



Toxic gases and vapours in containers

The Belgian customs policy



Toxic gases and vapours in containers Introduction to the issue

Containers

- Are moving all around the world
- Are selected for physical verification
 - by customs officers
 - upon entering and leaving the EU
- Need to be opened in the presence of
 - customs officers
 - other people involved in the logistic process
- Problem: toxic gases and vapours



Toxic gases and vapours in containers Introduction to the issue

Toxic gases and vapours get in containers due to

- Active fumigation
- Leakage of the charge
- Evaporation of the load
- Adsorption or desorption processes
- Chemical and biochemical processes
- Release by the container itself
- Remnants of (leakage of) a previous load
- Remnants of a previous fumigation



Toxic gases and vapours in containers Introduction to the issue

30% to 50%
of import containers in Europe
contain **toxic gases and vapours**
in concentrations
that exceed
the national and international exposure limits

Toxic gases and vapours in containers

Introduction to the issue

Effects of exposure to high levels of toxic gases and vapours

- Examples short term or direct effects
 - Breathing problems
 - Skin irritation
 - Tearing eyes
 - Loss of consciousness and even sudden death
 - ...
- Examples long term or indirect effects
 - Concentration and memory problems
 - Pulmonary oedema
 - Cancer
 - Damage to the central nervous system
 - ...

Toxic gases and vapours in containers

Introduction to the issue

**Customs officers
involved in physical verification of containers
are daily exposed to
high concentrations of toxic gases and vapours
and take serious risks
regarding to their personal health**

Toxic gases and vapours in containers

Introduction to the issue

The employer is legally responsible for the health and safety of the employees at work



Action

Development of gas policy

Toxic gases and vapours in containers

Different policies and approaches

- **General policy**

For all officers involved in verification of containers: first line + investigation

- For all customs officers in the field
- Information, training and instructions

- **First line verification policy**

For all officers in the first line, involved in verification of containers

- Verification at border Inspection Sites (BIS)
- Gas measuring by private companies

- **Investigation service policy**

For all officers working at the investigation service

- Verification on the terminal or any other location
- Gas measuring by customs officers

Toxic gases and vapours in containers

General policy

Main principles of general gas policy

- Communication (circular)
Make people aware of the risks
- Information (information sessions)
Inform people on gas and vapour related topics
- Training (training courses)
Learn people how to deal with the problem
- Instructions (procedures)
Set clear guidelines

Main participants

- Government executives and supporting gas experts
- Advisory bodies, such as occupational hygienist, ISPPW and doctors
- Teachers and trainers
- Team leaders
- Customs officers in the field

Toxic gases and vapours in containers

General policy

Integration of general policy in the working discipline of the officers in the field

- Distribution of a circular, to make officers aware of
 - the problem of toxic gases and vapours in containers
 - the existence of procedures and practical guidelines
- Information sessions, providing general information on
 - Toxic gases and vapours in containers
 - Gas measuring and measuring equipment
 - Personal protective equipment
 - Procedures to be followed
- Training sessions, providing specific information and practical exercises on
 - Reading and interpretation of gas measuring certificates
 - Measuring of containers
 - Use of personal protective equipment
 - How to act in case of emergency
- Distribution of procedures and practical guidelines
 - Roadmap, standard procedures and exceptional procedures
 - Emergency procedures

Toxic gases and vapours in containers

General policy

General gas-policy is based on

- 1. Making people aware of the problem**
- 2. Informing people on the issue**
- 3. Explaining how to deal with the problem**
- 4. Giving clear instructions and guidelines**

Toxic gases and vapours in containers

First line policy

Main principles of gas policy for first line verification

- Measuring by private gas measuring companies on behalf of declarant
- Ventilation and sporadic use of personal protective equipment (PPE)
- Verification by customs officer at the Border inspection Site (BIS)

Main participants

- Declarant
- Private gas measuring company
- Customs officers

Toxic gases and vapours in containers

First line policy

Integration of gas policy in the process of first line verification

- Selection of container for physical verification
- Container is delivered at the Border Inspection Site
- Declarant gives declaration and related docs to customs
- Container is scanned
- Container is measured for gas
 - by private gas measuring company
 - on behalf of declarant (art 188 and 189 UCC)
- Declarant hands over gas measuring certificate to customs
- If necessary container is ventilated and remeasured until toxins in the air have decreased to an acceptable level
- Ventilation is the rule, use of PPE in exceptional situations
- Physical verification of container by customs officer, in presence of the declarant

