

Modélisation de la dispersion atmosphérique des toxiques en cas d'incendie de trois cellules de stockage de produits combustibles pour un total de 15 000 m<sup>2</sup> pour des cellules de grande hauteur

Incendie de trois cellules de stockage  
**Dispersion des suies**  
Condition A, vent 2 m/s

SITE DATA:

Location: HEUDEBOUVILLE, FRANCE

Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)

Time: March 12, 2019 0958 hours DST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: **2 meters/second** from W at 3 meters

Ground Roughness: open country Cloud Cover: 5 tenths

**Air Temperature: 20° C** **Stability Class: A** (user override)

No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:

**Direct Source: 27.79 kilograms/sec** **Source Height: 254 meters**

Release Duration: 60 minutes

Release Rate: 1,670 kilograms/min

Total Amount Released: 100,044 kilograms

Note: This chemical may flash boil and/or result in two phase flow.

Use both dispersion modules to investigate its potential behavior.

THREAT ZONE: (GAUSSIAN SELECTED)

Model Run: Gaussian

Red : **LOC is not exceeded** --- (79 mg/(cu m))

Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion des suies**  
Condition D, vent 5 m/s

SITE DATA:

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)  
Time: March 12, 2019 1000 hours DST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: **5 meters/second** from W at 3 meters  
Ground Roughness: open country Cloud Cover: 5 tenths  
**Air Temperature: 20° C** **Stability Class: D**  
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:

**Direct Source: 27.79 kilograms/sec** **Source Height: 102 meters**  
Release Duration: 60 minutes  
Release Rate: 1,670 kilograms/min  
Total Amount Released: 100,044 kilograms  
Note: This chemical may flash boil and/or result in two phase flow.  
Use both dispersion modules to investigate its potential behavior.

THREAT ZONE: (GAUSSIAN SELECTED)

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (79 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

.Incendie de trois cellules de stockage  
**Dispersion des suies**  
Condition F, vent 3 m/s

SITE DATA:

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)  
Time: March 12, 2019 1000 hours DST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: **3 meters/second** from W at 3 meters  
Ground Roughness: open country Cloud Cover: 5 tenths  
**Air Temperature: 15° C** **Stability Class: F** (user override)  
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:

**Direct Source: 27.79 kilograms/sec** **Source Height: 169 meters**  
Release Duration: 60 minutes  
Release Rate: 1,670 kilograms/min  
Total Amount Released: 100,044 kilograms  
Note: This chemical may flash boil and/or result in two phase flow.  
Use both dispersion modules to investigate its potential behavior.

THREAT ZONE: (GAUSSIAN SELECTED)

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (79 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion du Monoxyde de carbone**  
Condition A, vent 2 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)  
Time: March 12, 2019 1001 hours DST (using computer's clock)

**CHEMICAL DATA:**

Chemical Name: CARBON MONOXIDE  
CAS Number: 630-8-0 Molecular Weight: 28.01 g/mol  
AEGL-1 (60 min): N/A AEGL-2 (60 min): 83 ppm AEGL-3 (60 min): 330 ppm  
IDLH: 1200 ppm LEL: 125000 ppm UEL: 742000 ppm  
Ambient Boiling Point: -191.5° C  
Vapor Pressure at Ambient Temperature: greater than 1 atm  
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **2 meters/second** from W at 3 meters  
Ground Roughness: open country Cloud Cover: 5 tenths  
**Air Temperature: 20° C** **Stability Class: A** (user override)  
No Inversion Height Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 87.17 kilograms/sec** **Source Height: 254 meters**  
Release Duration: 60 minutes  
Release Rate: 5,230 kilograms/min  
Total Amount Released: 313,812 kilograms  
Note: This chemical may flash boil and/or result in two phase flow.  
Use both dispersion modules to investigate its potential behavior.

