



Asia-Pacific  
Economic Cooperation



Asia-Pacific  
Legal Metrology Forum

# Handbook on Prepackaged Goods

APEC/APLMF Training Courses in Legal Metrology  
(CTI 10/2005T)

April 3-7, 2006  
Shah Alam, Malaysia

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Practical Application of OIML Recommendation R87 on Pre-packaged Goods  
April 3-7, 2006



Photos taken at the training course in Shah Alam, Malaysia

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## **Foreword**

This booklet is one of the outcomes of the APEC Seminars and Training Courses in Legal Metrology titled 'Practical Application of OIML Recommendation R87 on Pre-packaged Goods' that was held on April 3-7, 2006 at the Concorde Hotel in Shah Alam, Malaysia. This training course was the second training course conducted as a follow-up of the first course held in July 2004. It was organized by the Asia-Pacific Legal Metrology Forum (APLMF) with a support fund of APEC-TILF (Trade and Investment Liberalization and Facilitation) program, CTI-10/2005T. The training course was also supported by (1) SIRIM Berhad, Malaysia, (2) Ministry of Domestic Trade and Consumer Affairs of Malaysia, (3) Ministry of Consumer Affairs of New Zealand and (4) National Metrology Institute of Japan (NMIJ). Having this result, I would like to extend my sincere gratitude to all the staffs of SIRIM and the Ministry of Domestic Trade and Consumer Affairs of Malaysia, two trainers from the Ministry of Consumer Affairs of New Zealand, and the APLMF Working Group on Goods Packed by Measure chaired by Ministry of Consumer Affairs of New Zealand. Also, special thanks should be extended to the APEC Secretariat for their great contributions.

We have conducted the surveys among the APEC member economies concerning seminar and training programs in legal metrology to find their needs as well as possible resources which would be available for the region. The survey shows that there is still a strong need for repeating training courses on pre-packaged goods that is one of the most traditional and essential categories of instruments in legal metrology closely connected to our daily life. In addition, according to the globalization of international trade in worldwide, the compliance to international recommendations related to pre-packaged goods, which are represented by the OIML Recommendation R87, is becoming an important issue for the APEC and APLMF member economies.

The main target of this training course was to assist the experts in charge of the Average Quantity System (AQS) in the APEC / APLMF member economies to learn in depth and to develop common understanding about the labeling requirements and quantity of product in pre-packaged goods based on the international standards and OIML recommendations. Thus the target would meet the APEC objective to harmonize metrology legislation within the OIML framework. The contents of the training course were focused on the understandings of basic principles of pre-packing procedures, international or national recommendations related to the pre-packaged goods and learning of the actual reference test.

In view of these situations, this training course concerning pre-packaged goods had been planned and completed successfully so as to settle a sure basis of confidence in legal

metrology related to the measurement of pre-packing within the Asia-Pacific region. I would like to say that this is certainly a valuable second step to fruitful activities in legal metrology related to pre-packaged goods in the Asia-Pacific region.

I am really pleased to have this outcome from the training course and again deeply appreciate APEC Secretariat's generosity in contributing to the development in legal metrology among the APLMF member economies.

July 3, 2006

A handwritten signature in black ink, appearing to read "Akira Ooiwa". The signature is fluid and cursive, with the first name "Akira" and the last name "Ooiwa" clearly distinguishable.

Dr. Akira Ooiwa  
APLMF President

**APEC/APLMF Training Courses in Legal Metrology**  
**Training Course on Practical Application of OIML R87 on Pre-packaged Goods**

The Training Course on Practical Application of OIML R87 on Pre-packaged Goods was held from 3 to 7 April 2006 at the Concorde Hotel, Shah Alam, Malaysia. It was jointly presented by APLMF, the Ministry of Domestic Trade and Consumer Affairs, the National Metrology Laboratory, SIRIM Berhad, and the Ministry of Consumer Affairs, New Zealand.

40 trainees attended the course from the following 16 different economies namely Cambodia, Chile, People's Republic of China, Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Mexico, Mongolia, Papua New Guinea, Peru, Philippines, Singapore, Chinese Taipei, Thailand and Viet Nam.

Two trainers from New Zealand provided the training. The executive secretary of APLMF and seven staff members from the host economy also supported the course. In addition, a visit to a local sugar manufacturer was organized by the host economy. The host economy provided the venue and meals.

The confidence that goods traded are the correct weight or measure plays an important part in every day commercial transactions. As part of the process of ensuring this continuing confidence in internationally traded goods OIML member economies are seeking to implement OIML R87.

OIML R79 and OIML R87 were used as the source material for the training course. The objectives of the training course delivered in Shah Alam were:

- to demonstrate and develop the practical application of OIML R87 in determining the quantity of pre-packaged goods
- to explain the labelling requirements for pre-packaged goods as set out in OIML R79
- to discuss good regulatory practice when conducting an investigation into the quantity and labelling of pre-packaged goods

The training course has provided guidelines that will assist participating economies with the information necessary for them to implement OIML R87 in a consistent manner within the Asia Pacific region.

Copies of the training material provided by the trainers can be found on the APLMF website. A copy of the audio recording of the lectures made during the course is available on request. Each participant received their own copy of all the material used in the training.

The course started with welcoming addresses by the host economy and the APLMF Executive Secretary. The official group photograph was then taken. Following this each economy gave a brief presentation outlining how they currently implement OIML R87, how their legislation differs from OIML R87 and what problems, if any, they have with imported and/or exported goods with regard to weight or measure.

The emphasis of this course was on the practical applications of OIML R87. The presentations consisted of an overview of the implementation of OIML R87 in New Zealand, labelling requirements of OIML R79, procedures for determining the average quantity of pre-packaged goods, the average tare weight, drained quantity of goods packed in a liquid medium, the actual quantity of frozen products, random sampling techniques and the different types of density measuring equipment that are available. There were also practical demonstrations on how to determine the density of non-carbonated liquids, determining

drained weight and how to determine the average quantity and average tare weight. Following each demonstration the trainees worked in small groups to gain practical experience. The trainees participated enthusiastically in these group exercises. The host economy provided a range of goods and equipment so that each group of trainees could determine if those goods complied with the requirements of OIML R87.

On the morning of the final day of the course each economy gave a practical demonstration to the group on how they would carry out a reference test. This was an excellent opportunity for the trainers to establish that each trainee had fully understood the principles underlining OIML R87.

The training was provided by Mr. John Carter and Ms. Agatha Cordeiro. Mr. Carter has been a Weights and Measures Inspector in New Zealand for over 30 years. In 1999 he attended a workshop on checking the net content in pre-packages at the Deutsche Akademie Für Metrologie in Munich.

He was involved in the implementation of the Average Quantity System (Quantity of Product in Pre-Packages) in New Zealand.

Ms. Cordeiro originally trained as a Trading Standards Officer/Weights and Measures Inspector in England before emigrating to New Zealand. She was also involved in the implementation of the Average Quantity System (Quantity of Product in Pre-Packages) in New Zealand.

During the closing ceremony, the certificates were presented to all the trainees. The majority of trainees returned evaluation forms which provided valuable information for both the trainers and the organisers.

Feedback from the trainees was favourable and positive. Many trainees stressed the importance of maintaining international communication between the participants in the future.

John Carter  
Team Leader  
Measurement and Product Safety Service  
Ministry of Consumer Affairs  
Auckland, New Zealand





Asia-Pacific  
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Legal Metrology  
Forum

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**APEC/APLMF Seminars and Training Courses in Legal Metrology  
(CTI-10/2005T)  
Practical Application of OIML Recommendation R87  
on Pre-packaged Goods**

April 3–7, 2006  
at the Concorde Hotel, Shah Alam, Malaysia

**Program**

**Organizers:**

1. Asia-Pacific Economic Cooperation (APEC)
2. Asia-Pacific Legal Metrology Forum (APLMF)

**Supporting Organizations:**

1. SIRIM Berhad, Malaysia
2. Ministry of Domestic Trade and Consumer Affairs, Malaysia
3. Ministry of Consumer Affairs, New Zealand
4. National Metrology Institute of Japan (NMIJ)

**Main Objective:**

This training course intends to demonstrate and develop the practical application of the average quantity system (AQS) to determine the quantity of pre-packaged goods. In this regard the organizers proposes to look at OIML Recommendations R79 Labelling requirements for pre-packaged products and R87 Quantity of product in pre-packages, good regulatory practice, issues to be considered when conducting a reference test, on site demonstrations of conducting a reference test, and thus help meet the APEC and APLMF objective to harmonise metrology legislation on OIML international recommendations.

**Trainers:**

1. Mr. John Carter, Team Leader, Ministry of Consumer Affairs, New Zealand
2. Ms. Agatha Cordeiro, Measurement and Product Safety Officer, Ministry of Consumer Affairs, New Zealand

**Registration:**

Fill the attached “Registration Form” and send it to the APLMF secretariat by **February 28, 2006**.

**Visa assistance:**

If you need a visa to enter Malaysia, please fill up the bottom portion of the “Registration Form” for ‘Visa information’. This information will be forwarded to the host by APLMF secretariat. Upon receipt of the information, the host will send an official letter of invitation for visa application.



### **Venue and Accommodation:**

Concorde Hotel, Shah Alam

3, Jalan Tengku Ampuan Zabedah C9/C, 40100 Shah Alam, Malaysia

Tel: 603-55122200, Fax: 603-55122210

<http://www.concorde.net/shah/>

If you hope to reserve a room at the venue (USD 41 net/night), please fill up the “Hotel Reservation Form” and send it to the host in Malaysia by **March 10**.

### **Access Information**

The Concorde Hotel, Shah Alam is situated in the commercial centre of the city of Shah Alam which is located about 55 km from the Kuala Lumpur International Airport (KLIA). Participants are advised to arrive at the hotel directly by airport limousine taxi service (about 50 minutes ride). The taxi ticketing counter is located just before you exit the arrival hall after going through customs check point. If you miss this counter another counter is located in the airport lobby near exit door No. 2. Please note that there are two types of taxis available, the budget taxi costing RM58.30 (approx. 16 USD) from KLIA to Concorde Hotel and premier taxi costing RM77.30 (approx. 21 USD). An additional surcharge of RM17.00 and RM22.00 is levied for the budget taxi and premier taxi respectively after mid-night.

### **Contact Persons for the Training Course:**

#### **1. APLMF Secretariat (registration and travel support)**

Dr. Tsuyoshi Matsumoto & Ms. Ayako Murata

APLMF Secretary

NMIJ/AIST Tsukuba Central 3-9, 1-1-1 Umezono, Tsukuba, Ibaraki 305-8563, Japan

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E-mail: e.sec@aplmf.org & sec@aplmf.org

#### **2. Working Group on Goods Packed by Measure (lectures)**

Mr. David Morris

Senior Advisor Legal Metrology,

Measurement and Product Safety Service, Ministry of Consumer Affairs

33 Bowen Street, PO Box 1473, Wellington, New Zealand

Tel: +64-4-460-1373, Fax: +64-4-473-9400

E-mail: david.morris@mca.govt.nz

#### **3. Host in Malaysia (visa assistance, accommodation and venue)**

Mr. Chen Soo Fatt

Principal Metrologist, National Metrology Laboratory, SIRIM Berhad

Lot PT 4803, Bandar Baru Salak Tinggi 43900, Sepang, Selangor Darul Ehsan, Malaysia.

Tel: +60-3-8778-1663, Fax: +60-3-8778-1661

E-mail: soo.fatt\_chen@sirim.my

# Final Program

## Day 1 - Monday, April 3

- 09:00 – 09:30 Opening Ceremony
- Welcome address by Mr. Md Nor Md Chik, Senior General Manager of National Metrology Laboratory, SIRIM Berhad.
  - Opening address by the APLMF Executive Secretary
  - Take an assembled photo
- 09:30 – 10:00 *Coffee Break*
- 10:00 – 10:20 Programme outline by the trainers
- 10:20 – 12:30 Presentation by each Economy covering the following issues;
- Are you using AQS?
  - Does it differ from R87? If so how?
  - If they use a different system what is it?
  - Exported goods, any issues with weight or measure including examples.
  - How you deal with imported goods including examples?
  - Local goods, any issues with weight or measure including examples.
- Note: Number of presentations depends on number of economies.*
- 12:30 – 14:00 *Lunch*
- 14:00 – 14:40 Presentation by each economy (continue)
- 14:40 – 15:10 *Coffee Break*
- 15:10 – 17:00 An overview of the system in New Zealand including;
- Legislation (section 16A)
  - Penalties (Infringement Offence Notices)
  - Defence of desiccating goods
  - Labelling requirements
- 20:00 – 22:00 Welcome dinner invited by the NML-SIRIM Bhd. at the Tasik Indah Floating Restaurant, Shah Alam.

## Day 2 - Tuesday, April 4

- 09:00 – 10:20 OIML Recommendation R79
- Labelling requirements for pre-packaged goods
- OIML Recommendation R87
- Scope
  - Terminology
  - Metrological requirements for a pre-package
- 10:20 – 10:50 *Coffee Break*
- 10:50 – 12:30 OIML Recommendation R87 (Continue)
- Reference test for metrological requirements
  - Outline of examination procedure
  - Tare procedures
  - Drained quantity of products packed in a liquid medium
  - Test procedures for determining the actual quantity of frozen products
- 12:30 – 14:00 *Lunch*
- 14:00 – 15:10 Average Quantity System, a Statistical Based Method
- Random sampling
- 15:10 – 15:40 *Coffee Break*
- 15:40 – 17:00 Equipment, Density measurement

### **Day 3 - Wednesday, April 5**

- 09:00 – 10:20 Demonstration of the  
– Reference test for goods sold by weight.  
– Group Practical exercises
- 10:20 – 10:50 *Coffee Break*
- 10:50 – 12:30 Demonstration of the  
– Reference test for goods (non-carbonated liquid) sold by volume  
– Group Practical exercises
- 12:30 – 14:00 *Lunch*
- 14:00 – 15:10 – Discussion of the reference test of frozen seafood  
– Software demonstration
- 15:10 – 15:40 *Coffee Break*
- 15:40 – 17:00 Written practical examples to cover issues of length, area, number, and weight.

### **Day 4 - Thursday, April 6: Group Practical Exercises**

- 09:00 – 10:20 Practical training in the classroom on the products packed by weight
- 10:20 – 10:50 *Coffee Break*
- 10:50 – 12:30 Practical training (continue)
- 12:30 – 14:00 *Lunch*
- 14:00 – 17:00 Visit to Central Sugars Refinery Sdn. Bhd.
- 19:00 – 21:00 Farewell dinner invited by APLMF at the Restaurant Kelab Shah Alam Selanger in the Room Kenanga Grill

### **Day 5 – Friday, April 7**

- 09:00 – 10:40 Each economy give a practical demonstration of the reference test to the rest of the group.
- 10:40 – 11:10 *Coffee Break*
- 11:10 – 12:00 Continue the demonstration and discussion.
- 12:00 – 12:30 Closing Ceremony  
– Presentation of certificates to all trainees.  
– Closing address by the APLMF Executive Secretary.  
– Closing address by Mr. Mohd Ismail Md Yunus, Director of Legal Metrology, Enforcement Division, Ministry of Domestic Trade and Consumer Affairs.
- 12:30 – 14:30 *Lunch*
- 14:30 – 19:00 A guided city tour to Kuala Lumpur sponsored by the Malaysian Tourist Development Corporation (free of charge).

**Participants List of the Practical Application of OIML Recommendation R87 on Pre-packaged Goods**  
 April 3-7, 2006 at the Concorde Hotel in Shah Alam, Malaysia

<b>No.</b>	<b>Economy</b>	<b>Category</b>	<b>Name</b>	<b>Organization</b>
1	<b>Cambodia</b>	Trainee	<b>Mr. Kim Chandara</b>	Department of Metrology, Ministry of Industry, Mines, and Energy
2	<b>Chile</b>	Trainee	<b>Mrs. Carmen Gloria Vega Cancino</b>	National Consumer Service (SERNAC)
3	<b>PR. China</b>	Trainee	<b>Mr. Huang Zhaohui</b>	Jiangsu Institute of Measurement and Testing Technology (JIMTT)
4	<b>Indonesia</b>	Trainee	<b>Mr. Rifan Ardianto</b>	Directorate of Metrology, Directorate General of Domestic Trade, Ministry of Trade
5	<b>Japan</b>	Trainee	<b>Mr. Tsutomu Horikoshi</b>	Legal Metrology Division, National Metrology Institute of Japan, AIST
6	<b>Japan</b>	<b>Secretariat</b>	<b>Dr. Tsuyoshi Matsumoto</b>	Executive Secretary of APLMF, National Metrology Institute of Japan (NMIJ), AIST
7	<b>Lao. PDR</b>	Trainee	<b>Mr. Viengthong Vongthavilay</b>	Science Technology and Environment Agency (STEA), Department of Intellectual Property, Standardization and Metrology
8	<b>Malaysia</b>	Trainee	<b>Mr. Peter Agang</b>	Metrology Unit, Ministry of Domestic Trade and Consumer Affairs
9	<b>Malaysia</b>	Trainee	<b>Mr. Ahmad Ruslan Mohd Ariffin</b>	Metrology Corporation (M) Sdn Bhd
10	<b>Malaysia</b>	Trainee	<b>Ms. Chee Boon Lee</b>	Nestle (M) Sdn Bhd
11	<b>Malaysia</b>	<b>Host/Trainee</b>	<b>Mr. Chen Soo Fatt</b>	Principal Metrologist, National Metrology Laboratory, SIRIM Berhad
12	<b>Malaysia</b>	<b>Host</b>	<b>Mr. Md Nor Md Chik</b>	Senior General Manager, National Metrology Laboratory, SIRIM Berhad
13	<b>Malaysia</b>	<b>Host*</b>	<b>Mr. Ir. Lim Chin Chuan</b>	General Manager (factory), Central Sugars Refinery Bhd
14	<b>Malaysia</b>	Trainee	<b>Ms. Helena Kalsom Elias</b>	Central Sugars Refinery Bhd
15	<b>Malaysia</b>	Trainee	<b>Ms. Nor Fa'izah Mohd Fadzillah</b>	Nestle Manufacturing (M) Sdn Bhd
16	<b>Malaysia</b>	<b>Host</b>	<b>Ms. Suliana Ghazalli</b>	National Metrology Laboratory, SIRIM Berhad
17	<b>Malaysia</b>	Trainee	<b>Mr. Ismail Hussin</b>	Metrology Corporation (M) Sdn Bhd
18	<b>Malaysia</b>	Trainee	<b>Mr. Muhamad Aswan Ismail</b>	Metrology Corporation (M) Sdn Bhd
19	<b>Malaysia</b>	<b>Host</b>	<b>Mr. Anamalai Kuppan</b>	National Metrology Laboratory, SIRIM Berhad
20	<b>Malaysia</b>	Trainee	<b>Mr. Rajaram A/L Manickiam</b>	Nestle Manufacturing (M) Sdn Bhd
21	<b>Malaysia</b>	<b>Host*</b>	<b>Mr. Abdullah Azra Bin Mochtar</b>	Engineering Manager, Central Sugars Refinery Bhd
22	<b>Malaysia</b>	<b>Host*</b>	<b>Mr. Muzamli Bin Mohd Nor</b>	Chef Operating Officer, Central Sugars Refinery Bhd
23	<b>Malaysia</b>	Trainee	<b>Mr. Mohd Ismail Mohd Nor</b>	Metrology Corporation (M) Sdn Bhd
24	<b>Malaysia</b>	Trainee	<b>Ms. Sapiah Mohd Nor</b>	Metrology Unit, Ministry of Domestic Trade and Consumer Affairs
25	<b>Malaysia</b>	Trainee	<b>Ms. Hairani Nordin</b>	National Metrology Laboratory, SIRIM Berhad
26	<b>Malaysia</b>	Trainee	<b>Mr. Ab. Hamid Osman</b>	Metrology Corporation (M) Sdn Bhd

27	Malaysia	Trainee	Ms. Eshah Othman	Nestle Manufacturing (M) Sdn Bhd
28	Malaysia	Trainee	Ms. Faizah Othman	Metrology Unit, Ministry of Domestic Trade and Consumer Affairs
29	Malaysia	Trainee	Mr. Rosli Sahrani	Metrology Corporation (M) Sdn Bhd
30	Malaysia	Trainee	Mr. Muktar Sawi	National Metrology Laboratory, SIRIM Berhad
31	Malaysia	Trainee	Dr. Sim Chiaw Hock	University of Malaya
32	Malaysia	Trainee	Ms. Son Ee Woon	Nestle Manufacturing (M) Sdn Bhd
33	Malaysia	Trainee	Mr. Roslan Talib	Metrology Corporation (M) Sdn Bhd
34	Malaysia	Trainee	Ms. Caroline Tan Shiau Fern	Bristol-Myers Squibb (M) Sdn Bhd
35	Malaysia	Trainee	Ms. Teoh Sok Li	Nestle Manufacturing (M) Sdn Bhd
36	Malaysia	Trainee	Ms. Jaqueline Voon	Nestle Manufacturing (M) Sdn Bhd
37	Malaysia	Trainee	Ms. Wong Chiew Yan	Nestle Manufacturing (M) Sdn Bhd
38	Malaysia	Host/Trainee	Mr. Mohd Ismail Bin Md Yunus	Director, Metrology Unit, Ministry of Domestic Trade and Consumer Affairs
39	Malaysia	Trainee	Mr. Zuraidi Yusof	National Metrology Laboratory, SIRIM Berhad
40	Mexico	Trainee	Ms. Amparo Leticia Luján - Solís	National Center of Metrology of México (CENAM)
41	Mongolia	Trainee	Mrs. Myasuren Norov	Mongolian Agency for Standardization and Metrology
42	New Zealand	Trainer	Mr. John Carter	Team Leader, Ministry of Consumer Affairs
43	New Zealand	Trainer	Ms. Agatha Cordeiro	Measurement and Product Safety Officer, Ministry of Consumer Affairs
44	Papua New Guinea	Trainee	Mr. Victor V. Gabi	Papua New Guinea National Institute of Standards and Industrial Technology (NISIT)
45	Peru	Trainee	Mr. Jose Dajes	National Metrology Service
46	Philippines	Trainee	Mrs. Natividad R. Mamplata	Industrial Technology Development Institute, Department of Science and Technology
47	Philippines	Trainee	Mr. Jordan B. Damian	National Metrology Laboratory, Industrial Technology Development Institute
48	Singapore	Trainee	Mr. Lim Yong Seng	Weights and Measures Office, SPRING Singapore
49	Chinese Taipei	Trainee	Mr. Ching-ping Chao	Bureau of Standards, Metrology & Inspection
50	Thailand	Trainee	Mr. Thanakorn Ngeruengchai	Central Bureau of Weights and Measures
51	Vietnam	Trainee	Mrs. Nguyen Phuong Anh	Metrology Department, Directorate for Standards and Quality (STAMEQ)

\* Host staff of the field trip

Names are listed in alphabetical order of their economies and last names.

# **An Overview of the Average Quantity System in Use in New Zealand**

## **Understanding the Average Quantity System**

John Carter  
Ministry of Consumer Affairs

My purpose in presenting this paper is to provide an explanation of the requirements for packing goods by weight, measure or count.

The Weights and Measures Act 1987 provides the legal requirements for pre-packaged goods. Prior to an amendment in November 2000 the basic requirement of this Act in relation to pre-packaged goods was that each individual package should contain not less than the stated amount. This system was known as the Minimum Quantity System.

The 2000 amendment allowed the government to make regulations that changed the rules from the minimum quantity system to the Average Quantity System. The Regulations came into force on 14 November 2001. They require that pre-packaged goods of the same type, same stated quantity and available for inspection at the same time meet the requirements of the Average Quantity System.

### **The Average Quantity System (AQS)**

The AQS is an internationally recognised system for determining deficiencies in packages sold by quantity. It can be used where goods are packed in set amounts, e.g. 1 kg bags of sugar, 1 litre of milk or 1 dozen oysters, and labelled as such. It is used in a number of other countries or economies including the European Union, Canada, India, Switzerland, Bangladesh, Mexico, South Africa and Japan. Australia is currently going through a consultation process and expects to adopt the system in the near future.

The USA has a similar system that is broadly compatible with AQS.

AQS uses statistical sampling methods and provides both packers and consumers with a far greater assurance that the packaged goods they sell and buy contain the amount stated on the label.

### **Why did we change from a “minimum quantity system” to an Average Quantity System?**

Prior to November 2001 New Zealand used a “minimum quantity system”.

While modern (usually automated) filling and packing processes can reduce production costs, it has to be recognised that with such systems, filling every package to an exact amount, over a production run, is not achievable.

Under the minimum quantity system of checking pre-packaged goods this was recognised to some extent and a small allowance or negative tolerance was allowed. The legislation allowed for deficiencies of no more than 5% in any one package provided the contents of that package and eleven other randomly selected packages of the same kind and



stated quantity showed no aggregate deficiency. This method of checking pre-packaged goods was not based on recognised sampling techniques.

There had been some criticism of the minimum quantity system because enforcement action, such as prosecution or the issuing of an infringement offence notice could be instigated on a sample of 12 packages. Selecting 12 packages, from a production run of say 120,000 packages could not be considered a large enough sample.

With modern packaging systems this system was not providing an accurate picture of the packers compliance.

It was also argued that the legislation was confusing to manufacturers who had difficulty in determining what the parameters were and so had to pack substantially above the stated quantity in order to avoid rogue packages being counted as part of a sample. This resulted in additional compliance costs for the manufacturer.

For example, if, in order to meet the “minimum quantity system” requirements, the packer finds it is necessary to overfill by 1g, under AQS this 1g can be saved on each package. One gram doesn't seem much on one package but on a packaging line producing 10 000 x 500g packages a day, this amount of overfill is 10kg or 20 packages a day, over a 5 day week 50kg and over a year 2.5 tonne. This efficiency can be made while at the same time ensuring that consumers will still receive on average the amount stated on the package.

Additionally, international trade in pre-packaged goods has significantly increased, bringing pressure to harmonise on international standards and reduce technical barriers to trade.

In 1996 the Ministry of Consumer Affairs produced a discussion paper on AQS and industry was widely consulted.

AQS is an international system for defining quantity that has been used for several years in countries such as the UK and history has shown that it has not had any impact on other food labelling requirements, particularly those relating to food safety.

Under AQS a “lot” of packages must meet the average requirements. This system is designed to ensure that there are adequate safeguards for packers and consumers. With such safeguards packers can adjust their fill levels so that they can fill packages in a more efficient manner, apply tighter tolerances, while ensuring that consumers do not receive short quantity packages. Thus the system is designed to put both packers and consumers in a win win situation.

In adopting AQS, New Zealand is following international trends in having a system that should benefit exporters and be more user friendly for modern day producers. Under AQS checking by Measurement and Product Safety Officers (MAPSO's) will be more comprehensive, statistically based and also concentrated at the packers and importers rather than the retail stage. In other words getting it right at the source before packages reach the shop shelves and consumers hands.

Other countries have recognised the same needs. The UK adopted the system in 1979 in order to reduce technical barriers to trade.

- “ Enshrined in the provisions (of the various Acts) is a clear recognition of the fact that there are inherent errors in all weighing and measuring equipment, especially in automatic machinery used for mass production of pre packaged goods. The objective of an absolute minimum system could not therefore be achieved...the advances in packaging technology increased problems for packers and enforcement officers...It was inevitable that statutory recognition be given to the average system to ensure competitiveness of British industry in overseas markets where the system was already in operation...the main emphasis of enforcement was to move away from the retail outlet and into the packing plant or to the point of importation.”<sup>1</sup>

The Canadians adopted the system in 1989.

