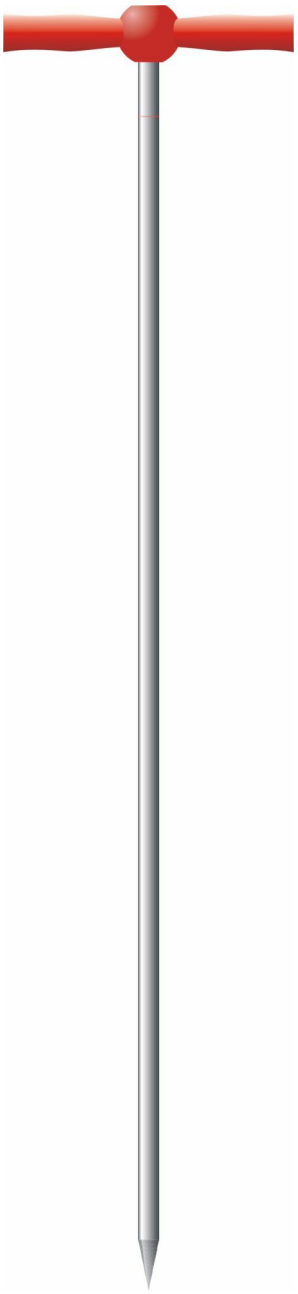
Temperature- Profile- Probe

TMS 106

for the determination of the temperature profile in compost materials



Composting

In the light of an increasing environmental consciousness and constantly decreasing landfill space, the composting of organic waste is becoming more and more important. As a result, the composting of green and bio-waste is carried out in almost all districts.

A pre-condition for the production of high-quality finished compost are optimal conditions for composting. Here, particular attention must be paid to the factors of oxygen content and the temperature in the pile.

In the aerobic process of decomposition, organic waste is converted by bacteria and fungi and the addition of oxygen into carbon dioxide and steam. Because this is an exothermic process, additional energy in form of heat is set free. Here, temperatures of more than 70°C can occur. When these temperatures can be maintained over a certain period of time, pathogens and seeds capable of germinating can be effectively killed and the hygenisation of the compost material is guaranteed. On the other hand, temperatures, that go beyond this value can lead to an overheating of the compost and would be a disadvantage for the process of degradation.

Too high temperatures thus decrease the degradation of organic substances and cause additionally an increased development of odour.

The composting factor of temperature can be controlled and supervised by the in the following described temperature-profile-probe in connection with one of our measuring systems. With it at the same time 6 measured values for temperature and thus the temperature profile of the pile can be determined. It is possible to find, for example, weak points in the run of the temperatures and to optimise the composting system by the application of equipment for measuring and control. With the determined temperature profile it is quite easy to calculate the temperature point of 55°C in cm measuring depth, which is relevant for the assessment of the hygienisation, according to the temperature protocol of the Federal Quality Community for Compost.

measurement of the temperature profile

The measurement of the temperature profile in the pile is carried out by a special pricking probe, which is made of corrosion-free high-grade steel. The pricking probe supplies six measured values, that are distributed over the whole length of the probe and that are transferred via a high quality special cable and a water-proof plug connection to the hand measuring device. Thus, a maximum in the functioning safety is guaranteed even when the system is in operation outdoors in extreme conditions. Because of its robust structure, the probe can also remain in the compost material.

Technical data:

temperature profile probe:	material high-grade steel WS 1.4571 (DIN 17440), diameter about 17 mm, length 1,2 m, weight about 2 kg, length of the connection cable: 9 m
operation temperature:	max. 100°C
adjustment time t_{90}:	about 10 min
Number of temperature-sensors.	6
Protection degree plug:	IP 67 (connected)

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