



Ecological pre-treatment of acetate and glycolstreams (e.g. de-icing area) in wastewater and water treatment installation.

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Abstract

A Belgian/Flemish company has developed an ecological additive for the degradation of de-icing products (e.g. on airport runways). These de-icing products are quite effective but organically affect surface water in the area. The water consequently needs to be treated. The technology offered, uses a biocatalyst to enhance biodegradation at lower temperatures. The company is looking for a collaboration through licensing agreement with companies involved in wastewater and water treatment.

Description

The company is a manufacturer of specialty chemicals (including de-icers), mainly intermediates and plasticizers, situated in medium volume niche markets. As a de-icer producer, the company identified a need for enhanced degradation of aircraft and runway de-icers at lower temperatures, leading to the development of the offered technology. Runway de-icing (RDF) and aircraft de-icing (ADF) products, contained in the runoff, will start to decompose in the receiving water outlets. Due to the low temperatures at the time of application, the activity of ordinary micro organisms, responsible for the decomposition process, are negligible and will lead to a very slow or even no decomposition. This results in high COD-levels (Chemical oxygen demand) which remain for an extended period of time in the water outlets. However, the addition of a dry powder containing an acetate/glycol oxidising bacterial culture (with sufficient growth kinetics at low temperature) after application of the de-icer, enhances the (bio)degradation of acetate and glycol and increases the decomposition with at least a factor 5 (even at low temperature).

To have an optimal result, sufficient oxygen and nutrients must be added (depending on the site conditions), in order to have optimal performance conditions.

Innovations and advantages of the offer

The technology offers a combined solution that allows for an enhanced degradation of both acetates and glycol. It can be used in a straightforward manner ; it does not require special equipment.

advantages:

- Cost savings (dependent on site)
- Fast degradation of acetate and glycols allows for a higher throughput of runoff water
- Higher efficiency in decomposition at low water temperature. In an optimized system the degradation can be enhanced with at least a factor 5.
- Total solution for runway and wing de-icing environmental problems at airports.

Current and Potential Domain of Application

current application: industrial (waste)water treatment, airport runway deicing, biodegradation of glycol/acetate streams

Potential application: domestic and industrial wastewater treatment



PROTECTING MAN AND ENVIRONMENT

Technology Offer

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