# ANNEXE E

Risques technologiques – Modélisations

7953-nov 2001 -WC ammoniac

New Study

nuage tox Ammoniac

Base Case

CASE Name: Data

## User-Defined Data

| | | |
|---|---|---|
| **Material** | | |
| Material Identifier | AMMONIA | |
| **Vessel** | | |
| Release Type | Continuous | |
| **Location** | | |
| Northern location of dispersion source | 0 | m |
| Eastern location of dispersion source | 0 | m |
| Dispersion Concentration of Interest | 150 | ppm |
| Averaging time associated with Concentration | Toxic | |
| Status of Dike | No dike present | |
| ERPG selection | ERPG is set | |
| IDLH selection | IDLH is set | |
| STEL selection | STEL is not set | |
| User Defined Averaging | User defined averaging time supplied | |
| User-Defined Average Time | 600 | s |
| **Indoor/Outdoor** | | |
| Outdoor Release Direction | Horizontal | |
| **Flammable** | | |
| Method to use for explosions | TNT | |
| Jet Fire Method | Shell | |
| **Discharge Parameters** | | |
| Release height | 0 | m |
| **Dispersion** | | |
| Number of Release Segments | 1 | |
| Fluid Phase(1) | Vapour | |
| Discharge Velocity(1) | 1E-5 | m/s |
| Duration of Discharge(1) | 600 | s |
| Final Temperature(1) | 25 | C |
| Liquid Fraction(1) | 0 | fraction |
| Release Rate(1) | 0.0368 | kg/s |
| Ignition Location | No ignition location | |
| Inventory of material to Disperse | 22.1 | kg |
| **Multi Energy Explosion** | | |
| Use Unconfined Volumes | No | |
| Use Fractions | No | |
| Use 1st Confined Source | No | |
| Use 2nd Confined Source | No | |

| | |
|---|---|
| Use 3rd Confined Source | No |
| Use 4th Confined Source | No |
| Use 5th Confined Source | No |
| Use 6th Confined Source | No |
| Use 7th Confined Source | No |

## Consequence Results

### Distance to Concentration Results

| Concentration(ppm) | Averaging Time | | Distance (m) |
|---|---|---|---|
| | | | Category 1.5/F |
| User Conc (150) | 600 | s | 11.9254 |
| UFL (250000) | 18.75 | s | 0.263669 |
| LFL (160000) | 18.75 | s | 0.305164 |
| LFL Frac (80000) | 18.75 | s | 0.342049 |
| ERPG 1 (25) | 3600 | s | 17.4526 |
| ERPG 2 (150) | 3600 | s | 11.1317 |
| ERPG 3 (750) | 3600 | s | 6.43783 |

### Distance to Equivalent Toxic Dose

Toxic Calculation Method = Mixture Probit

| Concentration(ppm) | Reference Time | | Distance (m) |
|---|---|---|---|
| | | | Category 1.5/F |
| User Conc (150) | 600 | s | 11.9136 |
| ERPG 1 (25) | 3600 | s | 15.3148 |
| ERPG 2 (150) | 3600 | s | 9.03616 |
| ERPG 3 (750) | 3600 | s | 0.587712 |

### Jet Fire Hazard

| | Category 1.5/F |
|---|---|
| Jet Fire Status | Hazard |

### Radiation Effects: Jet Fire Ellipse

| | | | Distance (m) |
|---|---|---|---|
| | | | Category 1.5/F |
| Radiation Level | 4 | kW/m2 | Not Reached |
| Radiation Level | 12.5 | kW/m2 | Not Reached |
| Radiation Level | 37.5 | kW/m2 | Not Reached |

## Flash Fire Envelope

| | | | Distance (m) |
|---|---|---|---|
| | | | Category 1.5/F |
| Furthest Extent | 80000 | ppm | 0.342049 |
| Furthest Extent | 160000 | ppm | 0.305164 |

## Weather Conditions

| | | Category 1.5/F |
|---|---|---|
| Wind Speed | m/s | 1.5 |
| Pasquill Stability | | F |
| Surface Roughness Parameter | | |
| Atmospheric Temperature | C | 25 |
| Surface Temperature | C | 25 |
| Relative Humidity | fraction | 0.5 |

