 UNIVERSITAT DE BARCELONA	Facultat de Química Departament Química Analítica Mat Control	PNT/MAT/008/01
		Elaboration of reports
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**Title:** Elaboration of reports

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**WRITTEN BY**

\_\_\_\_\_  
Msc. Glauce Pereira  
*Technical Cooperator*

Date:

**REVIEWED BY**

\_\_\_\_\_  
Dr. Emilio Carrasco  
*Technical Expert*



Date:

**APPROVED BY**

\_\_\_\_\_  
Dra. Angels Sahuquillo  
*Director*

Date:

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## 1 Objective

Establish the minimum information that a report of results sent to participants should have.

## 2 Scope

This document applies to all exercises of PT organized by Mat Control.

## 3 Definitions

**Participants** are laboratories entities that apply to the PT, receive the item and report the result.

## 4 Related Procedures

[PNT/MAT/007](#) - Data analysis and evaluation of proficiency testing scheme results.

## 5 Responsibilities

The technical responsible for PTS is responsible to elaborate the report and send it to participants.

## 6 References

Not applicable

## 7 Instructions



The report of proficiency test has three different parts:

- Technical inform;
- Characteristics of Methods used in PT;
- Results

### 7.1 Technical inform

The technical inform is the body of the report. This text format shall content information about:

- Objective of PT
- Design and organization of PT

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- Description of samples – preparation and characterization of reference material when appropriate.
- Homogeneity
- Stability
- General descriptions of participants
- Results
- Explanation of statistical techniques –include criteria to exclude points.
- Bibliography

## 7.2 Characteristics of Methods used in PT

Report shall have a list (in annex) of methods used by participant laboratories. This list shall content: laboratory code, pre-treatment explanation, technical code, parameters values when in possible, brand and model of equipments, uncertainty and other information when necessary. e.g :

Tabla 1. Determinación de cadmio (mg/kg) (Muestra A)					
Código Lab.	Pretratamiento lixiviado	Código Técnica	$\lambda$ (nm)	Marca y modelo instrumento	Incertidumbre del resultado (unidades) (al nivel de concentración obtenido)
01	Digestión ácida (HNO <sub>3</sub> ) al microondas	ICP	226.5; 228.8	Thermo, Iris Advantage	± 1,60 mg/kg
02	-	ICP	226.502	Perkin Elmer Optima 7300 DV	15 %
03	-	ICP	214.440, 226.502	PERKIN-ELMER, OPTIMA 3100 RL	NO EVALUADA.
04	NO	ICP	214	Varian 720-ES	20%
05	Acidificar	ICP	226.502	ICP OES P-E 4300 DV	15%
06	Acidular con ác. nítrico	ICP	214; 226; 228	Perkin-Elmer. Optima 3300 RL	15 %
07	Acidulado con HNO <sub>3</sub>	ICP	228.802	Perkin Elmer. Optima 2100DV	0.5

Or

Tabla 6. Determinación de amonio (mg/l) (Muestra B)					
Código Lab.	Pretratamiento muestra	Código Técnica	Marca y modelo instrumento	Incertidumbre del resultado (unidades) (al nivel de concentración obtenido)	Otra información
01	-	UV-vis	Thermo Spectronic Helios β	± 0,86 mg/l	
02	Destilación	VOL	BÜCHI K-370	30%	
03	-	UV-VISIBLE	THERMO. AQUAMATE		
04	NO	UV-vis	SYSTEA / EASYCHEM PWS	10%	
05	Basificar con NaOH	VOL	Destilador -valorador Büchi K-370.	15%	
06	-	ESI	ORION 960	12 %	-
07	-	ESI	Crison micro CM 2201	0.4	-
08	Destilado	UV-vis	DR5000-HACH LANGE	9.1%	
09	Homogeneización muestra	VOL	Destilador de vidrio	11,9%	
10	NINGUNO	ISE	Metrohm, 692 pH/ion Meter	17%	Electrodo WTW

### 7.3 Results

Results are presenting by parameter. For each parameter the report has:

- Table resume with laboratory code and values of replicates.

