

Packaged goods: average quantity

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This guidance is for England, Scotland & Wales

The 'average quantity system' covers packaged goods that are sold by weight or volume and applies to both foodstuffs and non-foodstuffs on offer for sale.

The Regulations that cover the average quantity system - the Weights and Measures (Packaged Goods) Regulations 2006 - control the overall average quantity of batches of packaged goods. They apply to packages that are made up without the customer being present, in pre-determined constant quantities, by weight or volume. They do not apply to 'catchweight' items where the quantities within packages vary - for example, prepacked cheese where the price you pay is dependent on the weight of each individual item.

The controls apply both to traders making packaged goods and those importing them from outside of the European Union (EU).

The effect of these Regulations is to ensure that 'on average' packaged goods contain the declared weight or volume of goods, which helps to increase customer confidence in the stated quantity, whilst recognising and defining acceptable tolerances to the variations in quantity inherent in packing processes.

What is a package?

A product plus its container becomes a package when they are combined without the purchaser being present (usually in a manufacturing environment) and thus the quantity cannot be altered without the container being opened or changed.

Very small items of less than 5 g or 5 ml, or large items of more than 25 kg or 25 l, are excluded from these Regulations but the quantity still needs to be at least that declared. Also excluded are goods sold by length or number. If you are in doubt about the product you are packing or importing please contact your local trading standards service for specialist advice.

The three packers' rules

A batch of packaged goods must, at the time of production, comply with the following three rules:

- **rule 1:** the actual contents of the packages must not be less, on average, than the nominal quantity (the weight or volume that is marked on the packages)
- **rule 2:** the proportion of packages that are below the nominal quantity by a defined amount - the 'tolerable negative error' or TNE - must be less than a specified level, in general no more than 2.5%
- **rule 3:** no package should be below the nominal quantity by more than twice the TNE

Tolerable negative error

The following is a table of the tolerable negative error (TNE) values that you should use when complying with the three rules.

| Nominal quantity (g or ml) | Tolerable negative error |
|----------------------------|--------------------------|
| 5 to 50 | 9% of nominal quantity |
| from 50 to 100 | 4.5 g / ml |
| from 100 to 200 | 4.5% of nominal quantity |
| from 200 to 300 | 9 g / ml |
| from 300 to 500 | 3% of nominal quantity |
| from 500 to 1,000 | 15 g / ml |
| from 1,000 to 10,000 | 1.5% of nominal quantity |
| from 10,000 to 15,000 | 150 g / ml |
| above 15,000 | 1% of nominal quantity |

Required checks

Packers have a duty to carry out sufficiently rigorous checks to ensure that all three of the packers' rules are met. This means you should establish a system that:

- is formalised and controls the production process
- sets up effective sampling and checking plans
- stipulates an appropriate target quantity
- controls limits
- uses and maintains appropriate equipment for checking
- trains staff
- keeps appropriate records

You have a duty to ensure that the quantity of product in packages meets the requirements of the three rules by either:

- measuring the content of each package using suitable equipment
... or
- checking statistically-selected samples of packages from the production using suitable equipment and keeping records of the results

Importers of packaged goods into the EU should refer to the '**Importers & average quantity**' section below for an outline of their responsibilities.

Equipment

The equipment used to carry out the checks must be suitable for the use to which it is put. This means that it should have a reasonable degree of sensitivity and accuracy, measuring to 0.2 units of the TNE for the package you are producing, and be suitable for the environment in which it is used.

For example, a 200 g nominal quantity package is permitted a TNE of 9 g; therefore $0.2 \times 9 \text{ g} = 1.8 \text{ g}$. In practice this would mean an instrument with a scale interval of 1 g would be suitable to either make up the packages or make checks on them.

Equipment must be calibrated and accurate and details of any repairs / alterations must be retained. Ask your local trading standards service for advice on specific equipment.

Actual content of packages

The actual content of a package (the net weight or volume) is the total gross weight of the package (package plus contents) minus the weight of the package.

Note: it is common practice when packing liquids to check the actual quantity of the goods in packages by weight - instead of measuring the volume - by calculating the equivalent weight using the equation **volume = mass divided by density**.

Tare weights

The weight of the package without the contents is known as the 'tare weight'. Tare weights may be assumed to be constant if the variation in packaging weight is within acceptable limits, in which case the actual content

of the packages is easy to determine by simple subtraction.