**7953-nov 2001 -WC ammoniac**

**New Study**

**nuage tox Ammoniac**
**Base Case**
**Data**

**Weather:** **Category 1.5/F**

**Speed:** **1.50** **m/s** **Stability:** **F**

7953-nov 2001 -WC ammoniac\New Study\nuage tox Ammoniac
Material: AMMONIA

**Centerline Molar Concentrations for Multiple Averaging Times**

ppm

Duration adjusted concentrations

Note that this is the only report that reflects duration adjusted / corrected concentrations

| Distance Downwind m | Flammable 18.8 s | Toxic 600.0 s | ERPG 3,600.0 s | IDLH 1,800.0 s | STEL s | User 600.0 s |
|---|---|---|---|---|---|---|
| **Segment Number:** | | **1** | | | | |
| 0.00 | 1,000,000.00 | 1,000,000.00 | 166,666.67 | 333,333.33 | | 1,000,000.00 |
| 0.01 | 1,000,000.00 | 1,000,000.00 | 166,666.67 | 333,333.33 | | 1,000,000.00 |
| 0.01 | 958,228.90 | 958,228.90 | 159,704.82 | 319,409.63 | | 958,228.90 |
| 0.03 | 790,783.56 | 790,783.56 | 131,797.26 | 263,594.52 | | 790,783.56 |
| 0.07 | 513,729.40 | 513,729.40 | 85,621.57 | 171,243.13 | | 513,729.40 |
| 0.12 | 359,467.50 | 359,467.50 | 59,911.25 | 119,822.50 | | 359,467.50 |
| 0.22 | 206,093.02 | 206,093.02 | 34,348.84 | 68,697.67 | | 206,093.02 |
| 0.48 | 93,833.27 | 93,833.27 | 15,638.88 | 31,277.76 | | 93,833.27 |
| 0.76 | 53,448.89 | 53,448.89 | 8,908.15 | 17,816.30 | | 53,448.89 |
| 1.07 | 34,478.52 | 34,478.52 | 5,746.42 | 11,492.84 | | 34,478.52 |
| 1.76 | 18,208.97 | 18,208.97 | 3,034.83 | 6,069.66 | | 18,208.97 |
| 2.49 | 11,723.47 | 11,723.47 | 1,953.91 | 3,907.82 | | 11,723.47 |
| 4.02 | 6,400.17 | 6,400.17 | 1,066.70 | 2,133.39 | | 6,400.17 |
| 5.58 | 4,220.81 | 4,220.81 | 703.47 | 1,406.94 | | 4,220.81 |
| 6.36 | 3,593.74 | 3,340.51 | 544.04 | 1,096.85 | | 3,340.51 |
| 7.15 | 3,165.20 | 2,718.59 | 430.68 | 876.83 | | 2,718.59 |
| 7.94 | 2,863.72 | 2,257.04 | 345.72 | 712.46 | | 2,257.04 |
| 8.73 | 2,648.94 | 1,900.18 | 279.11 | 584.16 | | 1,900.18 |
| 9.52 | 2,496.96 | 1,614.26 | 224.74 | 480.05 | | 1,614.26 |
| 10.31 | 2,393.29 | 1,377.66 | 178.63 | 392.44 | | 1,377.66 |
| 11.10 | 2,329.32 | 1,175.82 | 138.07 | 316.09 | | 1,175.82 |
| 12.68 | 2,243.39 | 1,121.69 | 130.64 | 300.14 | | 1,121.69 |
| 14.26 | 2,161.36 | 1,080.68 | 125.87 | 289.17 | | 1,080.68 |
| 17.41 | 2,007.88 | 1,003.94 | 116.93 | 268.64 | | 1,003.94 |
| 23.71 | 1,738.87 | 869.44 | 101.26 | 232.64 | | 869.44 |
| 36.32 | 1,322.82 | 661.41 | 77.04 | 176.98 | | 661.41 |
| 61.65 | 811.28 | 405.64 | 47.25 | 108.54 | | 405.64 |
| 87.12 | 528.78 | 264.39 | 30.79 | 70.75 | | 264.39 |
| 89.67 | 507.93 | 253.97 | 29.58 | 67.96 | | 253.97 |
| 94.78 | 469.75 | 234.87 | 27.36 | 62.85 | | 234.87 |
| 99.88 | 436.40 | 218.20 | 25.41 | 58.39 | | 218.20 |