“Prior to the adoption of the Average System, Canadian regulatory requirements...differed from those which were largely accepted internationally. The main areas of difference were tolerances, sampling methods and the fact that Canada operated under a ‘minimum’ system’ as opposed to the more widely accepted ‘average system’. As a signatory to GATT and a member of OIML Canada agreed to reduce technical trade barriers, and moved towards accepting international measurement standards”<sup>2</sup>

### **The basis for the NZ system**

The basis for the New Zealand Regulations is the Organisation of Legal Metrology (OIML) document R87 ‘Net Quantity in Pre-packages’. OIML document R87 outlines a system for national trade measurement authorities to make quantity checks on pre-packages.

Before the new legislation was introduced the Ministry sought independent expert advice on the statistical criteria set out in OIML R87 from Industrial Research Ltd (IRL).

### **OIML**

The main task of OIML is the harmonisation of metrology regulations world-wide. To accomplish this goal International Recommendations such as R87 are produced by OIML.

These are in effect recognised international measurement standards.

There are 60 member states of OIML and 53 corresponding members.

New Zealand is a full member.

Member countries (states) are expected to implement OIML recommendations.

### **The Average Quantity System – How it works**

The average quantity system consists of 3 basic requirements, commonly referred to as the 3 rules of AQS.

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<sup>1</sup> O’Keefe’s Law of Weights and Measures.

<sup>2</sup> Consumer and Corporate Affairs Canada. The Average System of Net Quantity Determination. Consumer Packaging and Labelling Regulations and Weights and Measures Regulations

- Rule 1
  - The actual contents of the packages in a lot must not be less, on average, than the stated quantity.
- Rule 2
  - Not more than 2.5% (1 in 40) of the packages in a lot may be non-standard. A package is non-standard if the quantity is less than the stated quantity on the package by more than a tolerable deficiency (*T*).
- Rule 3
  - There must be no inadequate packages. A package is inadequate if it contains less than the stated quantity, by more than twice the tolerable deficiency (*T*).

The tolerable deficiency is calculated from Table 2 of Schedule 7A to the Weights and Measures Regulations. This table is reproduced in appendix 1.

The tolerable deficiency is determined either as a fixed amount according to the stated quantity or as a percentage of the stated quantity.

The term 'a lot of packages' is used consistently in OIML R87 and the New Zealand regulations. Simply it means:

- A collection of packages containing goods that are of the:
  - same kind
  - same stated weight, measure or number
  - available for inspection at the same time and place.

When carrying out compliance checks it will be the Ministry's intention to interpret this in a manner that causes the least disruption while ensuring that the sample of packages selected provides a fair test to the benefit of both intended consumers and the packer.

The lot is accepted if it meets all 3 of these rules. It fails if it does not satisfy one or more of the requirements.

One way to comply with these 3 rules is to pack so that you know all your packages contain at least the stated quantity.

Another way is to devise a system of checks to ensure that all packages meet these three rules. This may incorporate a statistical sampling plan. This will give a manufacturer confidence that when a lot fails the need to take corrective action, such as reweighing and repacking or re-labelling the line, can be carried out on the certainty that the lot does not comply.

If all 3 rules are met consumers will have a 97.5% assurance that they will receive at least the declared quantity within the appropriate prescribed tolerance.

The Weights and Measures Regulations show the sampling plan that will be used by the Ministry's Measurement and Product Safety Officers (MAPSO's), they are not sampling plans that packers are required to follow.

When the statistical work was done for the NZ regulations it was based, as said, on the draft OIML R87 document. That too is devised as a system for national trade measurement authorities to make quantity checks on pre-packages.

The advice given to the Ministry by IRL was that the sampling characteristics and performance criteria contained within the regulations were suitable for reference checks to be made by MAPSO's, but may not be suitable for a packer to follow. The reasoning for this is that the sampling plan in the regulations is designed in such a way that the probability of rejecting a lot satisfying the underlying principles of AQS is small, 0.5% on lot average and 5% on proportion non – standard.

E.g. Let's look at rule one:

“The actual contents of the packages in a lot must not be less, on average, than the stated quantity.”

In order to ensure the probability of rejecting a lot satisfying the underlying principles of AQS is not greater than, 0.5% on lot average, a weighted average quantity is applied to the sample, by the MAPSO. This negative weighting is applied to the sample to allow for uncertainties in the method, and errors in the test equipment used. If the packer applies this same weighted average then the likelihood of the lot failing an inspection by a Measurement and Product Safety Officer is significantly increased.

The packer should sample to ensure that the probability of accepting a lot that fails to obey the underlying principles of AQS is small, so that they will then have confidence that their production will pass the Measurement and Product Safety Officer's test.

Further, the tests in the regulations are designed to be used for a completed lot e.g. from a warehouse or defined time period, whereas the packer will be more interested in sampling on line at various points of production in order to make on line changes where appropriate.

### **How is a reference test carried out?**

The Measurement and Product Safety Officer will take a random sample from the lot using recognised random sampling practises. (Random implies that every pack must have an equal chance of being selected, as every other pack in the lot.)

The size of this sample is based on the lot size and is determined using Table 1, from Schedule 7A of the Weights and Measures Regulations. See Appendix 1 for tables 1 and 2.

The following example shows the procedure MAPSO's will be using:

Product:	Butter
Lot size:	3500
Stated quantity:	500g

Using table 1, for 400 to 4 000 packages the sample size is 32.

Using recognised random sampling techniques, the MAPSO will randomly select 32 packages from the lot as the test sample.

The tare weight will then be determined by weighing 10 wrappers. If the standard deviation is small the average weight of these 10 wrappers is used as the tare weight. If the standard deviation is large it may be necessary to open each package in the sample, this is known as destructive testing and will only be done when absolutely necessary.

The net weight of each package will be determined by deducting the tare weight from the stated quantity.

Let's say the results for our sample are as follows:

30 packages had a net weight of 502g  
2 packages had a net weight of 484g

The MAPSO will next calculate the average net weight of the 32 packages to see if they comply with rule 1. If the average net weight is not less than the stated quantity then the lot will pass rule 1.

In the case of our example the average weight is 501g, the lot therefore passes rule 1.

The next step is to ensure that the number of non-standard packages in the lot does not exceed 2.5% (Rule 2)

Using table 2 we see that a 500g net package is allowed a tolerable error of 3% (15g). Therefore any package containing less than 485g and not less than 470g is a non-standard package.

In our example we have 2 packages that are non-standard.

Using table 1 we see that in a lot of 400-4000 packages, 4 non-standard packages are allowed in the sample, since we have only 2 non-standard packages the lot passes rule 2.

The next step is to ensure there are no inadequate packages in the lot (Rule 3). Using our example an inadequate package is any package that has a net weight of less than 470g. In our sample there are no packages that are inadequate so the lot passes rule 3.

### **Desiccating Goods:**

Desiccating goods are any goods that lose weight or volume through evaporation when the package is made up.

Under the Average Quantity System desiccating goods must meet the requirements of AQS on the day they are packed and for a further seven days. After this no package may be an inadequate package (exceed 2 T).

The Measurement and Product Safety Service will consider whether products are desiccating on a case by case basis. If there is doubt we will seek a second opinion and discuss the issue with the packer concerned before looking at legal options.

## **Catch weight goods**

These are goods that are enclosed in a package and cannot be portioned to a predetermined quantity because of their nature. They are usually sold in varying quantities. An example of catch weight goods is pre-packaged meat displayed for sale in a supermarket chiller. The AQS requirements do not apply to catch weight goods as these goods are mainly made up as individual packages. Therefore each package is judged separately and selling such a short weight package is an offence.

## **What is required of the packer?**

The main responsibility is to comply with the Weights and Measures Act and Regulations.

Packers need to ensure that when a reference test is carried out the sample will meet the AQS requirements.

I.e. ensure the packages meet the three rules.

This can be achieved by either weighing each individual package on an approved weighing instrument or by using an effective sampling and weighing or measuring system.

We recommend that if the packer does not already have a quality management system in place that he implements and maintains a system that includes statistical sampling of pre-packaged goods.

We also recommend that the packer:

- carries out regular checks to ensure the system is working.
- Keeps written records of checks.

Equipment used for check weighing pre-packaged goods must be suitable for the purpose for which it is being used.

- We recommended that equipment be checked annually by an accredited person and a certificate of accuracy issued.

The packer is recommended to purchase a copy of the Weights and Measures Amendment Act 2000 and the Weights and Measures Amendment Regulations 2001.

## **Is a packer obliged to use the Average Quantity System?**

There is no requirement to use the Average Quantity System and it is permissible to use the “minimum quantity system”.

Measurement and Product Safety Officer’s will apply the AQS reference test when checking packages. If goods are packed so that package weights meet the “minimum quantity system” requirements then they will easily meet the AQS requirements.

## **What are the Advantages of AQS?**

Parameters have been clearly defined.

Reduced compliance costs, the need to pack at substantially above the stated quantity to avoid rogue packages being included in the sample has been reduced.

It is a system that brings us into line with international trading partners and allows for easier export where quantity marking is an issue.

AQS uses statistical sampling methods and provides both packers and consumers with a far greater assurance that the packaged goods they sell and buy contain the amount stated on the label.

If the packer or importer ensures pre-packages meet the requirements of AQS the likelihood of costly recalls is greatly reduced, and exporters can be confident their product will not be rejected through quantity issues.

Australia, our closest trading partner presently uses the minimum quantity system but is in the process of adopting AQS. When this occurs producers will be able to compete under the same rules. This said, under the Trans Tasman Mutual Recognition Agreement goods produced in Australia or New Zealand that can be legally sold in one country can be sold in the other.



## **Quantity marking of food**

The requirement to quantity mark food has been transferred from the Food Regulations 1984 to the Weights and Measures Regulations 1999.

The Regulations came into effect on 20 December 2002 at the same time as the Food Standards Code. Every package of food must be quantity marked - either by weight, volume or number.

### **General Requirements**

- It must be in a prominent position and if marked with the food's name or description in close proximity to that marking.
- Clearly marked in letter and figures at least 2 mm in height.
- The colour must contrast distinctly with the background.
- If the package size will not allow 2mm markings, smaller size markings are allowed if they are clear and legible.

### **Exemptions**

- Packages of food not intended for retail sale.
- Confectionery less than 15g or 15ml and single Easter eggs.
- Food sold by number in transparent wrapping with 8 items or less.
- Takeaways, hamburgers, filled rolls etc.
- Packages of food either weighed or measured by the purchaser or in their presence.
- Food sold at a fundraiser.

### **Offences**

#### Section 16A

- Offence to supply weight, measure or number not in accordance with stated quantity.
- Applies to all packaged goods.
- Prescribes when package is deemed to contain the quantity stated on the label.
- Applies to desiccating goods

## **Penalties**

Offences against the W&M Act are dealt with in three ways:

- by letter of warning
- issuing of an infringement offence notice
- prosecution.

Infringement offence notice fee of \$500 for each package from a lot that fails the 3 rules of AQS. The Courts may also order an offender to make good any deficiency.

Prosecution (fine not exceeding \$5000 per package)

Courts may take into account the following when determining the level of fines:

- whether the offence was fraud and deliberate or careless and the degree of negligence.
- the affect on consumers
- the deterrent effect of a conviction and publicity.
- the circumstances of the defendant.
- the maximum penalty.
- any previous offending.

## **Reasonable precautions and due diligence**

The Act makes principals liable for any offences committed by their agents or employees.

The agent or employee remains personally liable.

A statutory defence exists if it can be proven the offence was committed without the defendants knowledge **AND** they took reasonable precautions and due diligence to prevent the offence.

## **Reasonable Precautions**

Subjective and related to each circumstance but can include:

- staff training
- sampling plans
- quality control systems

## **Due Diligence**

Ensuring that the system works. It includes:

- documented checks the system is operating as intended
- external or internal audits

Checking procedures must be carried out diligently

Oral checks are NOT sufficient.

Appendix 1

Table 1

Lots and sampling characteristics

<b>Column 1 Number of packages in the lot of packages</b>	<b>Column 2 Minimum sample size</b>	<b>Column 3 Sample correction factor (<i>c</i>)</b>	<b>Column 4 Number of non- standard packages permitted in a sample</b>
2	2	0	0
3	3	0	0
4	4	0	0
5	5	0	0
6	6	0	0
7	7	0	0
8	8	0	0
9	9	0	0
10	10	0	0
11	11	0	0
12	12	0	0
13-39	12	0.746	0
40-79	12	0.826	1
80-149	12	0.860	2
150-399	32	0.465	3
400-4 000	32	0.483	4
More than 4 000	80	0.295	6

Table 2

Amounts of error for packages labelled by mass or volume

<b>Column 1 Stated Quantity (g or ml or cm<sup>3</sup>)</b>	<b>Column 2 Amount of error (% of stated quantity)</b>	<b>Column 3 Amount of error (g or ml or cm<sup>3</sup>)</b>
0 to 50	9	-
More than 50 to 100	-	4.5
More than 100 to 200	4.5	-
More than 200 to 300	-	9
More than 300 to 500	3	-
More than 500 to 1 000	-	15
More than 1 000 to 10 000	1.5	-
More than 10 000 to 15 000	-	150
More than 15 000	1	-

## **Glossary**

### **Accredited person**

A person or organisation authorised under the Weights and Measures Act to carry out verification and certification of weighing and measuring equipment used for trade.

### **Catch weight goods**

These are goods that -

- a. are enclosed in a package; and
- b. cannot be portioned to a predetermined quantity because of their nature; and
- c. are usually sold in varying quantities.

### **Certificate of Accuracy**

A certificate issued under section 22A of the Weights and Measures Act 1987 that confirms that a piece of weighing or measuring equipment complies with the Weights and Measures Regulations. A certificate of accuracy is valid for one year.

### **Desiccating goods**

These are goods that lose weight or volume solely through evaporation when the package is made up.

### **Inadequate package**

Is a pre-package that has an error greater than twice the amount of error (*tolerable deficiency (T)*) allowed under Table 2 of Schedule 7A to the Weights and Measures Regulations.

### **Lot of packages**

Is a collection of packages containing goods that are of the:

- same kind
- same stated weight, measure or number
- available for inspection at the same time and place.

### **Non-standard package**

Is a pre-package that has an error greater than the tolerable deficiency (*T*) allowed under Table 2 of Schedule 7A to the Weights and Measures Regulations.

### **Verification**

The process of confirming that a piece of weighing or measuring equipment meets the minimum performance standards set out in the Weights and Measures Regulations before it can be used for trade.

**OIML R 79**

**Labelling Requirements for Pre-packaged Products**



## OIML R 79

# LABELING REQUIREMENTS FOR PRE-PACKAGED PRODUCTS

### Scope

This Recommendation covers requirements for the labelling of pre-packaged products with constant nominal content with respect to:

- the identity of the product;
- the name and place of business of the manufacturer, packer, distributor, importer or retailer; and
- the net quantity of the product.

There are two Annexes:

⇒ Annex A Units of measurement and symbols is mandatory

⇒ Annex B Type size of letters and numerals of net quantity on consumer pre-packages is informative

Pre-packaged products, unless subject to other specific laws or regulations, shall be labelled in accordance with this Recommendation before being offered for sale.

This Recommendation does not cover:

- Existing national regulations established for reasons of health, safety or tax, date limit for sale or use, storage temperature, etc.; however, such labelling should be taken into account as appropriate.
- Declarations of ingredients or nutritional information on the labels of food products.
- Pre-packages made up in variable quantities.

### Terminology

*Pre-packaged product*

Any commodity that is:

- enclosed in a container or wrapped in any manner; and
- marked with its quantity on its label prior to being offered for sale.

Pre-packaged products are also known as pre-packaged commodities or pre-packaged goods.

### *Net quantity*

The quantity of product in the pre-package exclusive of wrappers and any other material packed with such product.

Note: This term relates to specifications on a pre-package and does not account for the actual contents in an individual pre-package. The procedures for determining whether a production lot meets regulatory requirements are provided in OIML R 87 *Quantity of product in pre-packages*.

### *Label*

Any written, printed, or graphic matter affixed to, applied to, attached to, blown into, formed or moulded into, embossed on, or appearing upon a pre-package containing any product for purposes of branding, identifying, or giving any information with respect to the product or to the contents of the pre-package.

An inspector's tag or other non-promotional text affixed to or appearing on a product shall not be deemed to be a label that requires the label information prescribed by this Recommendation.

### *Principal display panel*

The part of a pre-package that is most likely to be displayed, presented, shown or examined under normal and customary conditions of display.

### *Person(s)*

Both singular and plural, as the case demands, including individuals, partnerships, corporations, companies, societies and associations.

### *Consumer pre-package*

A pre-package that is customarily produced or distributed for sale to final purchasers through retail sales agencies or other means.

### *Non-consumer pre-package*

Any pre-package intended solely for industrial or institutional use or for wholesale distribution.

### **Summary of information required on pre-package**

- identity of the product
- name and place of business of the manufacturer, packer, distributor or importer
- net quantity

### **Identity of the product**

The product's identity shall be conspicuously marked on the principal display panel in such a manner that it is easily read and understood.

However if the product can be easily identified because it's been pre-packaged inside transparent wrapping then the identity does not have to appear on the packaging.

The identity of the product shall be one of the following in the order of preference listed:

- the name is required by law; examples include hazardous chemicals such as household bleach
- the common, customary or usual name of the product; examples include Anzac biscuits, Yorkshire pudding and kiwi fruit
- the generic name or other appropriately descriptive term such as a specification which includes a statement of function.

### **Name and place of business of the manufacturer, packager, distributor or importer**

The name and place of business responsible for any of the following shall be conspicuously marked on the pre-package:

- manufacturing,
- packing,
- distributing,
- importing, or
- retailing.

When the product is not manufactured or pre-packaged by the person whose name appears on the label, the name may be qualified by a phrase that reveals the connection such person has with the product, for example: "manufactured for ...", "distributed by ...", "marketed by ...", "imported by ..." or "sold by ...".

National laws may permit the identity of the manufacturer or packer to be in code. Similarly the complete mailing address of the place of business may be represented by a code number.

### **Declared net quantity of the pre-packaged product**

This information shall be marked on the principal display panel. The declaration may be made at any one of the following locations:

- at the initial place of packaging,
- at importation, or
- at the place where pre-packaged product is offered for sale.

The metrological requirements for net contents in pre-packages are covered in OIML R 87.

For some products, national regulations may require the labelling of a drained quantity.

Requirements for small and mixed pre-packages are set out in national regulations. Small pre-packages include such items as individual packets of salt, pepper, sugar, individually wrapped pieces of confectionary, etc. Mixed pre-packages are those containing two or more individual pre-packages or units of dissimilar commodities.

Aerosol dispensers must be marked with the net quantity in mass that will be expelled when the instructions for use are followed. The propellant is included in the net quantity statement. Statements of quantity shall be the kilogram, gram or milligram.

The net quantity shall be expressed in terms of the largest whole unit of mass, volume, length, area, or a combination of these units in accordance with Annex A. Units of measurement and symbols shown below.

Statements of a quantity in terms of count shall be expressed in whole numbers.

Depending on national requirements and customs, the net quantity statement for a specific product may be expressed as follows: (see also Table 2 below)

### *Volume*

At a specified reference temperature determined in accordance with national regulations if the product is liquid or viscous. Normally, the reference temperature would not appear on the label;

### *Mass*

If the product is solid, semi-solid or viscous, a mixture of solid and liquid, or the solid part of a mixture of a solid and liquid;

### *Length*

The micrometre is used primarily in expressing thicknesses less than 1 mm for some products such as polyethylene films;

### *Customary usage*

Quantities based firmly on established general consumer usage and trade custom. Such quantities must provide accurate and adequate information to the purchaser. For example, the declaration of contents of a liquid by mass, or of a solid, semi-solid, or viscous product by volume or numerical count may be used. Examples include ice-cream sold by volume, tomato ketchup by volume, maple syrup by weight etc.

### *Presentation of information*

Statements of a quantity less than a whole number may contain decimal fractions to a maximum of three places, provided that the declaration complies with Table 2 in Annex A.

Statements of the net quantity shall:

- ⇒ be in easily legible boldface type or print
- ⇒ contrasts conspicuously with the background
- ⇒ contrasts conspicuously with other information on the pre-package;

However, when the value of the net quantity is blown, embossed, or moulded on the surface of the pre-package, then all other required label information shall be provided conspicuously elsewhere on the surface or on a label.

Statements of net quantity shall be in:

- ⇒ letters and numerals in a minimum type size established in relationship to either the area of the principal display panel of the pre-package (See Table 3 in Annex B); or
- ⇒ the quantity of the pre-packaged contents. (See Table 4 in Annex B).

### *Significance of numbers on labels*

In general, the number used on a label shall be shown to three figures in the decimal system. Three exceptions are permitted:

- quantities below 100 g, 100 mL, 100 cm<sup>3</sup>, 100 cm<sup>2</sup>, or 100 cm may be shown to two figures;
- any final zeros to the right of the decimal mark need not be expressed;
- if the quantity is less than one, it shall be shown in the decimal system with the figure zero preceding the decimal mark.

Statements such as “half a kilogram” are not acceptable.

### **Misleading practices**

This information should be read in conjunction with the mandatory requirements in Annex E of R87 *Quantity of product in pre-packages* with regard to the prohibition of misleading pre-packages.

### *Fill level*

Pre-packages shall be filled in such a manner that a purchaser may not reasonably be misled with respect to the quantity or identity of the product it contains. However consideration must be given to slack fill as discussed in R 87.

### *Pre-package design and display*

Pre-packages shall be made or displayed in such a manner that a purchaser may not reasonably be misled with respect to the quantity or identity of product contained therein.

If the pre-packaged product is labelled on more than one location, the information on all labels shall be equivalent and in accordance with the requirements of this Recommendation.

### **Exemptions**

Exemptions from required information on pre-package labels may be made on the basis of national practice. However, such exceptions shall be explicitly stated in national regulations.

## Annex A

### Units of measurement and symbols (Mandatory)

Units of measurement shall be expressed in either words or symbols. Table 1 provides the unit and the appropriate symbol for measurements.

**Table 1 – Units of measurement**

Unit	Symbol <sup>(a)</sup>
milligram	mg
gram	g
kilogram	kg
tonne	t
litre <sup>(b)</sup>	L or l
millilitre	mL or ml
micrometre	µm
millimetre	mm
centimetre	cm
decimetre	dm
metre	m
square millimetre	mm <sup>2</sup>
square centimetre	cm <sup>2</sup>
square metre	m <sup>2</sup>
cubic centimetre	cm <sup>3</sup>
cubic decimetre	dm <sup>3</sup>
cubic metre	m <sup>3</sup>

<sup>(a)</sup> Neither a full stop nor the letter “s” should be used after any of the symbols.

<sup>(b)</sup> The alternative symbol for the litre, L, was adopted by the General Conference of Weights and Measures (CGPM) in order to avoid the risk of confusion of the letter l and the number 1. The script letter *ℓ* is not an approved symbol for litre.

- A single space shall be used to separate the number from the unit of measurement.
- Appropriate phrases such as “net”, “net mass”, “net contents” or “net quantity” may be used in connection with the net quantity declaration. Such phrases may appear either before or after the net quantity declaration.
- The unit used depends on the type of measure and net quantity of product. Table 2 indicates the correct unit to use for a variety of measures and quantities.



**Table 2 - Choice of units**

Type of measure	Net quantity of product ( $q$ )	Units
Volume (liquids)	$q < 1000 \text{ mL}$ $1000 \text{ mL} \leq q$	mL (ml) L (l)
volume - cubic (solids)	$q \leq 1000 \text{ cm}^3 (1 \text{ dm}^3)$ $1 \text{ dm}^3 < q < 1000 \text{ dm}^3$ $1000 \text{ dm}^3 \leq q$	$\text{cm}^3$ , mL (ml) $\text{dm}^3$ , L (l) $\text{m}^3$
mass	$q < 1 \text{ g}$ $1 \text{ g} \leq q < 1000 \text{ g}$ $1000 \text{ g} \leq q$	mg g kg
length	$q < 1 \text{ mm}$ $1 \text{ mm} \leq q < 100 \text{ cm}$ $100 \text{ cm} \leq q$	mm mm or cm m
area	$q < 100 \text{ cm}^2 (1 \text{ dm}^2)$ $1 \text{ dm}^2 \leq q < 100 \text{ dm}^2 (1 \text{ m}^2)$ $1 \text{ m}^2 \leq q$	$\text{mm}^2$ or $\text{cm}^2$ $\text{dm}^2$ $\text{m}^2$

**Annex B**  
**Type size of letters and numerals for statements of net quantity on**  
**consumer pre-packages**  
**(Informative)**

No consensus has been reached on a minimum type size for lettering required by this Recommendation. Tables 3 and 4 show the USA and European Union requirements respectively.

**Table 3 - Minimum height of numbers and letters**

Area of principal display panel in square centimetres ( <i>A</i> )	Minimum height of numbers and letters in millimetres	Minimum height: label information blown, formed or moulded on surface of container in millimetres
$A \leq 32$	1.6	3.2
$32 < A \leq 161$	3.2	4.8
$161 < A \leq 645$	4.8	6.4
$645 < A \leq 2581$	6.4	7.9
$2581 < A$	12.7	14.3

The area does not include the tops, bottoms, flanges at tops and bottoms of cans, and shoulders and necks of bottles and jars) shall be determined as follows:

- In the case of a rectangular pre-package, where one entire side can properly be considered to be the principal display panel side, the product of the height × the width of that side.
- In the case of a cylindrical or nearly cylindrical pre-package, 40 % of the product of the height of the pre-package × the circumference.
- In the case of any other shaped pre-package, 40 % of the total surface of the pre-package, or an area considered to be a principle display panel of the pre-package

**Table 4 – Minimum height of numbers and letters**

Net contents (C)	Minimum height of numbers and letters in millimetres
$C \leq 50$ g (or mL)	2
$50$ g (or mL) $< C \leq 200$ g (or mL)	3
$200$ g (or mL) $< C \leq 1$ kg (or L)	4
$1$ kg (or L) $< C$	6

In the European Union Council Directive 76/211/EU prescribes the minimum type size in relation to the quantity of the net contents as shown in Table 4.

Pre-packaged product

- wrapped in any manner
- quantity marked on the label



principle display panel

Identity of the product

- must be conspicuously marked on the principle display panel
- be easily read and understood



Identity required by law

For example "Domestic bleach". The word "bleach" must appear on the label in addition to the words "sodium hypochlorite". Additional warning labels etc must also appear on the label e.g. an indication of its general degree and general type of corrosiveness – "Highly corrosive to skin".



Identity of the product

Usual name of the product



Identity of the product

Generic name



\* These images were retrieved from the lecturers' presentation slides for better understanding.

\*\* The products shown here as examples were randomly selected and do not reflect the publisher's preferences.

Information required on pre-package

Name and place of business may be qualified to reveal the connection....  
 "manufactured for"



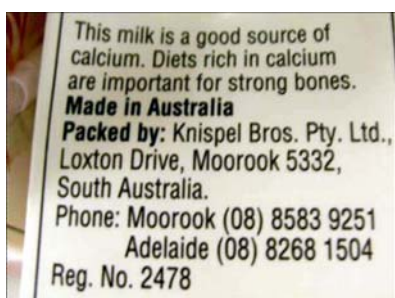
Information required on pre-package

"imported by"



Information required on pre-package

"packed by"



CUSTOMER HELPLINE: 0800 108 901

SCA Hygiene Australasia Ltd.

Freepost 2599

Customer Services

Private Bag 93100

Henderson, Auckland 8

Name and place of business

Net quantity

Some products may require the labelling of a drained quantity under national regulations.



Mixed pre-packages



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\*\* The products shown here as examples were randomly selected and do not reflect the publisher's preferences.



