1941

First Day of Observation

Bucket #1

Definite water line. Patches of white, powdery substance
appearing on entire dry surface above water line. Shreds
of fiber board appear to be dropping upon surface from
cover board. Liquid is flat to taste.

Bucket #2 (with metal die attached)

Definite water line observed. Patch of white metallic
substance forming around casting. This patch is approximately
two inches in diameter and is extending down toward the
surface of solution as a tapering streak. This may be due to
the solder which holds the die to the can. Liquid is flat to
taste.

Beaker

No visible effects upon casting attached to board

KE 0022676

N22636

October 15, 1941

Samples of each container were tested as follows:

Beaker: negative upon addition of phenolthalien

Bucket #1: negative upon addition of phenolthalien

Bucket #2: negative upon addition of phenolthalien

October 16, 1941

Bucket #1

Increased white patches above water line. These patches are becoming more profuse; becoming dusty to touch. Area around three quarters of dry surface is mottled with these patches. Entire area covered by water is coated with a definite white chemical deposit. The sides of the bucket so covered appear striated with innumerable hair lines which vary from one-eighth inch to one-fourth inch apart. These lines extend to bottom of bucket.

Bucket #2

Has accumulation of white deposit around casting; this extends down two inches toward surface of water. (No discernible increase in size since last observation)

Beaker

No visible change in water on status of casting.

pH readings are as follows:

Beaker pH 5.68

Bucket #1 pH 6.02

Bucket #2 pH 6.86

October 18, 1941

Bucket #1

Mottled patches^S of white substance rubbing off more at touch. Entire area covered by water has accumulation of deposit shielding all metallic surface.

Bucket #2

Mottled patches on dry portion of bucket not so profuse as in Bucket #1. The patches, never-the-less, are dusty to touch. Metal casting yields no obvious increase of deposit on or around casting. Area still approximately two inches in diameter.

Beaker

No visible change in H₂O or casting. Placed one drop of phenol

KE 0022677

October 20, 1941

pH readings of samples were as follows:

Bucket #1 pH 6.11

Bucket #2 pH 6.66

Beaker pH 6.38

The temperature at these readings was twenty degrees centigrade

October 25, 1941

No visible change upon any of the buckets other than those previously noted.

KE 0022678