Toxic gases and vapours in containers

First line policy

The declarant

- makes arrangements and pays for
 - gas measuring by private gas measuring company
 - delivery of gas measuring report to the customs, to
 - indicate the container is safe for verification according to the measuring results and or
 - inform the customs on the advise of the gas measurer about ventilation or the use of personal protective equipment
 - all related actions in order to allow safe verification (transport, ventilation, providing protective equipment)
- is free to choose the gas measuring company

Toxic gases and vapours in containers

First line policy

The gas measuring company

- Performs gas measuring
- Edits the gas measuring reports
- Gives advice on ventilation and personal protective equipment

Problem

- No legal basis for customs to give instructions to gas measuring company as declarant is contractor
- No law or regulation, nor government control on gas measuring

Consequence

- No guarantee as to the quality of measuring and advice mentioned in measuring report
- Serious health risks for customs officers

Solution = The Mission

Gentlemen's agreement between government and private gas measuring companies, in order ensure high quality gas measuring and decent reports



Toxic gases and vapours in containers

First line policy

The Mission includes a series of agreements on

- Mutual cooperation
- Measuring methods
- Qualifications of the staff of measuring companies
- Measuring equipment to be used
- Representative sampling
- Analysis of measuring results
- Reporting of measuring results
- Formulating advices on safety measures to be taken
- Substances to be measured
- Exposure limits to be respected
- Consequences of non-compliance

in order to maximize safety by minimizing the exposure risks



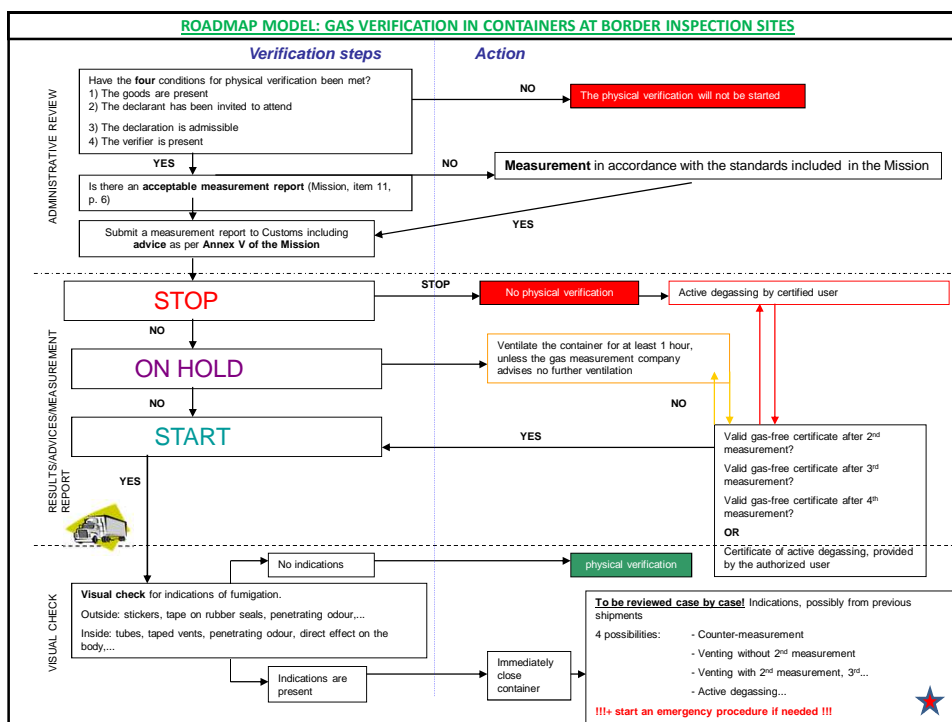
Toxic gases and vapours in containers

First line policy

The customs officers

Perform physical verifications of the containers, following

- Road map
 - Explaining the implementation of measuring and ventilation in the process of verification
- Notes accompanying the road map
 - Standards for gas measuring reports
 - Conditions in which to start, stop or hold the verification
 - Conditions and procedures on measuring, ventilation, stabilization and re-measuring of the container in order to allow safe verification