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (3680 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.  
Orange: **LOC is not exceeded** --- (920 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion du Monoxyde de carbone**  
Condition D, vent 5 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)  
Time: March 12, 2019 1003 hours DST (using computer's clock)

**CHEMICAL DATA:**

Chemical Name: CARBON MONOXIDE  
CAS Number: 630-8-0                      Molecular Weight: 28.01 g/mol  
AEGL-1 (60 min): N/A   AEGL-2 (60 min): 83 ppm   AEGL-3 (60 min): 330 ppm  
IDLH: 1200 ppm   LEL: 125000 ppm   UEL: 742000 ppm  
Ambient Boiling Point: -191.5° C  
Vapor Pressure at Ambient Temperature: greater than 1 atm  
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **5 meters/second** from W at 3 meters  
Ground Roughness: open country                      Cloud Cover: 5 tenths  
**Air Temperature: 20° C**                      **Stability Class: D**  
No Inversion Height                      Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 87.17 kilograms/sec   Source Height: 102 meters**  
Release Duration: 60 minutes  
Release Rate: 5,230 kilograms/min  
Total Amount Released: 313,812 kilograms  
Note: This chemical may flash boil and/or result in two phase flow.  
Use both dispersion modules to investigate its potential behavior.

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (3680 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.  
Orange: **LOC is not exceeded** --- (920 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion du Monoxyde de carbone**  
Condition F, vent 3 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)  
Time: March 12, 2019 1002 hours DST (using computer's clock)

**CHEMICAL DATA:**

Chemical Name: CARBON MONOXIDE  
CAS Number: 630-8-0 Molecular Weight: 28.01 g/mol  
AEGL-1 (60 min): N/A AEGL-2 (60 min): 83 ppm AEGL-3 (60 min): 330 ppm  
IDLH: 1200 ppm LEL: 125000 ppm UEL: 742000 ppm  
Ambient Boiling Point: -191.5° C  
Vapor Pressure at Ambient Temperature: greater than 1 atm  
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **3 meters/second** from W at 3 meters  
Ground Roughness: open country Cloud Cover: 5 tenths  
**Air Temperature: 15° C** **Stability Class: F** (user override)  
No Inversion Height Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 87.17 kilograms/sec** **Source Height: 169 meters**  
Release Duration: 60 minutes  
Release Rate: 5,230 kilograms/min  
Total Amount Released: 313,812 kilograms  
Note: This chemical may flash boil and/or result in two phase flow.  
Use both dispersion modules to investigate its potential behavior.

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (3680 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.  
Orange: **LOC is not exceeded** --- (920 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de 3 cellules de stockage  
**Dispersion du Dioxyde de carbone**  
Condition A, vent 2 m/s

SITE DATA:

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)  
Time: March 12, 2019 1006 hours DST (using computer's clock)

CHEMICAL DATA:

Chemical Name: CARBON DIOXIDE  
CAS Number: 124-38-9 Molecular Weight: 44.01 g/mol  
IDLH: 40000 ppm  
Normal Boiling Point: -unavail-  
Vapor Pressure at Ambient Temperature: greater than 1 atm  
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%  
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: **2 meters/second** from W at 3 meters  
Ground Roughness: open country Cloud Cover: 5 tenths  
**Air Temperature: 20° C** **Stability Class: A** (user override)  
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:

**Direct Source: 871.74 kilograms/sec** **Source Height: 254 meters**  
Release Duration: 60 minutes  
Release Rate: 52,300 kilograms/min  
Total Amount Released: 3,138,264 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (89980 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de 3 cellules de stockage  
**Dispersion du Dioxyde de carbone**  
Condition D, vent 5 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)  
Time: March 12, 2019 1008 hours DST (using computer's clock)

**CHEMICAL DATA:**

Chemical Name: CARBON DIOXIDE  
CAS Number: 124-38-9 Molecular Weight: 44.01 g/mol  
IDLH: 40000 ppm  
Normal Boiling Point: -unavail-  
Vapor Pressure at Ambient Temperature: greater than 1 atm  
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%  
Note: Not enough chemical data to use Heavy Gas option

