The result of measurements of participants exposure for a compound sampled with two or more adsorbents can schematically be described as in the following table.

	Adsorbent						Average
Participant	1	2	..	j	..	k	
1	x_{11}	x_{12}		x_{1j}		x_{1k}	$\bar{x}_{1\bullet}$
2	x_{21}	x_{22}		x_{2j}		x_{2k}	$\bar{x}_{2\bullet}$
..							
i	x_{i1}	x_{i2}		x_{ij}		x_{ik}	$\bar{x}_{i\bullet}$
..							
n	x_{i1}	x_{i2}					$\bar{x}_{n\bullet}$
Average	$\bar{x}_{\bullet 1}$	$\bar{x}_{\bullet 2}$		$\bar{x}_{\bullet j}$		$\bar{x}_{\bullet k}$	$\bar{x}_{\bullet\bullet}$

$$ICC = \frac{BMS - EMS}{kBMS}$$

where

$$BMS = \frac{n\sum(\bar{x}_{\bullet j} - \bar{x}_{\bullet\bullet})^2}{k}$$

$$EMS = \frac{\sum(x_{ij} - \bar{x}_{\bullet i} - \bar{x}_{j\bullet} - \bar{x}_{\bullet\bullet})^2}{(n-1)(k-1)}$$

x_{ij}=measurement of participant i (i=1,n, i.e. the participant where the compound has been detected) and adsorbent j (1,k, i.e. Carbopack B, Chromosorb 106 or Tenax TA).

In the comparison of adsorbents agreement the average of duplicate measurements are used for each adsorbent, and in the comparison of the adsorbents reliability the duplicates are used instead of adsorbents in the table above.