**Centerline Molar Concentrations for Multiple Averaging Times**

ppm

Duration adjusted concentrations

Note that this is the only report that reflects duration adjusted / corrected concentrations

| Distance Downwind m | Flammable 18.8 s | Toxic 600.0 s | ERPG 3,600.0 s | IDLH 1,800.0 s | STEL s | User 600.0 s |
|---|---|---|---|---|---|---|
| 104.99 | 410.72 | 205.36 | 23.92 | 54.95 | | 205.36 |
| 110.10 | 387.40 | 193.70 | 22.56 | 51.83 | | 193.70 |
| 120.31 | 346.63 | 173.32 | 20.19 | 46.38 | | 173.32 |
| 140.76 | 283.02 | 141.51 | 16.48 | 37.86 | | 141.51 |
| 181.66 | 200.34 | 100.17 | 11.67 | 26.80 | | 100.17 |
| 263.52 | 117.36 | 58.68 | 6.83 | 15.70 | | 58.68 |
| 345.41 | 77.73 | 38.86 | 4.53 | 10.40 | | 38.86 |
| 445.38 | 52.17 | 26.08 | 3.04 | 6.98 | | 26.08 |
| 545.37 | 37.73 | 18.86 | 2.20 | 5.05 | | 18.86 |
| 645.36 | 28.73 | 14.37 | 1.67 | 3.84 | | 14.37 |
| 745.35 | 22.73 | 11.36 | 1.32 | 3.04 | | 11.36 |

# DETAILED DISPERSION REPORT

**Study Folder:** 7953-nov 2001 -WC ammoniac

**Unique Audit Number:** 1,2

**PHAST v6.(**

7953-nov 2001 -WC ammoniac

New Study

**nuage tox Ammoniac**
**Base Case**
**Data**

**Weather:** Category 1.5/F

**Speed:** 1.50 m/s **Stability:** F

7953-nov 2001 -WC ammoniac\New Study\nuage tox Ammoniac
Material: AMMONIA

Note: C/Line Concentration is calculated at an averaging time of: 18.75 s
Plume Width and Height are calculated at an averaging time of: 600.00 s
and a Concentration of Interest of: 150.00 ppm

For Instantaneous releases (and if present in this report) the Mass Flowrate is the Mass of Released Material in the cloud, and the C/Line Distance is the same as the Time.

