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Att.: Thorolv Undrum

APPROVAL OF THE EPOXY COATING TANKGUARD 412 FOR USE IN CONTACT WITH POTABLE WATER ON SHIPS AND OFFSHORE INSTALLATIONS

We refer to the e-mail dated June 10, 2005, concerning approval of the epoxy coating Tankguard 412 for use in contact with potable water on ships and offshore installations.

General information about toxicological evaluation/approval of products in contact with potable water

The Norwegian Institute of Public Health, Division of Environmental Medicine, has the authority to approve products (coatings, additives, etc.) in contact with potable water on installations/ships offshore (The Ministry of Labour and Government Administration; Regulations of 31st of August 2001, and The Ministry of Trade and Industry; Regulations of 4th of September 1987).

According to The Ministry of Health and Care Services; Regulations of 1st of January 2002, concerning potable water supply and potable water onshore, approvals of additives for use in contact with potable water are required. Such additives are regulated by the Food Act, which is administered by the Norwegian Food Control Authority or by the local Norwegian health and food control authorities. The Norwegian Institute of Public Health, Division of Environmental Medicine, performs toxicological evaluations of such additives for the Norwegian Food Control Authority, as well as of materials which may come in contact with potable water onshore. The Norwegian Institute of Public Health does not approve products for use in contact with potable water onshore.

The manufacturer and/or the importer of such products are responsible for producing the products according to good manufacturing practice and for the quality of the products. The content of impurities and the migration of components directly or indirectly from such products to potable water should be as low as technically possible. Furthermore, the migrating substances should not pose any risk to human health. Please be aware that problems with taste and smell and too high values of TOC may easily occur if proper procedures for curing and washing are not followed.

Approval of Tankguard 412 for use in contact with potable water on ships and offshore installations

The Norwegian Institute of Public Health has evaluated Tankguard 412 on the basis of the product information and test results for TOC, odour and flavour provided by Jotun-A/S, and finds this coating **approved** for use in contact with potable water on ships and offshore installations. This approval is not valid for use in pipes and only for use in contact with cold water.

Premises for this evaluation/approval are that:

- **the producer's recommendations for use of the coating are followed, particularly the number of coatings, their thickness and the drying/curing times**
- **after being fully cured the coating should be thoroughly cleaned after one of the following washing procedures, or by another adequate procedure, before being used in contact with potable water**

1. **The tank is filled with hot water (>60 - 80°C), which are left for 24 hours before it is emptied. Thereafter, the tank is thoroughly cleaned with hot water (80°C) and scrubbed with a brush or washed with steam before being used.**

or

2. **The tank is filled with hot air, minimum 23°C for at least 7 days. Thereafter, the tank is filled 3 times with warm water (minimum 50°C), each filling is left to stand in the tank for 24 hours. Thereafter, the tank is thoroughly cleaned with warm water (50°C) and scrubbed with a brush or washed with steam before being used.**

If it is difficult to employ these preferred procedures, for instance if the tank is very large (>100 000 litres) making filling and emptying impractical, this alternative procedure may be used:

3. **The whole coating is irrigated with water (preferably with a temperature of more than 15°C) for 2 days. Thereafter, the tank is thoroughly cleaned with soap and hot water (80°C) and scrubbed with a brush or washed with steam before being used.**

- **the instructions for use of washing procedures are included in the product's Technical data sheet**
- **the product does not affect the quality of the potable water.**

Conclusion:

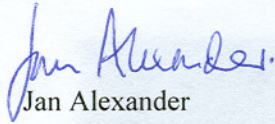
The Norwegian Institute of Public Health finds that Tankguard 412 is approved for use in contact with potable water on ships and offshore installations.

This approval is based on the product information given in the application and today's knowledge. If essential changes are made in the formulation, this approval will be annulled automatically and a new application is necessary. Also, if the basis for our approval of health effects is changed, the approval will be revoked.

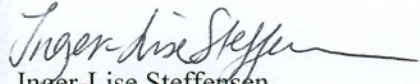
This approval is restricted to the effects on human health. It is otherwise no guarantee for the quality of the product and it should not be used in advertisements in a way that gives such an impression (Norwegian Marketing Regulation, Law no. 47, 16th of June 1972).

Charge of payment will be claimed according to Norwegian Occupational Environmental Laws §18 for products used on ships and offshore.

Yours sincerely



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