Mixed pre-packages

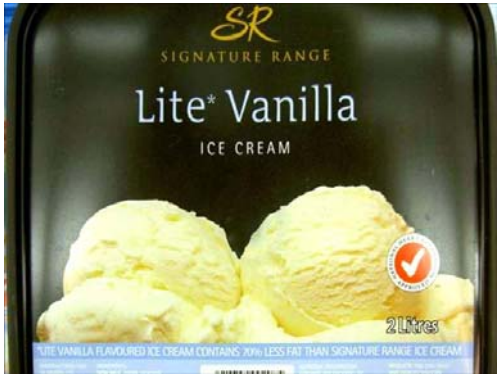
Units of dissimilar commodities

90g Tuna Sensations 17g Crackers  
107g NET



The image shows a package of Sealord Tuna Spread. The packaging is blue and white with a picture of the product on crackers. The text on the package includes 'SEALORD', 'TUNA SPREAD', 'SHAKITS', 'tuna SENSATIONS with crackers', and 'ready to eat snack'. A small label at the bottom left of the package indicates '90g Tuna Sensations 17g Crackers 107g NET'.


Net quantity - volume



The image shows a 2-litre tub of SR Signature Range Lite Vanilla Ice Cream. The packaging is dark with a picture of three scoops of ice cream. The text on the package includes 'SR SIGNATURE RANGE', 'Lite\* Vanilla ICE CREAM', and '2 Litres'. A small label at the bottom of the tub indicates 'NET QUANTITY - VOLUME'.

Net quantity

- count
- length



The image shows a yellow plastic plate with the 'Deeko' brand name. The packaging is blue and white with a picture of the plate. The text on the package includes 'Deeko', '20 PLASTIC PLATES', and 'EXTRA STRONG MICROWAVE SAFE'. A small label at the bottom left of the package indicates 'Net quantity'.

Net quantity – length & width



The image shows a roll of foil. The packaging is yellow and blue with a picture of the foil. The text on the package includes 'foil', '4.5 METRES', and '4.5m x 300mm'. A small label at the bottom of the roll indicates 'Net quantity - length & width'.

Quantities based firmly on established general consumer usage and trade custom

- liquid declared by mass
- semi-solid, product by volume



The image shows two products: O'Canada Pure Maple Syrup and Malabar Goats milk drinking yoghurt. The maple syrup is in a 250g bottle and the yoghurt is in a 500ml bottle. The text on the packages includes 'O'Canada', '100% PURE MAPLE SYRUP', 'Malabar', and 'Goats milk drinking yoghurt'.

Quantities based firmly on established general consumer usage and trade custom

- liquid declared by mass
- semi-solid product by volume



The image shows two bottles of sauce: Teriyaki Sauce and Lemon Sauce. The teriyaki sauce is in a 210ml bottle and the lemon sauce is in a 255g bottle. The text on the packages includes 'TERIYAKI SAUCE', 'LEMON SAUCE', and 'NET QUANTITY'.

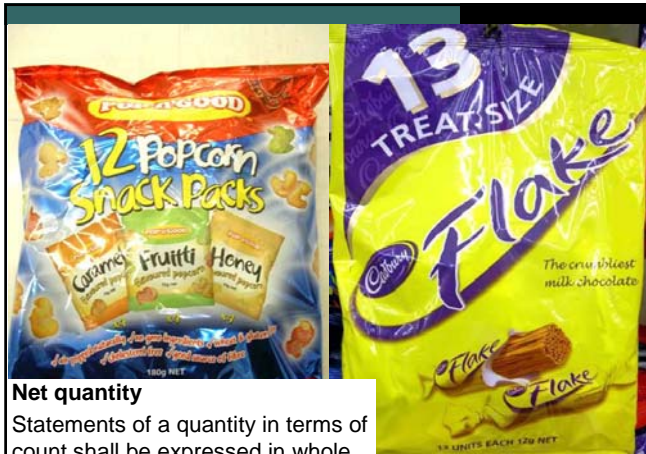
\* These images were retrieved from the lecturers' presentation slides for better understanding.

\*\* The products shown here as examples were randomly selected and do not reflect the publisher's preferences.

### Net quantity

#### Aerosol dispensers

- mass that will be expelled
- propellant is included
- in kilograms, grams or milligrams.



#### Net quantity

Statements of a quantity in terms of count shall be expressed in whole numbers.

### Presentation of information

Statements of a quantity less than a whole number may contain decimal fractions to a maximum of three places, provided that the declaration complies with Table 2 in Annex A.



### Significance of numbers on labels

Shown to three figures in the decimal system.



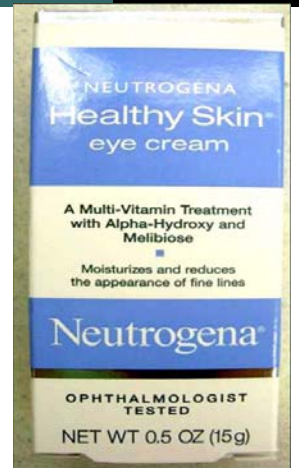
### Significance of numbers on labels

Quantities below 100g, 100 ml, etc., may be shown to two figures



### Significance of numbers on labels

If the quantity is less than one, it shall be shown in the decimal system with the figure zero preceding the decimal point.



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**OIML R 87**

**Quantity of Product in Pre-packages**



## **OIML Recommendation R87**

### **Quantity of Product in Pre-packages**

#### **Scope**

This Recommendation specifies the:

- Legal metrology requirements for pre-packaged goods labelled in predetermined constant nominal quantities of weight, volume, linear measure, area or count. Pre-packaged products that are made up in variable quantities fall outside the scope of this Recommendation.
- Sampling plans and procedures for use by legal metrology officials in verifying the quantity of the product in pre-packages.
- Informative Annexes include an examination procedure outline, procedures for determining average tare weight, the drained quantity of products in liquid medium, and the actual quantity of frozen products. There is also a mandatory Annex on misleading pre-packages.

#### **Terminology**

##### *Pre-packaged Product*

This consists of the contents of the pre-package and the packaging material into which it was put before being offered for sale. The packaging material does not have to fully enclose the product. In addition the quantity of product must not be able to be altered without the packaging either being opened or undergoing a perceptible modification. This Recommendation does not preclude legal metrology officials from taking into account reasonable deviations in the quantity of product that arise from exposure to reasonable environmental conditions. This can include desiccating and/or hygroscopic products.

Any commodity that is:

- enclosed in a container or wrapped in any manner; and
- is made up in predetermined constant nominal quantity; and
- the quantity is indicated on its label prior to being offered for sale.

Pre-packaged products are also known as pre-packaged commodities or pre-packaged goods.

The weight of pre-packages is often referred to as the ***Gross weight***.

The sum of the weight of any packaging material (tare weight) and the actual quantity (net weight) of a pre-package.

$$\text{Gross weight} = \text{tare weight} + \text{net weight}$$

### *Nominal quantity ( $Q_n$ )*

The quantity of product in a pre-package declared on the label by the packer. The requirements for this declaration of nominal quantity can be found in OIML R 79 *Labelling requirements for pre-packaged products*.

### *Inspection lot or batch*

A definite quantity of pre-packages produced at one time under conditions that are presumed to be uniform and from which a sample is drawn and inspected to determine conformance with specified criteria for acceptance or rejection of the inspection lot as a whole. Essentially the goods that make up the inspection lot are of the same stated kind, the same stated quantity, pre-packaged in the same place on the same production run under similar conditions.

### *Tolerable Deficiency (T)*

This is the maximum deficiency allowed on the contents of a pre-package. The amounts are specified in Table 2.

### *Individual pre-package error*

Difference between the actual quantity of product in a pre-package and its nominal quantity.

### *Inadequate pre-package*

Pre-packages with an individual pre-package error less than the nominal quantity.

#### *T1 error*

A pre-package found to contain an actual quantity of product less than the nominal quantity minus the tolerable deficiency. This is called a T1 error.

$$\text{T1 error: Actual contents} < (Q_n - T)$$

#### *T2 error*

A pre-package found to contain an actual quantity of product less than the nominal quantity minus twice the tolerable deficiency. This is called a T2 error.

$$\text{T2 error: Actual contents} < (Q_n - T2)$$

### *Average error*

This is the sum of individual pre-package errors divided by the number of pre-packages in the sample. The arithmetic sign must be considered when determining the average error.

#### *Actual quantity or net quantity*

This is the quantity of product that the pre-package contains as determined by measurements made by legal metrology officials.

#### *Content of a pre-package*

This is the actual quantity of product in a pre-package.

#### *Tare*

Also known as packing material, individual package, packaging or packaging material. It is everything of the pre-package that is intended to be left over after use of the product. The tare does not include intrinsic parts of the product. Examples include banana skins and the stone in some types of fruits.

#### *Random Sampling*

Sample pre-packages are chosen randomly. This means that each pre-package that makes up the inspection lot must have the same probability of being included in the sample.

#### *Sample Size (n)*

The number of pre-packages taken from an inspection lot is specified in Table 1. These pre-packages are used to provide information that will ultimately decide whether the inspection lot is accepted or rejected.

## **Metrological requirements for a pre-package**

The metrological requirements of this Recommendation must be met at each point of the distribution chain i.e. point-of-pack, import, distribution and wholesale transactions, and sale. Sale includes where a pre-package is offered or exposed for sale or is sold.

### *Average requirement*

The average actual quantity of product in a pre-package in an inspection lot shall be at least equal to the nominal quantity. The criteria outlined below shall be met if the average actual quantity of product in a pre-package in an inspection lot is estimated by sampling.

### *Individual pre-package requirement*

A certain amount of deviation from the nominal quantity of product in a pre-package is permitted. An inspection lot shall be rejected if it contains:

- More pre-packages that exceed the tolerable deficiencies than allowed in column 4 of Table 1; or
- One or more inadequate pre-packages that are T2 errors.

Failure to comply with either the average or individual pre-package requirements will cause the inspection lot to be rejected.

## **Reference test for metrological requirements**

Legal metrology officials shall conduct tests to determine if pre-packages comply with the requirements of this and other Recommendations such as R79 (Labelling requirements for pre-packaged products). Such tests may be carried out at any level of the distribution chain.

The expanded uncertainties at the 95% confidence level associated with measuring instruments and test methods used for determining quantities shall not exceed  $0.2T$ .

Examples of the source of uncertainty include:

- The maximum permissible error and repeatability in weighing and measuring instruments,
- Variability in the tare weight,
- Variability in density determinations caused by differing amounts of solids in the liquid or temperature changes.

Additional tests are permitted for the purpose of verifying that pre-packages meet the requirements of this Recommendation.

### **Statistical and general principals of control**

There are three rules which the inspection lot must pass. The inspection lot is rejected if it fails one or more of these rules.

#### **Rule 1**

The actual quantity of the product ( $Q_n$ ) in the pre-package must not be less, on average than the nominal quantity.

#### **Rule 2**

Less than 2.5% of pre-packages in the sample shall contain a quantity of product less than  $Q_n - T$ .

Column 4 of Table 1 states the maximum number of inadequate pre-packages in the sample which contain an actual quantity of product less than  $Q_n - T$ . (T1 error)

#### **Rule 3**

The inspection lot must be rejected if one or more pre-packages contain a quantity of product that is less than  $Q_n - 2T$ . (T2 error)

#### *Significance level of the tests for the Type I Risk*

A Type I Risk: the inspection lot is rejected when it was correctly filled.

*Test on the average of the quantity of product in a pre-package in the sample.*

The significance level is 0.5%. This means that there is a 1 in 200 chance of wrongly rejecting an inspection lot with the mean value  $\mu \geq Q_n$ .

*Test on the number of inadequate pre-packages in the sample.*

The significance level is 5%. This means that there is a 1 in 20 chance of wrongly rejecting an inspection lot containing 2.5% of inadequate pre-packages.

#### *Significance level of the tests for Type II Risks*

A Type II Risk is that the inspection lot is accepted when it should have been rejected.

At least 90% of reference tests shall detect inspection lots:

- For which the average fill is less than  $(Q_n - 0.74\sigma)$  where  $\sigma$  is the sample standard deviation of the quantity of the product in the pre-packages of the inspection lot; and
- Which contain 9% of inadequate pre-packages.

### **Characteristics of the sampling plans used in market surveillance by Legal Metrology Officials**

It is assumed that inspection lots are uniform.

The sample pre-packages are selected using random sampling techniques.

An inspection lot taken from the production line shall consist of all pre-packages not rejected by a checking system. Care shall be taken to prevent any changes, other than normal operating adjustments or other corrective actions in the production and pre-package filling process. Sample pre-packages must be selected after the final point of checking by the packer.

#### *Sample pre-packages chosen from the production line*

The size of the inspection lot shall be equal to the maximum hourly output of the production line. There is no restriction on the size of the inspection lot.

#### *Sample pre-packages not chosen from the production line at the premises of the packer*

- If the production line output exceeds 10,000 pre-packages per hour: the size of the inspection lot shall be equal to the maximum hourly output of the production line without any restriction as to the inspection lot size; or
- The production line output is 10,000 or fewer pre-packages per hour: the inspection lot size shall not exceed 10,000 pre-packages.

## **Annex E**

### **Prohibition of misleading pre-packages**

#### **General**

The consumer must not believe that they are going to receive more product than they will actually do so if they were to purchase the pre-packaged item. This false impression may arise from the pre-package being constructed with a false bottom, sidewalls or lid.

This is similar to the prohibition on capacity serving measures with false bottoms or sidewalls which when filled and emptied result in short measure delivery when compared to the expectations arising from the outer dimension of the measure.

There have been instances in the past where expensive cosmetic products have been placed in a container which gives the impression that it will hold more product than it will actually do so and would therefore be in breach of this requirement.

However there are types of product where the overall packaging material must be larger than the volume of the product it contains.

#### **Slack fill**

This is the difference between the actual capacity of the packing material and the volume of product it contains. Slack fill may be necessary for the following reasons:

- Protection of the product;
- The requirements of the machines used for enclosing the contents of the pre-package;
- Unavoidable product settling during shipping and handling; and
- The need for the pre-package to perform a specific function which is inherent to the nature of the product and is clearly communicated to consumers.

An example of protection of the product would include individual chocolates in a box where the packaging material might appear excessive to a consumer but has been deemed necessary by the manufacturer in order to protect the product from damage. An example of unavoidable product settling during shipping and handling includes cornflakes and laundry washing powders. An example of the specific function necessitating a larger pre-package would include drinks which are required to be shaken by the consumer so that the correct thickness of product is obtained.

### Non-functional slack fill

This is empty space in a pre-package when the pre-package is filled to less than its capacity. If a consumer cannot fully view the product in a pre-package it is deemed to be filled. Excessive non-functional slack fill may cause the pre-package to be misleading to the consumer.

### Aerosol dispensers

The percentage (grade) of fill by volume of aerosol dispensers shall be as required in Annex III of European Directive 80/232/EEC of 15 January 1980. (This annex is reproduced as table E1)

Further information on misleading pre-packages is covered in OIML R79.

**Table E.1 Capacities of aerosol containers**

Volume of the liquid phase in mL	Container capacities in mL for:	
	Products propelled by liquid gas	(a) Products propelled by compressed gas alone. (b) Products propelled by nitrous oxide or carbon dioxide alone or by mixtures of the two alone when the product has a Bunsen Coefficient of 1.2 or less.
25	40	47
50	75	89
75	110	140
100	140	175
125	175	210
150	210	270
200	270	335
250	335	405
300	405	520
400	520	650
500	650	800
600	800	1000
750	1000	



Nominal quantity

Manufacturer's declared quantity as labelled by the packer



Packing material



Slack fill



Slack fill



Slack fill

Protection

Slack fill is approximately 50%



\* These images were retrieved from the lecturers' presentation slides for better understanding.  
\*\* The products shown here as examples were randomly selected and do not reflect the publisher's preferences.



Unavoidable product settling during shipping and handling

Slack fill is approximately 37%

A close-up photograph of a white ruler placed vertically inside a cardboard box. The ruler is marked in centimeters from 0 to 30. The top of the product is visible at approximately the 6 cm mark, while the bottom of the box is at 0 cm. The ruler is placed against a brown cardboard wall.

Specific function

The slack fill is approximately 25%

A photograph of a 500ml bottle of Nature's Energy Super Shake chocolate milkshake. The bottle is white with brown and blue accents. A white ruler is placed vertically next to the bottle to measure its height. The ruler shows the bottle is approximately 12 cm high. The bottle has 'Nature's Energy Super Shake CHOCOLATE' and 'SHAKE IT UP FRESH FLAVORED MILKSHAKE 500ml' printed on it.

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\*\* The products shown here as examples were randomly selected and do not reflect the publisher's preferences.

# **Tare Procedures**

## Tare procedures OIML R87

John Carter 23/2/06

Annex B of R87 gives procedures for determining tare weights. This annex is informative and not mandatory.

The procedures permit the use of unused dry tare or used dry tare to determine the actual quantity of product in the pre-package as follows:

Actual quantity of product = Weight of the pre-package – Average weight of the packing material.

The average weight of the packing material is referred to as the average tare weight (ATW).

Unused dry tare is the weight of unused packing material of one pre-package.

Used dry tare is packing material that has been used as part of a pre-package and that has been separated from the product and cleaned using normal household procedures used by consumers of the product (e.g. the material should not be dried in an oven).

In practise we have found that packaging material used for wet products such as chicken and other meats can be difficult to dry. With these products it is often best to wash the packaging material and dry with a cloth then allow it to dry overnight.

Table 1 reproduced from OIML R87 is used to determine the average tare weight.

**Table B.1 Tare**

<b>If</b>	<b>Then</b>
The ATW is $\leq 10\%$ of the nominal quantity of product	Use the ATW to determine the actual quantity of product in the pre-packages according to A.2 step 7.
The ATW is $> 10\%$ of the nominal quantity and $s < 0.25 \times T$	Use a total of 25 packages to compute the ATW and determine the actual quantity of product in the pre-packages according to A.2 step 7.
The ATW is $> 10\%$ of the nominal quantity and $s > 0.25 \times T$	An ATW cannot be used. It is necessary to determine and to consider every individual tare weight. Determine the actual quantity of product in each pre-package according to A.2 step 7.

### Procedure to establish the tare.

Determine the unused dry tare or the used dry tare.

- 1 Randomly select an initial sample of 10 packing materials.  
These can be taken from an inspection lot (used dry tare) or from a lot of packing materials at the point of pack (unused dry tare).  
Note: in practise it is recommended to use unused dry tare if at all possible.
2. Determine the individual weight of each of the 10 packing materials.
3. Determine the average tare weight (ATW) and the standard deviation (s) of the initial sample and make an appropriate decision according to one of the following criteria:
  - a. If the average tare weight is less than or equal to 10% of the nominal quantity of the product, then the average tare weight of the 10 samples is used to determine the actual quantity of the product.

Because the variation in tare is small in relation to the nominal capacity then the mean tare is used. (The spread of tare is ignored)

#### Example 1

Nominal weight = 500 g

$T = 15$  g

Tare Sample	Tare (g)
1	1.5
2	1.0
3	1.0
4	0.5
5	1.0
6	1.5
7	1.0
8	1.5
9	0.5
10	1.0
Mean	1.05
s	0.369

In this example:

The average tare is 1.05 g which is less than 10% of the nominal weight of 500 g.

Therefore the tare value to be used is 1.05 g.

- b. If the average tare weight of the initial tare sample is greater than 10% of the nominal quantity and if its standard deviation is less than  $0.25 \times T$ , then the average tare weight of 25 sample is used to determine the actual quantity of the product.

**Example 2**

Nominal weight = 10 g

$T = 0.9$  g

Tare Sample	Tare (g)
1	3.0
2	3.1
3	3.2
4	3.3
5	3.0
6	3.2
7	3.3
8	3.0
9	3.2
10	3.1
Mean	3.14
S	0.117

In this example the average tare weight is 3.14 g which is greater than 10% of the nominal weight of 10 g and the standard deviation of 0.117 is less than  $0.25 \times T$ . Therefore we need to weigh another 15 individual packing materials to determine the ATW.

In example 2 the ATW of 3.14 g is greater than 10% of 10 g and the standard deviation of 0.117 is less than  $0.25 \times 0.9$  g

Therefore the sample number is increased to 25 as shown in example 3.

**Note:** Use the original sample of 10 packages and select a further 15. Consider whether such action is common sense e.g. where the weight of the packaging is greater than it's contents, such as with small tubes of ointment, but the tare weight is very constant, there is nothing to be gained from checking a further 15

### Example 3

Nominal weight = 10 g

$T = 0.9$  g

Tare Sample	Tare (g)
1	3.0
2	3.1
3	3.2
4	3.3
5	3.0
6	3.2
7	3.3
8	3.0
9	3.2
10	3.1
11	3.0
12	3.1
13	3.2
14	3.3
15	3.0
16	3.2
17	3.3
18	3.0
19	3.2
20	3.1
21	3.0
22	3.1
23	3.2
24	3.3
25	3.0
Mean	3.136
SD	0.115

The average tare weight of these 25 tare samples is 3.136 g

Therefore the tare used is 3.136 g

- c. If the average tare weight of the initial tare sample is greater than 10% of the nominal quantity and the standard deviation is greater than  $0.25 \times T$ , then an ATW cannot be used. In this case it is necessary to determine every individual tare weight.

#### Example 4

Nominal weight = 50 g

$T = 4.5$  g

Tare Sample	Tare (g)
1	7.5
2	6.0
3	5.0
4	6.5
5	7.0
6	6.5
7	5.0
8	4.5
9	4.5
10	8.0
Mean	6.05
s	1.26

In this example the average tare weight is 6.05 g which is greater than 10% of the nominal weight of 50 g. The standard deviation is 1.26 which is greater than 0.25 of 4.5 g ( $T$ )

Therefore we would have to check the tare of each individual package.

**Note:** This method may not have to involve destructive testing in all cases. E.g. it may be possible to weigh and mark with a number, empty packages and then place them randomly in the packaging line and then when filled check weigh them. This may be desirable in the case of small necked bottles with dense products in them. Emptying the product from these type bottles, then washing and drying them can be very awkward and time consuming.



## **Examination Procedure**

## Procedure for ensuring compliance with clause 3 of OIML R87

### Pre-Inspection Visit

Before carrying out an inspection it is useful to carry out a pre-inspection visit. This will enable you to determine the method of production and packaging, volume of product, run times, production times, need for special equipment or clothing. This will help avoid turning up with the wrong test equipment or at a time when production has finished for the day. E.g. Bakeries often start early in the morning and finish around midday.

### Inspection Visit

As with other visits, a proper introduction should be made, including production of a certificate of appointment and explanation of the purpose of the visit. The visit will be causing some disruption so it is important the company understand what is to happen.

### Test Equipment

Find a suitable location to set up the test equipment. Make sure that there is enough room to stack packages if necessary.

Ensure any weighing instrument being used is suitable.

The following table will assist in determining the weighing equipment to be used.

#### Schedule of weighing instrument division value for checking nominal quantity of pre-packages

Quantity to be checked Qn (ranges)	Maximum value of instrument division d	Instrument Accuracy Class
Up to < 0.6 g	0.005 g	II
0.6 g to < 1 g	0.01 g	II
1 g to < 3 g	0.02 g	II
3 g to < 5 g	0.05 g	II
5 g to < 11 g	0.1 g	II or III
11 g to < 28 g	0.2 g	II or III
28 g to < 111 g	0.5 g	II or III
112 g to < 333 g	1 g	III
334 g to < 1666 g	2 g	III
1667 g to < 3340 g	5 g	III
3340 g to < 6660 g	10 g	III
6660 g to < 25 000 g	20 g	III
25 000 g to < 50 000 g	50 g	III
50 000 g to < 100 000 g	100 g	III

**Notes:**

- The ranges of quantity to be checked have been selected so that the inspection (in service) maximum permissible error for the weighing instrument does not exceed one-fifth of the tolerable deficiency for the nominal quantity.

Weighing equipment being used for the inspection should be tested using standard weights at the weight of the goods being inspected and at the tare weight of the packaging. Any errors must be recorded.

**Net quantity statement**

Confirm that the goods are correctly marked with the stated net quantity (OIML R79)

**Procedure**

**At the packers premises**

1. Determine the inspection lot size.

**If the inspection lot is taken from the production line:**

The lot size is equal to the hourly output of the production line, without any restriction as to the inspection lot size.

**Note:**

- An inspection lot taken from the production line must consist of all pre-packages not rejected by a checking system.
- Ensure that no changes other than normal operating adjustments or other corrective actions are made during the pre-package filling process.

**The inspection lot is not taken from the production line.**

E.g. pre-packages are checked in the packer's warehouse.

If the production line output exceeds 10 000 pre-packages per hour the inspection lot size is equal to the hourly output of the production line, without any restriction as to the inspection lot size.

- If the production line output is 10 000 or fewer packages per hour: the inspection lot size must not exceed 10 000 pre-packages.

**At the distributors or importers**

The inspection lot size can be determined by:

- Number of pre packages belonging to one delivery or
  - Any other reasonable method determined by the inspector.
2. Determine the sample size appropriate for the inspection lot in accordance with table 1.

**Table 1 Sampling plans for pre-packages**

<b>Inspection lot size</b>	<b>Sample size (<i>n</i>)</b>	<b>Sample correction factor</b> $(t_{1-a}) \times \frac{1}{\sqrt{n}}$	<b>Number of pre-packages in a sample allowed to exceed the tolerable deficiencies in 4.2.3 (see also 2.4.1)</b>
100 to 500	50	0.379	3
501 to 3 200	80	0.295	5
> 3 200	125	0.234	7

e.g. if the lot size is 3 000 the sample size is 80 pre-packages.

3. Randomly select the sample. In practise it is often difficult or impossible to take the sample randomly. If this is the case the sample should be taken unsystematically.
4. Determine the tolerable deficiency (*T*) appropriate for the nominal quantity of the pre-packages in accordance with table 2

E.g. if the net weight of the package is 500 g the tolerable deficiency would be 15 g

**Table 2 Tolerable deficiencies in actual content for pre-packages**

Nominal quantity of product ( $Q_n$ ) in g or mL	Tolerable deficiency ( $T$ ) <sup>a</sup>	
	Percent of $Q_n$	g or mL
0 to 50	9	-
50 to 100	-	4.5
100 to 200	4.5	-
200 to 300	-	9
300 to 500	3	-
500 to 1 000	-	15
1 000 to 10 000	1.5	-
10 000 to 15 000	-	150
15 000 to 50 000	1	-
<sup>a</sup> $T$ values are to be rounded up to the next 1/10 of a g or mL for $Q_n \leq 1\,000$ g or mL and to the next whole g or mL for $Q_n > 1\,000$ g or mL.		
<b>Nominal quantity of product (<math>Q_n</math>) in length</b>		
<b>Percent of <math>Q_n</math></b>		
$Q_n \leq 5$ m	No tolerable deficiency allowed	
$Q_n > 5$ m	2	
<b>Nominal quantity of product (<math>Q_n</math>) in area</b>		
<b>Percent of <math>Q_n</math></b>		
All $Q_n$	3	
<b>Nominal quantity of product (<math>Q_n</math>) in count</b>		
<b>Percent of <math>Q_n</math></b>		
$Q_n \leq 50$ items	No tolerable deficiency allowed	
$Q_n > 50$ items	1 <sup>b</sup>	
<sup>b</sup> Compute the value of $T$ by multiplying the nominal quantity by 1 % and rounding the result up to the next whole number. The value may be larger than 1 % due to the rounding but this is accepted because the products are whole items and cannot be divided.		

- 5 Determine the number of pre-packages allowed to exceed the tolerable deficiency from column 4 of Table 1.

## Goods sold by weight

6 Determine the average tare weight

7 Determine the pre-package error for each individual pre-package.

Measure and record the weight for each pre-package.

**Note:** Pre-package is the combination of the product and the packaging material.  
The term Gross weight is often used instead of the term pre-package.