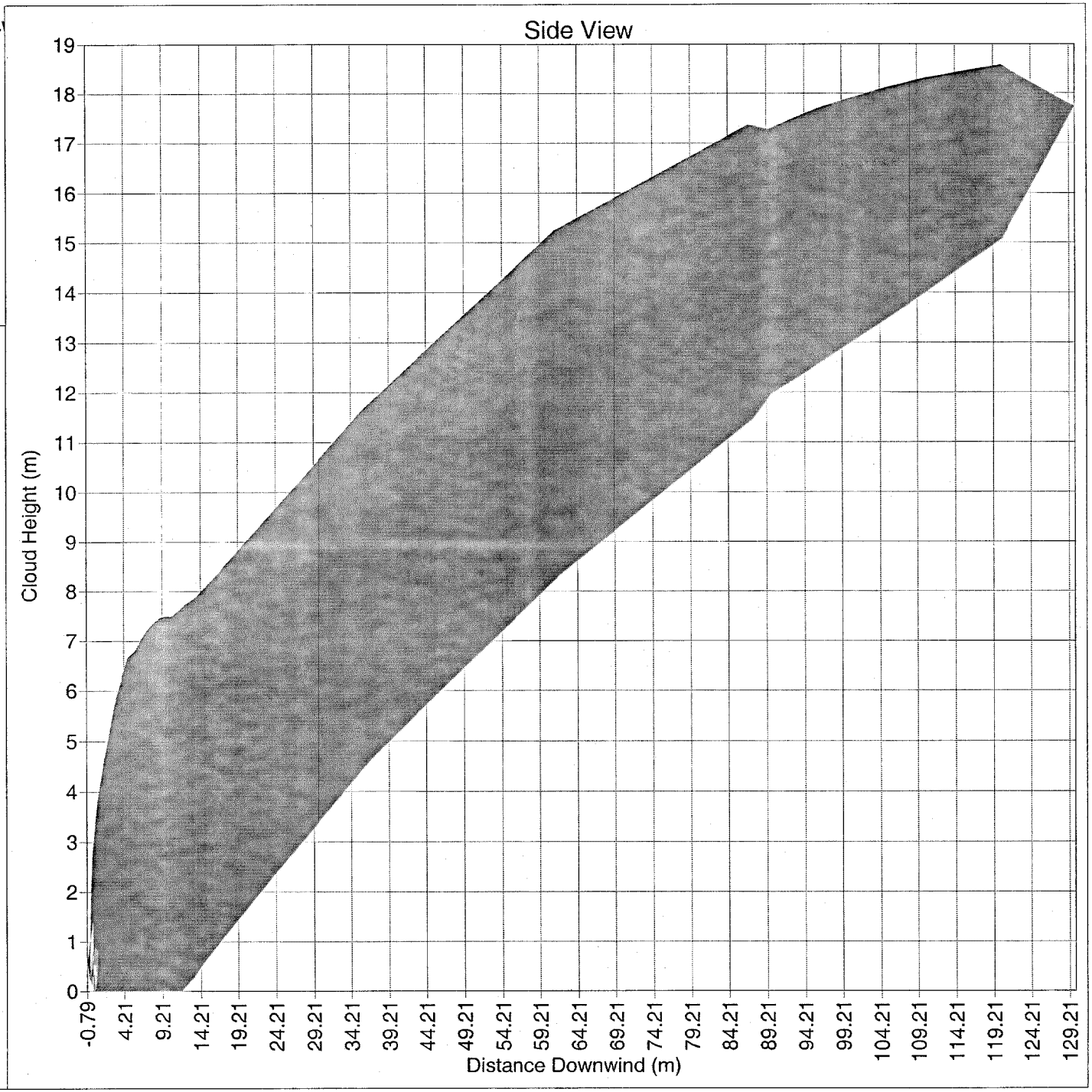
| Downwind Distance m | C/Line Height m | C/Line Conc ppm | Plume Half-width m | Plume Depth From C/Line m | Vapor Temperature C | Liquid Fraction fraction | Time s | Liquid Temperature C | Centroid Velocity m/s |
|---|---|---|---|---|---|---|---|---|---|
| **Segment Number: 1** | | | **Start Time:** | **0.00 s** | | | | | |
| 0.00 | 0.00 | 1,000,000.00 | 1.71 | 1.43 | 25.00 | 0.00 | 0.00 | | 0.10 |
| 0.01 | 0.00 | 1,000,000.00 | 1.71 | 1.43 | 25.00 | 0.00 | 0.00 | | 0.10 |
| 0.01 | 0.00 | 958,228.90 | 1.15 | 0.96 | 25.00 | 0.00 | 0.04 | | 0.23 |
| 0.03 | 0.05 | 790,783.56 | 0.55 | 0.46 | 25.00 | 0.00 | 0.16 | | 0.67 |
| 0.07 | 0.14 | 513,729.40 | 0.59 | 0.48 | 25.01 | 0.00 | 0.29 | | 0.77 |
| 0.12 | 0.23 | 359,467.50 | 0.69 | 0.57 | 25.02 | 0.00 | 0.43 | | 0.76 |
| 0.22 | 0.40 | 206,093.02 | 0.90 | 0.75 | 25.04 | 0.00 | 0.69 | | 0.72 |
| 0.48 | 0.71 | 93,833.27 | 1.33 | 1.12 | 25.07 | 0.00 | 1.28 | | 0.65 |
| 0.76 | 0.99 | 53,448.89 | 1.75 | 1.50 | 25.10 | 0.00 | 1.91 | | 0.61 |
| 1.07 | 1.24 | 34,478.52 | 2.15 | 1.87 | 25.13 | 0.00 | 2.59 | | 0.58 |
| 1.76 | 1.66 | 18,208.97 | 2.76 | 2.45 | 25.15 | 0.00 | 3.97 | | 0.59 |
| 2.49 | 1.97 | 11,723.47 | 3.14 | 2.83 | 25.17 | 0.00 | 5.27 | | 0.65 |

