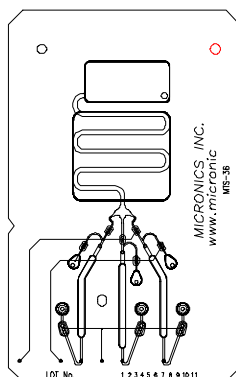


ActiveT™ Card – for Small Volume Assay Development

(For **Research Use Only** in conjunction with Micronics' **microFlow™ System**)



Description: Micronics' ActiveT™ card is a pump driven single use, disposable card designed for the development of automated diffusion based T-sensor® assays. The ActiveT™ card has three sample inlet reservoirs and is well suited to chemistry and special chemistry analyses – including immunoassays. Use the ActiveT™ card to demonstrate the quantitative detection of an analyte in a sample using a reference (control) solution.

ActiveT™ Card Specifications

- Catalogue Number: MTS-01
- Card Size: 83.3 mm x 52.0 mm x 2.64 mm
- ActiveT™ Channel: Length – 116 mm; Width – 1.15 mm; Depth – 0.15 mm
- Reagent pipette injection reservoir capacity – 60 µl
- Maximum volumes for ActiveT™ assay: 3 reagents 45 µl each
- Microfluidic flow control valves: 9
- Optical transmittance of ActiveT™ Channel: > 70%
- Compatible with aqueous buffers pH 4 – 10

Product Applications include:

- Drug and hormone analysis
- Cell-based toxicology
- Enzyme and protein analysis
- Chemistry/coagulation testing
- Process control & environmental research
- Life science research

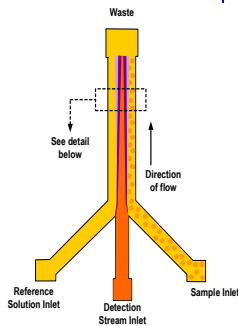
The ActiveT™ card is compatible with the Micronics' **µHydro™ Manifold** and used in conjunction with the **microFlow™ System**. The **µHydro™ Manifold** facilitates the automated loading of the ActiveT™ channel.

ActiveT™ Card Format

(Cat. No. MTS-01)

(For Research Use Only in conjunction with microFlow™ System)

Figure A



Analyte Detection with the ActiveT™ card and CAS platform

The ActiveT™ card relies on the patented, laminar flow diffusion-based T-Sensor® technology and enables detection of analytes in a variety of complex fluid samples, including whole blood, without prior separation. This structure also enables novel calibration-free assay formats compatible with Point of Care (POC) diagnostics. The ActiveT™ card's multiple inlets allow fluid streams to come together to flow in a central channel. This is shown in Figure A. A reference solution enters the card from the left inlet, a detection solution enters in the middle inlet, and a sample solution enters from the right inlet. All streams flow adjacent to one another after merging at the T-junction of the central detection channel. The detection channel stream exits into the waste port shown at the top. Under microfluidic flow conditions (also referred to as Low Reynold's Number Flow), there is no mixing in the central channel. The only transport of material from one stream to another is by diffusion. Diffusion separates components of a sample based on molecular size and shape.

With the ActiveT™ card, indicator chemistries and optical technology may be used to identify and quantitate components in the central microfluidic channel. The instrumentation for performing this analysis is remarkably simple, amounting to little more than a white light and a digital camera

Figure B

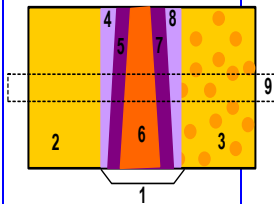


Figure B illustrates an enlarged cross section of the ActiveT™ card detection area. The numbers refer to the following details:

1. The original flow boundaries.
2. Reference Stream
3. Particle-filled sample stream.
4. Diffusion of detector substance into reference stream.
5. Diffusion of reference analyte into the detection stream.
6. Detection stream.
7. Diffusion of sample analyte into detection stream.
8. Diffusion of detector substance into the sample stream.
9. Detector cross-section used by imaging device.

The ActiveT™ card technology provides the advantage of isolating components of interest in a sample stream, without centrifugation or filtration, by the nature of the fluid flow in these channels. Another powerful attribute of the ActiveT™ card structure is self-calibration through the simultaneous flow of a reference solution on the opposite flank of the indicator stream from the sample to be analyzed. This simultaneous, real time reference capability allows the system to compensate for temperature fluctuations, light source fluctuations, detector fluctuations, and flow rate fluctuations in the channel. This is an extraordinary capability – virtually unattainable in the macrofluidic world of current instrumentation.

Protected by one or more of the following US patents: US 5,716,852, 5,932,100, 5,948,684, 5,972,710, 5,974,867, 6,171,865B1. Additional US & Foreign patents applications are pending.

For additional information on lab card custom design services and orders, or to place an order, please contact:

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