8 Subtract the average tare weight (ATW).

**Note:** Tare is also called packaging material.

$$\text{Pre-package or gross weight} - \text{ATW} = \text{Actual Quantity}$$

9 Subtract the nominal quantity ( $Q_n$ ). (The quantity declared on the label.)

$$\text{Actual Quantity} - Q_n = \text{individual pre-package error.}$$

### Example showing determination of individual pre-package error

Pre-package or gross weight	Average tare weight (ATW)	=	Actual Quantity	-	$Q_n$	=	Individual Pre-package Error
510 g	8 g		502 g		500 g		+ 2 g
500 g	8 g		498 g		500 g		- 2 g

10 Determine compliance.

There are 3 rules that the test sample must meet in order for the inspection lot to pass.

#### Rule 1

The actual contents of the pre-packages in an inspection lot must not be less, on average, than the nominal quantity.

#### Rule 2

Less than 2.5% of pre-packages in the sample shall contain a quantity of product less than  $Q_n - T$ . ( $T_1$  error)

#### Rule 3

The inspection lot must be rejected if one or more pre-packages contain a quantity of product that is less than  $Q_n - 2T$ . ( $T_2$  error)

### To determine if the test results comply with Rule 1:

i. Sum the individual pre-package errors to calculate the total pre-package error (TPE).

- ii. Divide the TPE by the sample size to calculate the average error (AE)
  - If the AE is a positive number the inspection lot passes rule 1.
  - If the AE is a negative number we need to calculate the sample error limit (SEL).

To calculate the SEL

- i. Determine the sample standard deviation (s)
- ii. Multiply the standard deviation by the sample correction factor (SCF) shown in column 3 of table 1 for the sample size in column 2.

$$\text{SEL} = s \times \text{SCF}$$

- iii. Add the SEL to the AE.
  - If the sum is a positive number, the sample (and inspection lot) passes; or
  - If the sum is a negative number, the sample (and inspection lot) fails.

**To determine if the test results comply with Rule 2:**

Compare each negative individual pre-package error obtained to the values for  $T$  in table 2.

- i. If the absolute value of a negative individual pre-package error is greater than the tolerable deficiency specified in table 2, a pre-package is inadequate.
- ii. If the number of inadequate pre-packages exceeds the total permitted in column 4 of Table 1, the lot fails

**To determine if the test results comply with Rule 3:**

If any inadequate pre-package with a negative individual pre-package error greater than  $T_2$  is found, the sample fails the individual pre-package requirement.

## Goods sold by volume

- 1 Follow steps 1 to 5 above.
- 2 Determine the pre-package error for each individual pre-package.

There are two methods commonly used:

- i. Direct comparison

This method requires destructive testing.

- a. Open each individual pre-package
- b. Measure the contents using a graduated cylinder to determine the actual quantity.
- c. Subtract the nominal quantity ( $Q_n$ ). (the quantity declared on the label.)  
$$\text{Actual Quantity} - Q_n = \text{individual pre-package error.}$$

- ii. Gravimetrically

- a. Measure and record the weight for each pre-package. (allow for any errors in the weighing instrument)
- b. Subtract the average tare weight (ATW) to find the actual weight of the product.

$$\text{Pre-package or gross weight} - \text{ATW} = \text{Actual Weight}$$

- c. Determine the density of a reference volume.

$$\text{density} = \frac{\text{productweight}}{\text{volume}}$$

- d. divide the actual weight by the density to find the Actual Quantity.
- e. Subtract the nominal quantity ( $Q_n$ ). (the quantity declared on the label.)

$$\text{Actual Quantity} - Q_n = \text{individual pre-package error.}$$

3. Continue from step 10 above.



# **Sampling Techniques**

## **Sampling Techniques**

Ideally every pre-pre-package in an inspection lot has an equal chance of being chosen. In reality this is not always easy to achieve. When we select our sample we are attempting to remove selection bias. A random sample will allow us to make the best estimate of the mean and standard deviation and thereby allow us to make statistically valid inferences.

## **Sampling Methods**

We can sample randomly by physical location within the inspection lot or by time off the production line.

## **Random Sampling**

A random sample is one that is drawn from the inspection lot in such a way that every item in the inspection lot has an equal chance of being chosen as a member of the sample.

Only if we have a random sample can we use probability theory to make inferences about the inspection lot. For example to calculate confidence intervals for, or to test hypotheses about some unknown population parameter.

## **Choosing a random sample**

Various 'mechanical' methods can be used which involve allocating a reference number to each member of the inspection lot and recording these numbers in some physical way, on cards, slips of paper etc. After thoroughly mixing we then choose as many cards etc. as there are pre-packages needed for the sample. The corresponding pre-packages of the inspection lot will then constitute the sample.

Random number tables consist of the ten digits 1, to 9, 0 repeated many times in random order so that any print position in the table has a probability of 0.1 of being occupied by any particular digit.

To use the tables a starting point must first be determined by some random procedure,

e.g. stab a page of the table with a pin and use the sequence of digits that is adjacent to the pin to establish,

- the page number
- the row number
- the column number

position in the table at which we will start taking the random digits.

For an inspection lot containing up to 999 pre-packages the digits would need to be taken as triplets giving the reference numbers 001, 002, ....999, Similarly for inspection lot sizes

between 1000 and 9999. Any four figure numbers that fall outside the required range being ignored should they arise.

Many calculators have a facility to generate random numbers. When the necessary key is pressed the calculator will usually display a 3 decimal figure between 0.000 and 0.999 inclusive. Taking the three digits of the random number you can use it to select a random sample from the inspection lot where the number of pre-packages does not exceed 1000.

For example to choose a random sample of 12 pre-packages from a inspection lot size of 35

- The 35 pre-packages in the inspection lot are allocated the reference numbers 1, 2,....34, 35
- A random start is made somewhere in either the table or using the random number generator on the calculator to provide a sequence of individual digits

88 45 41 59 69 **03** 70 **29** 67 53 **25** 96 **24** 62 **33** 71 39 **17** **05** 33 80 48 **16** **19** 41  
53 19 48 17 03 73 97 52 96 **11** 66 **27** 42 77 91 96 27 43 05 **22** 06

Pre-packages identified as 03, 29, 25, 24, 33, 17, 05, 16, 19, 11, 27, 22 would be selected as the sample.

Alternatively the calculator can also be used to select a random number in any range 1 to n by using the above technique to generate each digit in turn i.e. the first digit for thousands, the second digit for the hundreds, the third digit for the tens and the final digit for the units.

### **Choosing a random sample over time**

There are occasions when we wish to collect a sample of pre-packages at random times over a given period. The reference test carried out on a filling machine requires that a random sample of pre-packages be collected over one hour's normal production.

Random numbers can be used to establish the times at which these pre-packages should be taken from the end of the line.

Divide the hour into 3600 seconds and taking the digits in groups of four choose the random times in the range from 0001 to 3600 at which the packs must be selected.

**Choosing a random sample over time (cont'd)**

For example the following sequence of numbers (which remained after those beyond 3600 had been ignored) would produce the corresponding times throughout the hour.

1287 would correspond to a pack being chosen after 21 minutes 27 seconds  
1936 “ “ “ “ “ “ 32 minutes 16 seconds  
1677 “ “ “ “ “ “ 27 minutes 57 seconds  
0328 “ “ “ “ “ “ 5 minutes 28 seconds  
etc

Arrange the times in chronological order and with a stop watch determine which pre-packages would be chosen for the sample.

# **Test Equipment**

## Test Equipment

### Weighing Instrument

In general a weighing instrument is considered appropriate if it is verified and the maximum permissible error in service is no more than the permissible negative deviation (T) of the pre-package to be tested x 0.2

E.g stated content of the package: 500 g

T = 15 g

The instrument may have a margin of error no greater than  $15 \text{ g} \times 0.2 = 3 \text{ g}$ .

Consideration must also be given to combined uncertainties. The following table can be used as a guide.

#### Schedule of weighing instrument division value for checking nominal quantity of pre-packages

Quantity to be checked Qn (ranges)	Maximum value of instrument division d	Instrument Accuracy Class
Up to <0.6 g	0.005 g	II
0.6 g to < 1 g	0.01 g	II
1 g to < 3 g	0.02 g	II
3 g to < 5 g	0.05 g	II
5 g to < 11 g	0.1 g	II or III
11 g to < 28 g	0.2 g	II or III
28 g to 111 g	0.5 g	II or III
112 g to 333 g	1 g	III
334 g to 1666 g	2 g	III
1667 g to <3340 g	5 g	III
3340 g to <6660 g	10 g	III
6660 g to <25 000 g	20 g	III
25 000 g to <50 000 g	50 g	III
50 000 g to <100 000 g	100 g	III

**Note:** The ranges of quantity to be checked have been selected so that the inspection (in service) maximum permissible error for the weighing instrument does not exceed one-fifth of the tolerable deficiency for the nominal quantity.

## Density

### Density determination

In the international system of units (SI) density ( $\rho$ ) is a derived unit. It is defined as the quotient of the mass ( $m$ ) of a substance and the volume ( $V$ ) of the same substance.<sup>1</sup>

$$\rho = \frac{m}{V}$$

When the density is known and the mass has been determined the volume is:

$$V = \frac{m}{\rho}$$

### Equipment used to determine density

#### Hydrometer

A hydrometer is a device used to determine directly the density of a liquid. It usually consists of a thin glass tube closed at both ends, with one end enlarged into a bulb that contains fine lead shot to cause the instrument to float upright in a liquid. In the glass tube is a scale so calibrated that the reading on it level with the surface of the liquid in which the hydrometer is floating indicates the number of times heavier or lighter the liquid is than water. The function of the hydrometer is based on Archimedes principle that a solid suspended in a liquid will be buoyed up by a force equal to the weight of the liquid displaced. Thus, the lower the density of the substance, the lower the hydrometer will sink.

To use the hydrometer a glass cylinder with an inside diameter of at least 50 mm is required. The glass cylinder is filled with the sample.

The hydrometer is lowered carefully into the sample until it floats under its own weight. After the hydrometer has settled the density is read. The reading is taken on the line determined by the meniscus.

If the liquid is transparent the reading is taken on the line determined by the bottom of the meniscus. If the liquid is opaque the reading is taken at the top of the meniscus.

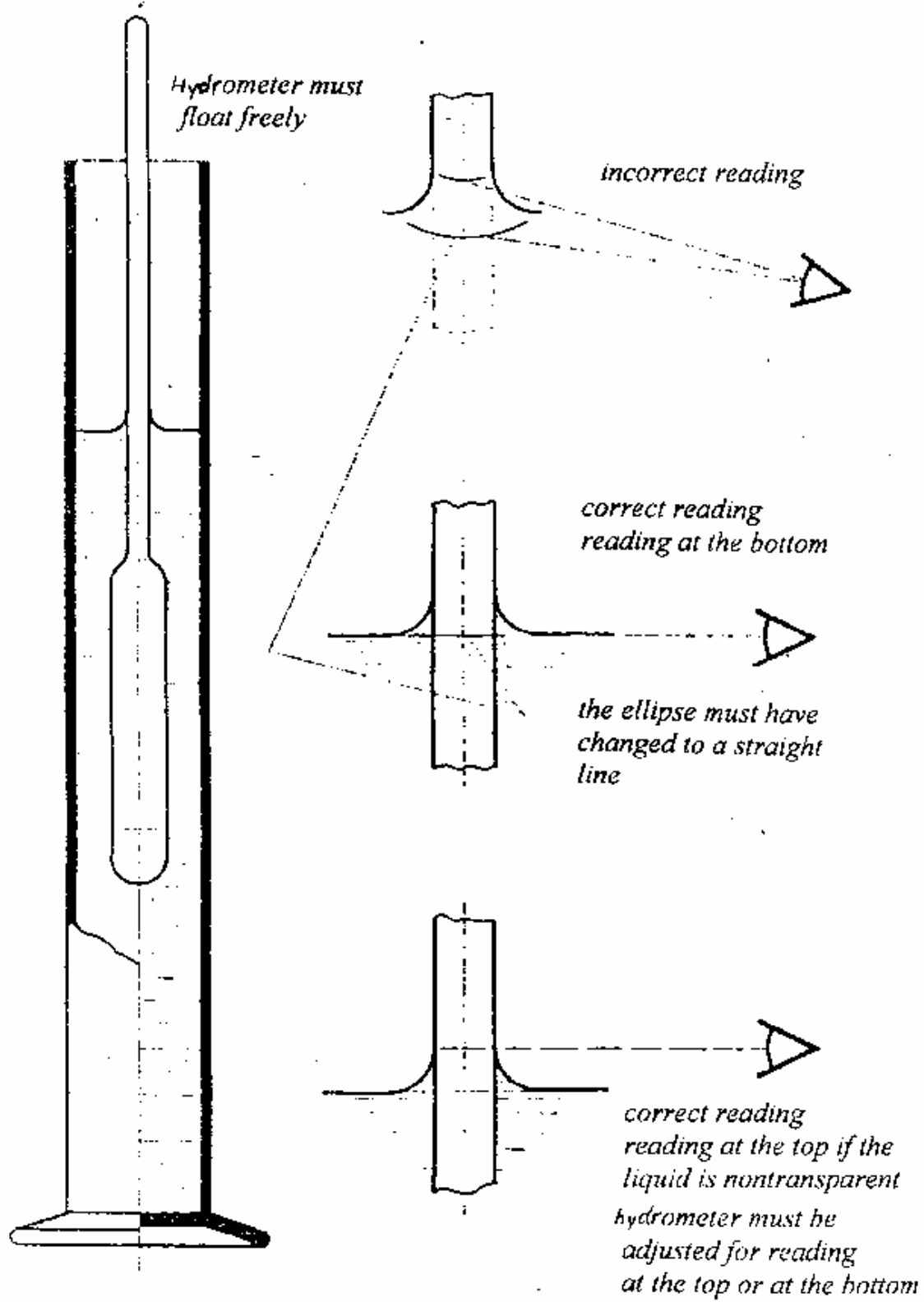
The density of the product is:

$$\rho = \text{reading} + \text{correction factor.}$$

The correction factor is stated individually on the calibration certificate for each hydrometer.

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<sup>1</sup> R87 suggests a reference temperature of 20°C.





## Pycnometers

Pycnometers are glass or metal containers with a precisely determined volume that are used to determine the density of liquids. They are closed by a stopper or lid.

To determine the density of a product:

- Clean the pycnometer with water and alcohol and dry thoroughly.
- Place the pycnometer and its lid on the weighing instrument and record the result. ( $m_o$ )
- Carefully fill the pycnometer ensuring that no air bubbles are trapped.
- Place the lid on the pycnometer.
- Place it in a thermostatic bath at  $20\text{ }^\circ\text{C} \pm 0.4\text{ }^\circ\text{C}$  for 20 to 30 minutes.
- Dry the pycnometer thoroughly and weigh the filled pycnometer ( $m_p$ )
- The density is determined using the following formula:

$$\rho = 0.99985 m/V + 0.0012 \text{ g/ml}$$

$$m = m_p - m_o$$

V = volume of the pycnometer at the temperature of measurement

## Density determination using the pressure proof glass pycnometer

The “pressure proof pycnometer” is suitable for determining the density of aerosols. It consists of a pressure proof glass pycnometer, surrounded by a cylinder of plastic material.

To determine the density of a product:

- Weigh the pycnometer including accessories ( $m_2$ )
- Cool it in a refrigerator
- Shake the aerosol can.
- Fill the pycnometer from the aerosol can.
- Weigh the filled pycnometer ( $m_1$ )
- Place in a thermostatic bath at  $20\text{ }^\circ\text{C}$
- Read the volume (V) after the graduation has become visible.
- Calculate the density

$$\rho = (m_1 - m_2) / V$$

### **Density determination using the displacement sphere or plunger.**

This piece of test equipment comprises of a spherical ball on the end of a rod. There is an annular mark on the rod to indicate the depth of immersion.

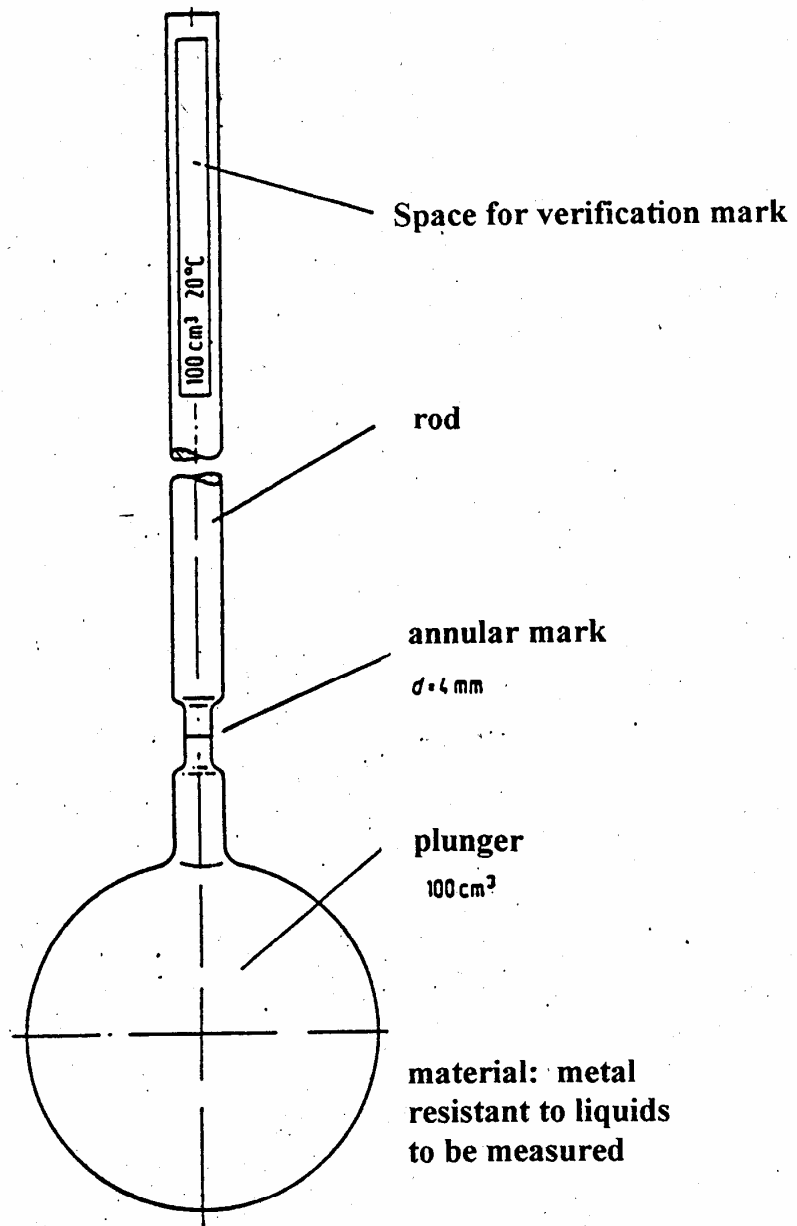
The correct volume of the plunger is known. (V)

This device is used to determine the density of paints and lacquers.

Test procedure:

- Clean the sphere and the container.
- Fill the container with the product so that it is possible to immerse the sphere.
- Place the container and the sphere in a thermostatic bath at 20° C for 20 to 30 minutes.
- Remove from the bath and dry the container and sphere.
- Place the container on a weighing instrument and record the weight. ( $m_2$ )
- Place the sphere into the product up to the annular mark on the rod. (avoid contact with the walls or bottom of the container).
- The buoyancy resulting during immersion can be read from the weighing instrument as additional load ( $m_1$ ).
- Use the following formula to determine the density.

$$\rho = (m_1 - m_2) / V + 0.0012 \text{ [g/ml]}$$



**Plunger for density determination of liquids  
(type with annular mark)**

### **Density determination using the line marked bottle.**

This method uses the container of the product.

It is used for drinks containing CO<sub>2</sub>

The principle is the same as that of the pycnometer but the volume of the container is unknown.

The container must:

- Not be deformable
- Be transparent at the location of the line mark
- Have a diameter at the location line mark of not more than 35 mm.

To determine the density of the product:

- Place the filled bottle in a thermostatic bath at 20° C
- Place the bottle on a horizontal surface
- Mark the fill height on both sides of the bottle.
- Weigh the bottle (and cap) and record result (M<sub>T</sub>)
- Empty the bottle
- Fill the bottle with distilled water (at 20° C) up to the mark.
- Weigh the bottle, (and cap) and record result (M<sub>w</sub>)
- Empty the bottle and dry it completely.
- Weigh the empty bottle and its cap and record result. (Weigh the bottle (and cap) and record result (M<sub>L</sub>))
- Use the following formula to determine the density.

$$\rho = 0.9970 \times (m_T - m_L) / (m_w - m_L) + 0.0012 \text{ [g/ml]}$$

### **Establish the density using a graduated glass cylinder.**

- Weigh the dry empty cylinder and record the result. ( $m_T$ )
- Fill with a quantity of product to a graduation line. ( $V$ )
- Weigh the cylinder and product to find the product weight ( $m_L$ ) and record the result.
- Calculate the density ( $\rho$ )

$$\rho = (m_L - m_T) / V$$

### **Establish the density using a density cup.**

A density cup is a container of known volume. ( $V$ )

- Weigh the empty density cup and glass strike ( $m_T$ ). Record the result.
- Brim fill the density cup with product.
- Slide the glass strike across the brim. Ensure no air is trapped. Top up through the hole in the glass strike.
- Carefully clean any overflowed product from the density cup and dry thoroughly.
- Weigh the density cup, glass strike and product to find the product weight ( $m_L$ ) and record the result.
- Calculate the density ( $\rho$ )

$$\rho = (m_L - m_T) / V$$

### **Density Meters**

These instruments calculate the density and display it on the digital readout.

The advantage of using these instruments is:

- Only a small amount of product is required to measure the density.
- They are easy to clean.
- The time taken to determine the density is very short.

To use:

- Calibrate the instrument using water.
- Insert the tube into the product and suck product into the vibrating tube.
- Read the density from the display.

## **Determining the content amount of pre-packages by means of a Template**

### **General**

The template is used to determine the quantity contained in pre-packages.

### **Basic principle**

The measuring template does not directly determine the amount contained in a pre-package, instead it is used to measure the distance between the top of the contents in the pre-package and the upper edge of the package (the empty space) without the package having to be opened.

The template is usually marked with a graduated scale from which a direct reading from the top of the contents to the top of the container can be made.

This scale is in units of volume so the volume of the fill can be directly read.

### **Requirements**

To ensure the accuracy of the template measurement the following requirements must be fulfilled:

- Because the pre-package quantity is checked without opening it the first requirement is that the packaging material is transparent.
- The packaging must be made of a stable material that holds its shape. Eg glass bottles.
- Any material that changes shape if a light pressure is applied will cause the level of the contents to rise or fall, and thus affect the accuracy of any measurement.
- The volume of the container when filled to the brim must be known.
- The volume of each container must be sufficiently constant.

This can be controlled by the pattern approval process and checking of containers by the verification authority.

Glass bottles are the usual containers that meet these requirements.

### **Other considerations**

- The type of cap the bottle has must be considered. Since the template is held over the cap when determining the measurement the thickness of any cap must be allowed for. The type of cap (e.g. screw on or press on) approved for use with the bottle should be marked on the template.
- The template must be easily identifiable with the bottle it is approved for use with.

### **Using the template.**

- The sample is taken from the inspection lot in accordance with the requirements of OIML R87

**Note:** If the sample is taken directly from the filling machine it is often difficult if not impossible to check products that “fizz” or foam using a template. These types of products are best tested from a lot in the warehouse.

- The bottle being tested must be placed vertically on a level surface.
- The template is placed over the top of the bottle.
- The reading is taken where the meniscus touches the edge of the bottle.

# **Drained Quantity of Products Packed in a Liquid Medium**



# **Drained Quantity of products packed in a liquid medium**

## **General**

When a pre-package contains solid goods in a liquid medium there are three possibilities:

- 1 The liquid medium is intended to be left over after use (e.g. cucumbers in vinegar water). The term “content of the pre-package” (equals “quantity of the product”) applies to the solid products. In this case the solid products are those contained in the pre-package excluding the packing material and the liquid medium. In this instance the “packing material” (everything that is intended to be left over after use) includes the liquid medium. The “content of a pre-package” is just the solid product.
- 2 The liquid medium is not intended to be left over after use (e.g. liquor with raisins, and also fruit juice with pulp). The term “content of the pre-package” (equals “quantity of the product”) applies to the solid products and the liquid medium. In this instance the “packing material” (everything that is intended to be left over after use) does NOT include the liquid medium. The “content of a pre-package” is the solid product together with the liquid medium. This procedure does not apply to these products. These products are inspected using the normal procedure.
- 3 The liquid medium might or might not be left over after use (e.g. sweetened juice with fruits, or fish in oil). The definition of packing material does not distinguish between the liquid medium and the goods. For instance, a recipe on the label could clarify if the liquid medium “is meant to be left over after use” or not. In this case the quantity of solids and the quantity of liquid medium could be on the label.

## **Terminology:**

### **Actual contents**

Quantity of product in a pre-package after equilibrium of solution process is established and the liquid medium is drained.

### **Liquid medium**

Means the following products, possibly in mixtures and also when frozen or quick-frozen, provided that the liquid is merely an adjunct to the essential elements of that preparation and is thus not a decisive factor for the purchase: water, aqueous solutions of salts, brine, aqueous solutions of food acids, vinegar, aqueous solutions of sugars, aqueous solutions of other sweetening substances, fruit or vegetable juices in the case of fruit or vegetables.

### **Nominal quantity**

Quantity of product in a pre-package less the liquid medium.

## Test equipment

- Suitable weighing instrument and test weights.
- Sieves
- 20 cm diameter sieve with 2.5 mm square mesh and a wire thickness of 1.12 mm for use with pre-packages of 850 mL or less.
- 30 cm diameter sieve with 2.5 mm square mesh and a wire thickness of 1.12 mm for use with pre-packages over 850 mL.
- Drip pan
- Stopwatch.

## Procedure for determining the actual quantity of product

Sampling periods are given in table C1. If the product being tested is not included in this table sampling shall be performed when the products are ready to be marketed according to the manufacturer or at any time later than 30 days after sterilization, pasteurization or similar process.

- 1 Select a sample of pre-packages in accordance with the sampling procedures.

### Note:

A tare sample is not needed because all the packages in the sample will be opened and measured.

2. Store the samples for a period of 12 hours before testing within the temperature range specified by the packer or between 20 °C and 24 °C.

- 3 Weigh the sieve and drip pan and record the weight.

- 4 Open the pre-package and pour the product and liquid medium across the sieve. Distribute the product and liquid medium over the surface of the sieve but **do not** shake the material on the sieve.

**Note:** If the nominal quantity is 2.5 kg or more, the quantity may, after weighing the whole amount, be divided among several sieves.

- 5 Tilt the sieve to an angle of 17° to 20° from the horizontal to facilitate draining.

- 6 Carefully invert by hand all solid product, or parts thereof, which have hollows or cavities if they fall on the sieve with the hollows or cavities facing upwards. Drain the hollows or cavities in soft products (e.g. sliced fruit) by tilting the sieve.

- 7 Allow a 2 minute drain time.
- 8 Place the sieve on the drip pan and reweigh the sieve, drip pan and contents.
- 9 Calculate the drained quantity as follows:

$$P = P_{e2} - P_{e1}$$

Where:  $P$  = drained quantity of the product

$P_{e1}$  = weight of the clean sieve and drip pan

$P_{e2}$  = weight of the sieve and drip pan plus product after draining

- 10 Subtract the drained quantity from the nominal drained quantity to determine the individual pre-package error.
- 11 Repeat steps 3 to 10 for the remaining pre-packages in the sample.