| Downwind Distance m | C/Line Height m | C/Line Conc ppm | Plume Half-width m | Plume Depth From C/Line m | Vapor Temperature C | Liquid Fraction fraction | Time s | Liquid Temperature C | Centroid Velocity m/s |
|---|---|---|---|---|---|---|---|---|---|
| 4.02 | 2.45 | 6,400.17 | 3.84 | 3.52 | 25.18 | 0.00 | 7.67 | | 0.69 |
| 5.58 | 2.81 | 4,220.81 | 4.26 | 3.96 | 25.20 | 0.00 | 9.89 | | 0.76 |
| 6.36 | 2.96 | 3,593.74 | 4.75 | 3.91 | 25.22 | 0.00 | 10.91 | | 0.81 |
| 7.15 | 3.10 | 3,165.20 | 5.24 | 4.00 | 25.22 | 0.00 | 11.88 | | 0.83 |
| 7.94 | 3.23 | 2,863.72 | 5.73 | 4.05 | 25.23 | 0.00 | 12.83 | | 0.85 |
| 8.73 | 3.36 | 2,648.94 | 6.25 | 4.06 | 25.23 | 0.00 | 13.76 | | 0.87 |
| 9.52 | 3.48 | 2,496.96 | 6.82 | 4.03 | 25.23 | 0.00 | 14.67 | | 0.88 |
| 10.31 | 3.61 | 2,393.29 | 7.48 | 3.95 | 25.24 | 0.00 | 15.57 | | 0.90 |
| 11.10 | 3.73 | 2,329.32 | 8.29 | 3.82 | 25.24 | 0.00 | 16.45 | | 0.92 |
| 12.68 | 3.99 | 2,243.39 | 8.41 | 3.77 | 25.24 | 0.00 | 18.18 | | 0.93 |
| 14.26 | 4.26 | 2,161.36 | 8.47 | 3.69 | 25.25 | 0.00 | 19.88 | | 0.96 |
| 17.41 | 4.81 | 2,007.88 | 8.57 | 3.65 | 25.26 | 0.00 | 23.16 | | 0.99 |
| 23.71 | 5.94 | 1,738.87 | 8.73 | 3.60 | 25.27 | 0.00 | 29.43 | | 1.05 |
| 36.32 | 8.14 | 1,322.82 | 8.92 | 3.56 | 25.30 | 0.00 | 40.96 | | 1.17 |
| 61.65 | 11.79 | 811.28 | 8.73 | 3.48 | 25.35 | 0.00 | 61.18 | | 1.36 |
| 87.12 | 14.40 | 528.78 | 7.64 | 2.97 | 25.41 | 0.00 | 78.24 | | 1.64 |
| 89.67 | 14.62 | 507.93 | 7.46 | 2.66 | 25.46 | 0.00 | 79.72 | | 1.81 |
| 94.78 | 15.03 | 469.75 | 7.07 | 2.59 | 25.46 | 0.00 | 82.54 | | 1.83 |
| 99.88 | 15.41 | 436.40 | 6.63 | 2.47 | 25.47 | 0.00 | 85.32 | | 1.85 |
| 104.99 | 15.78 | 410.72 | 6.23 | 2.33 | 25.47 | 0.00 | 88.07 | | 1.87 |
| 110.10 | 16.14 | 387.40 | 5.75 | 2.17 | 25.48 | 0.00 | 90.78 | | 1.90 |
| 120.31 | 16.82 | 346.63 | 4.53 | 1.76 | 25.48 | 0.00 | 96.15 | | 1.92 |
| 140.76 | 18.05 | 283.02 | 0.00 | 0.00 | 25.49 | 0.00 | 106.72 | | 1.96 |
| 181.66 | 20.14 | 200.34 | 0.00 | 0.00 | 25.51 | 0.00 | 127.26 | | 2.03 |
| 263.52 | 23.31 | 117.36 | 0.00 | 0.00 | 25.55 | 0.00 | 166.52 | | 2.14 |
| 345.41 | 25.63 | 77.73 | 0.00 | 0.00 | 25.59 | 0.00 | 203.31 | | 2.31 |
| 445.38 | 27.83 | 52.17 | 0.00 | 0.00 | 25.63 | 0.00 | 245.56 | | 2.42 |
| 545.37 | 29.57 | 37.73 | 0.00 | 0.00 | 25.66 | 0.00 | 285.95 | | 2.53 |
| 645.36 | 31.02 | 28.73 | 0.00 | 0.00 | 25.68 | 0.00 | 324.91 | | 2.61 |
| 745.35 | 32.25 | 22.73 | 0.00 | 0.00 | 25.70 | 0.00 | 362.80 | | 2.67 |

Study Folder: 7953-nov 2001 -

Audit No. 1244
Model : nuage tox Ammoniac
Weather : Category 1.5/F
Material: AMMONIA
Averaging Time: Toxic(600s)
C/L Offset 0 m
Legend : Concentration
Time: 103.9 s

