

DECISION RULE – STATE OF CONFORMITY

1. Any decision rule and any state of conformity declared, is done based on the result and the measurement uncertainty.
2. When the measurement result (a) is evaluated according to a specification, standard or requirement and in any case of a specified legislated maximum limit, L_{max} , using $U=2*u$ (where **U** is the Expanded Uncertainty determined with a coverage factor $k=2$ for confidence interval equal to 95% and **u** is the combined standard uncertainty), then this is:
 - Considered as **non-compliant** for confidence interval 95% when:
 $a-U > L_{max}$
 $a+U < L_{min}$
 - Considered as **compliant** for confidence interval 95% when:
 $a-U \leq L_{max}$
 $a+U \geq L_{min}$

Where:

A = the measurement result

U= the expanded uncertainty of the measurement (for confidence interval equal to 95%)

L_{max} = maximum limit of a legislation or a specification

L_{min} = minimum limit of a legislation or a specification

In general, when the measurement result (a) is evaluated according to a specific value L, then the sample is considered as:

- **Non-compliant** when the value L is **beyond the range $a \pm U$**
- **Compliant** for confidence interval 95% when $a - U \leq L \leq a + U$

Decision rule applied:

The sample is compliant when the measured result, taking into account the uncertainty and any recovery correction, is within limits for a 95% confidence level.

3. In microbiological testings and in particular for:
 - A. Detection methods: Sample is considered unsatisfactory if the presence of the target microorganism is detected in any of the sample units tested (1/5). Sample units are tested using the above standard method validated/verified for a detection limit of 5 cfu/375g.
 - B. For enumeration methods if the measured result x is compared to a unique declared value L, this is considered to be compliant in 95% confidence level, when $x-U < L < x + U$ where U is the expanded uncertainty (or tolerance).