Laboratory Code	Replica 1	Replica 2	Replica 3

- Table resume (generated by software Tool4PT) for **Raw Data** and **Treat Data** with number of sets, minimum, maximum, media, average, standard deviation, and coefficient of variance. , e.g:

#### Raw data

No data sets	min	max	median	Mean	StDev	CV (%)
29	0,83	97,85	2,367	15,482	33,442	216,0

Intervalo Mediana  $\pm$  50 % Mediana      1,18      3,55

**Código Labs. excluidos: 8, 15, 23, 27, 29**

#### Treated data

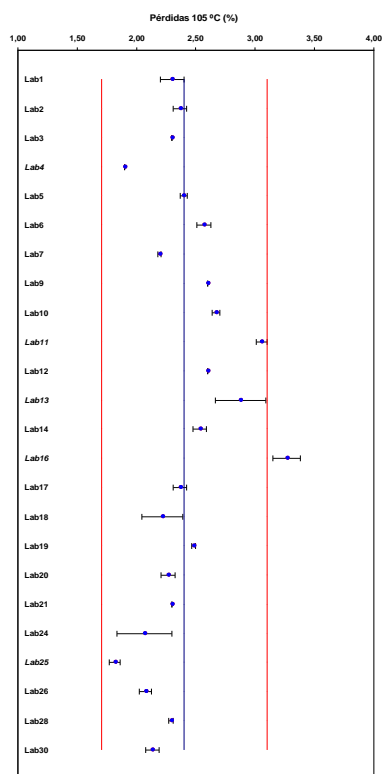
No data sets	min	max	median	Mean	StDev	CV (%)
24	1,82	3,27	2,33	2,40	0,34	14,1

- Table resume (generated by software Tool4PT) for Final Data after robust statistics, e. g:

#### Final data (robust statistics)

No data sets	No reallocated	% reallocated	Robust Mean	Robust St.Dev	C.V.(%)
24	5	20,8%	2,38	0,30	12,6

- Graphic with values distribution generated by software Tool4PT, e.g:



- Table resume with number of interactions, reallocated laboratories, e.g.:

	Nº iteraciones	Código laboratorio
Promedio robusto	2	
Desv. std. robusta	2	
Nº Labs. recolocados	5	Lab. 4, 11, 13, 16, 25

- Table (generated by sotware Tool4PT) with robust mean, robust standard deviation and coefficient of variance , e.g:

Robust Mean	Robust St.Dev	C.V.(%)
2,38	0,30	12,6

- Table resume with laboratory code, average and Z-score. And table with laboratory code and Z-score order according Z-score.

Código lab.	Promedio	Z-score	Código lab.	Z-score
Lab1	2,30	-0,27	<b>Lab15</b>	<b>-5,15</b>
Lab2	2,37	-0,04	Lab25	-1,88
Lab3	2,30	-0,27	Lab4	-1,60
Lab4	1,90	-1,60	Lab24	-1,04
Lab5	2,40	0,06	Lab26	-1,01
Lab6	2,57	0,62	Lab30	-0,82
Lab7	2,19	-0,62	Lab7	-0,62
Lab8	97,40	317	Lab18	-0,54
Lab9	2,60	0,73	Lab20	-0,38
Lab10	2,67	0,97	Lab28	-0,30
Lab11	3,05	2,25	Lab1	-0,27
Lab12	2,60	0,73	Lab3	-0,27
Lab13	2,88	1,66	Lab21	-0,27
Lab14	2,53	0,51	Lab2	-0,04
Lab15	0,83	-5,15	Lab17	-0,04
Lab16	3,27	2,96	Lab5	0,06
Lab17	2,37	-0,04	Lab19	0,33
Lab18	2,22	-0,54	Lab14	0,51
Lab19	2,48	0,33	Lab6	0,62
Lab20	2,27	-0,38	Lab9	0,73
Lab21	2,30	-0,27	Lab12	0,73
Lab23	97,62	317	Lab10	0,97
Lab24	2,07	-1,04	Lab13	1,66
Lab25	1,82	-1,88	Lab11	2,25
Lab26	2,08	-1,01	Lab16	2,96
Lab27	97,85	318	<b>Lab8</b>	<b>317</b>
Lab28	2,29	-0,30	<b>Lab23</b>	<b>317</b>
Lab29	97,63	318	<b>Lab29</b>	<b>318</b>
Lab30	2,13	-0,82	<b>Lab27</b>	<b>318</b>

- Z-score graphic, e.g:

