

Military Laboratories For Quality Control MLQC.

For Jordan, since 1962

The Military Laboratories For Quality Control touches the lives of many Jordanians throughs It works safety in food sectors and cosmetics and detergent and leather and fabric sectores through continuous impact to future health safety of Jordanian life .

Born out of the hearts and spirit of Jordanian army in 1962.

The Military Laboratories For Quality Control (MLQC) aims to be the leader in knowledge sciences locally and regionally. The MLQC uses scientific research to enhance economic development .

The Military Laboratories For Quality Control is an applied research institution, consultancy, and provide the support services within Jordan Army , looking to be a regional leader in the fields of science.



What We Do

Supported by more than 150

Science Specialists,

Researchers,

Technical Support Staff,

Highly Skilled Management,

The MLQC has become recognized as A center of locally ,
Regional and international research and development.



JAS Test 125 (A+B)

MLQC provides testing services via 7 specialized locally and internationally accredited laboratories According ISO 17025:2017.

And prides itself on offering both Military sectors and public and private sectors a unique scientific evidence helping in decision maker.

Military Laboratories for Quality Control Departments (MLQC).



Consultation

Testing

Training

Society

- Microbiology testing lab.
- Food Physical and Chemical testing lab.
- Detergents and Cosmetics testing Lab.
- Textile and Leather Physical and Chemical testing Lab.
- Research & Development Lab .
- Ammunition Surveillance testing Lab.
- Proficiency testing provider lab.



Military Laboratories For Quality Control Proficiency Testing Lab .



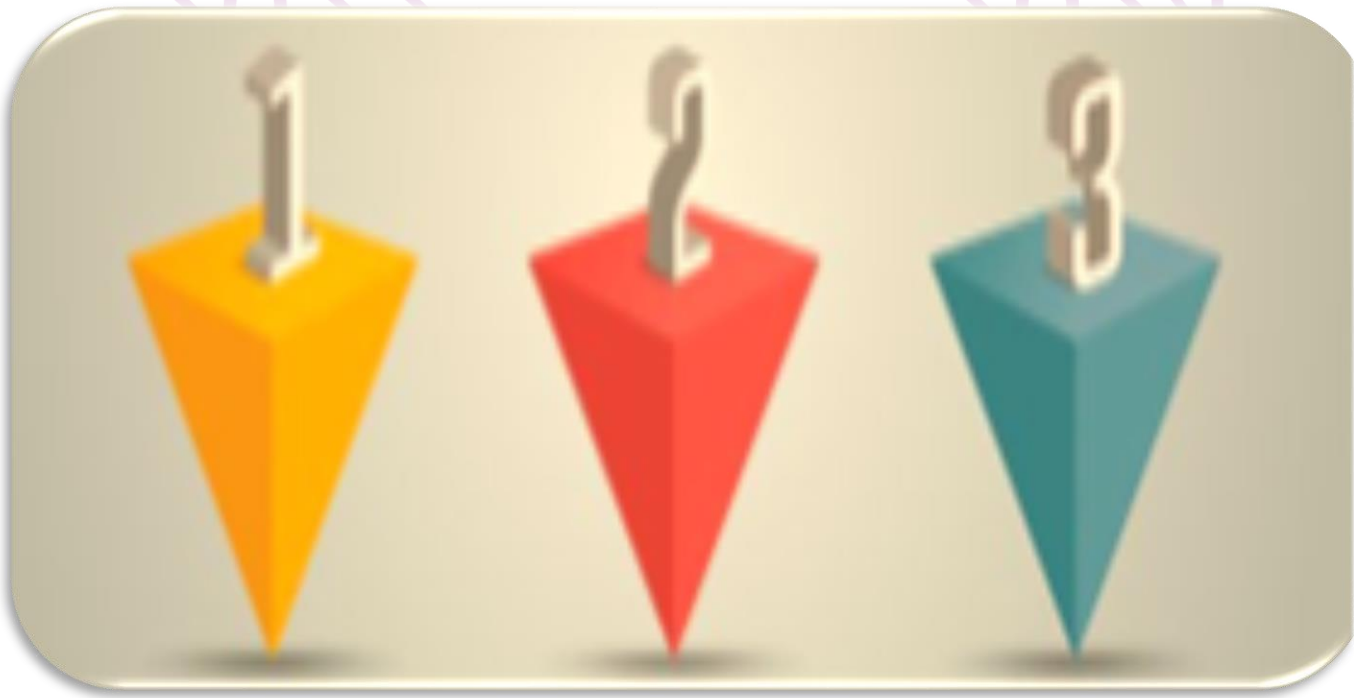
Stages of Proficiency Testing Department Development :



القيادة العامة للقوات المسلحة الأردنية - الجيش العربي
JORDAN ARMED FORCES - ARAB ARMY

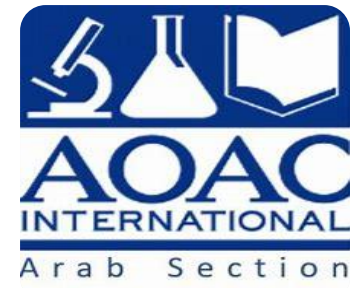
2022

2024



2023

GLOBAL FOOD REGULATORY
SCIENCE SOCIETY
GFORS



2022



AOAC- ARAB SECTION / Global Food Regulatory Science Society's (GFORSS).

Support to the Accreditation of military laboratories as an organizer of Proficiency testing programs.

A circular graphic with a bokeh background of warm, golden light spots. In the center, the year "2023" is written in a bold, golden, 3D-style font. The numbers are slightly blurred, giving a sense of depth and light. The entire graphic is set against a light gray background with faint white concentric circles.

2023

Introduction to the statistical design of proficiency testing schemes :

- The performance of the participants is assessed through the statistical evaluation of their results following the measurements or interpretations they make on the proficiency test items.
- Performance is often expressed in the form of performance scores which allow consistent interpretation across a range of measurands and can allow results for different measurands to be compared on an equal basis.
- Performance scores are typically derived by comparing the difference between a reported participant result and an assigned value with an allowable deviation or with an estimate of the measurement uncertainty of the difference
- Examination of the performance scores over multiple rounds of a proficiency testing scheme can provide information on whether individual laboratories show evidence of consistent systematic effects ("bias") or poor long-term precision



The Statistical Design .

“shall be developed to meet the

Objectives of the proficiency testing scheme, based on :-

- the nature of the data (quantitative or qualitative including ordinal and categorical),**
- statistical assumptions,**
- the nature of errors,**
- and the expected number of results”. Therefore, proficiency testing schemes with different objectives and with different sources of error could have different designs**

The statistical design for a proficiency testing scheme

- **Shall consider the minimum number of participants that are needed to meet the objectives of the design, and state alternative approaches that will be used AT CASE OF the minimum number .**
- **Guidance for proficiency testing schemes where there are few participants. In brief, the IUPAC/CITAC report recommends that the assigned value should be based on reliable independent measurements; for example, by use of a certified reference material, independent assignment by a calibration or national metrology institute, or by gravimetric preparation.**

The minimum number of participants needed for the various statistical methods will depend on a variety of situations:

- The statistical methods used, for example the particular robust method or outlier removal strategy chosen;**
- The experience of the participants with the particular proficiency testing scheme;**
- The experience of the proficiency testing provider with the matrix, measurand, methods, and group of participants;**

7.0**The number and type of expected participants in the proficiency testing scheme:**

A minimum of 10 laboratories are expected to participate. and every participant can submit multiple results in order to compare results between different analysts, methods or instruments, maximum of 3 results can be nominated results, nominated results are included in the statistical analysis of the data set, nominated results must be obtained using different methods, again to minimize the effect of bias. (note : every result acting as individual participant code in current round).

More than 10 and up to 20 participants will be entertained if the participation forms are received before last date of registration.

In case of non-receipt of sufficient participants following actions need to be initiated:

1. If at least 8 participants have been registered before last date of registration, then execute the PT Scheme.
2. If only 5 participants have been registered before last date of registration, extend the date of registration at least 15 to 30 days to get the sufficient number of participants,
3. If less than 5 participants have been registered before last date of registration, then postpone the PT scheme and inform to the registered participants and pay them back their registration amount

Outlier member:

Outlier member of a set of values which is inconsistent with other members of that set .

- **Note 1 to entry:**

An outlier can arise by chance from the expected population, originate from a different population, or be the result of an incorrect recording or other gross error.

- **Note 2 to entry:**

Many proficiency testing schemes (3.11) use the term outlier to designate a result that generates an action signal. This is not the intended use of the term. While outliers will usually generate action signals, it is possible to have action signals from results that are not outliers.

[SOURCE: ISO 13528:2022, 3.12, modified — The word “blunder” has been replaced with “gross error” in Note 1 to entry.

When statistical analysis is performed on participant results to determine an assigned value or performance criterion, PT providers are required to have:

- ❑ Procedures for dealing with extreme results, referred to in this document as gross errors and outliers .
- ❑ Detailed statistical procedures for calculating the mean and the standard deviation from participant data, appropriate for the objectives of the PT scheme and the number of participants; these include steps to check that statistical assumptions are reasonable (e.g. that the distribution of participant results is unimodal and reasonably symmetric) .

NOTE ISO 13528 Recommends robust statistical methods for the determination of the consensus mean and standard deviation, **without the need for outlier removal**, but it is important to ensure as far as possible that results **identifiable as gross errors are not included in statistical analysis**, whether robust procedures are used or not.

Blunder removal.

ISO/IEC 17043:2010, B.2.5 and the IUPAC Harmonized Protocol recommend **removing obvious blunders from a data set at an early stage in an analysis**, prior to use of any robust procedure or any test to identify statistical outliers. Generally, **these results would be treated separately** (such as contacting the participant). It can be possible **to correct some blunders**, but this should only be done according to an approved **policy and procedure**.

Visual review of data As a first step in any data analysis the proficiency testing provider should arrange for visual review of the data, conducted by a person who has adequate technical and statistical expertise. This check is to confirm the expected distribution of results, and to identify anomalies, or unanticipated sources of variability.

Determining the uncertainty of the assigned value

7.7.7 When the assigned value is derived as a robust average calculated using procedures in [C.2](#), [C.3](#), the standard uncertainty of the assigned value x_{pt} may be estimated as:

$$u(x_{pt}) = 1,25 \times \frac{s^*}{\sqrt{p}} \quad (6)$$

where s^* is the robust standard deviation of the results. (Here a “result” for a participant is the average of all their measurements on the proficiency test item.)

NOTE 1 In this model, where the assigned value and robust standard deviation are determined from participant results, the uncertainty of the assigned value can be assumed to include the effects of uncertainty due to inhomogeneity, transport, and instability.

NOTE 2 The factor 1,25 is based on the standard deviation of the median, or the efficiency of the median as an estimate of the mean, in a large set of results drawn from a normal distribution. It is appreciated that the efficiency of more sophisticated robust methods can be much greater than that of the median, justifying a correction factor smaller than 1,25. However, this factor has been recommended because proficiency testing results typically are not strictly normally distributed, and contain unknown proportions of results from different distributions (‘contaminated results’). The factor of 1,25 is considered to be a conservative (high) estimate, to account for possible contamination. A smaller factor, or a different equation, can be justified depending on experience and the robust procedure used.

Proficiency Testing Scheme

Water Chemistry
(PT 1)

Meat and meat products
(PT 2)

Vegetable oil and olive oil Products.
(PT 3)

Cereals and milling grains
(PT 4)

Milk and Milk products
(PT 5)

Detergents
(PT 6)

Cosmetics
(PT 7)

Fruit And Vegetable Products
(PT 8)





Military Laboratories for Quality Control
Proficiency Testing Department
Price list For Proficiency Testing sample preparation Coast .

Scheme : **Chemical Test for Vegetables oil and olive oil .**

Matrix : **Olive oil .**

Weight : **250 mL.**

#	Item	Quantity	Coast
1.	Raw materials "starting materials".	250 ml	2.50 JD
2.	Packaging.	1 Package	1.5 JD
3.	Label.	1 label	0.50 JD
4.	Data sheet	2 sheets	0.50 JD
5.	Preparation of test batches. (for 6 Parameters) ¹	1 sample	90 JD
6.	Results and statistical evaluation, Documentation software. ²	1 round	25 JD
7.	Shipments fees. ³	1 round	5 JD
8.	Climate control storages, and instruments calibrations. ⁴	1 month	2 JD
	Coast for one sample.	1pt sample	127.0 JD

1. Homogeneity and stability assessment parameters test four (Acidity and peroxide content, fatty acid profile, Density, Refractive Index, moisture and Volatile Matter content).
2. Pro lab standard software fulfils requirement of ISO17043, ISO15328, ISO 5725-2.
3. Arames.
4. Storage cabinet.



Military Laboratories for Quality Control
Proficiency Testing Department
Price list For Proficiency Testing sample preparation Coast.

Scheme : **Chemical Test for Milk and Milk product .**

Matrix : **Fluid Milk .**

Weight : **100 gm.**

#	Item	Quantity	Coast
1.	Raw materials "Starting materials".	100 gm	4.00 JD
2.	Packaging.	1 Package	1.50 JD
3.	Label.	1 label	0.50 JD
4.	Data sheet	2 sheets	0.50 JD
5.	Preparation of test batches. (for 6 Parameters) ¹	1 sample	100 JD
6.	Results and statistical evaluation, Documentation software. ²	1 round	25 JD
7.	Shipments fees. ³	1 round	5 JD
8.	Climate control storages, and instruments calibrations. ⁴	1 month	2 JD
	Coast for one sample.	1pt sample	139.00 JD

1. Homogeneity and stability assessment parameters test four (Acidity and peroxide content, fatty acid profile, Density, Refractive Index, moisture and Volatile Matter content).

2. Pro lab standard software fulfils requirement of ISO17043, ISO15328, ISO 5725-2.

3. Arames.

4. Storage cabinet.

Military Laboratories for Quality Control
Proficiency Testing Department
Price list For Proficiency Testing sample preparation Coast.

Scheme : **Chemical Test for Cosmetics and Detergents .**

Matrix : **Shampoo .**

Weight : **100 ml.**

#	Item	Quantity	Coast
1.	Raw materials "Starting materials".	100 ml	1.50 JD
2.	Packaging.	1 Package	0.50 JD
3.	Label.	1 Label	0.50 JD
4.	Data sheet	2 sheets	0.50 JD
5.	Preparation of test batches. (for 6 Parameters) ¹	1 sample	90 JD
6.	Results and statistical evaluation, Documentation software. ²	1 round	25 JD
7.	Shipments fees. ³	1 round	5 JD
8.	Climate control storages, and instruments calibrations. ⁴	1 month	2 JD
	Coast for one sample.	1pt sample	163.00 JD

1. Homogeneity and stability assessment parameters test four (pH, Acidity, Refractive Index and Volatile Matter content).

2. Pro lab standard software fulfils requirement of ISO17043, ISO15328, ISO 5725-2.

3. Arames.

4. Storage cabinet.



Department Technical	No.	P/PTP/05
	Revision No.	00
	Date	01-01-2024

**Military Laboratories for Quality Control
Proficiency Testing Department
Proficiency Testing schedule Plan.**

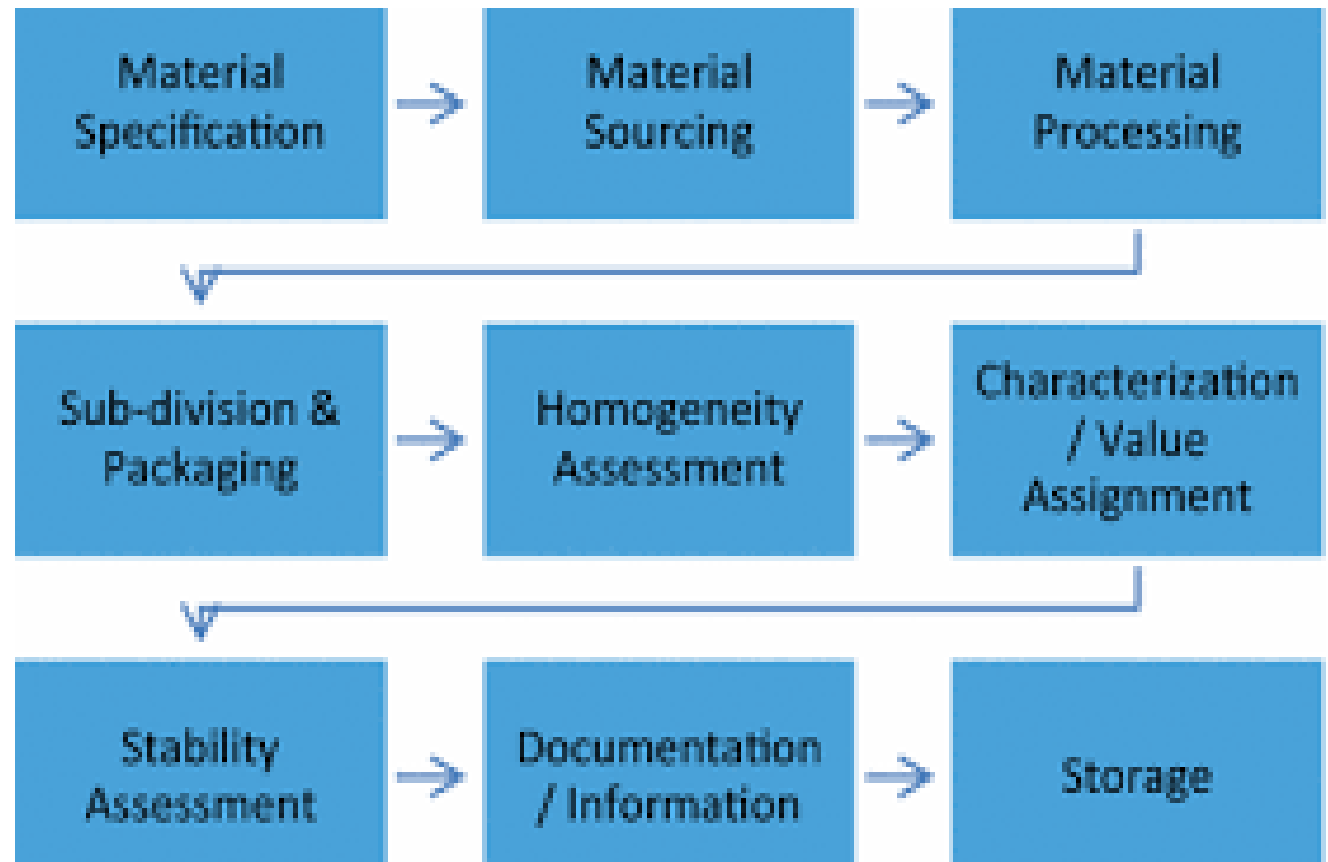
Year		2023-2024					
PT schedule plan							
Sr. no.	Proficiency test items	Analyte / Parameter	Test method	Participation fees in JD	Last date of registration	Last date of results submission	PT Report release date
1.0 Food Chemistry							
1.	Milk and Milk products / powdered milk. PT Scheme Name: PT 5 PT Scheme Code: MLQC/MILPC/01	Acidity % (As Lactic Acid)	ISO 6091 or <u>Any</u> comparable method	160 JD	20-1-2024 20-10-2024	28-2-2024 28-11-2024	16-3-2024 16-12-2024
		Moisture Content %	ISO 5537 or <u>Any</u> comparable method				
		Total Fat Content	ISO 23318 or <u>Any</u> comparable method				
		Total Nitrogen Content %	ISO 8968-1 or <u>Any</u> comparable method				
2.	Milk and milk products/ cheese. PT Scheme Name: PT 5 PT Scheme Code: MIQC/MILPC/02	Total Fat Content %	ISO 3433or <u>Any</u> comparable	160 JD	20-5-2024	28-6-2024	16-7-2024
		Nitrogen Content %	ISO 8968-1 or <u>Any</u> comparable method				
		Acidity % (As Lactic Acid)	ISO 6091 or <u>Any</u> comparable method				
			<u>ISO 5534 or Any</u>				

Department Technical	 <p align="center">Military Laboratories for Quality Control Proficiency Testing Department Proficiency Testing schedule Plan.</p>	No.	P/PTP/05
		Revision No.	00
		Date	01-01-2024

12.	Cosmetics and Detergents / PT Fabric softener PT Scheme Name: PT 6 Scheme Code: MLQC/DFSC/03	PH Content #	Any comparable method	100 JD	20-3-2024	28-4-2024	16-5-2024
		Active Matter Content (Cationic Content) %	ISO 2871-1 or <u>Any</u> comparable method				
13.	Cosmetics and Detergents / detergents laundry liquid washing fabric. PT Scheme Name: PT 6 Scheme Code: MLQC/DWFC/04	PH # 1% Dilution.	Any comparable method	100 JD	20-8-2024	20-9-2024	16-10-2024
		Active Matter Content%	Any comparable method				
	Cosmetics and Detergents / Hair conditioner	PH Content #	Any comparable method	D	24	24	24

ISO/Guide 80:2014

Guidance for the in-house preparation of quality control materials (QCMs)





Comment :
test has shortened
timescale for analysis
and/or returning results.



Comment :
test has shortened
timescale for analysis
and/or returning results.

Product Code :
Start Date :
Start Date :
Recommended Storage :



17 pack

Item Code : ()
Matrix :
Approx. Size :
Product Date :
Start-Date :
Start-Date : (R)
Recommended Storage :

Comment :
 test has shortened
 timescale for analysis
 and/or returning results.

Water
 100%
 NATURAL

Item Code : ()
Matrix :
Approx. Size :
Product Date :
Start-Date : (R)
Recommended Storage :

Comments :
 test has short
 timescale for
 and/or return

Milk
 100%
 NATURAL

Product Code :
Item Code : ()
Matrix :
Approx. Size :
Product Date :
Start - Date (R) :
End - Date (R) :
Recommended Storage :



Comments :
test has shortened
timescale for analysis
and/or returning results :



Comments :
test has shortened
timescale for analysis
and/or returning results.

Product Code :
Item Code : ()
Matrix :
Approx. Size :
Product Date :
Start - Date (R) :
End - Date (R) :
Recommended Storage :



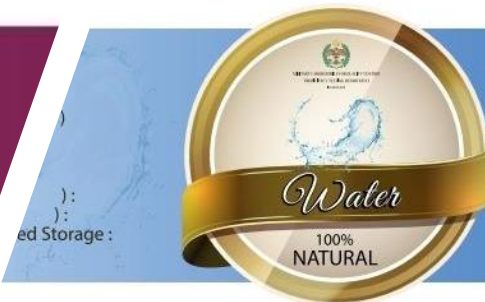
Product Code :
Item Code : ()
Matrix :
Approx. Size :
Product Date :
Start - Date (R) :
End - Date (R) :
Recommended Storage :



Comments :
test has shortened
timescale for analysis
and/or returning results.



Storage :



Recommended Storage :

Comments :
test has shortened
timescale for analysis
and/or returning results.

Product Code :
Item Code : ()
Matrix :
Approx. Size :
Product Date :
Start - Date (R) :
End - Date (R) :
Recommended Storage :



5/31/2024

Comments :
test has shortened
timescale for analysis
and/or returning results.





Sample transportation and storage



Proficiency testing scheme material is transported at ambient (18°C-25°C) temperature and on arrival in your laboratory . Keep it as instruction condition



Refer to the relevant PTS instructions for proper storage requirements e.g. either between 2 – 8 °C or room temperature before examination.



Identify a separate storage space for already analysed PT samples to decrease the possibility of a mix-up with current PT samples.

Participation .

Participation of the MLQC/PTD Proficiency Testing Schemes is open to all laboratories. Private laboratories, both local and international may participate.



SHIPMENTS AND RECEIPT OF SAMPLES .

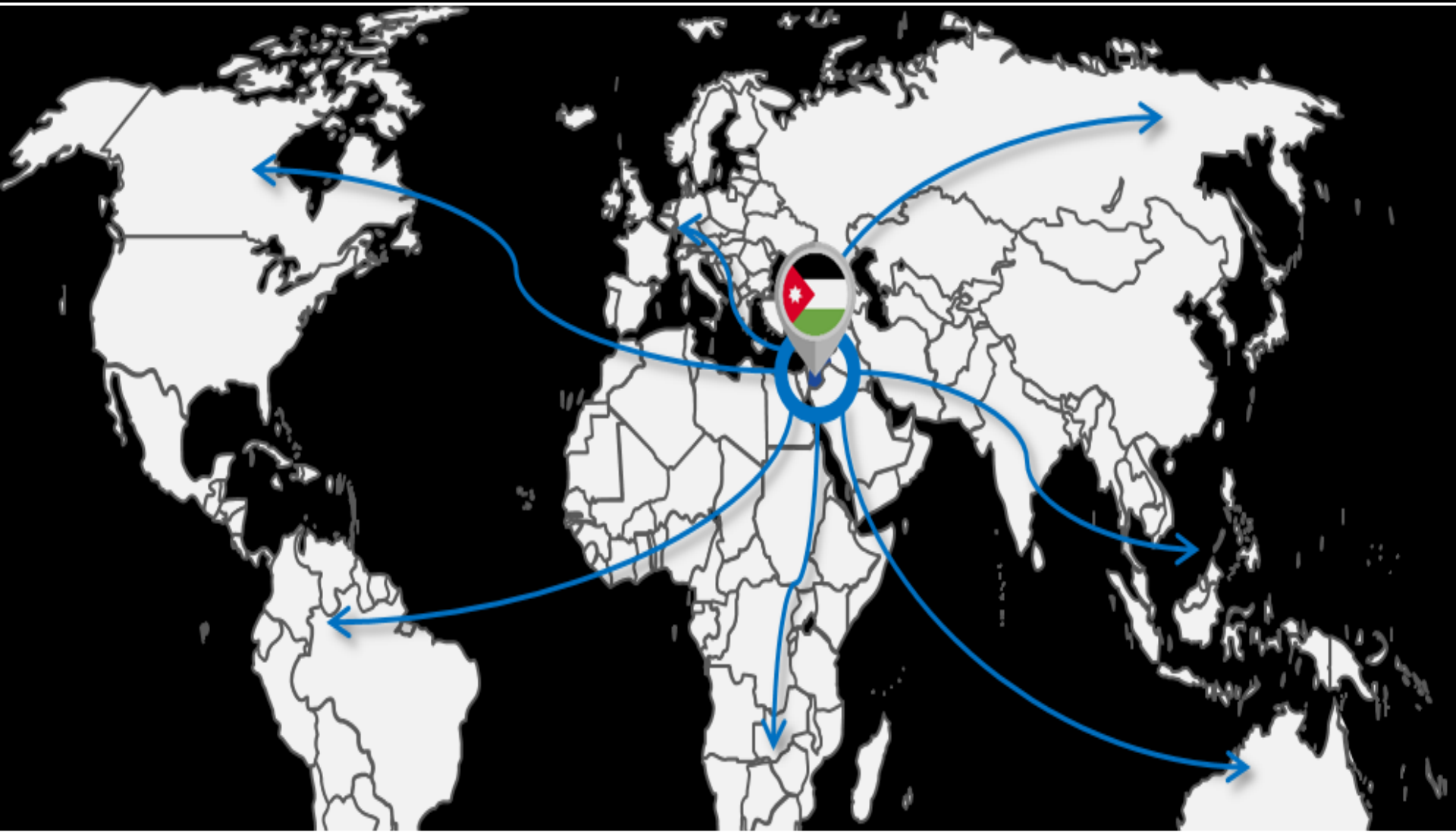


MLQC/PTD schemes outsource the shipping of samples to courier companies that comply with the IATA regulations.



