Chlorine Release from a Cylinder

HazSim® Hazmat Training Simulation System

Technician Level

Objectives

1. Identify the hazard
2. Establish a hot zone (as per AHJ)
3. Determine the concentration present
4. Mitigate the release

NFPA line items:

NFPA 470 11.2.2
NFPA 470 11.4.3.2

Questions for Participants

1. What is the vapor density of chlorine?
   2.49
2. What is the response time of the chlorine sensor?
   Varies by manufacturer
3. What is the IDLH for chlorine?
   10 ppm

Location suggestions

Inside a building

HazSim meter set to be selected:

Single-Gas chlorine detector or Multi-Gas detector with chlorine sensor

Equipment required:

- HazSim system
- Chlorine gas cylinder
- Chlorine A kit

Scenario

Gas leak from a chlorine 100 lbs cylinder inside a closed room. The leak is coming from the valve assembly. First in crews have evacuated the building and reported a bleach smell in the area.

Readings Timeline

Outside building

Sensor	Oxygen	% LEL	CO	H2S	PID	CL2
High	20.9	0	0	0	0	0
Low	20.9	0	0	0	0	0.2

At door (closed)

Sensor	Oxygen	% LEL	CO	H2S	PID	CL2
High	20.9	0	0	0	0	0
Low	20.9	0	0	0	0	1.2

Door opened

Sensor	Oxygen	% LEL	CO	H2S	PID	CL2
High	20.9	0	0	0	0	3
Low	20.9	0	0	0	0	10.5

Inside

Sensor	Oxygen	% LEL	CO	H2S	PID	CL2
High	20.9	0	0	-5	0	10
Low	20.9	0	0	-5	0	30

Near cylinder

Sensor	Oxygen	% LEL	CO	H2S	PID	CL2
High	20.9	0	0	-5	0	30
Low	20.9	0	0	-5	0	50

Training Tips

1. Emphasize that chlorine will accumulate low near the ground
2. Ensure participants let the instrument respond before moving to another room
3. Proper PPE should be worn as per AHJ

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