

Modélisation de la dispersion atmosphérique des  
toxiques en cas d'incendie d'une cellule de  
stockage de produits combustibles de 9 000 m<sup>2</sup>

Incendie d'une cellule de stockage  
**Dispersion des suies**  
Condition A, vent 2 m/s

SITE DATA:

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.40 (unsheltered single storied)  
Time: March 8, 2019 1031 hours DST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

**Wind: 2 meters/second from SW at 3 meters**  
Ground Roughness: urban or forest      Cloud Cover: 5 tenths  
**Air Temperature: 20° C**  
**Stability Class: A (user override)**  
No Inversion Height                      Relative Humidity: 75%

SOURCE STRENGTH:

**Direct Source: 16.7 kilograms/sec      Source Height: 209 meters**  
Release Duration: 60 minutes  
Release Rate: 1,000 kilograms/min  
Total Amount Released: 60,001.2 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 d'une cellule de stockage  
**Dispersion des suies**  
Condition D, vent 5 m/s

SITE DATA:

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.98 (unsheltered single storied)  
Time: March 8, 2019 1041 hours DST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

**Wind: 5 meters/second from SW at 3 meters**  
Ground Roughness: urban or forest    Cloud Cover: 5 tenths  
**Air Temperature: 20° C**                      **Stability Class: D**  
No Inversion Height                      Relative Humidity: 75%

SOURCE STRENGTH:

**Direct Source: 16.7 kilograms/sec**    **Source Height: 83 meters**  
Release Duration: 60 minutes  
Release Rate: 1,000 kilograms/min  
Total Amount Released: 60,001.2 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 d'une cellule de stockage  
**Dispersion des suies**  
Condition F, vent 3 m/s

SITE DATA:

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.62 (unsheltered single storied)  
Time: March 8, 2019 1043 hours DST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

**Wind: 3 meters/second from SW at 3 meters**  
Ground Roughness: urban or forest    Cloud Cover: 5 tenths  
**Air Temperature: 15° C**  
**Stability Class: F (user override)**  
No Inversion Height                      Relative Humidity: 75%

SOURCE STRENGTH:

**Direct Source: 16.7 kilograms/sec    Source Height: 139 meters**  
Release Duration: 60 minutes  
Release Rate: 1,000 kilograms/min  
Total Amount Released: 60,001.2 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 d'une cellule de stockage  
**Dispersion du Monoxyde de carbone**  
Condition A, vent 2 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.40 (unsheltered single storied)  
Time: March 8, 2019 0943 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 SW at 3 meters**  
Ground Roughness: urban or forest    Cloud Cover: 5 tenths  
**Air Temperature: 20° C**  
**Stability Class: A (user override)**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 52.3 kilograms/sec    Source Height: 209 meters**  
Release Duration: 60 minutes  
Release Rate: 3,140 kilograms/min  
Total Amount Released: 188,280 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 d'une cellule de stockage  
**Dispersion du Monoxyde de carbone**  
Condition D, vent 5 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.98 (unsheltered single storied)  
Time: March 8, 2019 1018 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 SW at 3 meters**  
Ground Roughness: urban or forest      Cloud Cover: 5 tenths  
**Air Temperature: 20° C**  
**Stability Class: D (user override)**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 52.3 kilograms/sec      Source Height: 83 meters**  
Release Duration: 60 minutes  
Release Rate: 3,140 kilograms/min  
Total Amount Released: 188,280 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 d'une cellule de stockage  
**Dispersion du Monoxyde de carbone**  
Condition F, vent 3 m/s

SITE DATA:

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.62 (unsheltered single storied)  
Time: March 8, 2019 1022 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 SW at 3 meters**  
Ground Roughness: urban or forest    Cloud Cover: 5 tenths  
**Air Temperature: 15° C**  
**Stability Class: F (user override)**  
No Inversion Height                      Relative Humidity: 75%

SOURCE STRENGTH:

**Direct Source: 52.3 kilograms/sec    Source Height: 139 meters**  
Release Duration: 60 minutes  
Release Rate: 3,140 kilograms/min  
Total Amount Released: 188,280 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 d'une cellule de stockage  
**Dispersion du Dioxyde de carbone**  
Condition A, vent 2 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.40 (unsheltered single storied)  
Time: March 8, 2019 1045 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 SW at 3 meters  
Ground Roughness: urban or forest      Cloud Cover: 5 tenths  
**Air Temperature: 20° C**  
**Stability Class: A (user override)**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 523 kilograms/sec    Source Height: 209 meters**  
Release Duration: 60 minutes  
Release Rate: 31,400 kilograms/min  
Total Amount Released: 1,882,980 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 d'une cellule de stockage  
**Dispersion du Dioxyde de carbone**  
Condition D, vent 5 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.98 (unsheltered single storied)  
Time: March 8, 2019 1049 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 SW at 3 meters**  
Ground Roughness: urban or forest      Cloud Cover: 5 tenths  
**Air Temperature: 20° C                      Stability Class: D**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 523 kilograms/sec      Source Height: 83 meters**  
Release Duration: 60 minutes  
Release Rate: 31,400 kilograms/min  
Total Amount Released: 1,882,980 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 d'une cellule de stockage  
**Dispersion du Dioxyde de carbone**  
Condition F, vent 3 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.62 (unsheltered single storied)  
Time: March 8, 2019 1050 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 SW at 3 meters**  
Ground Roughness: urban or forest      Cloud Cover: 5 tenths  
**Air Temperature: 15° C**  
**Stability Class: F (user override)**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 523 kilograms/sec      Source Height: 139 meters**  
Release Duration: 60 minutes  
Release Rate: 31,400 kilograms/min  
Total Amount Released: 1,882,980 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 d'une cellule de stockage  
**Dispersion du HCl**  
Condition A, vent 2 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.40 (unsheltered single storied)  
Time: March 8, 2019 1052 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 SW at 3 meters**  
Ground Roughness: urban or forest    Cloud Cover: 5 tenths  
**Air Temperature: 20° C**  
**Stability Class: A (user override)**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 19.7 kilograms/sec    Source Height: 209 meters**  
Release Duration: 60 minutes  
Release Rate: 1,180 kilograms/min  
Total Amount Released: 70,956 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 d'une cellule de stockage  
**Dispersion du HCl**  
Condition D, vent 5 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.98 (unsheltered single storied)  
Time: March 8, 2019 1054 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 SW at 3 meters**  
Ground Roughness: urban or forest    Cloud Cover: 5 tenths  
**Air Temperature: 20° C                      Stability Class: D**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 19.7 kilograms/sec    Source Height: 83 meters**  
Release Duration: 60 minutes  
Release Rate: 1,180 kilograms/min  
Total Amount Released: 70,956 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 d'une cellule de stockage  
**Dispersion du HCl**  
Condition F, vent 3 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.62 (unsheltered single storied)  
Time: March 8, 2019 1055 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 SW at 3 meters**  
Ground Roughness: urban or forest    Cloud Cover: 5 tenths  
**Air Temperature: 15° C**  
**Stability Class: F (user override)**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 19.7 kilograms/sec    Source Height: 139 meters**  
Release Duration: 60 minutes  
Release Rate: 1,180 kilograms/min  
Total Amount Released: 70,956 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))