**Note:** For subsequent weighing of the same sieve ensure that it is clean and free of product debris.

The sieve does not have to be dry as long as it is weighed accurately before being used.

- 12 Determine inspection lot compliance.

**Note:** The tare weight is the combined weight of the drained liquid, the wet container and any other packaging material.

**Table C.1 Recommended periods of time for checking drained weight**

Product	Period of time for checking	
	From	To
Fruit, vegetable and other vegetable foodstuffs (except for strawberries, raspberries, blackberries, kiwis, loganberries)	30 days after sterilization	Tenability
Strawberries, raspberries, blackberries, kiwis, loganberries	30 days after sterilization	2 years after sterilization
Products out of salted fish, anchovies, marinades, stewed fish goods, preserved fish, mussels, shrimps, etc.	Immediately after pouring on	14 days after pouring on
Marinades of fried fish	48 hours after pouring on	14 days after pouring on
Small sausages and other meat products	5 days after sterilization	Tenability
Other products	14 days after pouring on	Tenability

# Drained Quantity of Products



- Net Weight (385g)
- Drained Weight (230g)




- Can Capacity (850 ml)
- Net Weight (820 g)
- Drained Weight (465 g)



### Drained Quantity of Products Packed in a Liquid Medium



The liquid (sauce) is intended to be consumed along with the solid product.

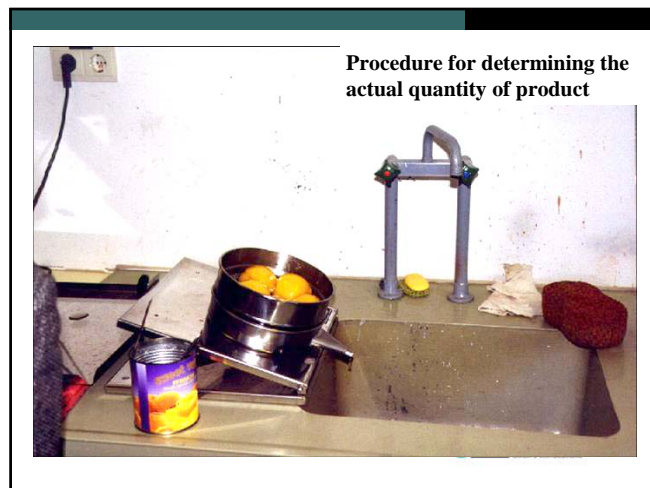
Drained weight procedure does not apply.



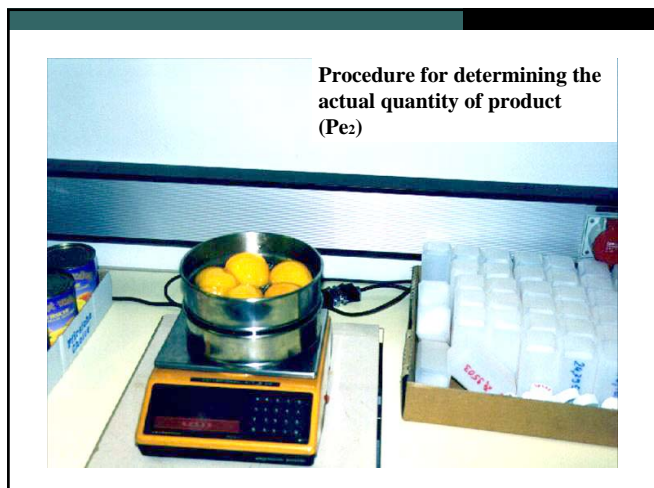
### Drained Quantity of Products Packed in a Liquid Medium



Sweetened syrup is intended to be eaten with the fruit.

\* These images were retrieved from the lecturers' presentation slides for better understanding.  
 \*\* The products shown here as examples were randomly selected and do not reflect the publisher's preferences.



### Procedure for determining the actual quantity of product

Calculate the drained quantity as follows:

$$P = Pe_2 - Pe_1$$

Where:

$P$  = drained quantity of the product

$Pe_1$  = weight of the clean sieve and drip pan

$Pe_2$  = weight of the sieve and drip pan plus product after draining



\* These images were retrieved from the lecturers' presentation slides for better understanding.

\*\* The products shown here as examples were randomly selected and do not reflect the publisher's preferences.

# **Test Procedures for Determining the Actual Quantity of Frozen Products**

## **Test Procedures for determining the actual quantity of frozen products. (Annex D)**

This annex gives guidelines for testing of three different types of frozen products.

1. Frozen fruits and vegetables.
2. Glazed seafood.
3. Frozen shrimp and crab meat.

### **Frozen fruits and vegetables**

To determine the actual quantity use the equipment and test procedure described below:

#### **Equipment**

1. Suitable weighing instrument.
2. Thermometer with 1 °C graduations and accurate to  $\pm 1$  °C.
3. Water source and hose.
4. Sink or other receptacle.
5. A sieve with 2.36 mm square openings that is large enough to hold the contents of 1 pre-package (for pre-packages with a nominal quantity up to 1.4 kg use a 20 cm diameter sieve and for pre-packages greater than 1.4 kg use a 30 cm sieve).
6. A drip pan.
7. Stop watch.

#### **Procedure**

1. Select sample in the normal manner.
2. Weigh sieve and drip pan together and record weight.
3. Determine the gross weight of each individual pre-package.
4. Immerse the pre-package in water maintained at 20 °C ( $\pm 1$  °C) with a continuous flow.



**Note:**

- If the pre-package is not water-tight, place it in a plastic bag and remove any excess air using a vacuum and then seal it securely.
  - Avoid agitating the pre-package while it is thawing.
5. When all of the ice has melted, remove it from the water bath and wipe it dry.
  6. Open the pre-package with care and a minimum of agitation.
  7. Tilt sieve approximately 17° to 20° from the horizontal to facilitate drainage
  8. Distribute the product evenly over the sieve in one sweeping motion
  9. Drain for 2 minutes
  10. Transfer the sieve containing the product to the pre-weighed drip pan
  11. Weigh sieve and drip pan and deduct weight obtained in step 2 to determine the actual drained quantity of the product.
  12. Repeat steps 2 to 11 for each pre-package.

**Glazed seafood (seafood that is covered with a film of water and then frozen to preserve its quality)**

The actual quantity of the seafood shall be exclusive of the glaze.

To determine the actual quantity use the equipment and test procedure described below:

**Equipment**

1. Suitable weighing instrument.
2. Water source, hose and spray head.
3. Sink or other receptacle.
4. A sieve with 2.36 mm square openings that is large enough to hold the contents of 1 package (for packages with a nominal quantity of 900 g or less use a 20 cm diameter sieve and for packages greater than 900 g use a 30 cm sieve).
5. A container large enough to hold the product.
6. Stop watch.

## **Procedure**

1. Select sample in the normal manner.
2. Weigh a container large enough to hold the product.
3. Determine the gross weight of each individual pre-package.
4. Remove the product from the pre-package and place it under a gentle spray of cold water until the ice glaze is removed. Agitate the product with care to avoid damage.
5. Transfer the product to the sieve.
6. Tilt sieve approximately 17° to 20° from the horizontal to facilitate drainage without shifting the product.
7. Drain for 2 minutes.
8. Transfer the product to the pre-weighed container
9. Weigh product and container together and record result.
10. Deduct weight of pre-weighed container from product and container weight to determine the actual drained quantity of the product.
12. Repeat steps 2 to 11 for each pre-package.

## **Frozen shrimp and crabmeat**

When determining the net weight of frozen shrimp and crabmeat, use the test equipment and procedure provided below

### **Equipment**

1. Suitable weighing instrument.
2. Thermometer with 1 °C graduations and accurate to  $\pm 1$  °C.
3. Water source and hose with a 4 L to 11 L per minute flow rate
4. Sink or other receptacle (e.g. 15 litre container).
5. A wire mesh basket or other container that is large enough to hold the contents of 1 package and has openings small enough to retain all pieces of the product
6. A sieve with 2.36 mm square openings that is large enough to hold the contents of 1 package (for packages with a nominal quantity up to 450 g use a 20 cm diameter sieve and for packages greater than 450 g use a 30 cm sieve).

7. A container large enough to hold the product
8. Stopwatch

### **Procedure**

1. Select sample in the normal manner.
2. Weigh a container large enough to hold the product and record the result.
3. Determine the gross weight of each individual package.
4. Place the unwrapped frozen shrimp or crabmeat in the wire mesh basket and immerse in a 15 L or larger container of fresh water at a temperature of 26 °C ( $\pm 1$  °C) Submerge the basket so that the top of the basket extends above the water level.
5. Maintain a continuous flow of water into the bottom of the container to keep the temperature within the specified range.
6. As soon as the product thaws, determined by loss of rigidity, transfer all material to a sieve.
7. Without shifting the product on the sieve, incline the sieve approximately 30° from the horizontal position to facilitate drainage.
8. Drain for 2 min.
9. At the end of the drain time, immediately transfer the product to the pre-weighed container
10. Weigh product and container together and record result.
11. Deduct weight of pre-weighed container from product and container weight to determine the actual drained quantity of the product.
12. Repeat steps 2 to 11 for each pre-package.



Guideline for testing three different types of frozen products:

**Frozen fruits and vegetables**




Guideline for testing three different types of frozen products:


**Glazed Seafood**  
(seafood that is covered with a film of water and then frozen to preserve its quality)



**Glazed Seafood**



Weighing a container large enough to hold the product. ( $m_T$ )



**Glazed Seafood**



Determining the gross weight of each individual pre-package



**Glazed Seafood**

Removing the ice glaze



**Glazed Seafood**



Transferring the product to the sieve and draining the water for two minutes without shifting the product



\* These images were retrieved from the lecturers' presentation slides for better understanding.  
\*\* The products shown here as examples were randomly selected and do not reflect the publisher's preferences.

### Glazed Seafood



Transferring the product to the pre-weighed container and weighing it all together to record the result. (md)

Actual drained contents = md – mt



### Glazed Seafood (Determine amount of glaze)

Gross weight – tare = net weight

E.g.) 303.5 g – 9.5 = 294 g

Net weight – Actual drained contents = Amount of glaze

E.g.) 294 g – 248 g = 46 g

15. 65% of net weight is water



Guideline for testing three different types of frozen products:

**Frozen shrimp and crabmeat**



\* These images were retrieved from the lecturers' presentation slides for better understanding.  
\*\* The products shown here as examples were randomly selected and do not reflect the publisher's preferences.

# Economy Report of the Kingdom of Cambodia

Training Course  
on  
Pre-Packaged Goods  
on 3-7 April 2006, Malaysia

Presented by  
Mr. KIM Chandara  
Deputy Director, Department of Metrology  
Ministry of Industry, Mines and Energy

## Introduction

- Cambodia joined ASEAN in April 1999. Over the past years, the ASEAN Legal Metrology authorities have been working together through the Working Group on Legal Metrology of ASEAN Consultative Committee on Standards and Quality (ACCSQ) to align legal metrology requirements among ASEAN economies. Also Cambodia belongs to the ACCSQ WG3 member; and joined the corresponding member of OIML in 2000 and the full member of AFLMF in 2002.

## Law and Regulations

- Presently, there is no Weights and Measures or National Metrology Law giving power to the Department of Metrology to carry out Legal Metrology Activities.
- In order to ensure and strengthen administration of legal metrology, we have reviewed the draft Law of Metrology and submitted to the Council Ministers Office for adoption and promulgated some necessary legislations relating to the metrology management as below:
  - Ministerial Circular on Management of Weights and Measures.
  - Ministerial Prakas of SI Unit
  - Ministerial Prakas of Pre-Packaged products
  - Ministerial Prakas of Management of Standards and Equipments of  
- Liquid Volume.

## Structure of Metrology

- Recently, the Metrology of Cambodia is split between the Department of Metrology (DOM) and Industrial Laboratory Center of Cambodia (ILCC).
- DOM has the responsibility for all Legal Metrology Activities and keeps the Secondary and Working Standards.
- ILCC keeps the Primary Standard and also implements the Industrial and Scientific Metrology requested by DOM. Our structure is as below (See annex No. 1).

## Legislation Control for Packaging

- In Cambodia, the Ministerial Prakas of the Pre-Packaged products has been approved by the Government. The next step is to seek assistance for practical training in the implementation of technical procedure of testing and inspection. This Prakas (Regulation) is based mostly on the International Recommendation (R79 and R87).

## Organization Responsibility

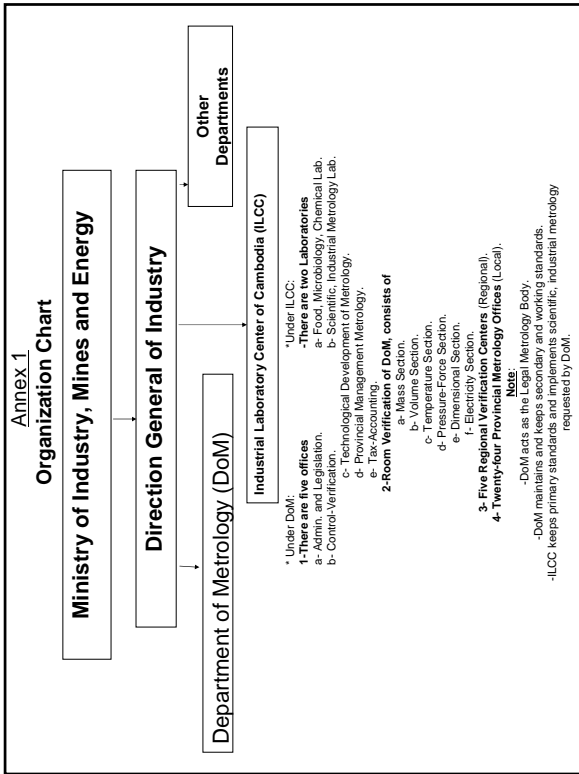
- The Department of Metrology and its local verification offices take the responsibility for packaging as prescribed in the Ministerial Prakas of Pre-Packaged products. All Pre-Packaged goods produced in Cambodia should be verified and must pass verification before being used or put on the market.
- Presently every three months, we try to verify of Pre-Packaged goods by Weight or Volume in order to measure the net content accurately so that the indication and the true value are within a certain permissible error. For example, the specified goods are listed below:
  - Pure drinking water,
  - Soft drink,
  - Beer,
  - Alcoholic,
  - Sauce,
  - Noodles,
  - Oil Lubricant.
- For all kind of imported and exported goods are under the control of the General Department of Camcontrol of the Ministry of Commerce.

## Future Step Adopting R87

- In 2005, we plan strengthening the capacity for the staffs of DOM and Provincial verification offices on Pre-Packaged goods for practical training in the implementation of technical procedure of testing and inspection.

## Conclusion and Acknowledgment

- Cambodia has opportunity as a member of APLMF and always received support technical, financial and moral assistance from the APLMF executive secretary and all friends members made Cambodia upgrade herself to participate in the regional and international metrology activities.
- On behalf of DOM, Cambodia, I would like to express my gratitude to APLMF and APEC secretariat and the host country for their sponsorship and organizing this training course.





## Answers to the Questionnaire for the Training Course\*

### *“Practical Application of OIML Recommendation R87 on Pre-packaged Goods”*

Malaysia, April 2006

#### 1. Are you using Average Quantity System?

The National Consumer Service, SERNAC, as a Chilean governmental agency, whose mission is to protect, inform and teach consumers about their rights, has recently initiated the adoption of the NIST (USA) methodology contained in the **Handbook N° 133 “Checking the Nets Contents of Packaged Goods” (H133.)**

The decision to adopt this methodology reveal our intention, as a Consumer Service, to introduce the net content control in pre-packaged products as a relevant technical tool in our work, especially in our permanent activities related to market research and monitoring. This way we are trying to clear markets, giving transparency to consumers, mostly in those markets that they consider as relevant ones.

In the 2006 Operational Planning for the SERNAC Research Department we have established the practical validation of this tool through some specific studies.

#### 2. Does it differ from R87? If so how?

**Yes.** In the scope of R87 (prepackaged products labeled in predetermined constant nominal quantities), there are two areas where both norms differ significantly:

- a) **The evaluation of individual package deficiencies:** the biggest difference between H133 and R87 is the way in which they evaluate individual package errors. R87 uses a **2-tiered system** (*T1* and *T2* errors), while H133 has only a **one-tiered system**. H133 establishes a single value for a given nominal quantity (called the Maximum Allowable Variation, or MAV). If an inspection lot size is 3200 packages or less, no individual package may be deficient by more than the MAV. If an inspection lot size is more than 3200 packages, 1 individual package may be deficient by more than the MAV.
- b) **Sample sizes:** R87 is designed around conducting **inspections at the point of pack**, while most package inspection activities in the H133 are **conducted at retail** (in the store with products off the shelf). Because of this, the inspection lot sizes are frequently much smaller than those specified in R 87. H133 sampling plan reflects this difference:

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Thanks to María Cristina Leiva, Chief of Sernac’s Product Research Unit

<u>Inspection Lot Size</u>	<u>Sample Size</u>
1 - 11	ALL packages are tested
12 - 250	12
251 - 3200	24
More than 3200	48

Other differences between R87 and H133 are:

- The confidence level of H133 is 97 %, while the confidence level of R87 is 99.5 % (i.e. the probability of rejecting an acceptable lot under H133 is 3 %; under R 87 it is only 0.5 %)
- H133 does not contain any inspection lot size restrictions when testing at the point of pack (R87 section 4.2.1.)
- H133 uses different initial tare sample sizes, although both procedures utilize a method for determining if additional packages must be opened based on variation seen within the tare values.
- For doing drained quantities and quantities of frozen foods (R87 Annexes C and D), H133 switches from a 20 cm sieve to a 30 cm sieve at slightly different package sizes.

### 3. What steps are you taking to adopt OIML R87?

At the time we are working on the implementation of NIST methodology contained in the Handbook N° 133 “Checking the Nets Contents of Packaged Goods”, but at the same time we are trying to **take the best of the two worlds**, H133 an R87, so we could count on a complete and customized tool. Our participation in this Seminar is intended to be on that complementary approach.

### 4. How do you deal with importing goods including examples?

There are several organisms whose work is related to this matter. There is the Ministry of Economy, the Ministry of Health, the Chilean Custom, the Ministry of Agriculture and some private organizations such as Impo/Expo Associations. Custom’s information indicates that there are no issues with pre-packaged products, but with **bulk products** like combustibles (crude petroleum, for example).

### 5. Exported goods, any issues with weight or measures? Example

Actors are almost the same that in the case of imported goods, but in the case of exportations we don’t manage information of issues on this matter. Instead of issues most Chilean exporters are learning about this subject, mostly because of our International Commerce Agreements and certifications like ISO 9000 (Chilean wine is a good example for this).

### 6. How do you deal with importing goods including examples?

We have general requirements for all products that are commercialized in our internal market. These requirements are related to:

- **Label** information must be in **local language** (Spanish)
- **Net content** of products must be expressed in units of the **Decimal Metric System**.
- All the information contained in product’s labels must be susceptible to **verify by itself**.

There are also some **specific requirements** for **nutritional products** (food) contained in the Foods' Sanitary Regulation (Decree N°977, Ministry of Health) and in the Labeling Regulation for Packaged Nutritional Products (Decree N° 297, Ministry of Economy).

Additionally, in some particular cases there are other specific requirements, like in the case of cured meat products (**sausages** and similar products) or in the case of **wheat flour**.

Only a few of no-nutritional packaged products have specific requirements related with weight and measures. Among these, there are **flat weaves and tricots**, clothes and foot wear.

**7. Do you have any issues regarding imported goods?**

Most issues are related to the fact that the original language information is more comprehensive and accurate than its translation to Spanish. Also, depending on the kind of commerce (different types of traders) there could be found products with no Spanish labeling or with information that does not meet with our minimal standards.

**8. Local goods, any issues with weight or measures including examples?**

No issues.

**9. What are your current quantity labeling requirements?**

For detailed labeling requirements see Annex A.

Some specific requirements are:

a) Cured meat (sausages and similar): Net content must be expressed in kilograms or grams for products that come in cans (conserved products), semi-conserved and emptiness sealed, when that represent the final sale unit to be sold to consumer.

b) Soft butter (Margarine): Net content of margarine packages must be informed according to one of the following values: 5, 10, 15, 20, 25, 50, 125, 250, 500, 750, 1000 and 2000 gr

If it comes in a package intended for individual consumption, then net content can be inferior to the one declared before, whenever it fulfills the tolerance limits established in the following table:

<b>Declared Net Content</b>	<b>Maximum allowance (negative variation)</b>
<b>gr or ml</b>	<b>%</b>
5 - 50	9
51 - 200	4.5
2001 - 500	3
501 – and more	1.5

c) Wheat flour: Net content must be expressed in grams or kilograms, on the basis of a 15% of humidity.

d) Portable fire extinguishers:

- Temperature operation limit expressed in Celsius degrees (°C).
- Mass of loaded and unloaded device must be expressed in kilograms (kg).

**ANNEX A<sup>1</sup>**

**Table N° 1: Valid Official Chilean Rules most linked to Legal Metrology (Optional)**  
*Normas Chilenas Oficiales vigentes, de mayor vinculación con la Metrología Legal (No obligatorias)*

<b>Norma Chilena</b>	<b>Materia</b>
NCh 2336. Of1999 NCh 2337. Of1999 NCh 2338. Of1999 NCh 2339. Of1999	Procedimientos de muestreo para la inspección por atributos
NCh 2680, Partes 1, 2 y 6 Of2002	Exactitud (veracidad y precisión) de métodos de medición/ensayos y resultados
NCh 30. Of1998	Unidades SI y recomendaciones para el uso de sus múltiplos y de otras ciertas unidades
NChISO 31 Partes 0 a 13	Magnitudes y unidades
NCh 2051. Of1999	Contenido neto de envases
NCh 2450. Of1998	Vocabulario de términos fundamentales y generales de metrología
NCh 1075. Of1978	Balanzas - Terminología, clasificación y requisitos generales
NCh 1270. Of1977	Máquina expendedora de aceite comestible – Requisitos, calibración y verificación
NCh 2486. Of2000	Laboratorios de ensayo - Equipos de medición-Guía para la determinación de los intervalos de calibración
NCh 2487. Of2000	Principios generales para el uso de los materiales de referencia certificados en las mediciones

**Table N° 2: Laws and Regulations specifying product's labeling requirements**  
**(Mandatory)**  
*Leyes y Reglamentos que especifican requisitos de rotulado de productos*  
**(Obligatorios)**

<b>Identificación</b>	<b>Título</b>	<b>Fecha de publicación /Descripción</b>	<b>Modificaciones</b>
Ley N° 19.496 Ministerio de Economía	Ley de Protección de los Derechos del Consumidor	07.06.1997 Norma las relaciones entre proveedores y consumidores, establece las infracciones en perjuicio del consumidor y señala el procedimiento aplicable en estas materias.	

<sup>1</sup> There is no official translation for the information included in this Annex.

Reglamento N° 229 Ministerio de Economía	Reglamento sobre información del precio unitario de los productos	25.11.2002 Establece obligación de los supermercados de informar al consumidor final el precio por unidad de medida, conjuntamente con el precio de venta de cada uno de los productos que ofrezcan, en aplicación del artículo 30 de la Ley 19.496 y otorga carácter de información básica comercial.	
D.S.N° 114 Ministerio de Economía	Reglamenta requisitos para el consumo interno de la margarina de mesa y para repostería	25.10.1984 Establece requisitos que debe cumplir el producto de origen nacional e importado cuando se destine a consumo interno, excepto para la margarina dietética. Art.10 establece contenido neto de los envases de margarina de mesa y de repostería para venta a público, Art.11 fija tolerancias aceptables de contenido neto para envases individuales	
D.S.239 Ministerio de Salud	Reglamento del Sistema Nacional de Control de Cosméticos	Título II, Párrafo 3°, art.40 letrad) Establece requisito de rotulación del contenido neto expresado en unidades del sistema métrico decimal.	
D.S.N° 197 Ministerio de Economía	Reglamenta rotulación de productos plásticos	20.08.87 Especifica requisitos de rotulación de productos plásticos nacionales e importados	
DS 26 Ministerio de Economía	Reglamento de rotulación del calzado	22.03.1984 Reglamenta : a) rotulación y símbolos para el cuidado de los textiles b) de los rollos y piezas de tejido plano y de punto c) del vestuario, excepto calcetería	D.S.N° 236,

DS.N° 27 Ministerio de Economía	Reglamenta rotulación del calzado	22.03.84 Establece requisitos obligatorios de rotulación para el calzado de cualquier origen o procedencia, que se comercialice en el mercado interno, excepto el de seguridad.	D.S.N° 302 20.noviembre.1987 D.S.N° 36 (03.03.2001)
Decreto N° 60 Ministerio de Economía	Reglamento de rotulación de cecinas	24.05.1984 Requisitos de rotulación de cecinas crudas y cocidas destinadas al público consumidor	
D.S. N° 977 Ministerio de Salud	Reglamento sanitario de los alimentos	Párrafo II, especifica requisitos de rotulación	D.S.N° 297, 1992 (20.jul.1992), art.14 N° 2, requisitos de información de las etiquetas
Decreto N° 170	Reglamento de rotulación de harina de trigo	07.08.87 Establece requisitos mínimos de rotulación para la harinado trigo envasada que se comercialice para cualquier uso o se destine al público consumidor	
Decreto N° 297	Reglamento de rotulación de productos alimenticios envasados	29.07.1992 Establece los requisitos que debe cumplir la rotulación de los productos alimenticios envasados destinados a consumo humano.	
Decreto N° 369	Reglamenta norma sobre extintores portátiles	06.08.1996 Establece requisitos de rotulación de extintores portátiles, incluidos los utilizados en vehículos de la locomoción colectiva y taxis.	

**Table N° 3: Consumer's Basic requirements for packages' labeling<sup>2</sup>**  
***Requisitos Básicos de Etiquetado de Envases para el Consumidor***

(Esta no es una lista completa de los requisitos de etiquetado que pueden corresponder a un producto)

	<b>Requisito de Etiquetado</b>	<b>SI/ NO</b>	<b>Comentarios y fuentes de información adicional</b>
<b>Sección 1: ¿Se requiere que la siguiente información aparezca en la etiqueta del envase?</b>			
1.1	Declaración de identidad (según lo establezca la ley o reglamentación, o según el nombre genérico, común o acostumbrado). La identidad debe estar paralela a la base sobre la cual se colocará el envase en el estante del establecimiento comercial.	SI	Disposiciones de carácter general: Artículos 29 y 32 de la Ley N°19.496. Normas especiales: Por ejemplo: D.S.297/92 y otras de carácter particular.
1.2	Declaración de la cantidad neta del contenido.	SI	Disposición de carácter general: Artículos 29 de la Ley N°19.496. Normas especiales: Por ejemplo: D.S.297/92 y otras de carácter particular.
1.3	Declaración de responsabilidad que incluya el nombre y dirección de la empresa o del responsable (del fabricante, distribuidor o importador).	SI	Idem.
1.4	Declaración de país de origen de los productos importados y de los que contengan ingredientes o material de origen extranjero.	SI	<u>Idem.</u>
1.5	Etiquetas de advertencia, si corresponden al producto.	SI	Disposiciones de carácter general: Arts. 29 y 45 de la Ley 19.496. Normas particulares, p/ej.DS369/96.
<b>Para Productos Alimentarios:</b>			
1.6	Se requiere etiquetado nutricional.	SI	Cuando el alimento declare en su publicidad o en su rotulación propiedades nutricionales, o su descripción produzca el mismo efecto. Norma especial: DS297/92
<b>Para los Alimentos, Fármacos y Cosméticos:</b>			
1.7	Se requiere etiquetado con la lista de ingredientes.	SI	DS 297/92 y DS 1876/95
1.8	Se requiere la fecha de vencimiento del producto, si corresponde.	SI	Art. 14 DS297/92 modificado por DS 682/93
<b>Sección 2: Requisitos de Idioma</b>			

<sup>2</sup> Survey made by the Interamerican Metrology System (SIM)

2.1	¿Es obligatorio que la información requerida esté en el idioma del país?	SI	Disposiciones de carácter general: Artículos 29 y 32 de la Ley N°19.496. Normas especiales: Por ejemplo: D.S.297/92 y otras de carácter particular.
2.2	¿Puede la información requerida aparecer en varios idiomas en la etiqueta?	SI	Norma general: Art. 32 de la Ley 19.496. Normas particulares p/ej: Art.7° DS 297/92
2.3	¿Está el número de idiomas que puede aparecer en una etiqueta limitado por alguna reglamentación?	NO	
2.4	¿Está el tamaño de la letra para la información requerida en el idioma oficial afectada por el tamaño de la letra utilizada para la misma información en los otros idiomas?	SI	No existe norma especial.
2.5	Se permite colocar etiquetas adhesivas pero la información debe ser conforme a todos los requisitos de etiquetado incluso el tamaño de la letra, espacios en blanco y claridad.	SI	Norma general: Art. 29 Ley 19.496. Normas particulares: ejemplo Art.16 DS 297/92.