150 ppm
8E4 ppm
1.6E5 ppm
2.5E5 ppm



7953-nov 2001 -WC ammoniac

New Study

**nuage tox Ammoniac(55%)**

**Base Case**

**CASE Name:** Data

## User-Defined Data

| | | |
|---|---|---|
| **Material** | | |
| | Material Identifier | AMMONIA |
| **Vessel** | | |
| | Release Type | Continuous |
| **Location** | | |
| | Northern location of dispersion source | 0 m |
| | Eastern location of dispersion source | 0 m |
| | Dispersion Concentration of Interest | 150 ppm |
| | Averaging time associated with Concentration | Toxic |
| | Status of Dike | No dike present |
| | ERPG selection | ERPG is set |
| | IDLH selection | IDLH is set |
| | STEL selection | STEL is not set |
| | User Defined Averaging | User defined averaging time supplied |
| | User-Defined Average Time | 600 s |
| **Indoor/Outdoor** | | |
| | Outdoor Release Direction | Horizontal |
| **Flammable** | | |
| | Method to use for explosions | TNT |
| | Jet Fire Method | Shell |
| **Discharge Parameters** | | |
| | Release height | 0 m |
| **Dispersion** | | |
| | Number of Release Segments | 1 |
| | Fluid Phase(1) | Vapour |
| | Discharge Velocity(1) | 1E-5 m/s |
| | Duration of Discharge(1) | 600 s |
| | Final Temperature(1) | 25 C |
| | Liquid Fraction(1) | 0 fraction |
| | Release Rate(1) | 0.02024 kg/s |
| | Ignition Location | No ignition location |
| | Inventory of material to Disperse | 12.16 kg |
| **Multi Energy Explosion** | | |
| | Use Unconfined Volumes | No |
| | Use Fractions | No |
| | Use 1st Confined Source | No |
| | Use 2nd Confined Source | No |

| | |
|---|---|
| Use 3rd Confined Source | No |
| Use 4th Confined Source | No |
| Use 5th Confined Source | No |
| Use 6th Confined Source | No |
| Use 7th Confined Source | No |

## Consequence Results

### Distance to Concentration Results

| Concentration(ppm) | Averaging Time | | Distance (m) |
|---|---|---|---|
| | | | Category 1.5/F |
| User Conc (150) | 600 | s | 5.99684 |
| UFL (250000) | 18.75 | s | 0.20182 |
| LFL (160000) | 18.75 | s | 0.243214 |
| LFL Frac (80000) | 18.75 | s | 0.280008 |
| ERPG 1 (25) | 3600 | s | 7.85462 |
| ERPG 2 (150) | 3600 | s | 5.59945 |
| ERPG 3 (750) | 3600 | s | 3.9317 |

### Distance to Equivalent Toxic Dose

Toxic Calculation Method = Mixture Probit

| Concentration(ppm) | Reference Time | | Distance (m) |
|---|---|---|---|
| | | | Category 1.5/F |
| User Conc (150) | 600 | s | 6.05586 |
| ERPG 1 (25) | 3600 | s | 7.07677 |
| ERPG 2 (150) | 3600 | s | 5.05531 |
| ERPG 3 (750) | 3600 | s | 2.95 |

### Jet Fire Hazard

| | Category 1.5/F |
|---|---|
| Jet Fire Status | Hazard |

### Radiation Effects: Jet Fire Ellipse

| | | | Distance (m) |
|---|---|---|---|
| | | | Category 1.5/F |
| Radiation Level | 4 | kW/m2 | Not Reached |
| Radiation Level | 12.5 | kW/m2 | Not Reached |
| Radiation Level | 37.5 | kW/m2 | Not Reached |

**Flash Fire Envelope**

| | | | Distance (m) |
|---|---|---|---|
| | | | Category 1.5/F |
| Furthest Extent | 80000 | ppm | 0.280008 |
| Furthest Extent | 160000 | ppm | 0.243214 |

**Weather Conditions**

| | | Category 1.5/F |
|---|---|---|
| Wind Speed | m/s | 1.5 |
| Pasquill Stability | | F |
| Surface Roughness Parameter | | |
| Atmospheric Temperature | C | 25 |
| Surface Temperature | C | 25 |
| Relative Humidity | fraction | 0.5 |

