

## Inhibited compound for internal preservation

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### Abstract

Corrosion of metal products during storage, transportation, or other inter-operational periods keeps researchers concerned, and as a result, encourages study of anti-corrosion protection agents in current unstable economic situation, for example, possibility of their recycling. It is not surprising that nowadays scientists are searching for anti-corrosion protection agents. Accordingly, important requirements for corrosion protection agents are affordability and adaptability. The term “adaptability” means that anti-corrosion protection agents can be used in hard-to-reach structures. Under such conditions, the best anti-corrosion protection agents are preservation compounds, as they are relatively inexpensive, often organic-based, with an effective corrosion inhibitor in. The author tested anti-corrosion effectiveness of FMT corrosion inhibitor solution in diesel fuel. FMT is a nitrogen-containing inhibitor consisting of tallow oil fatty acids and added copper derivatives of chlorophyll (where central magnesium atom of chlorophyll is replaced by copper). Copper derivatives of chlorophyll were obtained from kelp algae extract. We synthesized a new solution of FMT inhibitor in diesel fuel; this solution has a natural coniferous complex instead of copper derivatives of chlorophyll from algae. FMT efficiency was proved experimentally in accelerated corrosion tests. The paper explains necessity of synthesizing a new type of FMT inhibitor after experimental stability assessment of various solutions. The article also gives an example of how this compound can be used for storing petroleum products in the space between the first and second bottom of underground tanks (oil storage tanks with double walls and double bottom).

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