Samples that fall under the UN3373 Category B Hazardous samples are shipped with a special courier that complies with IATA regulations

aramex
delivery unlimited



Jordan is strategically located at the heart of the Middle East, with easy access across the region.

What is a Proficiency Testing Scheme?


A Proficiency Testing Scheme (PTS) is the practice of testing samples of unknown values sent from an external PT scheme.

These samples are shipped to a laboratory at least once throughout the year.

The samples are analysed within a specified time frame by testing personnel who must treat them like a routine sample. Once the samples have been tested, results are sent to the PTS for evaluation.

The evaluated results are sent back to the laboratory in a report that compares the results obtained with the actual results and compares your laboratory to other laboratories using identical or similar method




Military Laboratories for Quality Control
Proficiency Testing Department

PT Item Delivery Note and Receipt Note FOPN02, Rev. No. 02
Page No. 1 of 1

To,	Delivery Note No.	Date of delivery	
	Proficiency testing scheme for	PT Scheme code	
	Contact person	Contact number	

We are sending herewith the following material to you as per your participation in the above mentioned proficiency testing program for mandatory testing as per the test methods given in the relevant protocol. You are requested to acknowledge the receipt of the sample by signing this delivery note and send an scanned copy immediately and later on by courier.

Sr. No.	Description of materials with full details	Qty.	Reusable / non-reusable

Sr. No.	Check performed	Status of review	
		Yes	No
1.	Whether PT material is in good condition? If not received in good condition or damaged, then attach photograph of PT item.	<input type="checkbox"/>	<input type="checkbox"/>
2.	PT item code mentioned on package	<input type="checkbox"/>	<input type="checkbox"/>
3.	Is appropriate PT item received as per registration?	<input type="checkbox"/>	<input type="checkbox"/>

Overall remarks:

PT item received by: _____ PT item reviewed by: _____
Head of Laboratory

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to: email: dap-tech1@af.mil.gov

Annex-A, Result Sheet FOPN02, Rev. No. 02
Page No. 1 of 1

For: **MLQC/CSHC02** Reporting date: **20/02/2024**
 Intending testing scheme for: **vegetable oil and oilseeds products**
 Program No.: **PT5**
 Name of laboratory: _____
 Address of laboratory: _____
 Tel. No.: _____
 Fax No.: _____
 E-mail: _____
 Contact Person: _____
 Contact Number: _____

Results of tests

Name of materials: **olive oil**
 Condition of sample during receipt: _____


Parameter	Results of observation		Reference test method no.	Measurement uncertainty @ k=2
	Unit of measurement	Results (detail at last)		
+				
-				
+				
-				
+				
-				
+				
-				
+				
-				
+				
-				
+				
-				
+				
-				
+				
-				

Tested by: _____ Approved by: _____
(Signature, Name, Designation and seal of laboratory)

Please enclose herewith the detailed calculations, raw data sheet etc. to justify the results reported above. Raw data in terms of raw data sheet / observation sheet / work sheet etc. must be enclosed herewith. Without supports of raw data the above results will not be considered in analysis and no follow-up with the laboratory will be done in case of missing raw data. It will be deemed that the laboratory has not submitted any raw data and the above result sheet will be taken out.

BT

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Military Laboratories for Quality Control
Proficiency Testing Department

No. **PTPT/02**
Revision No. **02**

Date: **01/01/2024**

Instruction for Participants

PT Scheme No. **MLQC/OILO01** Date: **27/02/2024**

Instructions to be followed

- Each of the participant will receive one package containing PT item as per participation and an envelope containing this sheet, PT item receipt note (FOPN02) and Result sheet (FOPN02). Participant's laboratory code will be mentioned on the final report.
- Open the package as soon as you receive it, take out the PT item safely from the package, and examine the PT item. In case of damaged PT item, send the photographs of PT item, ask for other fresh PT item by receipt note (FOPN02), as soon as you receive it.
- PT item is prepared separately, caution is required to keep the PT item safely and separately to avoid inter-mixing/deliberation. Emptying of the packets shall be done properly so as to free particles of PT item should not be left stuck inside the packet.
- PT item is labeled with unique identity to separate them for different tests. The detail of test parameters, methods and sample identification to be used is elaborated in table below:

Parameter	Method of Test	Sample package identification No. ()
Particle value	ISO 3696 as responsible method	
Acidity % content (as Choc. Acid)	ISO 658 as responsible method	
Fatty acid profile	as comparable method	

- Carry out the test as soon as you receive the PT item and email the scanned image of duly filled Result sheet (FOPN02) for reporting of results latest by the last date of submission mentioned in Result sheet (FOPN02).
- Results received after the last date of receipt will not be accepted and such participants shall be treated as "Not Participated".
- Report the results with desired accuracy of decimal places as indicated in Result sheet (FOPN02).
- Treat proficiency test items in the same manner as your routine test sample.
- Store left over quantity of PT item safely till the completion of PT round.
- Ensure that calibrated equipment having valid metrological traceability is used during the testing.

