



The Uncomplicated Truth: Net Quantity vs. Gross Weight

When shipping by air, an often confusing topic that we sometimes address with shippers of dangerous goods is the use of net quantity vs. gross weight on their Shipper's Declaration for Dangerous Goods. It may seem difficult to determine whether to indicate a net quantity or a gross weight on shipping paperwork, but it is actually quite simple. IATA DGR §8.1.6.9.2(a) (Step 6) states that the Second Sequence of the DGD must indicate the number of packages and the net quantity of dangerous goods in each package (by volume or weight as appropriate). It further states that for Limited Quantities, where the letter "G" follows the quantity shown in Column H of Subsection 4.2, the *gross weight* of each package must be indicated, with the letter "G" added following the unit of measurement. Let's start with some definitions.

The IATA regulations, in the Appendix A Glossary, define "net quantity" as the weight or volume of the dangerous goods contained in a package excluding the weight or volume of any packaging material. It may also be defined as the weight of an unpackaged *article* of dangerous goods. The term "dangerous goods" here refers to the substance or article *as described by its proper shipping name*. For example, for UN 2795, batteries, wet, filled with alkali, the net quantity refers to the net weight of the batteries themselves. Some shippers may make the mistake of assuming that the net quantity is the volume of liquid electrolyte contained within the battery, but this would be failing to acknowledge that the proper shipping name describes "batteries" – which are *articles*. The same goes for UN 1044, fire extinguishers; the net weight is the weight of the fire extinguisher, which is the article described by the proper shipping name. But what about UN 3481, lithium ion batteries contained in equipment? We must first ask ourselves what is being described by this proper shipping name. In this case, it is the *lithium ion batteries* (again, *articles*) which are contained in the equipment. Therefore, the maximum permitted net quantity refers to the net weight of only the lithium ion batteries in the package, and this is subsequently the quantity to be reflected on the DGD.

Gross weight is a bit more straight-forward than net quantity. It is defined as the *total weight of the package as presented for transport*. But when would we need to declare the gross weight of a package as opposed to a net quantity? The answer is, again, quite simple...all you have to do is follow the regulations! When a gross weight limitation is indicated in Column H of the list of dangerous goods, a gross weight must be shown on the shipping paper. A gross weight will be indicated using a capital "G" following the quantity (in kg) indicated. Many shippers may recall seeing this in relation to ID 8000, consumer commodity. For dangerous goods being sent as consumer commodity, the maximum allowable quantity is given as 30 kg G or 30 kilograms *gross*. This tells the shipper that when documenting this shipment, they will indicate the gross weight of the package instead of the net quantity of the dangerous goods contained within.

The difference between net quantity and gross weight may seem like a small one, but it is imperative to utilize these terms correctly when preparing and documenting dangerous goods shipments. Accurate communication on documentation is an important part of maintaining safety during the process of transporting dangerous goods. And if you ever find yourself confused and unable to determine whether a gross weight or a net quantity should be indicated, just give a member of our customer service team a call at 1-844-LEARNDBG for some friendly assistance from the Bureau of Dangerous Goods.

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