7953-nov 2001 -WC ammoniac

New Study

nuage tox Ammoniac(55%)
Base Case
Data

Weather: Category 1.5/F

Speed: 1.50 m/s Stability: F

7953-nov 2001 -WC ammoniac\New Study\nuage tox Ammoniac(55%)
Material: AMMONIA

**Centerline Molar Concentrations for Multiple Averaging Times**
ppm
Duration adjusted concentrations
Note that this is the only report that reflects duration adjusted / corrected concentrations

| Distance | Flammable | Toxic | ERPG | IDLH | STEL | User |
|---|---|---|---|---|---|---|
| Downwind | 18.8 | 600.0 | 3,600.0 | 1,800.0 | | 600.0 |
| m | s | s | s | s | s | s |
| **Segment Number:** | | 1 | | | | |
| 0.00 | 1,000,000.00 | 1,000,000.00 | 166,666.67 | 333,333.33 | | 1,000,000.00 |
| 0.01 | 1,000,000.00 | 1,000,000.00 | 166,666.67 | 333,333.33 | | 1,000,000.00 |
| 0.01 | 955,038.66 | 955,038.66 | 159,173.11 | 318,346.22 | | 955,038.66 |
| 0.03 | 749,197.26 | 749,197.26 | 124,866.21 | 249,732.42 | | 749,197.26 |
| 0.08 | 433,484.74 | 433,484.74 | 72,247.46 | 144,494.91 | | 433,484.74 |
| 0.13 | 281,946.64 | 281,946.64 | 46,991.11 | 93,982.21 | | 281,946.64 |
| 0.26 | 148,061.07 | 148,061.07 | 24,676.85 | 49,353.69 | | 148,061.07 |
| 0.56 | 62,246.36 | 62,246.36 | 10,374.39 | 20,748.79 | | 62,246.36 |
| 0.89 | 34,300.68 | 34,300.68 | 5,716.78 | 11,433.56 | | 34,300.68 |
| 1.59 | 15,199.17 | 15,199.17 | 2,533.20 | 5,066.39 | | 15,199.17 |
| 2.34 | 9,013.47 | 9,013.47 | 1,502.25 | 3,004.49 | | 9,013.47 |
| 2.53 | 8,137.06 | 7,803.64 | 1,283.87 | 2,579.29 | | 7,803.64 |
| 2.72 | 7,448.27 | 6,836.72 | 1,108.76 | 2,238.69 | | 6,836.72 |
| 2.92 | 6,899.37 | 6,048.19 | 965.31 | 1,960.09 | | 6,048.19 |
| 3.11 | 6,457.35 | 5,393.60 | 845.54 | 1,727.92 | | 5,393.60 |
| 3.30 | 6,099.03 | 4,841.59 | 743.81 | 1,531.18 | | 4,841.59 |
| 3.50 | 5,807.77 | 4,369.41 | 656.04 | 1,361.90 | | 4,369.41 |
| 3.69 | 5,571.45 | 3,960.26 | 579.17 | 1,214.15 | | 3,960.26 |
| 3.88 | 5,381.14 | 3,601.41 | 510.90 | 1,083.45 | | 3,601.41 |
| 4.27 | 5,114.14 | 2,997.79 | 393.40 | 860.11 | | 2,997.79 |
| 4.66 | 4,973.20 | 2,502.19 | 293.00 | 671.59 | | 2,502.19 |
| 5.05 | 4,893.19 | 2,446.59 | 284.96 | 654.66 | | 2,446.59 |
| 5.44 | 4,814.80 | 2,407.40 | 280.39 | 644.17 | | 2,407.40 |
| 6.21 | 4,661.84 | 2,330.92 | 271.49 | 623.71 | | 2,330.92 |
| 7.75 | 4,370.93 | 2,185.46 | 254.54 | 584.79 | | 2,185.46 |
| 10.82 | 3,845.52 | 1,922.76 | 223.95 | 514.49 | | 1,922.76 |
| 16.97 | 2,992.15 | 1,496.08 | 174.25 | 400.32 | | 1,496.08 |
| 29.43 | 1,878.86 | 939.43 | 109.42 | 251.37 | | 939.43 |
| 42.06 | 1,235.55 | 617.78 | 71.95 | 165.31 | | 617.78 |
| 67.49 | 636.99 | 318.49 | 37.10 | 85.22 | | 318.49 |
| 93.02 | 379.97 | 189.98 | 22.13 | 50.84 | | 189.98 |