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **5 meters/second** from W at 3 meters  
Ground Roughness: open country Cloud Cover: 5 tenths  
**Air Temperature: 20° C** **Stability Class: D**  
No Inversion Height Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 871.74 kilograms/sec** **Source Height: 102 meters**  
Release Duration: 60 minutes  
Release Rate: 52,300 kilograms/min  
Total Amount Released: 3,138,264 kilograms

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : **LOC is not exceeded --- (89980 mg/(cu m))**  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de 3 cellules de stockage  
**Dispersion du Dioxyde de carbone**  
Condition F, vent 3 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)  
Time: March 12, 2019 1007 hours DST (using computer's clock)

**CHEMICAL DATA:**

Chemical Name: CARBON DIOXIDE  
CAS Number: 124-38-9 Molecular Weight: 44.01 g/mol  
IDLH: 40000 ppm  
Normal Boiling Point: -unavail-  
Vapor Pressure at Ambient Temperature: greater than 1 atm  
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%  
Note: Not enough chemical data to use Heavy Gas option

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **3 meters/second** from W at 3 meters  
Ground Roughness: open country Cloud Cover: 5 tenths  
**Air Temperature: 15° C** **Stability Class: F** (user override)  
No Inversion Height Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 871.74 kilograms/sec** **Source Height: 169 meters**  
Release Duration: 60 minutes  
Release Rate: 52,300 kilograms/min  
Total Amount Released: 3,138,264 kilograms

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (89980 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion du HCl**  
Condition A, vent 2 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)  
Time: March 12, 2019 1010 hours DST (using computer's clock)

**CHEMICAL DATA:**

Warning: HYDROGEN CHLORIDE can react with water and/or water vapor. This can affect the evaporation rate and downwind dispersion. ALOHA cannot accurately predict the air hazard if this substance comes in contact with water.

Chemical Name: HYDROGEN CHLORIDE

CAS Number: 7647-1-0                      Molecular Weight: 36.46 g/mol

AEGL-1 (60 min): 1.8 ppm   AEGL-2 (60 min): 22 ppm   AEGL-3 (60 min): 100 ppm

IDLH: 50 ppm

Ambient Boiling Point: -85.0° C

Vapor Pressure at Ambient Temperature: greater than 1 atm

Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **2 meters/second** from W at 3 meters

Ground Roughness: open country                      Cloud Cover: 5 tenths

**Air Temperature: 20° C                      Stability Class: A** (user override)

No Inversion Height                      Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 32.85 kilograms/sec   Source Height: 254 meters**

Release Duration: 60 minutes

Release Rate: 1,970 kilograms/min

Total Amount Released: 118,260 kilograms

Note: This chemical may flash boil and/or result in two phase flow.

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian

Red : **LOC is not exceeded** --- (358 mg/(cu m))

Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Orange: **LOC is not exceeded** --- (60 mg/(cu m))

Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion du HCl**  
Condition D, vent 5 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)  
Time: March 12, 2019 1012 hours DST (using computer's clock)

**CHEMICAL DATA:**

Warning: HYDROGEN CHLORIDE can react with water and/or water vapor. This can affect the evaporation rate and downwind dispersion. ALOHA cannot accurately predict the air hazard if this substance comes in contact with water.

Chemical Name: HYDROGEN CHLORIDE

CAS Number: 7647-1-0                      Molecular Weight: 36.46 g/mol

AEGL-1 (60 min): 1.8 ppm   AEGL-2 (60 min): 22 ppm   AEGL-3 (60 min): 100 ppm

IDLH: 50 ppm

Ambient Boiling Point: -85.0° C

Vapor Pressure at Ambient Temperature: greater than 1 atm

Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **5 meters/second** from W at 3 meters

Ground Roughness: open country                      Cloud Cover: 5 tenths

**Air Temperature: 20° C**

**Stability Class: D**

No Inversion Height

Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 32.85 kilograms/sec   Source Height: 102 meters**

Release Duration: 60 minutes

Release Rate: 1,970 kilograms/min

Total Amount Released: 118,260 kilograms

Note: This chemical may flash boil and/or result in two phase flow.

