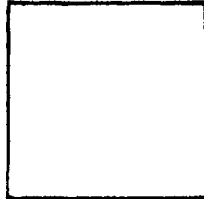


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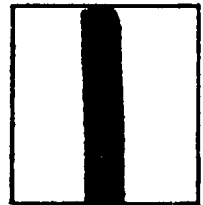
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Watertown Arsenal Labs,
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INVENTORY

Rept. No. 342/2

DOCUMENT IDENTIFICATION

8 Dec. 39

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Report No. 342/2
Watertown Arsenal

December 8, 1939

EXPERIMENTAL

Corrosion on Copper Alloy parts in 5000 lb. Ajax Induction Furnace, Building 421, P.O. 2255, November, 1938, (Specification No. WED-197) delivered February, 1939.

Brass parts were found to be coated with corrosion products and were found to be cracked. The appearance was as though the corroding solution flowed down to or dripped upon many of the brass fittings.

Colorless salt deposits existed on bottom side of middle wood timbers.

Wood timbers were required to be fireproofed.

Ammonium salts are used to fireproof wood. One formula recommends a solution containing a large percentage of ammonium sulfate.

The colorless deposit was found to be mainly ammonium sulfate (Report 369/97 - A. Sloan).

The brass parts were found to have intergranular cracks penetrating more than half the cross section in some cases. The brass had a satisfactory structure otherwise (Report 342/10 - H. G. Carter).

Difficulty was due to stress-corrosion. The fireproofing salts were leached out of the wood by moisture coming in contact with it. The solution flowed downward or dripped onto the brass parts, such as hose clamps and brass washers, which were tightened up and therefore stressed. Ammonium salt solutions are detrimental to stressed brass.

P. R. Koating
P. R. Koating

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