However, where the tare weight varies from pack to pack, an allowance must be made for this by establishing the heaviest weight that a package might be and adjusting the target weight of the package accordingly.

If packages cannot be guaranteed to be of a consistent weight, final checks on packages will have to be carried out by 'destructive testing', which involves opening packages in order to determine their actual quantity by weighing or measuring the contents. In order to avoid destructive testing you should specify to your packaging material supplier that variability in packaging weight must be sufficient so that gross weighing and simple subtraction of a standard tare weight can be employed.

For more detail and advice on ensuring consistent tare weights you should contact your local trading standards service.

Quantity control systems

Where the packing process variability (standard deviation) is always less than 0.5 TNE of the product then the average requirement rule (packers' rule 1) is the most critical.

Where the process variability exceeds 0.5 TNE then target quantity (the amount you set your filling machine to fill each package with) must exceed the declared quantity so as to comply with the three packers' rules.

If you test fewer than 50 items in a production run then a sampling allowance must be added to the target quantity - that is, increase the fill quantity. A production run is the time taken to produce 10,000 packages (with a minimum of one hour and a maximum of one normal day). Different products demand differing levels of checking and testing.

The [guidance notes](#) on the GOV.UK website give an example of setting target quantities and action limits.

For more detail and advice you should contact your local trading standards service.

Keeping records

If you are checking packages by statistical sampling, you must make records of the checks you have carried out. These records must show that you have complied with the three packers' rules. It is recommended that, as a minimum, you should record the product, the batch number, the date, the number of packs in the batch, the number checked and the results of the check.

A record must also be made of the corrections and adjustments that the checks have shown to be necessary. The records must be kept for 12 months from the time the packages leave your possession or the shelf life of the product, whichever is the earliest.

Markings

Required markings need to be easily legible and visible under normal conditions of presentation. This means taking into consideration use of colour and contrast. Packages must be marked with the following:

- **a statement of the nominal quantity.** This statement must be in metric and the size of the marking is prescribed - for example, for a 500 g pack the marking must be at least 4 mm high
- **your name and address.** Alternatively you may give the name and address of the business who asked

you to make the packaged goods on their behalf

One way to ensure the visibility requirement for markings is met in normal conditions of presentation is to place the markings on the front, or possibly the top, of the container.

If you are packing foodstuffs within the scope of EU Regulation (EU) No 1169/2011 *on the provision of food information to consumers*, remember that the name of the food and the net quantity (weight or volume) must appear in the same field of vision.

In addition, foods that are packed in a liquid medium must be labelled with both the drained net weight and the net weight of the food.

You may mark the packs with the E-mark only on packages of at least 5 g or 5 ml and not exceeding 10 kg or 10 l. It must be at least 3 mm high, indelible, easily legible and appear in the same field of vision as the statement of quantity.



The E-mark acts as a metrological passport for goods sold throughout the EU and ensures free movement of the goods. If you want to export goods with the E-mark you need to notify your local trading standards service first so check with the service before applying it.

Importers & average quantity

If you import goods from outside the EU you are responsible for ensuring that the packs comply with the three packers' rules and that they are marked correctly. However, you may obtain and keep suitable documents from the actual packer (before the packages leave your possession) that provide sufficient evidence to show that the packages comply with the quantity requirements.

The person providing the documentation has to be of a suitable status (for example, an accredited test laboratory or national metrology service) and the information it contains should be validated.

Further information

More detailed [information on the application of the Regulations](#) can be found on the GOV.UK website.

Penalties

Failure to comply with trading standards law can lead to enforcement action and to sanctions, which may include a fine and/or imprisonment. For more information please see '[Trading standards: powers, enforcement & penalties](#)'.

Key legislation

[Weights and Measures \(Packaged Goods\) Regulations 2006](#)

[Non-automatic Weighing Instruments Regulations 2016](#)

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Please note

This information is intended for guidance; only the courts can give an authoritative interpretation of the law.

The guide's 'Key legislation' links may only show the original version of the legislation, although some amending legislation is linked to separately where it is directly related to the content of a guide. Information on amendments to UK legislation can be found on each link's 'More Resources' tab; amendments to EU legislation are usually incorporated into the text.



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