Note: Keep and Store PT item at (15-25) °C and (30-60) % RH with good sealing package.

MLQC/CSHC/02

1
Sample code:
Analysis month: 02/24

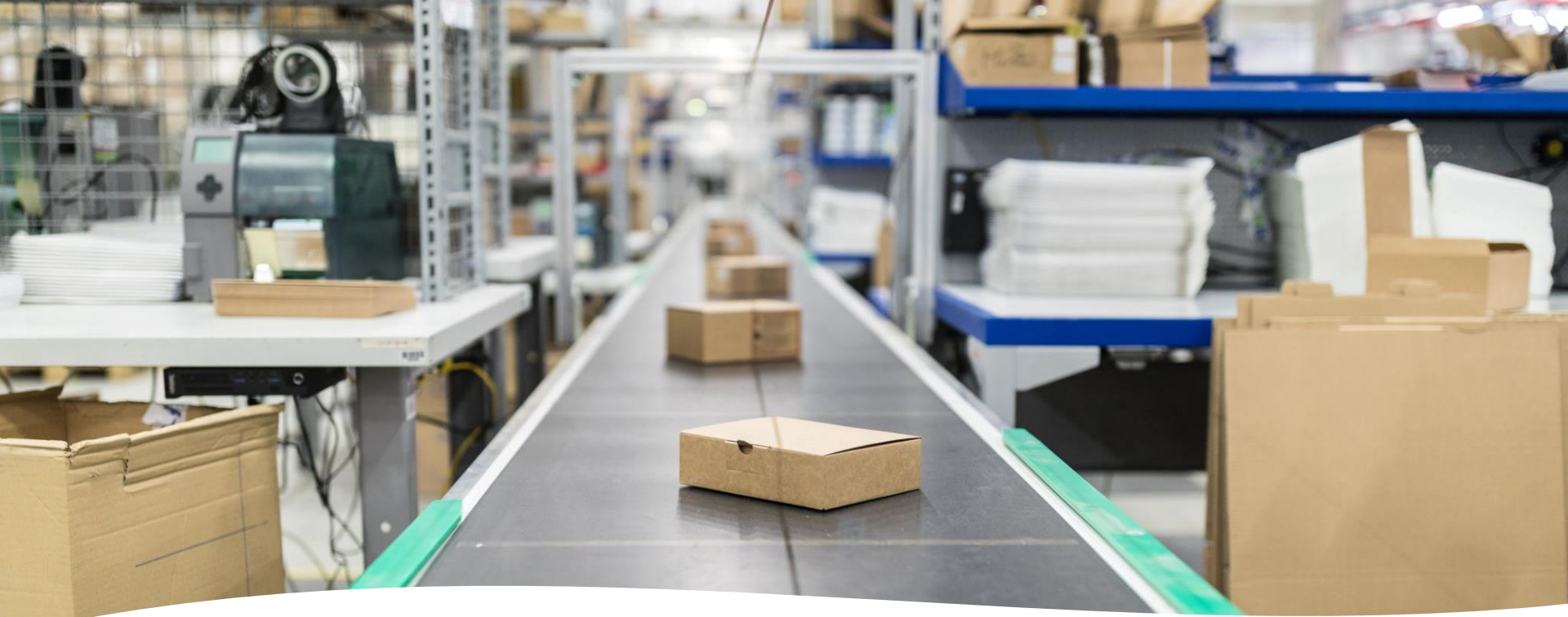


Packaging .

Specimens are transported in IATA 650 compliant packaging All packaging complies with the IATA Dangerous Goods Regulations.

Your subscription package should include the following items:

- Unique Sample code .
- Master copies of results sheets , instruction sheets , receipt delivery note
- Label on sample with general information (due dates for submission of results , PT CODE , PT Scheme Name ...etc) .



• **Receipt of Samples**

- **Inspect contents of package immediately on arrival in the laboratory (Breakages, possible deterioration during transportation...etc) .**
- **Store the samples as per storage instructions until the samples are tested.**
- **Verify that all samples are present (no duplicate or missing samples).**
- **Inspect for sample integrity (adequate volume, cracked or leaking, etc.).**
- **Verify package received corresponds with your enrolment and shipping schedule.**

➤ **Contact Scheme Manager/Coordinator within 5 working days after receipt of samples OR if samples have not been received**

➤ **If there are any issues after inspecting package contents replacement samples are available.**

➤ **Actions to be taken if sample was not received Should you not receive your PT samples contact the Scheme Manager/Coordinator within 5 working days post the shipment date. A “tracking of parcel” will then be instituted with the courier company and the participant will be duly informed of the findings.**



Just saying

Thanks