Toxic gases and vapours in containers

First line policy

First line gas-policy is based on

- 1. A gas measuring certificate, provided on behalf of the declarant in application of articles 188 and 189 UCC**
- 2. Gas measuring by private companies complying with the principles of the Mission**
- 3. Verification at the BIS, by customs officers following the instructions of a roadmap**

Toxic gases and vapours in containers

Investigation service policy

Main principles of gas policy for investigation service

- Quick and discrete verification of containers
 - No interference of declarant
 - No interference of private gas measuring company
 - No time for ventilation
- Gas measuring by customs officer
- Use of personal protective equipment
- Verification of container by customs officer on the terminal

Only one main participant

Customs officer,
using measuring equipment and personal protective equipment

Toxic gases and vapours in containers Investigation service policy

Gas policy integrated in the process of investigation

- Selection of container for quick and discrete verification and further investigation
- Container is located on the terminal
- Gas measuring by customs officer on the terminal by use of professional measuring equipment and checklist
- Immediate Interpretation of measuring results by customs officer
- If necessary use of personal protective equipment
- Verification and further investigation of the container by customs officer

Toxic gases and vapours in containers Investigation service policy

Instructions and guidelines for customs officers on

- Dangers of exposure to toxic gases and vapours
- Exposure limits
- Measuring methodology
- Measuring technology

Training on

- Use of measuring equipment
- Interpretation of measuring results
- Use of personal protective equipment
- How to apply emergency procedures



Toxic gases and vapours in containers Investigation service policy

Measuring equipment

- Qualities
 - Suitable for measuring a specific list of substances
 - Quick reaction
 - Reliable results
 - User friendly
 - Strong, weather-, water- and shockproof
 - Budget friendly
- Choice
 - Sensor based technology
 - Measuring tubes
packed in a strong and handy pellicase



Toxic gases and vapours in containers Investigation service policy

Personal protective equipment

- Qualities
 - Highly protective
 - Reliable
 - User friendly
 - Budget friendly
- Choice
 - Gloves
 - Protective suits with feet
to use in combination with safety shoes
 - Respiratory protection
 - Overflow cap
 - Fresh air delivered by tubes connected to compressor



Toxic gases and vapours in containers Investigation service policy

Investigation service gas-policy is based on

1. Gas measuring by customs officers, using professional measuring equipment
2. Use of personal protective equipment
3. Quick and discrete physical verification by customs officers on the container terminal



Toxic gases and vapours in containers A dynamic process

- Knowledge grows and technology changes evolution in
 - production processes
 - the use of raw materials, composed materials and chemicals
 - gases and vapours that occur in containers
 - medical and scientific knowledge
 - legal framework
- Good gas policy = dynamic issue
 - Permanent monitoring of the evolutions
 - Steady improvement of the policy
 - Risk analyses and data mining
 - Measuring equipment and personal protective equipment
 - ...



Toxic gases and vapours

A dynamic process

Safety is essential for customs officers
Time is money for businessman



Future first line gas policy based on RI&E
provided by importer or exporter

- **RI&E = known risks = relatively safe → Fast lane**
 - Limited and specific measuring in function of RI&E
 - calculated ventilation time in function of RI&E
- **No RI&E → unknown risks = relatively unsafe → Slow lane**
 - extensive measuring to cover as many risks as possible
 - extensive ventilation times

Always Safety First



Toxic gases and vapours in containers

A dynamic process

Knowledge grows and technology changes

Production procedures change

Measuring techniques evolve

Medical knowledge expands

Legal frameworks are being modified



The policy on toxic gases and vapours

=

Dynamic process

Permanent monitoring

Steady modification

Toxic gases and vapours in containers

Strategy behind the policy

- Developing, carrying, maintaining and improving a policy on toxic gases and vapours
 - Difficult matter
 - Technically
 - Legally
 - Organizationally
 - Lots of people are involved
- How come this policy works?
 - Communication
 - Cooperation