Incendie d'une cellule de stockage  
**Dispersion du HCN**  
Condition A, vent 2 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.40 (unsheltered single storied)  
Time: March 8, 2019 1140 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: 25.5° C  
Vapor Pressure at Ambient Temperature: 0.81 atm  
Ambient Saturation Concentration: 809,371 ppm or 80.9%

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

**Wind: 2 meters/second from SW at 3 meters**  
Ground Roughness: urban or forest   Cloud Cover: 5 tenths  
**Air Temperature: 20° C**  
**Stability Class: A (user override)**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 1.5 kilograms/sec   Source Height: 209 meters**  
Release Duration: 60 minutes  
Release Rate: 91.8 kilograms/min  
Total Amount Released: 5,508 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 d'une cellule de stockage  
**Dispersion du HCN**  
Condition D, vent 5 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.98 (unsheltered single storied)  
Time: March 8, 2019 1144 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: 25.5° C  
Vapor Pressure at Ambient Temperature: 0.81 atm  
Ambient Saturation Concentration: 809,371 ppm or 80.9%

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

**Wind: 5 meters/second from SW at 3 meters**  
Ground Roughness: urban or forest   Cloud Cover: 5 tenths  
**Air Temperature: 20° C                      Stability Class: D**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 1.5 kilograms/sec   Source Height: 83 meters**  
Release Duration: 60 minutes  
Release Rate: 91.8 kilograms/min  
Total Amount Released: 5,508 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 d'une cellule de stockage  
**Dispersion du HCN**  
Condition F, vent 3 m/s

**SITE DATA:**

Location: HEUDEBOUVILLE, FRANCE  
Building Air Exchanges Per Hour: 0.62 (unsheltered single storied)  
Time: March 8, 2019 1145 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: 25.5° C  
Vapor Pressure at Ambient Temperature: 0.66 atm  
Ambient Saturation Concentration: 663,766 ppm or 66.4%

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

**Wind: 3 meters/second from SW at 3 meters**  
Ground Roughness: urban or forest   Cloud Cover: 5 tenths  
**Air Temperature: 15° C**  
**Stability Class: F (user override)**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 1.53 kilograms/sec   Source Height: 139 meters**  
Release Duration: 60 minutes  
Release Rate: 91.8 kilograms/min  
Total Amount Released: 5,508 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 d'une cellule 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: 0.40 (unsheltered single storied)  
Time: March 8, 2019 1147 hours DST (using computer's clock)

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

**Wind: 2 meters/second from SW at 3 meters**  
Ground Roughness: urban or forest      Cloud Cover: 5 tenths  
**Air Temperature: 20° C**  
**Stability Class: A (user override)**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 225 kilograms/sec      Source Height: 209 meters**  
Release Duration: 60 minutes  
Release Rate: 13,500 kilograms/min  
Total Amount Released: 810,000 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 d'une cellule 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: 0.98 (unsheltered single storied)  
Time: March 8, 2019 1149 hours DST (using computer's clock)

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

**Wind: 5 meters/second from SW at 3 meters**  
Ground Roughness: urban or forest      Cloud Cover: 5 tenths  
**Air Temperature: 20° C**                      **Stability Class: D**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 225 kilograms/sec**      **Source Height: 83 meters**  
Release Duration: 60 minutes  
Release Rate: 13,500 kilograms/min  
Total Amount Released: 810,000 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 d'une cellule 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: 0.62 (unsheltered single storied)  
Time: March 8, 2019 1150 hours DST (using computer's clock)

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

**Wind: 3 meters/second from SW at 3 meters**  
Ground Roughness: urban or forest      Cloud Cover: 5 tenths  
**Air Temperature: 15° C**  
**Stability Class: F (user override)**  
No Inversion Height                      Relative Humidity: 75%

**SOURCE STRENGTH:**

**Direct Source: 225 kilograms/sec      Source Height: 139 meters**  
Release Duration: 60 minutes  
Release Rate: 13,500 kilograms/min  
Total Amount Released: 810,000 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.