Negative peaks observed using Refractive Index Detector - WKB67342

SYMPTOMS

- Negative peaks observed using Refractive Index Detector
- Negative peaks have the same peak shape and intensity as positive peaks, but they appear mirrored

ENVIRONMENT

- 2410 Differential Refractometer
- 2414 Refractive Index Detector
- ACQUITY RI Detector

CAUSE

The cell is dirty OR the pressure relief valve is activated.

FIX or WORKAROUND

- Clean the sample and reference cell as described in the Refractive Index Detector Overview and Maintenance Guide. See the section "Decontaminating the fluidics path".

If cleaning does not help:

- Reduce back pressure behind the RI detector. (Is the waste line blocked or clogged?)

ADDITIONAL INFORMATION

During normal operation, the pressure relief valve remains closed. It opens when the pressure for the flow cell, whose maximum pressure rating is 690 kPa (6.89 bar, 100 psi), gets too high. This protects the flow cell from exceeding the maximum pressure rating. The pressure rating of the relief valve is 103.4 kPa (1 bar, 15 psi).

The attachments show the flow path when the pressure relief valve is open or closed. When closed (normal operation), sample passes through the sample side of the flow cell only (positive peaks). When open, sample first passes through the sample side of the flow cell (positive peaks), and later through the reference side of the flow cell (generating the mirrored signal observed for the positive peaks).