**Sección 3: Los siguientes artículos se refieren a los detalles de los requisitos que pueden afectar al panel principal de la etiqueta. Este panel principal es aquella parte o partes de una etiqueta o envase diseñado(s) de tal forma que sea la parte que el consumidor probablemente vea cuando sea presentada para su venta.**

3.1	La identidad del producto debe aparecer en el panel principal de la etiqueta.	SI	Normas generales: Art.29 y 32 de la Ley 19.496. Normas especiales: ejemplo: Arts. 18 y 19 del DS 297/92.
3.2	La declaración de la cantidad neta del contenido debe aparecer en el panel principal de la etiqueta.	SI	Idem.
3.3	La declaración de la cantidad neta del contenido debe aparecer en la parte inferior correspondiente al 30% del panel principal de la etiqueta.		Regulado en la normativa particular: Por ejemplo: D.S.297/92, Arts. 18 al 22.
3.4	La declaración de la cantidad neta del contenido debe aparecer paralela a la base sobre la cual se colocará el envase en el estante.	SI	Idem.
3.5	El tamaño de la letra para la declaración del contenido neto se establece en base al área del panel principal de la etiqueta.	SI	Idem.
3.6	Se permite el uso de etiquetas aplicadas en áreas limitadas y tiras de encabezado en reemplazo del panel principal.	SI	Es efectivo en la primera parte, no en la segunda parte de la afirmación.

**Sección 4: Los siguientes artículos se refieren a los detalles sobre la declaración de la cantidad neta del contenido:**



4.1	<p>¿Cuál de los siguientes se puede utilizar como el punto decimal en la declaración de cantidad neta?</p> <p><b><u>Debe usarse la coma (,) para la separación de los decimales</u></b></p> <p>Debe usarse el punto (.) para la separación de los decimales. Se puede utilizar el punto o la coma. Es preferible la coma, pero se permite el punto. Es preferible el punto, pero se permite la coma.</p>	SI	
4.2	La declaración de la cantidad neta del contenido debe indicarse claramente y debe existir un contraste entre los colores.	SI	Respecto de la primera parte: Normas generales: Art. 32 de la Ley 19.496. Normas particulares: Art.14 DS297/92 La segunda parte no es efectiva.
4.3	El uso de terminología como, “contenido neto”, “masa neta” o “peso neto” es obligatorio como parte de la declaración de la cantidad neta del contenido.	SI	Norma general: Art.29 Ley 19.496 Norma especial: Art.14 N°2 DS 297/92.
4.4	El área alrededor de la declaración de la cantidad neta del contenido debe estar libre de cualquiera interferencia.	NO	No existe norma respecto de “alrededor”.
4.5	Es obligatorio el uso de símbolos y abreviaturas específicas para las unidades de medida.	SI	Regulado en la normativa particular, por ejemplo: D.S.297/92 Art.14 N° 2.
4.6	La declaración debe ser la cantidad neta del contenido del producto y excluir el envase y cualquier otro material.	SI	Idem.
4.7a	<u>Es obligatorio</u> que la declaración del contenido neto sea en unidades del SI (Système International), pero también puede expresarse en otras unidades de medida.	SI	Normas generales: Arts. 29 y 32 de la Ley 19.496. Normas particulares: Por ej. DS 297/92 Art.14.
4.7b	La declaración del contenido neto <u>se permite únicamente</u> en unidades del SI.	NO	Norma general: Art. 32 de la Ley 19496 exige la aplicación del sistema métrico decimal aplicable en Chile, pudiendo expresarse en otra unidad. Norma particular: Art. 14 N°2 DS 297/92, repite la misma idea.
4.7c	La declaración del contenido neto <u>puede aparecer en unidades del SI o bien</u> , en pulgadas-libras.	NO	
4.7d	<u>Es obligatorio</u> que la declaración del contenido neto sea en <u>pulgadas-libras y en unidades del SI</u> [por ej., 453 g (1 lb) se denomina requisito de “unidad dual de medida”].	NO	

4.8	Es obligatorio que la declaración del contenido neto sea expresada en la unidad de medida entera más grande que se haya utilizado.	<b>NO</b>	
4.9	Se permite que las unidades adicionales aparezcan con la unidad entera más grande [por ej., 1 lb (16 oz) se denomina requisito de “declaración de cantidad dual”].	<b>NO</b>	
4.10	Se permiten declaraciones complementarias acerca de la cantidad pero estas no deben calificar o exagerar la cantidad neta.	<b>SI</b>	
4.11	Se prohíben las salvedades respecto a la declaración de la cantidad neta (por ej., “aproximadamente”, “cuarto de galón grande”, “kilogramo grande”).	<b>SI</b>	Se encuentra en la legislación particular. Por ejemplo DS 297/92, Art. 14 n°2.
4.12	Excepciones a los requisitos de cantidad neta para envases pequeños (es decir, 15 g o ml o menos).	<b>SI</b>	Se encuentra en la legislación particular. Por ejemplo DS 297/92, Art. 17.
4.13	Se aplican requisitos específicos de etiquetado a ciertos tipos de empaques, incluso a aquellos con unidades múltiples, variedad de productos diferentes en un solo empaque, y a las combinaciones de productos.	<b>SI</b>	Existen normas especiales acerca de ciertos tipos de empaques, por ejemplo Mallas y bandejas Art. 15 DS 297/92

<b>Sección 5: Otros requisitos de etiquetado</b>			
5.1	Ciertos productos comerciales comunes están sujetos a métodos de venta específicos.	SI	
5.2	Los métodos de muestreo, procedimientos estadísticos, y los métodos de prueba impactan lo que los envasadores deben colocar en el envase con el fin de cumplir con los requisitos del contenido neto.	SI	
5.3	<p>¿Concuerdan los requisitos sobre la cantidad neta utilizados en su país con las siguientes disposiciones del segundo proyecto de revisión de la R87 de la OIML “Contenido Neto de los Pre-empaquetados”?</p> <p>a. Contenido neto promedio</p> <p>b. Prueba de significación= 0.995</p> <p>c. Límite en el número de envases en una muestra que superan la Deficiencia Tolerable</p> <p>d. Deficiencias Tolerables especificadas para diferentes cantidades etiquetadas tales como:</p> <p>Masa:</p> <p>Volumen:</p> <p>Área:</p> <p>Largo:</p> <p>Conteo:</p> <p>e. Se permite el procedimiento de la tara promedio.</p>	<p>SI</p> <p>SI</p> <p>SI</p> <p>SI</p> <p>SI</p>	
5.4	Se permiten variaciones razonables de la cantidad neta del contenido según la etiqueta, justificadas por variaciones en el relleno y pérdida de humedad.	SI	
5.5	Temperatura especificada para determinar la densidad de los líquidos con el fin de verificar la cantidad neta del contenido.	SI	La leche es un buen ejemplo. DS 977/96.
5.6	Etiquetado especial para productos peligrosos.	SI	Norma general : Art. 45 Ley 19.496. Normas particulares: por ejemplo DS 369/96
5.7	Requisitos especiales de etiquetado para pesticidas.	SI	Idem.
5.8	Requisitos especiales de etiquetado para carnes y carnes de aves de corral.	SI	Ley 19.162 /92 y DS 977/96
5.9	Requisitos especiales de etiquetado para productos no consumibles de venta al consumidor.	SI	DS 369/96 y DS 26/84. Simbología para el cuidado de Textiles y

			vestuario. Extintores: clasificación de fuegos, potencial de extinción y agente extintor
5.10	Requisitos especiales de etiquetado para vinos, bebidas alcohólicas y tabaco.	SI	Existe Norma.
5.11	Se especifica el tamaño de los envases para ciertos productos (también se denomina tamaño “racional” y a veces se confunde con el etiquetado en unidades métricas).	SI	Algunos como arroz, conservas, azúcar y aceite comestible. Existe Norma.
5.12	Requisitos especiales de etiquetado para textiles y lanas.	SI	DS 26/84
5.13	¿Cuál es la autoridad principal encargada de hacer cumplir el etiquetado de productos envasados y cuáles son los lugares de inspección?	SI	En materia de productos alimenticios, cosméticos y farmacéuticos es el Ministerio de Salud, a través del Instituto de Salud Pública. Servicio Nacional del Consumidor, sin facultades fiscalizadoras.
5.14	Afirmaciones Ambientales en el Etiquetado (por ej., afirmaciones como “Reciclable” y “Seguro para el Medio Ambiente” ).	SI	Sujeto a lo dispuesto en los artículos 33 inciso 1° de la Ley 19.496 y en la legislación particular, Art. 12 del DS 297/92



# Legal Metrology with a Consumer's Protection Perspective



Carmen G. Vega Cancino  
Research Department Chief  
Chilean National Consumer Service

## Introduction

- National Consumer Service (SERNAC)
  - Public Decentralized Service → Ministry of Economy.
  - Mission → Teach, Inform and Protect: consumers' rights and duties.
    - change Chilean vision about consumption matters.
  - Law N° 19.496 (March 7th, 1997)

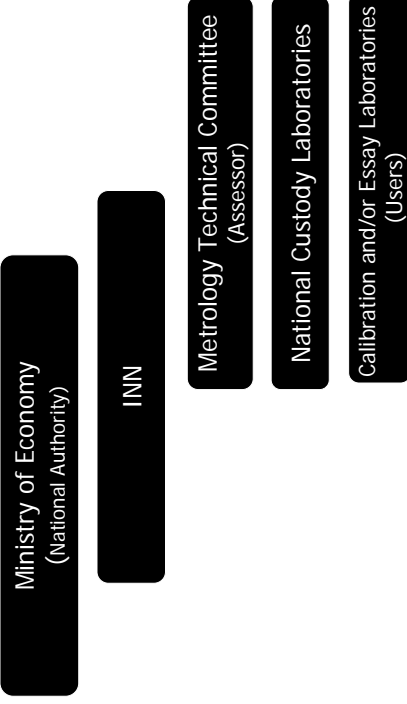


## Legal Metrology

- SERNAC:
  - Participation through the National Institute of Normalization and Standardization (INN)
    - [www.sernac.cl](http://www.sernac.cl)
    - [www.inn.cl](http://www.inn.cl)
    - [www.metrologia.cl](http://www.metrologia.cl)



## National Metrology Network





GOBIERNO DE CHILE  
AGENCIA NACIONAL  
DEL CONSUMIDOR



Documento de  
Microsoft Word



Questionnaire

CHILE\_Paper\_Malaysia2006

## **Practical Application of OIML Recommendation R87 on Pre-packaged Goods China**

It is an important task for Chinese government to manage the intendance of the pre-packaged goods, especially of the fixed quality pre-packaged goods. On May 30, 2005, General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China promulgated “The Intendance Rule of Fixed Quality Good” to protect the legal rights of the consumers; and this rule was applied on January 1, 2006. For the modification in the new OIML Recommendation R87 such as range, calculate request, evaluation standard and the examination method, our government revised the old rule according with the new R87. The formal actualization of this rule will protect the benefits of the consumers and the legal rights of the business as well.

There are quality testing departments in each province’s measurement and testing institute in our economy. They manage the measurement and testing on the fixed quality goods for the society. In order to unify the procedures conducted by the workers, the government promulgated the JJF 1070-2005 “Rules of Metrological Testing on the Net Quantity of Products in Prepackages with Fixed Content” on October 9, 2005.

This rule adopted the OIML R87 of version 2004 - “Quantity of Product in Prepackages.” The contents on the label of net quantity of fixed quality packing goods completely adopted the OIML R79 of version 1997 - “Labeling Requirements for Prepackaged Products.” The calculation request and the examination of calculation request on the quality of fixed quality packing goods completely adopted the OIML R87 of versions 2004 - “Quantity of Product in Prepackages.”

In this rule, there are some complements and adjustments to OIML Recommendation R87 made along with the actual conditions of our economy.

Complementary contents: The testing method, request of actual quality and the peel off method of goods which quantity is less than 100.

Regulatory contents: Because of the complex situation of misled packing, this rule could not contain the contents of misled packing in OIML R87 appendix E.

The application of this rule will help to raise the technique level of examiners and improve the development of fixed quality goods in our economy.

We came up with some inquiries when we compiled the rule of testing which is based upon the R87 in our economy. They are as followings:

1. When we are implementing a measurement examination to the merchandise which net quantity is labeled by the quality unit, what request to the accurate degree of the measurement tools used for measuring the tare quality?
2. In the sampling project of pre-packaged goods in table 1, is it right if sample correction coefficient is 0.234 while the examination batch is over 3200?
3. When we are implementing the testing, if appearing a piece of fixed quality packing merchandise whose shortage of actual content is more than the twice the allowed shortage, do we have to continue to check up the actual content of the rest merchandise?
4. Is there any request and provision for the quality of things that are used to fill in the fixed quality goods?
5. In the table 2 of 87, some shortage quality is represented by the percentage of  $Q_n$ , but others are represented by the actual data  $g$  or  $ml$ . Why? Is there any difference?
6. It is very important to forbid misled packing. We will appreciate very much if we can get some more information about the policy and techniques of the forbiddance of misled packing.

Huang ZhaoHui  
NanJing, P.R China  
2006-4-3

Enclosure: the sample project of measurement of actual quality of small batch fixed quality packing goods which is less than 100.



1. Inspection lot and sampling characteristics see table 1.

table 1: Sampling plans for prepackages

Inspection lot size	Sample Size (n)	Sample correction factor $\lambda = t_{0.995} \times \frac{1}{\sqrt{n}}$		Number of prepackages in sample allowed to exceed the tolerable deficiencies
1 to 10	N	/	/	0
11 to 50	10	1.028	s	0
51 to 99	13	0.848	s	1

2. The method of taking tare see table 2

table 2: The method of taking tare

比值 Rc/Rt	测定皮重抽样数 $n_t$	
	n=10	n=13
$\leq 0.2$	10	13
0.21 to 1.00	10	13
1.01 to 2.00	8	10
2.01 to 3.00	5	6
3.01 to 4.00	3	4
4.01 to 5.00	2	3
5.01 to 6.00	2	3
$\geq 6.01$	2	2

The step and the request of using table 2

1. The step and the request when the quantity of sample is bigger or equal to 10:

a) Sample random 2 pieces in the sample, measure their net quantity ( $R_c$ ) and tare ( $R_t$ ).

b) With the value  $n$  and  $R_c/R_t$ , measure  $n_t$  from the table 2.

2. The step and the request when the quantity of sample is smaller than 10:

When the sample quantity  $n < 10$  pieces, its  $n_t$  can be assured as following way:

a) When sample quantity is 1-2 pieces, draw out them.

b) When the sample quantity is 3-9 pieces, we can sample according to table 2. When  $n \leq n_t$ , draw out samples as the sample quantity  $n$ .

3. The request of the tare testing:

a) When  $n_t = N$ , we should measure the actual content with the sample unit of each tare.

b) When  $n_t < N$ , we should measure the actual content with the average of  $n_t$  samples of tare.

2006-4-3 in Malaysia

# **The Practical Application of OIML R87 on Pre-Packaged Goods in Indonesia**

Rifan Ardianto  
Directorate of Metrology,  
Ministry of Trade Republic of Indonesia

## **I. Introduction**

Directorate of Metrology is the Government Organization which is responsible for the authority in conducting the implementation of legal metrology in Indonesia. The vision of Directorate of Metrology is to ensure precise measurement in all fields maintaining the public protections through the accuracy of the measuring instruments in order to increase the competitiveness of the local products in international market. So the development and improvement of the Legal Metrology system is required.

Since 2000, Directorate of Metrology faced the heavy duties. The Government has changed the administration system from centralized into decentralized. This system affected in the implementation of Legal Metrology in Indonesia, and the Pre-packaged good was not exceptional. With this new system on pre-packaged goods, the Directorate of Metrology as a central is a facilitator and regulator, and testing activities are done by the regional Metrology Legal (Regional Metrology Unit).

## **II. Pre-packaged Regulation**

The prepackaged goods are regulated in the articles 22, 23, 24 and 31 Law No.2 1981 on Legal Metrology. But the technical requirements are regulated more detail on Minister Decrees. The technical requirements are adopted from OIML Recommendation R79 for labeling and OIML recommendation R87 for pre-packaged testing.

In practical, we use most of the procedures in OIML recommendation R87 on pre-packaged goods testing. Statistically, our procedures are not differing from R87. Only on tare procedures, we only use tare sample size of 10 packing materials for all products. Here we use the procedures for all goods, not only on local goods for local distribution and exported goods but also for the imported goods.

Today, most goods are not handled under implicit declaration, but some of the dairy products, milk, instant noodles and LPG have still been handled under no governed rules by the manufacturers. In this year, we are going to revise the pre-packaged goods regulation. This means to prepare the mutual recognition agreement in 2008.

### **III. The Problems**

One of the main problems concerning pre-packaged goods in Indonesia is the application of the regulation in regional area, which is not optimal yet. There are different points of view between Directorate of Metrology and manufactures. They mix the Directorate of Metrology regulation with the quality control regulation on each manufactures. Directorate of Metrology regulates the pre-packaged goods concerning metrological inspection, and we do not interfere with the manufacture's quality control regulation.

The other basic mistake is on the sampling procedure. Sometimes the manufactures entrust the pre-packaged goods testing to verification officers, so they only test for the given goods. It is not right and not following the sampling procedures, which take the sample of the pre-packaged goods that "represent" the whole rest of the goods (all goods in the same lot or batch).

Here that is why we need to revise the regulation on the pre-packing and set supervision for verification officers and manufacturers.

### **IV. Questions**

1. What is the different between prepackaged goods testing procedures on OIML recommendation R87 and quality control procedure concerning the six sigma quality control?
2. How are the procedures of testing the pre-packaged goods that have been circulated in society in order to inspection because we never know which population (lot or batch) they were taken from?
3. There are 3 places that we can use for testing the pre-packaged goods which are in manufacturer, in the storages, and in the society (agents, markets, stores, etc). In manufacturer, we believe some have the ISO certificate related to quality control and we are no doubt with their testing of prepackaged goods. The OIML recommendation R87 might be used for the manufacturer/producer that does not have that certificate. But in the storage and in the society, could the OIML recommendation R87 be used for testing the pre-packaged goods?

# The Practical Application of OIML R87 on The Pre-Packaged Goods in Indonesia

By : Rifan Ardianto



Ministry of Trade Republic Indonesia  
Directorate General of Domestic Trade  
**Directorate of Metrology**  
Jl.Pasteur No.27 Bandung 40171 Indonesia



## Introduction

- Directorate of Metrology is the Government Organization that is responsible for the authority of conducting the Legal Metrology implementation in Indonesia.
- We ensure good measurement systems in all fields to maintain the public protections through the accuracy of the measuring instruments in order to increase the competitiveness of the local products in the international market.
- The organization changed the administration system from centralized into decentralized. This system affected the implementation of Legal Metrology in Indonesia. Pre-packaged goods were not exceptional.



## Pre-Packaged Regulation

- The prepackaged goods are regulated in the articles 22, 23, 24 and 31 Law No.2 1981 on Legal Metrology.
- The technical requirements are regulated more in details on Ministerial Decrees. The technical requirements are adopted from OIML Recommendation R79 for labeling and OIML recommendation R87 for pre-packaged testing.
- Statistically, our procedures are not differing from R87. Only on tare procedures, we only use tare sample size of 10 packing materials for all products.
- Most goods are not handled under implicit declare, but some of the dairy products, milk, instant noodles, and LPG have been handled by the manufacturers under no governed rules.
- Plan for this year: Revision of the regulation on pre-packaged goods in order to prepare the mutual recognition agreement in 2008.



## Pre-Packaged Software Using Excel



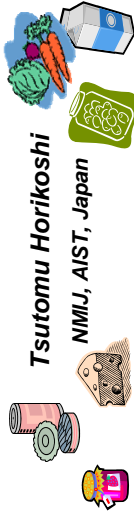
## The Problems

- What is the difference between prepackaged goods testing procedures on OIML recommendation R87 and quality control procedure concerning the six sigma quality control?
- How do you proceed the inspection testing on the pre-packaged goods that have been circulated in society because we never know which population (lot or batch) they were taken from?
- There are 3 places where we use for testing the pre-packaged goods which are in the storages of manufacturer and in the society (agents, markets, stores, etc).  
In manufacturer, we believe some of the manufacturer have the ISO certificate (ISO9001) related to quality control, and we trust their testing of prepackaged goods. The OIML recommendation R87 might be used for the manufacturer/producer that does not have that certificate. But in the storage and in the society, could the OIML recommendation R87 be used for testing the pre-packaged goods?



THANK YOU

## APEC/APLMF Seminars and Training Courses in Legal Metrology Practical Application of OIML R87 on Pre-packaged Goods



**Tsutomu Horikoshi**  
NMIJ, AIST, Japan

Q1 : What are your current pre-packaged goods regulations / requirements?

**Commodity's Quantity Measurement Systems of Japan (CQMSJ) under the regulations in the Measurement Law**

- > These systems are designed for consumer protection based on the law.
- > Specified commodities;
- > Commodities of 29 kinds are enumerated in the regulations.
- > The specified commodities shall be measured with specified tolerances.

Q2 : What system of inspection do you use?

**We use two kinds of inspection systems**

- > Inspection of individual commodity
- > Inspection by statistical method

Q3 : Are you using an average quantity system (AQS)?

**Basically, we use an AQS based on OIMLR87 for statistical inspections**

Q4 : Does it differ from R87? If so how?

**The major difference between R87 and CQMSJ is as follows:**

Difference	OIMLR87	CQMSJ
Scope of nominal quantity	0 – 50 kg	5g-25kg
Number of production of the target lot	100 or more	150 or more
Sample size	50,80,125	32 or 80

### Tolerable deficiency in CQMSJ

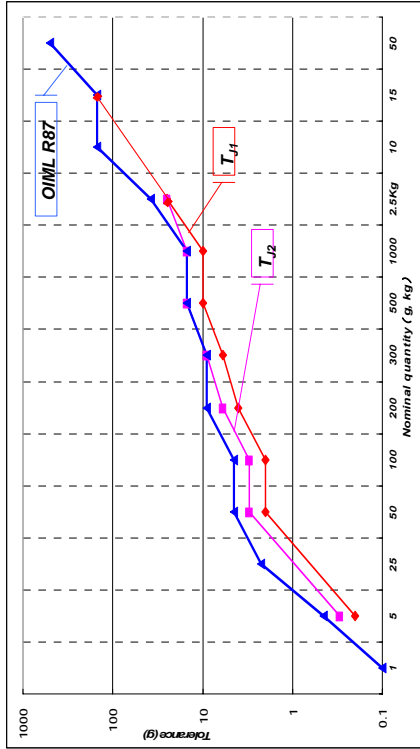
Mass (1) [TJ1]		Mass (2) [TJ2]	
Nominal quantity (Qn)	Error	Nominal quantity (Qn)	Error
5g ≦ Qn ≦ 50g	4%	5g ≦ Qn ≦ 50g	6%
50g < Qn ≦ 100g	2g	50g < Qn ≦ 100g	3g
100g < Qn ≦ 500g	2%	100g < Qn ≦ 500g	3%
500g < Qn ≦ 1kg	10g	500g < Qn ≦ 1.5kg	15g
1kg < Qn ≦ 25kg	1%	1.5kg < Qn ≦ 10kg	1%

Volume		Area (Leather)	
Nominal quantity (Qn)	Error	Nominal quantity (Qn)	Error
5mL ≦ Qn ≦ 50mL	4%	25dm <sup>2</sup> ≦ Qn	2%
50mL < Qn ≦ 100mL	2mL		3%*
100mL < Qn ≦ 500mL	2%	*Leather with a large pace of expansion	
500mL < Qn ≦ 1L	10mL		
1L < Qn ≦ 25L	1%		

### Tolerable deficiency in CQMSJ

#### Case of Mass



Q5 : Exported goods, any issues with weight or measure including examples?

**There is no regulation in the Measurement Law on export goods.**

Q6 : How you deal with imported goods including examples?

**Regulations enforced to imported goods are equivalent to those to the local products.**

Q7 : Do you have any issues regarding imported goods?

**Prepackage goods shall be labeled with the nominal quantity in the measuring units of specified Quantity of the State of Physical Phenomena (QSPP). Some imported goods have labels with different quantity.**

Example	Specified commodities	QPSS	Imported goods
	Olive oil	Mass (g)	Volume (mL)
Maple syrup	Mass (g)	Volume (mL)	

Q8 : Local goods, any issues with weight or measure including examples?

**Some of the local products retaining moisture are show as the following.**

**Sometime it is difficult to measure the quantity accurately.**

> **Products soaked in water and sold with in the water:**

**Tofu (bean curd), Oyster, Konnyaku, etc.**

> **Pickled vegetables sold with the brine, vinegar:**

**Pickles cucumbers, etc.**

> **Products retaining a lot of water:**

**Meat, Fish, etc.**

Q9 : What are the problems and demands you have concerning pre-packaged goods?

> **The main cause for rejection in a spot inspections is considered to be misunderstanding of tare. It is important for the person in charge of measurement to weigh the trays and garnishes carefully, so that they can tare those weight correctly.**

> **Although an AQS is adopted in Japan, it is rarely used in practice, due to the labour required for inspection.**



Q 10 : What are your current quantity labeling requirements?

**It is necessary to indicate the nominal quantity, name and address of the packer / manufacture under the Measurement**

**Law (Ministry of Economy, Trade and Industry).**

**Other laws**

- > **Quality Labeling Standards System :**  
Ministry of Agriculture, Forestry, and Fisheries
- > **Food Sanitation Law in Japan :**  
Ministry of Health, Labour and Welfare
- > **Etc.**

Example of item on a label;

**Country of origin Nutritional value Storage condition Ingredients  
Information on genetically modified Best-before date, etc.**

## Operation of CQMSJ by local government

### On-the-spot Inspection

Commodities selection



Measurement of product



Tare sample



Report of a results



**Thank you for your attention**

## The presentation of Lao PDR On prepackaged goods

1. Currently the regulation on prepackaged goods is drafted and based on the ASEAN common requirements on prepackaged goods, and it has not implemented yet due to the lack of experiences and necessary equipments.

2. Which system of inspection do we use ? Do we use an average quantity system?

We do not know yet, and I do hope fully to get experience and share with the workshop meeting for a period of time.

3. I am sure that it will not differ from R87 and R79 because ASEAN common requirements on prepackaged goods is based on them.

Regarding the dealing with imported and exported goods and local goods, we will gain experiences from this workshop meeting.