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian

Red : **LOC is not exceeded** --- (358 mg/(cu m))

Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Orange: **LOC is not exceeded** --- (60 mg/(cu m))

Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion du HCl**  
Condition F, vent 3 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)  
Time: March 12, 2019 1011 hours DST (using computer's clock)

**CHEMICAL DATA:**

Warning: HYDROGEN CHLORIDE can react with water and/or water vapor. This can affect the evaporation rate and downwind dispersion. ALOHA cannot accurately predict the air hazard if this substance comes in contact with water.

Chemical Name: HYDROGEN CHLORIDE

CAS Number: 7647-1-0                      Molecular Weight: 36.46 g/mol

AEGL-1 (60 min): 1.8 ppm   AEGL-2 (60 min): 22 ppm   AEGL-3 (60 min): 100 ppm

IDLH: 50 ppm

Ambient Boiling Point: -85.0° C

Vapor Pressure at Ambient Temperature: greater than 1 atm

Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **3 meters/second** from W at 3 meters

Ground Roughness: open country                      Cloud Cover: 5 tenths

**Air Temperature: 15° C**                      **Stability Class: F** (user override)

No Inversion Height                      Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 32.85 kilograms/sec   Source Height: 169 meters**

Release Duration: 60 minutes

Release Rate: 1,970 kilograms/min

Total Amount Released: 118,260 kilograms

Note: This chemical may flash boil and/or result in two phase flow.

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian

Red : **LOC is not exceeded** --- (358 mg/(cu m))

Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Orange: **LOC is not exceeded** --- (60 mg/(cu m))

Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion du HCN**  
Condition A, vent 2 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)  
Time: March 12, 2019 1013 hours DST (using computer's clock)

**CHEMICAL DATA:**

Chemical Name: HYDROGEN CYANIDE  
CAS Number: 74-90-8                      Molecular Weight: 27.03 g/mol  
AEGL-1 (60 min): 2 ppm   AEGL-2 (60 min): 7.1 ppm   AEGL-3 (60 min): 15 ppm  
IDLH: 50 ppm      LEL: 56000 ppm      UEL: 400000 ppm  
Ambient Boiling Point: 25.7° C  
Vapor Pressure at Ambient Temperature: 0.81 atm  
Ambient Saturation Concentration: 806,532 ppm or 80.7%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: 2 meters/second from W at 3 meters  
Ground Roughness: open country      Cloud Cover: 5 tenths  
**Air Temperature: 20° C                      Stability Class: A (user override)**  
No Inversion Height                      Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 2.55 kilograms/sec      Source Height: 254 meters**  
Release Duration: 60 minutes  
Release Rate: 153 kilograms/min  
Total Amount Released: 9,180 kilograms

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : LOC is not exceeded --- (45 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion du HCN**  
Condition D, vent 5 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)  
Time: March 12, 2019 1015 hours DST (using computer's clock)

**CHEMICAL DATA:**

Chemical Name: HYDROGEN CYANIDE  
CAS Number: 74-90-8                      Molecular Weight: 27.03 g/mol  
AEGL-1 (60 min): 2 ppm   AEGL-2 (60 min): 7.1 ppm   AEGL-3 (60 min): 15 ppm  
IDLH: 50 ppm   LEL: 56000 ppm   UEL: 400000 ppm  
Ambient Boiling Point: 25.7° C  
Vapor Pressure at Ambient Temperature: 0.81 atm  
Ambient Saturation Concentration: 806,532 ppm or 80.7%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **5 meters/second** from W at 3 meters  
Ground Roughness: open country                      Cloud Cover: 5 tenths  
**Air Temperature: 20° C                      Stability Class: D**  
No Inversion Height                      Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 2.55 kilograms/sec                      Source Height: 102 meters**  
Release Duration: 60 minutes  
Release Rate: 153 kilograms/min  
Total Amount Released: 9,180 kilograms