Toxic gases and vapours in containers

Strategy behind the policy

Communication and cooperation between

- Government executives
- Internal gas experts
- Teachers and trainers
- Team leaders
- Customs officers in the field
- Officers attached to the ISPPW
- Doctors attached to the FPS Public Health
- External occupational hygienist
- Private gas measuring companies
- Professional association of port related companies
- Foreign colleagues
- [Unions](#)



Toxic gases and vapours in containers

Strategy behind the policy

- **Government executives**
 - Put the issue on the agenda
 - Provide budgets
 - Officialise procedures and agreements
- **Supporting internal gas experts**
 - Develop procedures, roadmaps and practical guidelines
 - Draft circulars
 - Compile statistics
 - Provide internal and external communication
 - Answer questions and solve problems
 - Intermediate between the participants
 - Process and monitor feedback information
 - Treat and follow up complaints
 - Collect and disseminate information



Toxic gases and vapours in containers

Strategy behind the policy

- **Teachers and trainers**
 - Prepare courses
 - Make people aware of the risks
 - Inform and train people
- **Team leaders**
 - Keep people aware of the risks
 - Ensure that procedures are followed
 - Communicate new procedures
 - Collect and communicate feedback from the field
 - Evaluate procedures in the field
 - Follow up problems in the field and suggest improvements
- **Customs officers in the field**
 - Communicate problems and suggest improvements
 - Give feedback on training courses, guidelines and instructions



Toxic gases and vapours in containers

Strategy behind the policy

- **Officers attached to the ISPPW**
 - Advise on legal issues concerning safety and prevention
 - Advise on safety, prevention and emergency procedures
 - Monitoring on the correct implementation of legislation
 - Compile statistics on incidents and accidents
 - Investigate the how and why of incidents and accidents
 - Make proposals to improve procedures in order prevent incidents and accidents
- **Doctors attached to the FPS Public Health**
 - Advise on the medical aspects of the issue
 - Provide assistance and help in case of emergency
 - Guide any possible victims through the medical process



Toxic gases and vapours in containers

Strategy behind the policy

- **External occupational hygienist**
 - Advises on
 - legal and technical issues
 - technology and methodology
 - Assists in
 - developing procedures, roadmaps and guidelines
 - buying and testing measuring equipment and PPE
 - problem solving
 - processing and interpreting statistics
 - the process of risk analyses
 - quality control of measuring and measuring reports delivered by private gas measuring companies
 - Train the trainer



Toxic gases and vapours in containers

Strategy behind the policy

- **Private gas measuring companies**
 - Provide professional gas measuring and measuring reports
 - Give input on new equipment and technologies
 - Give feedback on procedures and suggest improvements
 - Communicate problems in the field and suggest solutions
 - Deliver statistical information
- **Professional association of port related companies**
 - Communicate problems of trade and logistic sector
 - Deliver feedback on the implementation of new procedures
 - Inform private companies on (new) procedures
- **Foreign colleagues**
 - Mutual info-exchange on problems in the field and procedures
 - Mutual info-exchange on training, measuring equipment and PPE



Toxic gases and vapours in containers

Strategy behind the policy

- **Unions**
 - Keep the issue on the agenda
 - Emphasize the importance of and the need for
 - a proper gas policy
 - regular and decent training
 - professional measuring equipment
 - personal protective equipment
 - an external occupational hygienist for technical advice
 - budget and staff
 - Communicate feedback given by members
 - Assist members in case of an incident
 - Follow up measurements taken in response to incidents
 - Lobbying for uniform standards on national and international level

Unions are supporting, monitoring and guarding the gas policy



Toxic gases and vapours in containers Strategy behind the policy

Communication lines and platforms

- National and local working group
- Consultative, thematic, informative and negotiation meetings
- Legal consultation structures on safety and prevention (Unions!)
- Telephone and mail advice
- Information and training sessions
- Intranet and internet site

Toxic gases and vapours in containers Strategy behind the policy

**Strategy behind the policy
Communication and cooperation**

**Unions
not enemies but allies
of the government and the customs officers
in developing a safe and reliable gas policy**

**All together
we will get there**

Toxic gases and vapours in containers

Time for questions

Questions

???

Please feel free to ask

...



**Toxic gases and vapours
in containers**

Thank you for your attention



Toxic gases and vapours in containers

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