

BBE Laboratory participates in two proficiency schemes.

In both 25 mm PVC filters are loaded with alpha-quartz and sent to laboratories for the determination of the mass of quartz present on the filters.

NIOH: Locally BBE Laboratory participates in the National Institute for Occupational Health's EQA Programme – Respirable Crystalline Silica. Only DoF XRD was used to determine the quartz content. The results for the round 4 and round 5 are displayed. The "target" value is the value obtained by NIOH by means of gravimetric analysis on a balance with a resolution of 0.001 mg (so-called 6-decimal balance). Results for round 6 have not been received to date.

NIOH uses the z-score as an indication of the performance of the laboratory.

WASP: The Workplace Analysis Scheme for Proficiency (WASP) is an independent analytical performance testing scheme, operated by the Health and Safety Laboratory (HSL in the UK). BBE Laboratory participates in the WASP- alpha-quartz on membrane filters. Both DoF XRD (lab 1571) and KBr FTIR (lab 1572) analytical techniques were used to determine the quartz content. The results for rounds 81 and 82 are displayed. Trimmed participant means have been used as the "true" results.

WASP is using a scoring system based on the Rolling Performance Indicator (RPI). The Performance Index (PI) statistic is calculated from the four sample results in each round

$$\text{Performance Index} = \frac{\sum_{s=1}^4 \left(\frac{x_s}{\bar{x}} - 1 \right)^2 \times 10,000}{4}$$

- where x_s is the result obtained by the laboratory for sample number s (of four), and \bar{x} is the assigned value for sample 's'. (The ratio x_s/\bar{x} is the "standardised result", i.e. the result obtained by the participant, divided by the "assigned value".) (The multiplication factor of 10,000 is arbitrary, to avoid having to deal with very small numbers).]

Criteria:

- **GOOD:** Results obtained by the participating laboratory are on average within 7.5% of the assigned value. This equates to an **RPI of 56.25 or less.**
- **ACCEPTABLE:** Results obtained by the participating laboratory are on average within 15% of the assigned value. This equates to an **RPI of 225 or less.**
- **UNACCEPTABLE:** Results obtained by the participating laboratory differ by more than 15% of the assigned value. This equates to an **RPI of greater than 225.**