ION EXCHANGE IN HYDROPONICS

LEWATIT®

THE BETTER CHANGE

LANXESS

Energizing Chemistry

EFFECTIVE DOSAGE WITH LONG-TERM ACTION

GROWTH IS NOT JUST A QUESTION OF NATURE

LEWATIT® HD 50, the follow-up product to LEWATIT® HD 5, has been successfully used to fertilize plants grown by hydroculture (also known as hydroponics) since 2002 when the new German fertilizer regulation was introduced. LEWATIT® HD 50 is based on water-insoluble ion exchange resins and contains all the necessary nutrients that are not contained in tap water. As a slow-release fertilizer, this LANXESS product ensures an optimum supply of nutrients for healthy plant growth.

EASY TO USE

The water reservoir lasts for several weeks and is easy to monitor. The nutrients are normally sufficient for as long as 3 - 4 months.

CLEAN

There is no need for any decomposing soil. The clay granules used as the substrate are odorless, do not change in any way, and are free of soil pests.

SUCCESSFUL

The plant is optimally supplied with water and nutrients to ensure healthy plant growth.

EFFECTIVE DOSAGE WITH LONG-TERM ACTION

SOIL PLANTS

- Clump of earth around the soil becomes increasingly compact; it has no structural stability.
- Through the compaction of the roots, root ventilation and oxygen supply are inhibited.
- Soil substrates can provide a breeding ground for soil pests.
- Long-term fertilization is possible e.g. with fertilizer sticks.
- Intensive care needed due to short periods between irrigation.
- Depending on the type of plant, the substrate needs to have a high clay, sand or peat content. Only plants with the same soil requirements can be planted together.
- Wide range of flowering plants.

HYDROCULTURE PLANTS

- The clay granules have good structural stability.
- Good ventilation of the roots. Plants are therefore healthy and grow better.
- No pests breeding in the soil.
- Water supply lasts several weeks; the level can be monitored by a water indicator.
- Reliable and easy long-term fertilization for 3-4 months with LEWATIT® HD 50.
- Plants with different substrate requirements can be planted in the same container.
- Somewhat fewer flowering plants available.

- advantage
- disadvantage

HARDNESS RANGES

Hardness range	Water hardness	German hardness (dH)	Total hardness
1	soft	0-7	0,0-1,3
2	medium	7-14	1,3-2,5
3	hard	14-21	2,5-3,8
4	very hard	above 21	above 3,8

*1mmol/l=1mol/m³=5,61 dH

The quality and salt content of tap water can differ considerably. However, LEWATIT® HD 50 offers a solution for all hardness ranges.

A SOLUTION FOR ALL TYPES OF WATER

For the most frequently encountered water with a hardness range of 3-4, LEWATIT® HD 50 has proved ideal as a slow-release fertilizer. Valuable nutrients are continuously released until the store is exhausted. Generally speaking, the nutrient supply lasts for 3-4 months. The tap water or nutrient solution is partially softened, but the pH remains stable. The use of hard, high-salt water for watering is therefore no problem whatsoever.

Water in soft water areas with a hardness of 1-2 lacks calcium and magnesium, precisely the two minerals that are vital for plant growth. Because of the lack of hardening constituents, an adequate supply of nutrients to the plants cannot always be ensured. For this reason, we recommend a separate dose of dolomite (calcium/magnesium carbonate) or gypsum (calcium sulfate). Both mineral salts have only low solubility in water, which means that, like LEWATIT® HD 50, they have a slow-release effect that lasts for 3-4 months. The dolomite or gypsum can therefore be mixed directly with the LEWATIT® HD 50 before fertilization. We recommend the addition of 75 g dolomite or 50 g gypsum per liter of LEWATIT® HD 50.

ONLY HEALTHY PLANTS CAN FLOURISH

OPTIMUM NUTRIENT RELEASE

The nutrients contained in the LEWATIT® HD 50 are released gradually through the salts introduced with the tap water and through the plant's products of metabolism. Consequently, the nutrients are readily available to the plant at all times. The water enriched with the nutrients thus serves as a nutrient solution from which the plant can satisfy its needs.

The nutrients taken out of the water by the plant are topped up by the LEWATIT® HD 50 until, after 3-4 months, the supply is exhausted. Plants with a high growth rate need more water and nutrients than slow-growing plants. In other words, the length of time the slow-release fertilizer remains effective is governed by the plant itself.

TYPE AND CONTENT OF NUTRIENTS IN LEWATIT® HD 50:

Appearance:	hard, brownish and ochre-colored beads
Bulk density:	680-780 g/l
Water content in supplied form:	approx. 50 %

CONTENT OF MACRONUTRIENTS PER LITER OF LEWATIT® HD 50 IN THE SUPPLIED FORM:

Total nitrogen*:	approx. 2 %
Phosphate*:	approx. 1 %
Potassium*:	approx. 2 %

* related to wet weight

LEWATIT® HD 50 also contains the following micronutrients (trace elements): iron, manganese, copper, zinc, boron and molybdenum.

* The product data marked with an asterisk are specifications; compliance is constantly monitored by LANXESS Deutschland GmbH.

OVER-FERTILIZATION IS VIRTUALLY IMPOSSIBLE

LEWATIT® HD 50 encourages the healthy development of plants by using a special technique: When the ion exchange resin releases the nutrients to the nutrient solution, it adsorbs at the same time the salts that have a harmful effect on the plant. Consequently, the total salt content of the water is not increased, which means that harmful accumulations of salt or over-fertilization is virtually impossible.

PROLONGED GROWTH WITH LESS TROUBLE

APPLICATION

The required amount of LEWATIT® HD 50 is simply added to the water in a loose form. The nutrient supply is used up after about 3 months so that a fresh amount of LEWATIT® HD 50 must then be added to the water. The spent product can remain in the container.

DOSAGE

Generally 20-30 ml LEWATIT® HD 50 will be needed for an ornamental plant up to 50 cm tall. Where several plants are planted in one container, this quantity should be added for each plant. With smaller or larger plants, the amount of nutrient should be adjusted accordingly.

STORAGE STABILITY

LEWATIT® HD 50 has a shelf life of at least two years. If it is stored in contact with the air, the water content will slowly decline. At the same time, the beads shrink, reducing the supplied volume by a maximum of 45 %. Dry material can swell up again quickly in water. The nutrients remain unchanged in both these processes and continue to be available. Frost does not exert any harmful effect on the fertilizing properties.

DISPOSAL

Spent ion exchange resins are not harmful to the environment and can be disposed as household waste.

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