

## Quality Levels for INON® Gloves



AQL (acceptable quality level) is an arbitrary, self-imposed specification that enables glove manufacturers to continuously monitor their production processes. Where medical gloves are concerned, health authorities usually define AQLs. These levels are generally adopted by end users.

Standards used in most countries specify an AQL for defects of 1.5 in surgical gloves, 2.5 in examination gloves and 4.0 in other types of gloves. The defect level from a very large number of samples at an AQL of 1 will not be more than 1%. For example, a batch of one million units may contain no more than 10,000 defectives. At an AQL of 0.065 the number of defectives will be about 650, and at an AQL of 1.5 no more than 15,000 defectives will be found, but as many as 40,000 defectives can be found at an AQL of 4.0.

This, however, provides no insight into the defect level within a smaller batch. Using a binomial distribution, we can calculate the probability of the number of defects in a box of 50 or 100 gloves at an AQL of 1.5 for both types of INON gloves. The table below shows the number of defects and their probability for each type of glove. For example, the risk of having more than 2 holes in a box of 100 gloves is only 19.1%. The same risk for a box of 50 gloves is a mere 4%!

Number of Defects	INON 2000 Box of 100	INON 2100 Box of 50
0	22,1%	47,0%
1	33,6%	35,8%
2	25,3%	13,3%
3	12,6%	3,3%
4	4,7%	0,6%
5	1,4%	0,1%
6+	0,4%	0,0%

Gloves that are sold as industrial gloves usually have an AQL of 4.0 and the table below shows how many more defects these gloves will have. The chance of more than 2 defects in a box of 100 is more than 75%! For a box of 50 gloves this chance is almost 33%.

Number of Defects	Industrial Box of 100	Industrial Box of 50
0	1,7%	13,0%
1	7,0%	27,1%
2	14,5%	27,6%
3	19,7%	18,4%
4	19,9%	9,0%
5	16,0%	3,5%
6+	21,2%	1,4%

In conclusion, you will need more than twice the number of industrial gloves than medical-grade gloves in order to get the job done. Quality pays!