- And based on the what we learned in the two workshop meetings on prepackaged goods organized in Bangkok Thailand and in Kuala Lumpur Malaysia, we have already finished the draft on prepackaged goods regulations.

Finally I do hope to get lessons, experience and sharing with all of our colleagues in the meeting workshop as well as from the lectures, and I would like to express my sincere thanks to all of organizers (APLMF), Metrology in Malaysia and particularly the National Metrology Institution of JAPAN (NMIJ) and Dr. Matsumoto who has provided me a funding support to attend this workshop.

Thank you

## CURRENT SITUATION OF PRE-PACKAGED GOODS IN MALAYSIA

BY  
MINISTRY OF DOMESTIC  
TRADE AND CONSUMERS  
AFFAIRS, MALAYSIA

## Introduction

- Sale of pre-packed goods in Malaysia regulated and governed by Ministry of Domestic Trade and Consumers Affairs.

## Definition of Terms

- “goods” includes all chattels personal other than things in action and money.
- “pre-packed” means packed or made up in advance ready for sale in a wrapper, bag or container

## Price Control Act 1946

- Marks or Labels to be displayed:

- quality
- grade
- weight
- price
- place of origin
- date of manufacture of such goods

### **Price Control (Labeling By Manufacturers, Importers, Producers or Wholesalers) Order 1980**

Pre-packed goods and indications of particulars:

“No manufacturer, importer, producer or wholesaler shall sell any pre- packed goods unless there is affixed to such goods, or its wrapper, bag or container, a label or mark containing the following particulars”

### **Particulars on Labeling under Price Control Order 1980:**

- name of the goods
- minimum weight, quantity, amount or capacity of the goods (expressed in terms of unit, net weight or measure solely in metric, in the case of imported good solely in metric units)
- name and address of the manufacturer, importer, producer or wholesaler

### **Criteria of Label or Mark**

■ The label or mark shall be:

- legible
- in clear words
- such size and color
- must be solely in Bahasa Malaysia and any other language (produced in Malaysia)
- must be solely in Bahasa Malaysia and English for imported goods

### **Price Control Order 1980**

Offences:

- no label or mark for pre-packed goods
- to remove, obliterate, delete or substitute any label or mark

### Trade Descriptions Act 1972

■ Offences:

- a) applies a false trade descriptions to any goods
- b) supplies or offer to supply any goods to which a false trade description is applied

### Price Control Act 1946

■ Penalties:

- 1) any person other than body corporate:
  - a) first offence
    - fine <RM 15,000.00 or
    - to imprisonment <2 years or
    - to both

### Price Control Act 1946

- b) second or subsequent offence
  - fine <RM 25,000.00 or
  - to imprisonment <5 years or
  - to both
- (2) body corporate:
  - a) first offence
    - fine <RM 25,000.00
  - b) second and subsequent offence
    - fine <RM 50,000.00

### Trade Descriptions Act 1972

■ Penalties :

- 1) any person other than body corporate
  - a) first offence
    - fine <RM 100,000.00 or
    - to imprisonment <3 years or
    - to both

### Penalties for Offences

- b) second or subsequent offence:
  - fine <RM 200,000.00 or
  - to imprisonment <6 years or
  - to both
- 2) body corporate:
  - a) first offence
    - fine <RM 250,000.00
  - b) second and subsequent offence:
    - fine <RM 500,000.00

### Answers for Recommended Topic of Presentation Questions

- No current pre-packed goods regulations or requirements
- No system of inspection.
- Not using average quantity system.
- Imported goods must comply to Price Control Order 1980.
- No issues regarding imported goods, local goods.
- Quantity Labeling Requirements (SI Unit in net weight)

### CURRENT SITUATION ON OIML R87 IN MALAYSIA

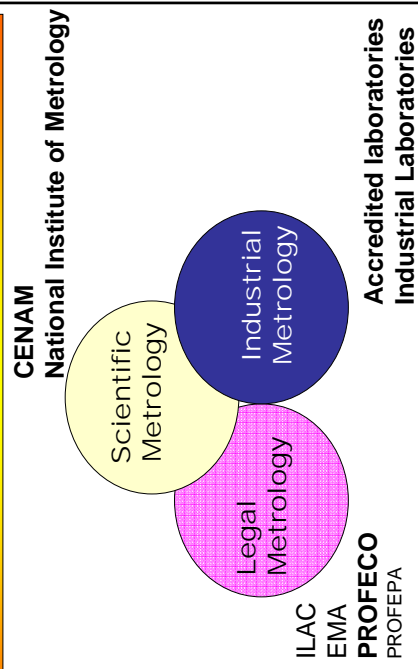
- Steps taking to adopt OIML R87:
  - Currently proposing new regulation to standardize the prepackages goods.
  - The regulation will be in-cooperated with R87 recommendation.

**THANK YOU FOR YOUR ATTENTION**



## *Inspection system in México for pre-packaged goods regulations.*

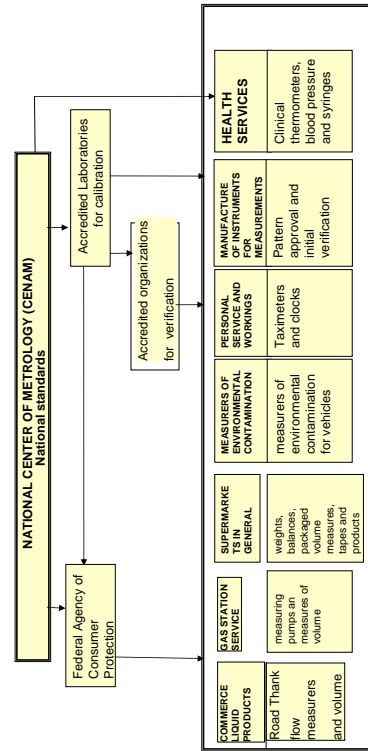
*Amparo Leticia Luján-Solís  
Mass and Density Section  
National Center of Metrology  
(CENAM)*



## STANDARDS FOR PREPACKAGED PRODUCTS IN MEXICO

- **NOM-002-SCFI-1993** Prepackaged products – net quantity, tolerances and verification methods. (current standard)
- **PROY – NORM – 002 – SCFI** Prepackaged products – net quantity, tolerances and verification methods. (under revision)

### TRACEABILITY SYSTEM FOR LEGAL METROLOGY IN MEXICO





**Size of the sample as a function of the size verification lot**

Lot of products (units)	Number of samples
150 to 500	13
501 to 1200	20
1201 to 10 000	32
10 001 to 35 000	50
35 001 to 500 000	80

**Size of the sample for expensive products**

Lot of products (units)	Number of samples
even 50	2
51 to 150	3
more 150	4

**Tolerances for general application**

Net quantity (g or ml)	Tolerance
even 50	11,0%
50 to 100	5,5 g or ml
100 to 200	5,5 %
200 to 300	11 g or ml
300 to 500	3,7 %
500 to 1 000	18,5 g or ml
1000 to 10 000	1,85 %
10000 to 15 000	185 g or ml
more of 15 000	1,2 %

**Tolerances for a specific application**

Net quantity (g or ml)	Tolerance
even 50	9,0%
50 to 100	4,5 g or ml
100 to 200	4,5 %
200 to 300	9 g or ml
300 to 500	3,0 %
500 to 1 000	15 g or ml
1000 to 10 000	1,5 %
10000 to 15 000	150 g or ml
more of 15 000	1,02 %

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**highest number of units outside tolerance**

Size of sample	Units outside tolerance
13	1
20	2
32	3
50	5
80	7

Thanks!!



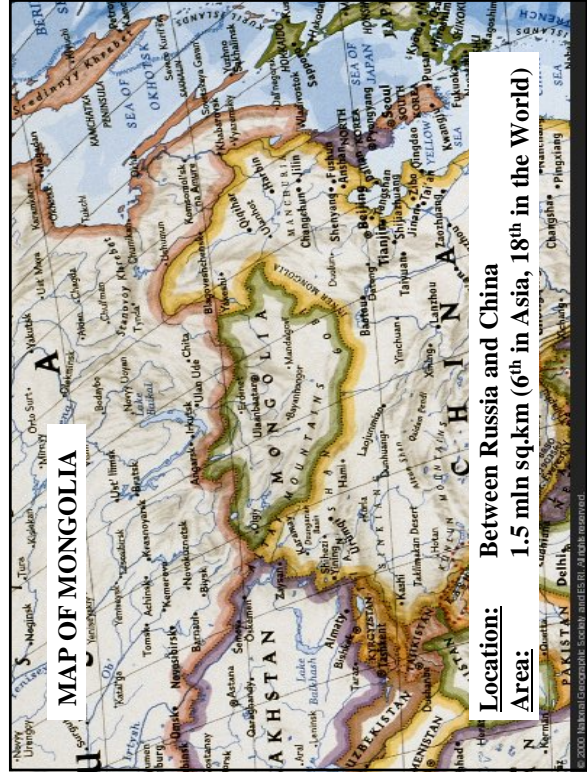
## CURRENT SITUATION ON PRE-PACKAGED GOODS IN MONGOLIA

N. Myasuren  
Verification officer for weight  
Mongolian Agency for Standardization and Metrology  
Metrology department  
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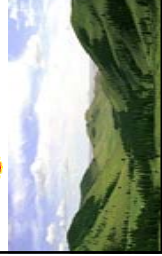
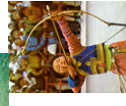
## Brief introduction of MASM

Mongolian Agency for Standardization and Metrology was established in 1924. The organization is located in the central part of the country in the capital city of Ulaanbaatar.



### Quick facts about Mongolia

- Population: 2,8 mil. (with low density of 1,5 persons per sq.km)
- More than 10 ethnic groups, (75%-Khaikha, 7%-Kazakhs and others)
- Language: Mongolian
- Religion: More than 90%-Tibetian Buddhist Lamaism, 6%-Muslim
- Climate: Extreme continental, 4 distinct seasons



## *Brief introduction of MASM*

The MASM is a government regulatory body responsible for coordinating and managing the activities of Metrology, Standards, Certification and Accreditation throughout the country.

The highest decision-making body of the center is MASM Council which consists of 20 members, who represent government and non-government organizations and approved by the government. The center executes its activities with 120 employees and implements its policy via the local centers for standardization and metrology in 21 aimags (provinces).



Mongolian Agency  
for Standardization and Metrology



## Measurement Standards

The metrology center maintains the Mongolian national measurement standards for the SI units of mass, time and frequency, voltage, solid density, temperature and volume.

Main activities include:

- Development of national measurement standards system
- Dissemination of national measurement standards
- Development of Certified Reference Materials
- Calibration of measurement standards and instruments



## Legal Metrology

- Pattern approval of measuring instruments
- Verification of mandatory instruments as required by law
- Licences for manufacture, repair and sale of measuring instruments
- Control of packaging/quantities

The metrology department verifies over 50 thousand measuring instruments per year.



## Current pre-packaged goods regulations

- Law on guarantee the uniformity of measurement and acts of legislation
- MNS (CAC) 4280-95
- Rules on metrological inspection on quantity labeling of pre-packaged products



- Imported, exported and domestic goods are handled by the same regulations we mentioned above
- In other words, we use the same documents



## The minimum criteria for the label

1. The name of a product
2. The number of normative document
3. The content
4. Netto
5. The organisation name
6. Date of manufacture
7. Expired date
8. The storage condition



## Law on guarantee the uniformity of measurement

Article 11. Control on packed product's quantity

1. The packed products shall satisfy the following requirements:
  - 1/ to be packed or wrapped up in such manner when the contents thereof can not be changed without opening, unsealing or deformation;
  - 2/ to be noted down the mass, volume and other quantities on the label.
2. The average value of quantity of packed and wrapped up products and of products soled by retail shall confirm the nominal value declared in related standard and on the package or in accompanying documentation, the value of quantity of a definite packed and wrapped up product shall confirm the permissible limit of deviation of nominal value



## According to the abovementioned law

- We use the average quantity system in rather large factories during the production, packaging and realization



## The average quantity system

Also the average quantity system is applied in the metrological inspection activity using same method as in OIML R87 to calculate the average value from the part.



## Inspection on quantity labeling of pre-packaged products

First

Control in the factory of packing materials through verification of conforming to related requirements on labeling process

After

On the site where the packaging activities carried out we control if the products packed correctly according to the information on label and the correctness of the metrological properties we control on the market

# THANK YOU

Practical Application of OIML  
Recommendation R87 on Pre – packaged  
Goods

April 3 – 7, 2006  
Concorde Hotel, Shah Alam, Malaysia

Pre – Training Presentation

## Introduction

- Victor Gabi
- National Institute of Standards and Industrial Technology
- Papua New Guinea



## Are you using AQS?

- Currently this part of the PNG Packaging Legislation is not been implemented

## Exported Goods

- Only instrumentation used are verified

## Imported Goods

- Goods are not sampled at entry but checked of shelves when sold.

## Local Packaged Goods

- There is no control on local goods packed for trade.

### General Issues

- Appropriateness of the Packaging Act of PNG
- Improve competence of Legal Metrology Authorities and Inspectors
- Lack of understanding on the use of AQS
- Reduce the gap of harmony between OIML R87 and Packaging Act PNG
- Technology Transfer through nationally organized workshops/seminar/trainings
- Establishing appropriate programmes



# Packed Products

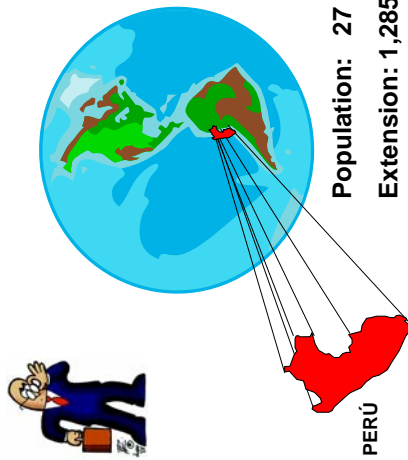
José Dajes Castro  
Head, National Metrology Service  
Indecopi - PERU  
Malaysia, April 3-7, 2006

## CONTENT

- Current Situation of Pre-packaged Goods in Peru.
- Legal Documents of the Packed Products
  - NMP 001-95 (OIML R79)
  - NMP 001-95 (OIML R87)
- Inspection of Packed Products



## Where is Peru?



Population: 27 219 264 hab  
Extension: 1,285,216 km<sup>2</sup>  
Language: Spanish

PERÚ

## Where is Peru?



# CURRENT SITUATION OF PRE-PACKAGED GOODS IN PERU



## I

- Since 1995, INDECOPI has adopted the International recommendations OIML R79 – 1989 and R87-1989. These standards are mandatory.

\*Sampling methods and test procedures are consistent with OIML R87

\*The declaration of net quantity contents is obligatory in our country.

\*The required information must be in the official language (spanish)

Metrological requirements for package:

1. Average content

$$\bar{x} \geq Q_n$$

2. Contents in individual packages

Error T1: Content (real)  $< (Q_n - T)$

• Error T2: Content (real)  $< (Q_n - T2)$  or  $(Q_n - 2 \times T)$

T = tolerance

## A.- LEGAL DEVICES

Consumers Protection Law

Labeling Requirements Law

## B.- CONTROL INSTITUTIONS

\* INDECOPI

- Consumers Protection Commission (CPC)

- Technical and Commercial Standards Commission

- National Metrology Service (NMS)

Other for coordination:

\* MINISTRY OF HEALTH

\* MINISTRY OF AGRICULTURE

\* MINISTRY OF FISHING

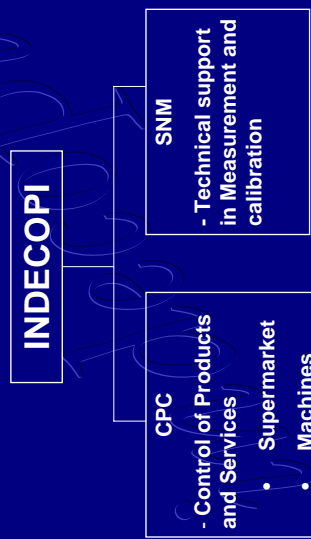
### C.- LEGAL DOCUMENTS OF THE PACKED PRODUCTS

- \* Metrological Standard Peruvian (mandatory) (Norma Metrologica Peruana - NMP)
  - NMP 001 1995 : Packed Products, labelling (Adoption of the OIML R79)
  - NMP 002 1995 : Packed Products. – Net Content (Adoption of the OIML R87)
- \* Peruvian Technical Standard (voluntary)
  - NTP 209.038 1994 : Packed food – labelling Adoption of CODEX ALIMENTARIUS)
- \* Regulation of Alertness and Sanitary Control of Foods and Drinks

### Packed Products – Labeling, They have to contain at least the following information:

- Name of the product.
- Declaration of the ingredients and additives used to make the product.
- Name and address of the manufacturer.
- Name, corporate names and address of the importer, which it will be able to figure in additional label.
- Number of Sanitary Record.
- Date of expiration, when the product needs it, according to the Food Codex or the Sanitary Peruvian Standards -Code of the lot.
- Special conditions of conservation, when the product needs it.

### D.- INSPECTION OF PACKED PRODUCTS



### E- FUTURE ACTIONS

- Review NMP 002-95  
( TO ADOPT THE NEW OIML R87- 2004  
“Quantity of product in prepackages”)
- Review NMP 001-95  
(TO ADOPT THE NEW OIML R79- 1997)

Thank you

[jdajes@indecopi.gob.pe](mailto:jdajes@indecopi.gob.pe)

[www.indecopi.gob.pe](http://www.indecopi.gob.pe)

National Institute for the Defense of Competition and Protection of Intellectual Property

**INDECOPI**

Organization and functions

April 2006

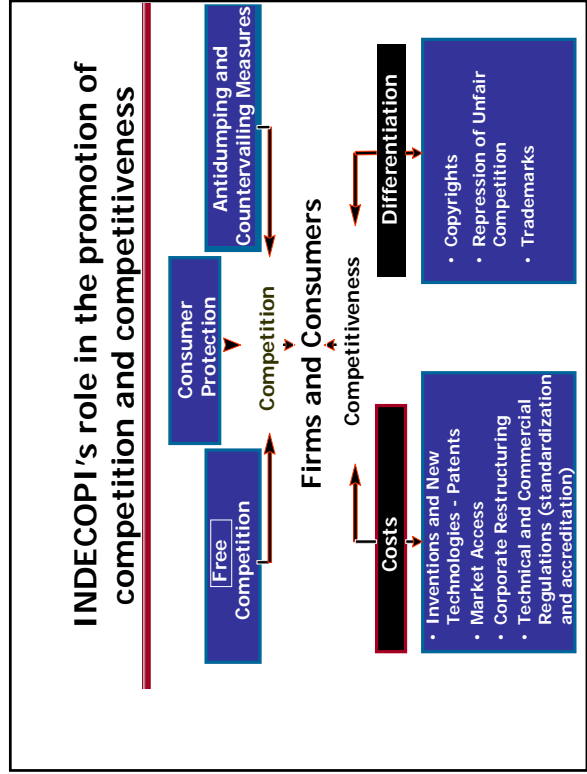
### INDECOPI's Systemic Vision

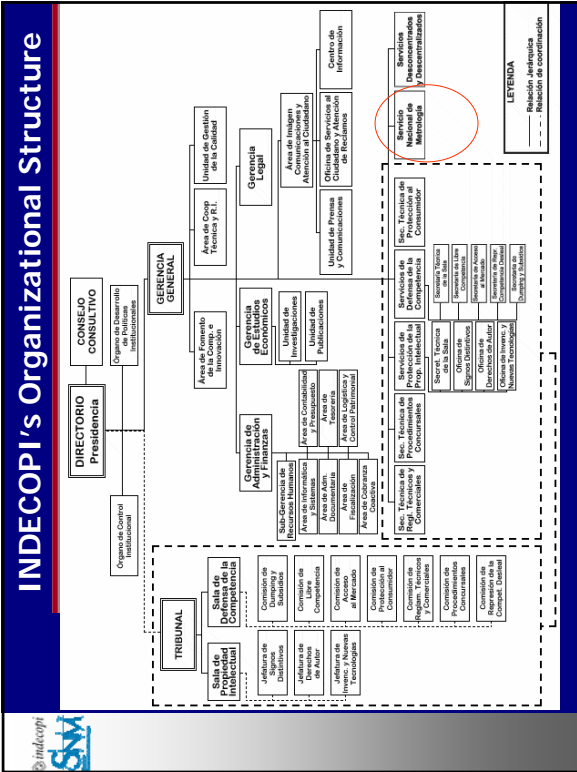
Competition in IP markets promotes investment in R&D



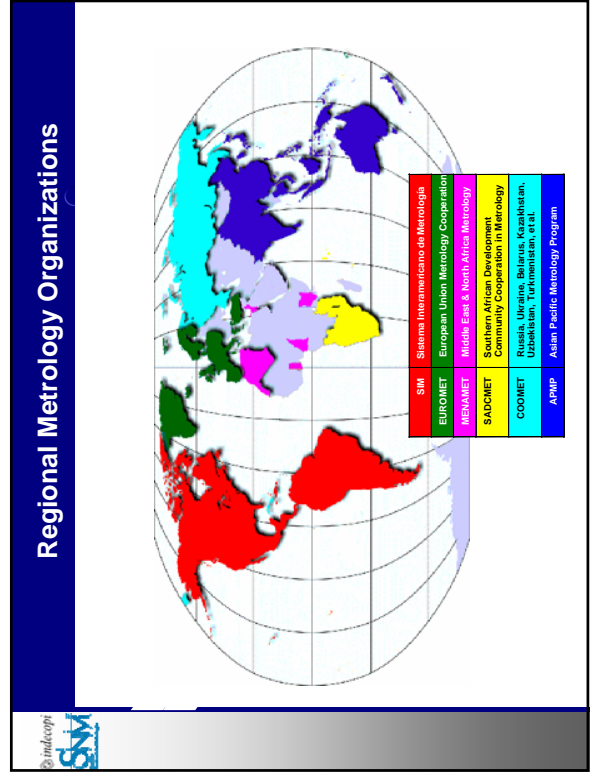
Investment in R&D is a corporate strategy which contributes to increase market competitiveness

Source: Department of Economic Studies, INDECOPI





- ## Services rendered by INDECOPI
- ➔ **Solution of Controversies**
    - controversies related to intellectual property
    - controversies related to competition issues (consumer protection, advertising, free competition, bureaucratic barriers and corporate restructuring)
  - ➔ **Registry**
    - trademarks, patents, copyrights
    - accreditation of laboratories
    - accreditation of liquidating entities
  - ➔ **Standardization**
    - calibration
    - patterns of weight, volume, energy, temperature, pressure, longitude and angles
    - technical and metrological standards
  - ➔ **Information**
    - training on legal framework and free market
    - information to the market
    - information on new technology
    - Economic-legal analysis and technical reports



# Labeling of Prepackaged Foods in the Philippines

Natividad Mamplata  
Jordan Damian

Industrial Technology Development Institute  
Department of Science & Technology

## Philippine Products

### Top Exports

- Coconut products
  - copra, desiccated coconut, copra meal / cake
- Sugar and Products
  - refined & centrifugal, molasses
- Fruits & Vegetables
  - canned pineapple/ juice & concentrates, bananas, mangoes
- Marine products
  - tuna, shrimp and prawns
- Seaweeds and carrageenan

## Philippine Imports

- Dairy Products
- Fish & Fish Preparation
- Rice
- Fruits & Vegetables
- Beverages

Processed Food Exporters are advised to comply with:

FAO-WHO CODEX Standards  
GMP, HACCP, TQM, ISO Certification

## Philippine Laws (Food & Drug Regulatory System)

RA 3720	Food, Drugs & Devices & Cosmetics Act
RA 7394	Consumer Act of the Philippines
RA 7581	Price Act
RA 8976	Food Fortification Law
RA 5921	Pharmacy Law
RA 6675	Generics Law
RA 9165	Comprehensive Dangerous Drugs Act
Others	

## Food, Drugs & Devices & Cosmetics Act (RA 3720)

- An Act to Ensure the Safety & Purity of Foods & Cosmetics, & the Purity, Safety, Efficacy & Quality of Drugs & Devices being made available to the Public, vesting the **Bureau of Food & Drugs** with Authority to Administer & Enforce the Laws Pertaining Thereto & for other Purposes”

## Food, Drugs & Devices & Cosmetics Act (RA 3720)

### *Policy:*

- Establish standards & quality measures of food, drugs & devices and cosmetics
- Adopt measures to ensure pure and safety supply of foods and cosmetics & pure, safe, efficacious & good quality drugs & devices in the country

## Bureau of Food & Drugs (BFAD)

### **Functions, powers & duties:**

- To administer and supervise the implementation of the Food, Drugs & Devices & Cosmetics Act and of rules and regulation issued pursuant to the same
- To provide for the collection of samples of food, drug and cosmetic
- To analyze and inspect food, drugs and cosmetics in connection with the implementation of the Act
- To establish analytical data to serve as basis for the preparation of food, drug & cosmetic standards and to recommend standards of identity, purity, quality & fill of container

## Bureau of Food & Drugs (BFAD)

- To issue certificate of compliance with technical requirements to serve as basis for the issuance of license and spot-check for compliance with regulations regarding operation of food, drug and cosmetic manufacturers and establishments
- To levy, assess & collect fees for inspection, analysis & testing of products and materials submitted in compliance with the provisions of the Act

## **Bureau of Food & Drugs (BFAD)**

- BFAD promulgated **Administrative Order (A.O.) No.88-B (1984) “ Rules & Regulations Governing the Labeling of Prepackaged Food Products Distributed in the Philippines”**
  - Applies to imported and locally produced goods

## **Labeling of Prepackaged Food Products Administrative Order 88-B**

- Section 1. Definition of Terms*
- Section 2. General Provisions*
  - Prepackaged food shall not be described or presented on any label or in any labeling in a manner that is false, misleading or deceptive or is likely to create erroneous impression regarding its character
  - Food packages shall have labels that carry the necessary information about the product
    - *principal display panel*
    - *information panel*

## **Labeling of Prepackaged Food Products BFAD Administrative Order 88-B**

### *Section 3. Mandatory Label Information*

- Name of the Food
- List of Ingredients
- Declaration of Food Additives
- Net Contents and Drained Weight
- Name & Address of Manufacturer, Packer & Distributor
- Lot Identification

## **Labeling of Prepackaged Food Products BFAD Administrative Order 88-B**

- Section 3.3. Net Contents & Drained Weight*
  - 3.3.1. Net content shall be declared using the metric system
    - for liquid foods, by volume
    - for solid foods, by weight
  - if sold by numbers, a declaration of count may be made
  - for semi-solids or viscous foods, by weight or volume



**Labeling of Prepackaged Food Products  
BFAD Administrative Order 88-B**

- 3.3.2. Foods packed in a liquid medium normally discarded before consumption may carry a declaration of drained weight
- 3.3.6. For multi-unit retail packages, a statement of the quantity of contents on the outside package shall include the number of individual units, the net content of each unit & the total quantity of contents of the multi-unit package.  
E.g. 20 x 10g sachets (net wt. 200g)

**Labeling of Prepackaged Food Products  
BFAD Administrative Order 88-B**

- Section 4. Nutrition Information**
- Section 5. Labeling of Food Additives**
- Section 6. Other Requirements**
  - 6.1. Open-Date Marking - Prepackaged food shall be open-date marked in compliance with the "Guidelines for Open-Date marking of Prepackaged Foods"
  - 6.2. Alcoholic Beverages - alcohol content in % or proof to be included

**Labeling of Prepackaged Food Products  
BFAD Administrative Order 88-B**

- Section 7. Misleading Declarations / Representations**
  - any representation relative to the flavor of the food product
  - use of photographs & graphic representations
  - use of names of places
- Section 8. Exemptions**
  - shipment or delivery of a food which is to be processed, labeled or repacked at establishment other than that where originally processed shall be exempt

**Labeling of Prepackaged Food Products  
BFAD Administrative Order 88-B**

- Section 8. Exemptions cont.**
  - a food, while held for sale, shall be exempt from labeling requirements, if said food, having been received in bulk containers at a retail establishment, is accurately weighed, measured or counted either within the view of the purchaser or in compliance with the purchaser's order

**Labeling of Prepackaged Food Products  
BFAD Administrative Order 88-B**

*Section 9.* Any article of food that is misbranded may be seized by the Bureau of Food and Drugs if the misbranded article is dangerous to health , or that labeling of the article is fraudulent or would be in material respect misleading to the injury or damage of the purchaser or consumer

*Section 10.* Any violation of the provision of the rules and regulations shall render the article misbranded and the responsible person shall be subject to the penal provisions of the Food, Drugs & Devices & Cosmetics Act

**BFAD Bureau Circular 6A s.1998**

**Subject: Permissible Net Content Variation in Pre-packaged Food**  
Issued to all food processors of pre-packaged foods and parties concerned  
Annex A of the circular is a guidance chart for determining the "Allowable Deviation from the Declared Net Content"  
Annex B provides as reference the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods

**BFAD Bureau Circular 6A s.1998**

Concerns have been expressed that a number of food processors of prepackaged food products are not clear on how to use the guidance chart.  
The chart and sampling plans will guide both BFAD and the foods processors, manufacturers and repackers in the determination of the accurate net content variations.