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (45 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion du HCN**  
Condition F, vent 3 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)  
Time: March 12, 2019 1014 hours DST (using computer's clock)

**CHEMICAL DATA:**

Chemical Name: HYDROGEN CYANIDE  
CAS Number: 74-90-8      Molecular Weight: 27.03 g/mol  
AEGL-1 (60 min): 2 ppm   AEGL-2 (60 min): 7.1 ppm   AEGL-3 (60 min): 15 ppm  
IDLH: 50 ppm      LEL: 56000 ppm      UEL: 400000 ppm  
Ambient Boiling Point: 25.7° C  
Vapor Pressure at Ambient Temperature: 0.66 atm  
Ambient Saturation Concentration: 661,437 ppm or 66.1%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **3 meters/second** from W at 3 meters  
Ground Roughness: open country      Cloud Cover: 5 tenths  
**Air Temperature: 15° C**      **Stability Class: F** (user override)  
No Inversion Height      Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 2.55 kilograms/sec**      **Source Height: 169 meters**  
Release Duration: 60 minutes  
Release Rate: 153 kilograms/min  
Total Amount Released: 9,180 kilograms

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (45 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion des fumées de l'incendie (seuil équivalent)**  
Condition A, vent 2 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)  
Time: March 12, 2019 1004 hours DST (using computer's clock)

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **2 meters/second** from W at 3 meters  
Ground Roughness: open country      Cloud Cover: 5 tenths  
**Air Temperature: 20° C**      **Stability Class: A** (user override)  
No Inversion Height      Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 3969.43 kilograms/sec**  
**Source Height: 254 meters**  
Release Duration: 60 minutes  
Release Rate: 238,000 kilograms/min  
Total Amount Released: 14,289,948 kilograms  
Note: This chemical may flash boil and/or result in two phase flow.  
Use both dispersion modules to investigate its potential behavior.

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (21705 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.  
Orange: **LOC is not exceeded** --- (5568 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion des fumées de l'incendie (seuil équivalent)**  
Condition D, vent 5 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)  
Time: March 12, 2019 1005 hours DST (using computer's clock)

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **5 meters/second** from W at 3 meters  
Ground Roughness: open country Cloud Cover: 5 tenths  
**Air Temperature: 20° C Stability Class: D**  
No Inversion Height Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 3969.43 kilograms/sec**  
**Source Height: 102 meters**  
Release Duration: 60 minutes  
Release Rate: 238,000 kilograms/min  
Total Amount Released: 14,289,948 kilograms  
Note: This chemical may flash boil and/or result in two phase flow.  
Use both dispersion modules to investigate its potential behavior.

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (21705 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.  
Orange: **LOC is not exceeded** --- (5568 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage  
**Dispersion des fumées de l'incendie (seuil équivalent)**  
Condition F, vent 3 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)  
Time: March 12, 2019 1005 hours DST (using computer's clock)

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**

Wind: **3 meters/second** from W at 3 meters  
Ground Roughness: open country      Cloud Cover: 5 tenths  
**Air Temperature: 15° C**      **Stability Class: F** (user override)  
No Inversion Height      Relative Humidity: 50%

**SOURCE STRENGTH:**

**Direct Source: 3969.43 kilograms/sec**  
**Source Height: 169 meters**  
Release Duration: 60 minutes  
Release Rate: 238,000 kilograms/min  
Total Amount Released: 14,289,948 kilograms  
Note: This chemical may flash boil and/or result in two phase flow.  
Use both dispersion modules to investigate its potential behavior.

**THREAT ZONE: (GAUSSIAN SELECTED)**

Model Run: Gaussian  
Red : **LOC is not exceeded** --- (21705 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.  
Orange: **LOC is not exceeded** --- (5568 mg/(cu m))  
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.