



NQAC

Nestlé Quality Assurance Center
Dublin

SAMPLE MATRIX VERIFICATION PROCESS

WHY DO WE NEED A VERIFICATION PROCESS?

Based on research performed at the Nestlé Research Center, we know that certain matrices are inhibitory to *Salmonella*, *Listeria* or general testing growth at the standard 1:10 testing dilution. Armed with this information, NQAC Dublin implemented a process requiring additional dilutions to be performed on matrices that are known to have an inhibitory nature. Our verification process is to ensure that we are not releasing any false negative results due to ingredients and/or materials being inhibitory at the standard dilution.

Below is a list of flavors/ingredients we know can be inhibitory. However, other factors (processing effects, concentration, and synergism with other ingredients) need to be considered as well.

Coffee (including instant), Hazelnut, Pumpkin, Mint, Vanilla, Lemon, Caramel, Cinnamon, Coconut, Amaretto, Banana, Cherry, Orange, Raspberry, Strawberry, Cheese Flavor, Blueberry, Artificial Sugar, Garlic, Oregano, Onion, Clove, Basil, Sage, Savory, Cocoa, powdered teas, and anything that has a high level of Salt.

High salt content has an impact on bacterial recovery so it is necessary for us know this information to ensure accurate results. Please provide the salt content information in the sample instructions for your submission. The following scheme will be used to test your product, when salt content is provided.

Salt Content	Dilution
≤10%	1:10
11-20%	1:20
>20%	1:100

HOW THE VERIFICATION PROCESS WORKS

During sample processing if your material has not been verified before, using information from our internal database, we make a technical judgment to determine what dilution should be used to test that material. This justification will also take into account any information that is received with the material in regards to the ingredients.

If the determined dilution is over 1:10, we will contact you requesting direction on how to proceed. Once we receive instruction from you testing will be initiated same day or the following morning depending on the time of day your response is received.

If it is determined that the technical justification needs supporting data, the matrix will undergo a formal verification study. If the verification process finds the material needs to be tested at a dilution higher than 1:10, you will be contacted via email by the Customer Service Team making you aware of the necessary dilution. This email will also request permission from you to process your future samples at this dilution without any further notifications or verification delays. We will record your decision in our internal database by the SAP Material ID Number or Unique Identifier.

Please note future submissions will need to list the SAP Material ID Number or Unique Identifier.

UNDERSTANDING DILUTIONS

To aid in understanding the verification process a standard dilution matrix was constructed. This table will help you determine how many replicates will be needed to perform testing at your requested product weight after NQAC Dublin has determined the required dilution. Please see the below tables:

		Salmonella Weight								
		25 g	100 g	125 g	150 g	250 g	325 g	375 g	750 g	1500 g
Dilution	1:10	1	1	1	1	1	1	1	2	4
	1:20	1	1	1	1	2	3	3	5	10
	1:100	1	4	5	6	10	13	15	30	60
	1:200	2	10	10	10	25	26	25	50	100
	1:500	5	20	25	30	50	65	75	150	300
	1:1000	10	40	50	60	100	130	150	300	600
	1:2000	25	100	125	150	250	325	375	750	1500
	1:3000	25	100	125	150	250	325	375	750	1500

		Listeria Weight			
		25 g	100 g	125 g	250 g
Dilution	1:10	1	1	1	2
	1:20	1	2	2	4
	1:50	1	4	5	10
	1:100	2	8	10	20

HOW TO USE THE TABLES

If you are requesting a product to be tested at 375 g and we have determined that the dilution required to test that sample is 1:20 then the number of *Salmonella* test replicates required to complete the test is 3. The final report will show the results for 3 *Salmonella* replicate tests at 125 g each.

Please contact nqacdublincustomerservice@us.nestle.com or 614-526-5200 for additional questions.



ISO 17025 Accredited.

We receive, test and report seven days a week.

614.526.5200

NQACDUBLININFO@US.NESTLE.COM

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