

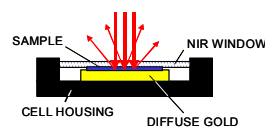
Near-Infrared Transflectance Paste Cell

Overview

The Transflectance Paste Cell is ideal for measuring samples that are too viscous to pump through a conventional flow-through cell. While the related MRC-912-000 Transflectance Liquid Cell is suitable for samples as viscous as honey, the Transflectance Paste Cell can handle samples of even greater density. Its unique design creates a repeatable pathlength and allows for easy cleanup between measurements.

Operation

The pasty or soft solid sample is placed on the center of the window and the diffuse gold is placed on top. The bottom half of the housing is threaded onto the assembled top half, and a unique mechanism uniformly disperses the sample between the window and diffuse gold surface. Once the housing is completely tightened, the sample is ready for measurement and a repeatable pathlength is achieved.



Cleaning the Cell

The cell was designed for ease of cleaning, even when measuring extremely viscous samples. No tools are required to disassemble the cell, and all exposed surfaces can be cleaned with a soft sponge, soap and water. The gold surface is chemically resistant, so the use of alcohol, acetone, or other similar laboratory solvents is also possible.

Benefits and Features

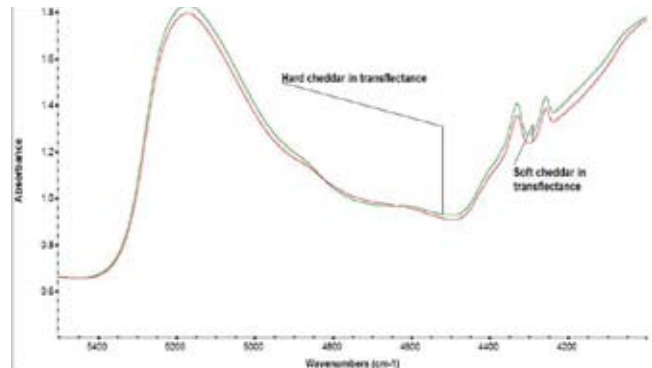
- Quick and easy sampling and cleaning
- Pivoting pressure mechanism coupled with very strong sapphire window allows measurement of extremely viscous samples by spreading them into a uniform layer of approximately 200 μm
- Reproducible pathlength
- Universal design can be used on any near-infrared analyzer with reflectance sampling
- Easy sample application and cleaning

Diffuse Gold Reflector design assures reproducible thin pathlength after the cell is assembled, easy separation of window and reflector, even using the most viscous and sticky samples.

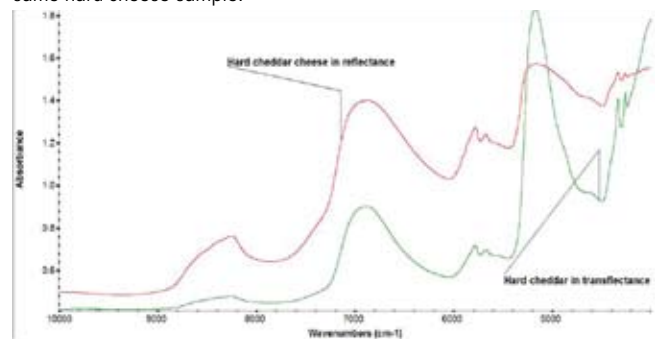


Some viscous samples that are ideal for the Transflectance Paste Cell include peanut butter, mustard, hard caramel, cookie dough, solid cheese, industrial gels, pastes and glues.

For samples that have very small differences, the controlled, reproducible thickness (or pathlength) is a major advantage. Transflectance spectra from both hard cheddar and soft cheddar are shown below.



Measuring a sample in transflectance rather than reflectance can dramatically increase the intensity of the bands in the spectrum, particularly in the longer wavelength regions. The spectra below demonstrate the difference between transflectance and reflectance methods using the same hard cheese sample.



Specifications

Product Number:	MRC-912-005
Cell Dimensions:	2.20" Diameter x 0.66" Height
Reflective Surface:	0.68" Diameter Diffuse Gold
Physical Pathlength:	0.20 mm nominal
Window Material:	Sapphire
Packaging:	Wood Case

Ordering Information

MRC-912-005	Transflectance Paste Cell
MRC-912-006	Paste Cell Gold Reflector (replacement part only)
MRC-912-007	Sapphire window (replacement part only)
MRC-912-013	Sapphire Window refurbishing (with Cell Top sent back to Middleton Research)