



HALAMID® - STABILITY DATA

Halamid® is a universal, effective, readily biodegradable disinfectant with superior storage stability. Tests have shown that Halamid® is a very stable product, both as a powder and as a solution, ensuring that it remains ready for use with full efficacy whenever you need it.

Halamid® has a shelf life of two years after production date when stored in the closed original packaging, in a cool and dry place, away from direct sun light and heat.

Storage stability

Tests have shown that, if properly stored, Halamid® will not undergo significant changes in quality even after several years of storage.

In order to determine the storage stability of Halamid® under tropical conditions a test was performed at 35°C and 85% relative humidity.

25 kg of Halamid® packed in its original 4 ply paper bag were placed in a constant climate cupboard for 120 days. During this period the weight and the content of the Halamid® were regularly checked. After 120 days of storage at 35°C and 85% relative humidity the Halamid® packed in its original bag proved not to have been changed in weight or content.

A similar test was run with Halamid® in open contact with the humid air.

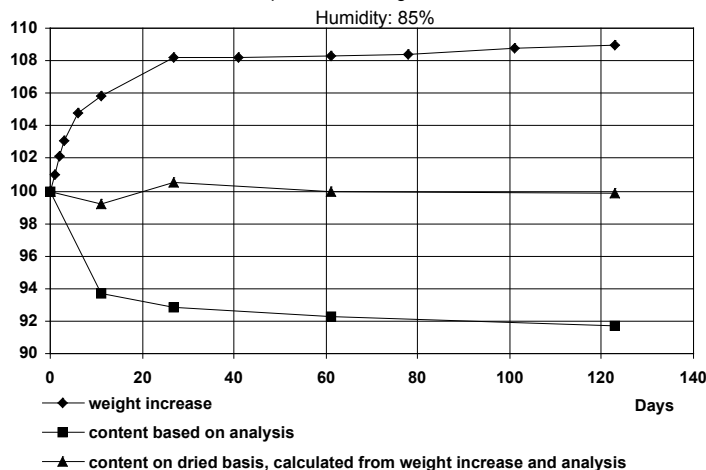
In the first 30 days of this experiment the weight of the Halamid® increased while the content declined. After that period the weight and content of the Halamid® were more or less stable.

The weight increase was caused by water adsorption, which resulted in a content reduction exactly proportional to the content decrease analyzed. No decomposition of Halamid® could be detected.

All this proves that Halamid® is a product with superior storage stability even under non-ideal conditions.

Halamid® Stability under Tropical Conditions

Test condition: direct contact between Halamid and air
Temperature: 35 degrees Celsius



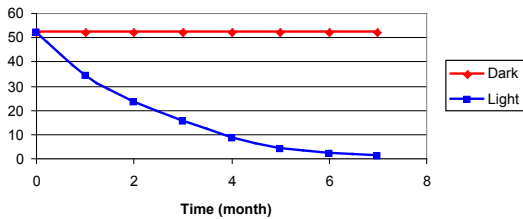
STABILITY IN SOLUTION

The available data show that Halamid® solutions prepared with clean water and store away from light and heat are very stable, which makes possible to prepare stock solutions.

Influence of light

From the graph below, it is clear that a Halamid® solution stored in the dark (using an opaque container) can be stored for several months without decomposition.

Influence of light, 5% Halamid® solution

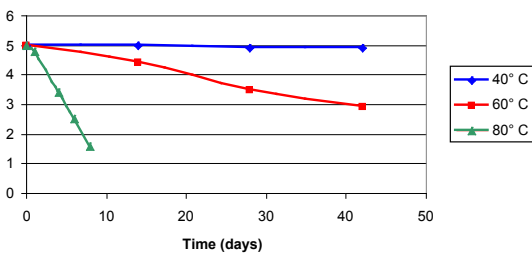


It is important to avoid exposure of Halamid® solutions to sunlight if they are to be kept for a certain period of time.

Influence of temperature

Even at elevated temperature, Halamid® solutions show good stability. For example, after 4 weeks at 40°C, only 2% of activity is lost.

Influence of temperature, 0.5% Halamid® solution

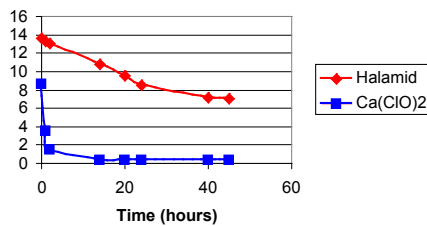


Influence of organic matter

Presence of organic matter has only a limited effect on Halamid® efficacy. It is for example recognized that Halamid® is much less affected by organic matter than hypochlorite.

To illustrate this, Halamid® and hypochlorite solutions were prepared using river water. After only a couple of hours, the vast majority of hypochlorite is degraded by reaction with the organic matter present, while after 2 days, there are still about 50% of the original Halamid® concentration available.

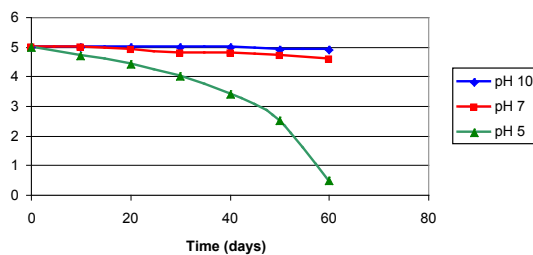
Halamid® vs hypochlorite (river water)



Influence of pH

The graph below show the influence of pH on stability of a Halamid® solution. Under neutral / alkaline pH condition, the Halamid® solution is very stable. Under acidic conditions, Halamid® is degraded, one of the reasons why acidic compounds should not be mixed with Halamid® in formulations.

Influence of pH, 0.5% Halamid® solution



All the available data point to the stability of Halamid®, both as a solid as well as in solution

**Use biocides safely.
Always read the label
and product information
before use.**

**Halamid® is an
Axcentive product
available in various
packages, from
2 kg buckets to
1000 kg big bags.**

axcentive

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The use of Halamid® as a disinfectant may be submitted to local legislation and a registration may be required. Please check with your local authorities or contact us to check about the registration status in your country. The information presented herein is true and accurate to the best of our knowledge, but without any guarantee unless explicitly given. Since the conditions of use are beyond our control, we disclaim any liability, including infringement, incurred in connection with the use of these products, data or suggestions. November 2015