All parties are reminded that an erroneous net content declaration can render a product misbranded or mislabeled.

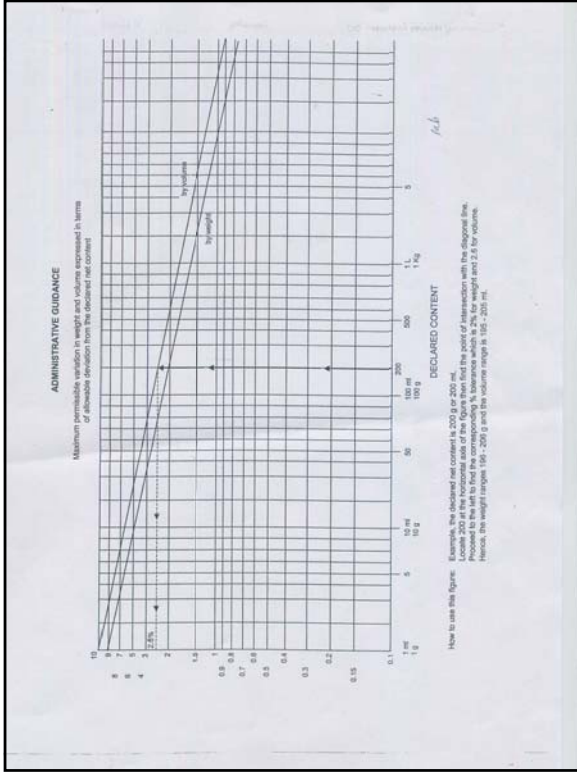
**BFAD Bureau Circular 6A s.1998**

Explanations for uniform interpretation of the guide:  
A sample unit is considered defective if it does not conform with the prescribed tolerance for weight/volume variation. This also applies to variation in the declared drained weight  
Acceptance of defective units in a given production lot , attributed to weight / volume variation, shall be based on the CODEX sampling plans for prepackaged foods

## BFAD Bureau Circular 6A s.1998

Inspection Level I is applied for normal sampling operation and Inspection Level II is applied in case of resolving disputes.

For proposed foods packed in rigid containers, it is also required that the fill of the container shall at least be 90% of the water capacity of the container.



## Issues & Concerns

- no issues on net weight variation of products
- actions will be taken by BFAD only when complaints are received
- focus on problems among food processors
  1. Mislabeling
    - product name in local language with no English translation and description
    - net weight declared in grams instead of "g"
    - format of nutrition label not followed
    - format of principal display panel and information panel i.e. prescribed size

2. Contaminants e.g. histamine, dioxin, 3-MCPD, bromates, sulfites, GMO's
3. Misdeclarations on labels of food supplements e.g. "No approved therapeutic claim" is supposed to appear on the label ; flavored oils declared as "virgin"



Thank you  
Terima Kasih

# Country Report for Pre-Packaged Products in the Philippines

Jordan B. DAMIAN - National Metrology Laboratory and  
Natividad R. MAMPLATA - Standards and Testing Division  
Industrial Technology Development Institute - PHILIPPINES

## What are your current pre-packaged goods regulations/requirements?

- Provisions on the labeling and fair packaging of pre-package products as stipulated in Chapter IV Republic Act No. 7394 "The Consumer Act of the Philippines"
- The Department of Trade and Industry (DTI) through its regional and provincial offices regularly monitor the prices of basic and prime commodities guided by the Republic Act No. 7581 "The Price Act"
- Standards Law (Republic Act 4109).

## What system of inspection do you use?

- Inspection is carried-out by the concerned department upon receipt of complaints of unfair trade practices.
- DTI inspectors usually inspect product on a random basis and check the product which has been reported of irregularities.

## Consumer Complaints

The concerned department may commence an investigation upon petition or upon letters complaint from any consumer: Provided, That upon a finding by the department of a prima facie violation of any provisions of this Act or any rule or regulation promulgated under its authority; it may motu proprio or upon verified complaint commence formal administrative action against any person who appears responsible therefore. The department shall establish procedures for systematically logging in, investigating and responding to consumer complaints into the development of consumer policies, rules and regulations, assuring as far as practicable simple and easy access on the part of the consumer to seek redress for his grievances.

## Sanctions

After investigation, any of the following administrative penalties may be imposed even if not prayed for in the complaint:

- a) The issuance of a cease and desist order, Provided, however, That such order shall require him to submit a report of compliance therewith within may include any or all of the following terms and conditions:
- b) The acceptance of a voluntary assurance of compliance or discontinuance from the respondent which may include any or all of the following terms and regulations:
  - 1) an assurance to comply with the provisions of this Act and its implementing rules and regulations;
  - 2) an assurance to refrain from engaging in unlawful acts and practices or unfair or unethical trade practices subject of the formal investigation;



## Are you using an average quantity system?

- For some area, i.e. foods and drugs. No yet been settled in general.



- 3) an assurance to comply with the terms and conditions specified in the consumer transaction subject of the complaint.
- 4) an assurance to reimburse
- 5) an assurance to reimburse the complaint, including expenses in making or pursuing the complaint, if any and to file a bond to guarantee compliance therewith
  - a) restitution or rescission of the contract without damages;
  - b) condemnation and seizure of the consumer found to be hazardous to health and safety unless the respondent files a bond to answer for any damages or injury that may arise from the continued use of the product;
  - c) the imposition of administrative fines in such amount as deemed reasonable by the Secretary, which shall in no case be less than Five hundred pesos (P500.00) nor more than Three hundred thousand pesos (P300,000.00) depending on the gravity of the offence, and an additional fine of not more than One thousand pesos (P1,000.00) or reach each day of continuing violation.



## Does it differ from R87? If so how?

- Somehow similar to the R87. Simple checking and verification is carried-out during actual inspection .





## Exported goods, any issues with weight or measure including examples?

ARTICLE 16 of RA 7394 "**Consumer Products for Export**" The preceding article on safety shall not apply to any consumer product if:

- a) it can be shown that such product is manufactured, sold or held for sale for export from the Philippines, or that such product was imported for export, unless such consumer product is in fact distributed in commerce for use in the Philippines,
- b) such consumer product or the packaging thereof bears a stamp or label stating that such consumer product is intended for export and actually exported.



## How you deal with imported goods including examples?

ARTICLE 14 of RA 7394 "**Certification of Conformity to Consumer Product Standards**" The concerned department shall aim at having consumer product standards established for every consumer product so that consumer products shall be distributed in commerce only after inspection and certification of its quality and safety standards by the department. The manufacturer shall avail of the Philippine Standard Certification Mark which the department shall grant after determining the product's compliance with the relevant standard in accordance with the implementing rules and regulations.

Refer also to ARTICLE 15 of RA 7394 "**Imported Products**".



## How you deal with imported goods including examples?

### CHAPTER V of RA 7394 "**LIABILITY FOR PRODUCT AND SERVICES**"

Any Filipino or foreign manufacturer, producer, and any importer, shall be liable for redress, independently of fault, for damages caused to consumers by defects resulting from design, manufacturer, construction, assembly and erection formulas and handling and making up, presentation or packing of their products, as well as for the insufficient or inadequate information on the use and hazards thereof.



A product is defective when it does not offer the safety rightfully expected of it, taking relevant circumstances into consideration, including but not limited to:

- a) presentation of product;
- b) use and hazards reasonably expected of it;
- c) the time it was put into circulation.

A product is not considered defective because another better quality product has been placed in the market.

The manufacturer, builder, producer or importer shall not be held liable when its evidences:

- a) that it did not place the product on the market;
- b) that although it did place the product on the market such product has no defect ;
- c) that the consumer or third party is solely at fault.



Do you have any issues regarding imported goods?

- No known complaints so far with respect to weights and measures.



Local goods, any issues with weight or measure including examples?

- No major issues so far.



What are the problems and demands you have concerning pre-packaged goods?'

- No clear policies with regards to weights and measures of pre-package products.
- With the current demand on trade developments and changes in the needs of the consumers, it is therefore imperative for DTI to adopt new and appropriate measures in consideration of providing the best interest of the consumers. The objectives of the said measures are to improve the DTI monitoring and enforcement activities to effectively and efficiently implement the DTI programs on trade and industry laws; to standardize the monitoring and enforcement procedures; and to ensure accurate and up-to-date monitoring and enforcement reports to serve as basis of reviewing and improving existing policies and DTI front line services.



What are your current quantity labeling requirements?

- Taken from RA 7394 Chapter IV Article 77 to 95.





### **Minimum Labeling Requirements for Consumer Products**

All consumer products domestically sold whether manufactured locally or imported shall indicate the following in their respective labels of packaging:

- a) its correct and registered trade name or brand name;
- b) its duly registered trademark;
- c) its duly registered business name;
- d) the address of the manufacturer, importer, re-packer of the consumer product in the Philippines;
- e) its general make or active ingredients;
- f) the net quantity of contents, in terms of weight, measure or numerical count rounded off to at least the nearest tenths in the metric system;
- g) country of manufacture, if imported; and
- h) if a consumer product is manufactured, refilled or repacked under license from a principal, the label shall so state the fact.



The following may be required by the concerned department in accordance with the rules and regulations they will promulgate under the authority of this Act:

- a) whether it is flammable or inflammable;
- b) directions for use, if necessary;
- c) warning of toxicity;
- d) wattage, voltage or amperes; or
- e) process of manufacture used, if necessary.

### **Philippine Product Standard Mark**

The label may contain the Philippine Product Standard Mark if it is certified to have passed the consumer product standard prescribed by the concerned department.



### **What steps are you taking to adopt OIML R87?**

Close coordination with the concerned regulatory bodies of the Philippine government.



## ***Consumer Arbitration Officers***

The concerned Department Secretaries shall appoint as many qualified consumer arbitration officers as may be necessary for the effective and efficient protection of consumer rights, Provided, however that there shall be not more than ten (10) consumer arbitration officers per province, including the National Capital Region.



# ***Thank you for listening!!!***





# Requirements of Pre-Packed Goods under Weights and Measures Programme

by  
Lim Yong Seng  
Weights and Measures Office  
SPRING Singapore



## Outline

- Introduction
- Organisation Chart
- Standards
- Activities
- Pre-Packed Goods Requirements
- Exported and Imported Goods
- Local Goods
- Pre-packed Goods and Quantity Labeling requirements
- Implementation of OIML R87

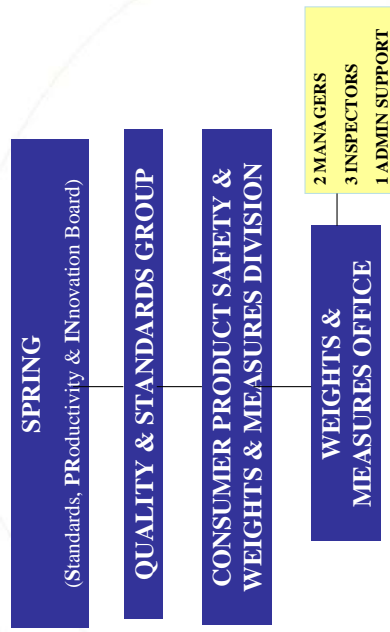


## Introduction

- Weights and Measures Office (WMO) - Authority for legal metrology
- Metric system with the exception of Chinese unit (tahils)- for trading in Chinese herbs/ medicines



## Organisation Chart



## Standards

- Reference Standards – Traceable to National Metrology Centre, SPRING Singapore
- Working standards – Calibrated by WMO



## Activities

- Appointment of Authorised Verifiers
- Registering approved pattern of instruments
- Spot-checks, Complaint Investigation, Education for consumers
- Verification of Weighing/ Measuring Instruments
  - Non-automatic weighing instruments
  - Fuel Dispensers
  - Flow meters
  - Linear measure
  - Liquor measure



## Pre-Packed Goods Requirments

- Minimum Quantity System – Year 2005 and earlier. But adopting the Average Quantity System (AQS) since 2001.
- Average Quantity System – After the gazetting of the amended Weights and Measures Act and Regulations in year 2005
- Fairer system as consumers are assured of average aggregate weight/measures meeting the nominal weight/measure



## Exported and Imported Goods

- Existing Regulations covers pre-packed goods meant for direct sale to consumers or traders
- Inspection/Spot checks conducted at point of sale to consumers.
- Short-weight pre-packed goods based on AQS is considered an infringement under the Weights and Measure Act



## Local Goods

- Examples of pre-packed goods that were short-weight includes:
  - **Minced meat** – pre-packed with a moisture absorber into styro-foam tray wrapped in plastic wrap. Declared weight inclusive of the packaging
  - **Sandwich skin** – short-weight ranging from -4.5g to -40.8g
  - **Mozafati dates** – short-weight ranging from -100g to -132g
  - **White lotus paste** – short weight ranging from -8 to -14g



## Pre-packed goods and Quantity Labeling Requirements

- 95% of products sold in major supermarkets are pre-packaged goods
- Labeling of pre-packaged goods is not under the purview of SPRING



## Implementation of OIML R87

- Weights and Measures Office conducted 3 training courses for the industry on the requirements of OIML R87 since 2003
- Media briefing to educate the public on the awareness
- Conduct regular on-site inspections on pre-packed goods



## Prepackaged Products Management in Taiwan

Ching Ping Chao  
Chinese Taipei, BSMI  
2006.4

## The Weights and Measures Act

- This Act was amended and promulgated by Presidential Order on 2 January 2003.
- The related articles concerning packaged products were added to this Act.

## Labeling and tolerance

- All prepackaged products shall be labeled with the information of net quantity and expressed by using the legal units of measurement. The difference between the labeled quantity and the actual quantity shall not exceed the statutory range of tolerance.

## Regulations

- Regulations of governing the categories, labeling, sampling, and relevant administration matters concerning pre-packed products subject to control shall be prescribed by the competent authority (Ministry of Economy Affairs).
- Regulations Governing Management of Prepackaged Products
  - are based on OIML R87 and R79
  - The enforcement date of these Regulations shall be determined by the competent authority.
  - We have not put these regulations into enforcement yet.



## The place to conduct random sampling tests

- In order to ensure the prepackaged products in compliance with the provisions. The weights and measures authority (BSMI) may send its staff to the following places to conduct random sampling tests on a non-periodical basis:
  - 1. the place of display and sale of products;
  - 2. the production premises or storage places where the commodities subject to control are produced;
  - 3. the storage places of importers.

## Random Sampling Tests

- The distributors, manufacturers (producers) and importers of prepackaged products shall cooperate with the random sampling tests to be conducted without evading, impeding or refusing such activities.
- A statement indicating the categories and quantities of samples taken in the course of random sampling testing shall be issued.

## Re-sampling Test

- For any prepackaged products subject to control that have failed random sampling tests, the manufacturer or importer thereof may apply for another sampling test and shall bear the costs arising from such re-sampling test.

## Penal Provisions

- Any manufacturer or importer of a prepackaged products who violated the provision by failing to label net quantity, not to label net quantity with legal units of measurement, or not to make the difference between the labeled quantity and the actual quantity which exceeds the statutory range of tolerance and has further failed to correct the violation within a given time limit nor failed the random sampling tests twice within one year, shall be imposed with a fine in an amount between NTD 100,000 ~ 500,000.

## Prepackaged Products Governed by Regulations

- The following prepackaged products shall be governed by Regulations with
  - 1.a net content of 5g–10kg expressed in units of mass;
  - 2.a net content of 5ml–10l expressed in units of volume;
  - 3.a net content expressed in count.

## Technical Specification

- **Our technical Specification is based on OIML R87 and R79.**
- **We use Average Quantity System (AQS) to control the quantity of packaged goods.**
- **The sampling plan, tolerable deficiency, and acceptance or rejection criteria(three rules) are followed with AQS.**

## Technical Specification

- **The tare procedure is taken as the same as OIML R87.**
- **Significance level of the tests for Type I Risk and Type II Risk is not referred to our technical specification.**

## Our Next Steps

- Because of different kinds of packaged products had been governed by other government authorities before the regulations were published by BSMI, we will consult with other competent authorities to enforce the regulations.
- The first step is to enforce packaged products labeled in units of mass.



**THANK YOU**



Department of Internal Trade


## Packaged Commodities Control in Thailand

At the training Course in Shah Alam, Malaysia April 3 – 7 ,2006

PRESENT BY  
THANAKORN NGERNUENGCHAI




Bureau of Weights & Measures




## Legislative control for packaged commodities

- The legislative control for packaged commodities is prescribed in the Weights and Measures Act B.E 2542(1999) and the Ministerial Notification
- to protect consumers from being cheated or misleading conducts in packaging system.
- Except the packaged commodities, their declaration of the quantity shall be the weight unit more than 50 kg or the volume unit more than 20 l and the weight unit less than 5 g or the volume unit less than 10 ml.



## Legislative control for packaged commodities

- all packaged commodities imported into the Kingdom, which the declaration of their quantities is expressed in weights and measures of foreign countries, the importer shall declare the quantity of such commodity in the weight and measure units in accordance with this Act.
- The declaration of the commodity shall be made before taking such commodity from the customs officers, except it is permitted to be made thereafter by the Director-General



## Methods in Weights and Measures of Foreign Countries prescribed

- The declaration of the quantity of commodities shall be numerals or letters permanent, obliterated ,clearly ,and legibly and their height size shall not be less than 2 millimeters by declaration of Equivalence be near the quantity of weights and measures of foreign countries.
- If there is decimal. The declaration of decimal shall be possibly only one position of decimal.



### Prescribe Types and Declare Quantity of Packaged Commodities

- Meat, pork, poultry, fish.
- Milk, yogurt.
- Edible vegetables, fruit, nut, rice.
- Flour, oil, coffee, tea.,
- Beverages, vinegar.
- Monosodium glutamate, sauce, pepper, salt, sugar.
- Cement, lubricating oil, hydraulic brake fluid, lubricating grease .



### Prescribe Types and Declare Quantity of Packaged Commodities

- Shampoos, hair oil, hair conditioners or treatments.
- Talcum powders, soap, toothpaste, detergent.
- Paint for house and building.
- Ink, toilet paper.
- Etc.



### Local Packaged Commodities



### Declare the quantity of packaged commodities with rules and means as follows

- (1) declare the net quantity or the real quantity of the commodity on its package. but not including the quantity of package.
- (2) declare the quantity be weight and measure units of metric system or count units depending on each declaration types of commodities with the numerals of Thai or Arabic language and the letters of Thai language.



Declare the quantity of packaged commodities with rules and means as follows

- (3) have the Thai language content of "**Net quantity**" or other Thai language contents be the same meaning in front of the quantity of commodity according to (1).
- (4) declare the quantity of commodity and the contents according to (1)(2)and(3) at its package label or its package clearly and legibly. Numerals and letters shall be the height size no less than 2 millimeters and shall be permanent and obliterated.



Declare the quantity of packaged commodities with rules and means as follows

- (5) In case of declaring the quantity of commodities at its package label or its package to be many side of package that the quantity of commodities shall be declared the same.
- (6) The declaration of net quantity of commodity at its label shall be accurately corresponding to the quantity of the commodity contained in package or may be short no more than the **MPE**



Declare the quantity of packaged commodities with rules and means as follows

- (7) The packaged commodities contain the same small packaged commodities that there are the same commodity and quantity from two packaged up and individual small packages, that can be sold or distributed, separated out of the large package commodities. Pack of the large packaged commodities shall be declared a number of the small packages and the quantity of the commodity in the small packages in accordance with the methods are prescribed in (1) (2) (3) (4) (5) and (6).



List 2. Annexed to Notification of Ministry of commerce

- Maximum permissible errors for the declaration of the net quantity of the packaged commodity described in the following.



### No.1 MPE for an individual package labeled by weight.

Declaration of quantity on packages	Maximum permissible errors
≤ 200 g	6 %
> 200 g to 1 kg	3 %
> 1 kg to 5 kg	2 %
> 5 kg to 15 kg	1.5 %
> 15 kg to 50 kg	1 %



### No.2 MPE for an individual package labeled by volume.

Declaration of quantity on packages	Maximum permissible errors
≤ 50 ml	6 %
> 50 ml to 500 ml	3 %
> 500 ml to 1 l	2 %
> 1 l to 10 l	1.5 %
> 10 l to 20 l	1 %



### No.3 MPE for an individual package labeled by length.

Declaration of quantity on packages	Maximum permissible errors
≤ 1m	2%
> 1m	1%



### No.4 MPE for an individual package labeled by count.

Declaration of quantity on packages	Maximum permissible errors
≤ 35 units	-
> 35 units to 50 units	3 %
> 50 units	2 %

The sampling of packaged commodities for checking declaration of net quantity shall be taken as follows:

- (1) The packaged commodities are not exceeding 100 packages. The packaged commodities are been sampling not exceeding 10 packages.
- (2) The packaged commodities are exceeding 100 packages up to 250 packages. The packaged commodities are been sampling 11 packages but not exceeding 20 packages.
- (3) The packaged commodities are exceeding 250 packages. The packaged commodities are been sampling 21 packages but not exceeding 40 packages.

The packaged commodities for checking the declaration of net quantity shall be separate at each case as follows

- (1) the packaged commodities are the same kind and declare the same net quantity. (Standard packages)
- (2) the packaged commodities are the same kind and declare the different net quantity. (Random packages)

Standard package



Random package



The considerable rule of the result for checking the declaration of net quantity shall be as follows:

- (1) In case of checking the packaged commodities are the same kind and declare the same net quantity, the average net quantity of the packaged commodity samples must not be less than the declaration of the net quantity.  
 But in case of checking the packaged commodities are the same kind and declare the different net quantity, the total of the different quantity of the package commodity samples must not be short (less than zero).



The considerable rule of the result for checking the declaration of net quantity shall be as follows:

- (2) The net quantity of the packaged commodity sample individual package can not be short more than MPE

In case the packaged commodities checking the net quantity shall be exceeding 250 packages, one sample be acceptable to short no more than 2 times of the MPE.



Prescribe the compensation rate of the moisture loss of soap as follows.

Soaps packed	Compensation Rate of Moisture loss % of Weight
No exceeding 15 days.	-
Exceeding 15 days to 90 days	3
Exceeding 90 days to 180 days	5
Exceeding 180 days to 365 days	7
Exceeding 365 days	8



**Future direction:**

- 1. We have been beginning to edit the notification, in care:
  - 1.1 Number and letter size we will follow OIML R79 Annex B table 4
  - 1.2 Maximum permissible errors (Tolerable Deficiencies), we will follow OIML R 87 Table
  - 1.3 Sampling plans; we will follow OIML R87 Table 1:



**THANK YOU**



# PREPACKAGED GOODS IN VIETNAM

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## Legislative control for packaging in Vietnam

- Labeling Requirements of pre-packaged foods (TCVN 7087: 2002) in full compliance with Codex standard 1-1991.
- The Regulation on metrology for pre-packages by weight or volume (May 17, 2002)
- The Technical Regulation on sampling plans for prepackages inspection (February 12, 2002).
- List of pre-packed goods subject to State management over measurement (August 09, 2002).

## List of prepackaged goods subject to State management over measurement

1. Sugar
2. Milk
3. Tea, Coffee
4. Assorted cake, jam, candy
5. Oil, animal fat, vegetable oil
6. Instant wheat noodle, vermicelli, rice noodle, rice porridge
7. Assorted sauces
8. Gourmet powder
9. Assorted dried meat

## List of prepackaged goods subject to State management over measurement

10. Assorted nutritive farina
11. Rice, bean, ground-nut, packed dry farm produce
12. Animal feeds
13. Assorted seeds
14. Lubricating oil
15. Detergent
16. Cement
17. Manures
18. Paint of different categories
19. Liquid petroleum gas packed in tanks



## Conformity of Vietnam's legal documents to R87

- Vietnam applies AQS in normal practices, which is in full compliance with R87.
- Vietnam's legal documents only regulate the main points of R87. There are some areas that have not yet been covered by them:
  - Vietnam's legal documents only regulate metrology requirements of prepackages by weight or volume. Those by linear measure, area, or count are not stipulated.
  - Vietnam does not have legislative or technical procedures for determining the drained net mass of solid foodstuffs packed in a liquid medium, the actual quantity of frozen products and also does not have tare procedures.

## Conformity of Vietnam's legal documents to R87

- Legislative requirements or other processes that prohibit misleading pre-packages do not exist in VN.
- Vietnam does not regulate the upper limit of nominal quantity of prepackages while limits of R87 cover prepackages from 0 to 50 kg for mass and 0 to 50 L for volume. VN regulates a tolerable Deficiency (T) = 2 % for Qn > 25 000 (g or ml) compared to T=1 % for Qn from 15 000 to 50 000 (g or ml) of R87.
- Inspection lots less than 100 are inspected 100% .

## Prepackaged goods control in Vietnam

- In Vietnam, the Directorate for Standards and Quality (STAMEQ) is responsible for control and inspection of prepackages in the whole country.
- Branches of STAMEQ in 64 provinces are in charge of control and inspection of prepackages in their localities.

## Prepackaged goods control in Vietnam

- a/ State control of prepackaged goods produced and consumed locally:
  - Inspection rate : at production site : 20%  
at market : 80%
  - Criteria of control : quantity determination of goods and prepackages labeling
  - Offence penalties : according to decree 126- October 2005

## Prepackaged goods control in Vietnam

b/ Quantity control of imported prepackages :

Prepackaged goods are not inspected at frontiers and export countries. They are inspected at the site of repacking or at the market where goods are in circulation.

If any offence is detected, producers or agencies in charge of the repacking process will be responsible for it.

## Prepackaged goods control in Vietnam

c/ Quantity control of exported prepackages :

No legal documents exist to regulate quantity control of exported prepackages in Vietnam. Normally, upon request of exporters and/or importers, a third party is employed to conduct the quantity inspection. The procedures of sampling and testing either complies to legal documents or tailored to exporters/importers' requirements.

## Steps to be taken adopting R87 in Vietnam

- 2006 : on the basis of courses organized in 2005 on prepackaged goods for the staff of STAMEQ branches , STAMEQ expands the training courses for enterprises.
- July 2006 : legal documents on labeling requirement take effect, fully complies to R79.

## Steps to be taken adopting R87 in Vietnam

- 2007 : develop test procedures for determining the drained quantity of products packed in a liquid medium and actual quantity of frozen products.
- 2008 : Expand the scope of applying R87 to quantity of linear measure, area, and count. Vietnam's legislative documents are implemented fully in accordance with R87.

Thank you for your attention !

