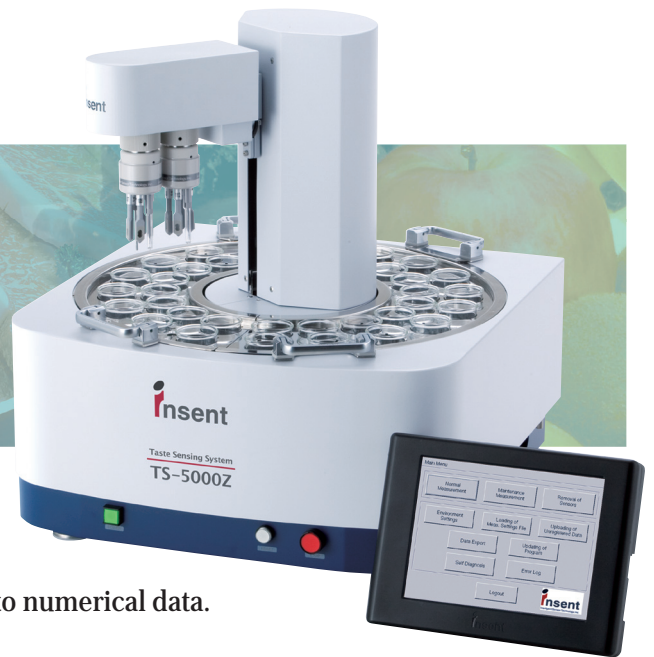


Taste Sensing System TS-5000Z



The Taste Sensing System TS-5000Z, which employs the same mechanism as that of the human tongue, converts the taste of various substances such as food and drugs into numerical data.

Using unique aftertaste measurement technology, even aspects such as “richness” and “sharpness,” which could not be measured by conventional chemical instruments, can be expressed.

Moreover, the proprietary analysis application makes obtaining analysis results easy.

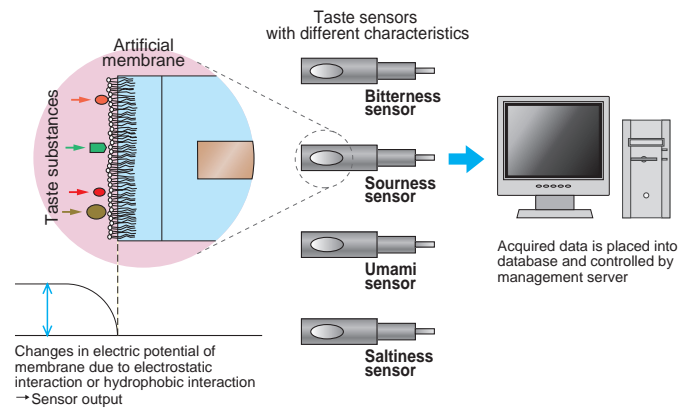
As a support tool for sensory evaluation, the TS-5000Z is a powerful tool for use in a variety of fields such as quality control, product development, marketing, and sales, where objective evaluation of taste is required.

Taste Sensors Model Taste Reception Mechanisms of Living Organisms

The surface of the tongue of living organisms is formed of a lipid bilayer with its own specific electric potential. This electric potential varies according to the electrostatic interaction or hydrophobic interaction between various taste substances and the lipid. The amount of change is perceived by the human brain as taste information, an activity referred to as taste judgment.

Our taste sensors imitate this taste reception mechanism of living organisms. Our taste sensors consist of an artificial lipid membrane (similar to that of the human tongue) that causes electrostatic or hydrophobic interactions with various taste substances, allowing them to sense “taste.”

Reaction principle of taste sensors

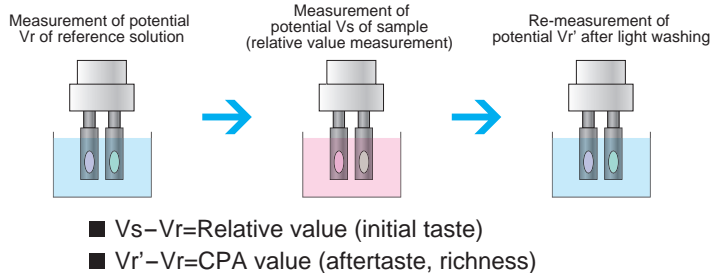


Measurement Method

The taste sensors evaluate two types of taste, namely initial taste, which is the taste perceived when food first enters the mouth, and aftertaste, which is the persistent taste that remains in the mouth after the food has been swallowed. Using the potential of a reference solution* as zero, the difference in potential with the sample liquid is measured as the initial taste. The sensors are then lightly washed and the difference in potential with the reference solution is measured as the aftertaste.

*Reference solution: Almost completely tasteless solution containing 30 mM KCl and 0.3 mM tartaric acid. The Taste Sensing System uses it as a substitute for human saliva.

Measurement method of taste sensors



Taste information

Initial taste: Sourness, bitterness, astringency, umami, saltiness, sweetness
Aftertaste: Aftertaste from bitterness, aftertaste from astringency, umami richness

The taste information is an indication of taste obtained from the results measured by the taste sensors. The evaluation of many different tastes is possible by changing the settings of sensors.

