

Sensor with Injectable Recognition Element (SIRE)

Type: SIRE Sensor Cell Set

Description



The SIRE Sensor Cell Set consists of a sensor with an integrated non-removable specialised chamber; the set also contains a syringe which will allow the injection of the recognition element (Enzyme). The SIRE Sensor Cell uses the concept of soluble enzymes into a reaction chamber separated from the sample by a semi permeable dialysis membrane. The analyte (for example maltose), enters into the reaction chamber by diffusion. The analyte reacts with the recognition enzymes creating H_2O_2 which is oxidized on a screen printed Pt electrode. The current corresponds to the amount of analyte.

Physical Parameters

Dimensions:

Weight:	4.5g	Height:	45 mm
Length:	30 mm	Width:	23 mm

Membrane Specifications:

Molecular weight cut-off (MWCO):3500 Da

Recommended Accessories

Peristaltic pump PP, Microdialysis catheter MDC1 or PME011 and any potentiostat capable of amperometry (Potentiostats can be found at: <https://bvt.cz/kategorie-produktu/potentiostats/>)

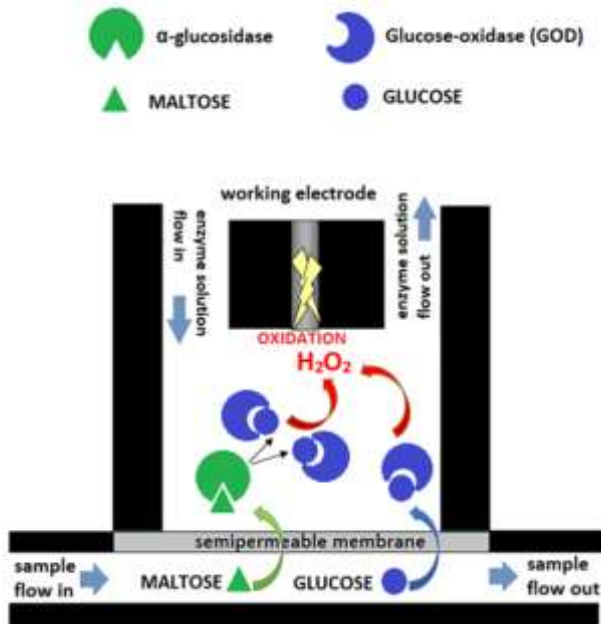
Sensor Usage

The specific range of the sensor enables the continuous monitoring of maltose decrease during beer fermentation. The system can be used for any soluble enzyme.

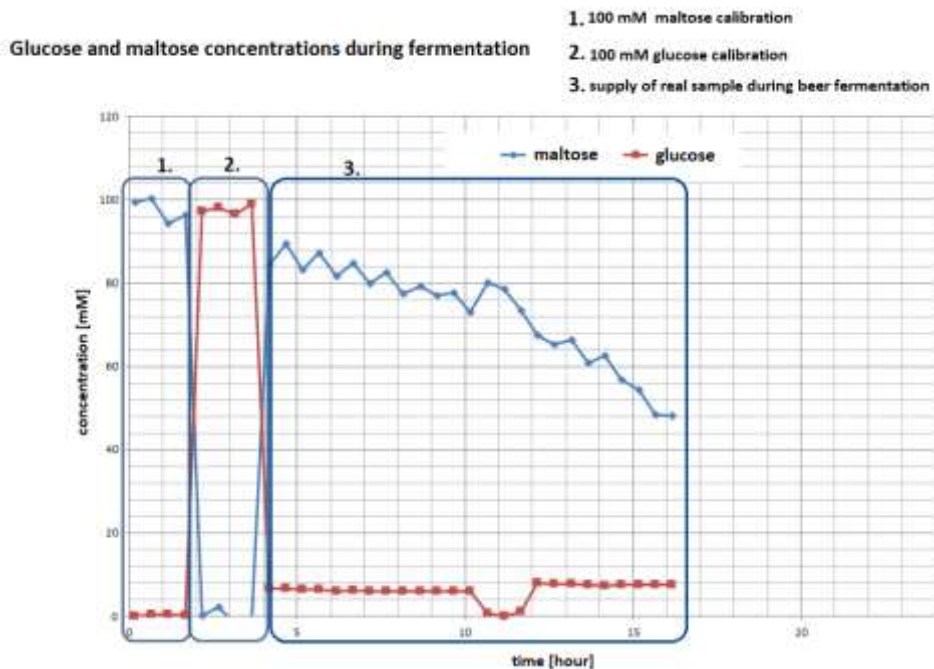


[Datasheet: Sensor with Injectable Recognition Element \(SIRE\)](#)

Example of Principle:



Example of Results from an Experiment:



Example of Glucose and maltose sensor response during real fermentation

[Datasheet: Sensor with Injectable Recognition Element \(SIRE\)](#)

References:

- KRIZ, Dario. Use of a chemical sensor, Chemel AB: Amperometric enzyme electrodes for analytes in body fluids, e.g. glucose in blood. US6214206B1. Uděleno October 23, 2000. Zapsáno June 19, 1997.
- O'CONNELL, Mark Thomas a Jan KREJCI. Microdialysis techniques and microdialysis-based patient-near diagnostics. Analytical and Bioanalytical Chemistry [online]. 2022, 414(10), 3165-3175 [cit. 2022-06-06]. ISSN 1618-2642.

Ordering information

- Minimum order quantity - 1 SIRE Sensor Cell Set
- Delivery time for a standard SIRE Sensor Cell Set is 2 weeks from receipt of order
- Delivery time for a non-standard SIRE Sensor Cell Set depends on the final technical specification

Example of Order

- 2 pieces - SIRE Sensor Cell Set