Sodium estimation by chloride inference.
Work sheet for Quantab test strips Lot A1099

(Note for use ONLY with lot A1099)

Date. __ / __ /2012

Product _____

Size _____ Bar code _____ Coding

_____ kJ Na _____ mg/100g Salt as ingredient Y N

Weight of product sample _____ g [WPS]

Weight of water added. _____ g [WWA] Soak time _____

Quantab units _____

mg/L Cl _____ [mg/L Cl]

Estimated % water in sample _____ [%EWIS]

Total water = ([%EWIS]/100 * [WPS]) + [WWA] = _____ g [TW]

Total Cl = [TW] * [mg/L Cl] / 1000) = _____ mg [TCl]

Cl in 100g of product = [TCl] * 100 / [WPS] _____ mg [Cl/100g]

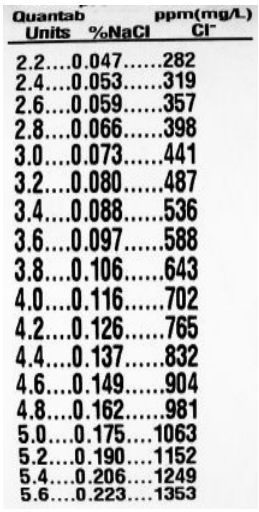
Cl in reference product = _____ mg/100g [UCl] (external information)

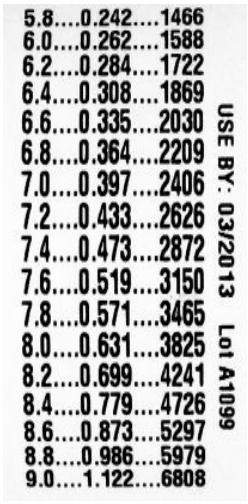
Na in reference product = _____ mg/100g [UNa] (external information)

Difference in Cl = [Cl/100g] - [UCl] = _____ mg/100g [DCl]

Deduced sodium = ([DCl] * 0.647) + [UNa] = _____ mg/100g

Notes.





[TW] After adequate soaking the chloride will be distributed in the added water and in the water that was originally in the product.
[UCl][UNa] The reference product details are for a similar product. If no information use zero for both.
[DCl] The difference in chloride level from the reference products level is assumed to be associated with a different salt level. [DCl] can be negative.
Deduced sodium. The sodium in NaCl is 0.647 times the chloride. (Na 22.989 / Cl 35.453) Any difference in the chloride from the reference level is assumed to be from salt and this salt has a related sodium level.
Example. If 1g of salt was added to 100g of roast chicken with reference and actual levels of Na 80mg/100g and Cl 75mg/100g it would produce 101g with Na 468mg/100g and Cl 675mg/100g. Assuming the chloride test revealed the correct chloride level [Cl/100g] of 675mg/100g the Cl assumed from salt [DCl] would equal 675 – 75 = 600. The deduced and correct sodium level would be 80 + (600 * 0.647) = 468mg/100g. If there were no reference levels available (use UCl, UNa = 0) then ones best assumption would be to assume all the chloride was associated with sodium from salt and the deduced sodium would be 675 * 0.647 = 437mg/100g. Note it is not necessary for the reference levels to be for an unsalted product.
Practical example for above product. [WPS] 5g, [WWA] 50g, Qantab units 3.8, [mg/L Cl] 643, [%EWIS] 65%, [TW] 53.25, [TCl] 34.24, [Cl/100g] 684.8, [UCl] 75, [UNa] 80, [DCl] 609.8, Deduced sodium 475mg/100g. Note same result using a salted reference [UCl] 675 and [UNa] 468.