

MyAirShield - Calculation of typical ClO₂ release*

With below calculation we want to calculate how much ClO₂ gas is generated from a certain number of MyAirShield Badges in a specific room size.

To be conservative, we have reduced the room volume in which the ClO₂ is released with an experience factor (Net volume factor), as one cannot assume that the ClO₂ is homogeneously mixed throughout the air in the entire room.

With this conservative approach on both the "net volume factor" and "no ventilation", the result of the calculation is the maximum amount which one can expect in terms of ClO₂ concentration in a real application. However, this theoretical maximum amount is still below the exposure limit.

We can therefore conclude that even after 24 hours of constant release in an unventilated room, the ClO₂ concentration levels stay significantly below the National Institute for Occupational Safety and Health recommend exposure limits (TWA).

Classroom Scenario

MyAirShield™ Badges in the room
(People in the room)

25 pcs

Room Conditions

Room size	40,0	m ²		430,6	ft ²
Average ceiling height	2,5	m		8,2	ft
Room volume gross	100,0	m ³		3.531,4	ft ³
Net volume factor	25%				
Room volume net	25,0	m ³		882,9	ft ³
Ventilation (fresh air exchange) (Use 0 for rooms with no ventilation or unknown ventilation)	0	m ³ /h		0	ft ³ /h

Expected ClO₂ concentrations*:

After 1 hour	60	min		1,2	ppb
After 4 hours	240	min		4,8	ppb
After 8 hours	480	min		9,6	ppb
After 12 hours	720	min		14,4	ppb
After 24 hours	1440	min		28,8	ppb

* based on MyAirShield reference conditions and release rate experiments performed by Kore Technology, UK

Note: National Institute for Occupational Safety and Health recommend exposure limit of 100ppb (TWA) and 300ppb (STEL)

TWA = Employee's average exposure limit in any 8-hour work shift

STEL = Short Term Exposure Limit