**Centerline Molar Concentrations for Multiple Averaging Times**

ppm

Duration adjusted concentrations

Note that this is the only report that reflects duration adjusted / corrected concentrations

| Distance Downwind | Flammable 18.8 | Toxic 600.0 | ERPG 3,600.0 | IDLH 1,800.0 | STEL | User 600.0 |
|---|---|---|---|---|---|---|
| m | s | s | s | s | s | s |
| 99.41 | 339.66 | 169.83 | 19.78 | 45.44 | | 169.83 |
| 105.80 | 310.09 | 155.04 | 18.06 | 41.49 | | 155.04 |
| 112.20 | 284.84 | 142.42 | 16.59 | 38.11 | | 142.42 |
| 124.98 | 243.20 | 121.60 | 14.16 | 32.54 | | 121.60 |
| 150.56 | 184.21 | 92.11 | 10.73 | 24.65 | | 92.11 |
| 201.73 | 117.64 | 58.82 | 6.85 | 15.74 | | 58.82 |
| 301.71 | 62.24 | 31.12 | 3.62 | 8.33 | | 31.12 |
| 401.69 | 39.06 | 19.53 | 2.27 | 5.23 | | 19.53 |
| 501.68 | 27.08 | 13.54 | 1.58 | 3.62 | | 13.54 |
| 601.68 | 20.04 | 10.02 | 1.17 | 2.68 | | 10.02 |

**7953-nov 2001 -WC ammoniac**

**New Study**

**nuage tox Ammoniac(55%)**

**Base Case**

**Data**

**Weather:** Category 1.5/F

**Speed:** 1.50 m/s **Stability:** F

7953-nov 2001 -WC ammoniac\New Study\nuage tox Ammoniac(55%)
Material: AMMONIA

Note: C/Line Concentration is calculated at an averaging time of: 18.75 s
Plume Width and Height are calculated at an averaging time of: 600.00 s
and a Concentration of Interest of: 150.00 ppm

For Instantaneous releases (and if present in this report) the Mass Flowrate is the Mass of Released Material in the cloud, and the C/Line Distance is the same as the Time.

| Downwind Distance m | C/Line Height m | C/Line Conc ppm | Plume Half-width m | Plume Depth From C/Line m | Vapor Temperature C | Liquid Fraction fraction | Time s | Liquid Temperature C | Centroid Velocity m/s |
|---|---|---|---|---|---|---|---|---|---|
| **Segment Number: 1** | | | **Start Time:** | **0.00 s** | | | | | |
| 0.00 | 0.00 | 1,000,000.00 | 1.27 | 1.05 | 25.00 | 0.00 | 0.00 | | 0.10 |
| 0.01 | 0.00 | 1,000,000.00 | 1.27 | 1.05 | 25.00 | 0.00 | 0.00 | | 0.10 |
| 0.01 | 0.00 | 955,038.66 | 0.87 | 0.72 | 25.00 | 0.00 | 0.05 | | 0.22 |
| 0.03 | 0.05 | 749,197.26 | 0.42 | 0.35 | 25.00 | 0.00 | 0.16 | | 0.64 |
| 0.08 | 0.14 | 433,484.74 | 0.50 | 0.41 | 25.01 | 0.00 | 0.31 | | 0.69 |
| 0.13 | 0.22 | 281,946.64 | 0.61 | 0.50 | 25.03 | 0.00 | 0.46 | | 0.67 |
| 0.26 | 0.37 | 148,061.07 | 0.83 | 0.69 | 25.04 | 0.00 | 0.77 | | 0.63 |
| 0.56 | 0.64 | 62,246.36 | 1.25 | 1.07 | 25.07 | 0.00 | 1.43 | | 0.57 |
| 0.89 | 0.87 | 34,300.68 | 1.65 | 1.43 | 25.10 | 0.00 | 2.15 | | 0.54 |
| 1.59 | 1.25 | 15,199.17 | 2.38 | 2.10 | 25.12 | 0.00 | 3.68 | | 0.51 |
| 2.34 | 1.53 | 9,013.47 | 2.80 | 2.53 | 25.15 | 0.00 | 5.18 | | 0.56 |
| 2.53 | 1.59 | 8,137.06 | 3.01 | 2.38 | 25.16 | 0.00 | 5.52 | | 0.61 |

# DETAILED DISPERSION REPORT

**Unique Audit Number:** 1,3

**Study Folder:** 7953-nov 2001 -WC ammoniac

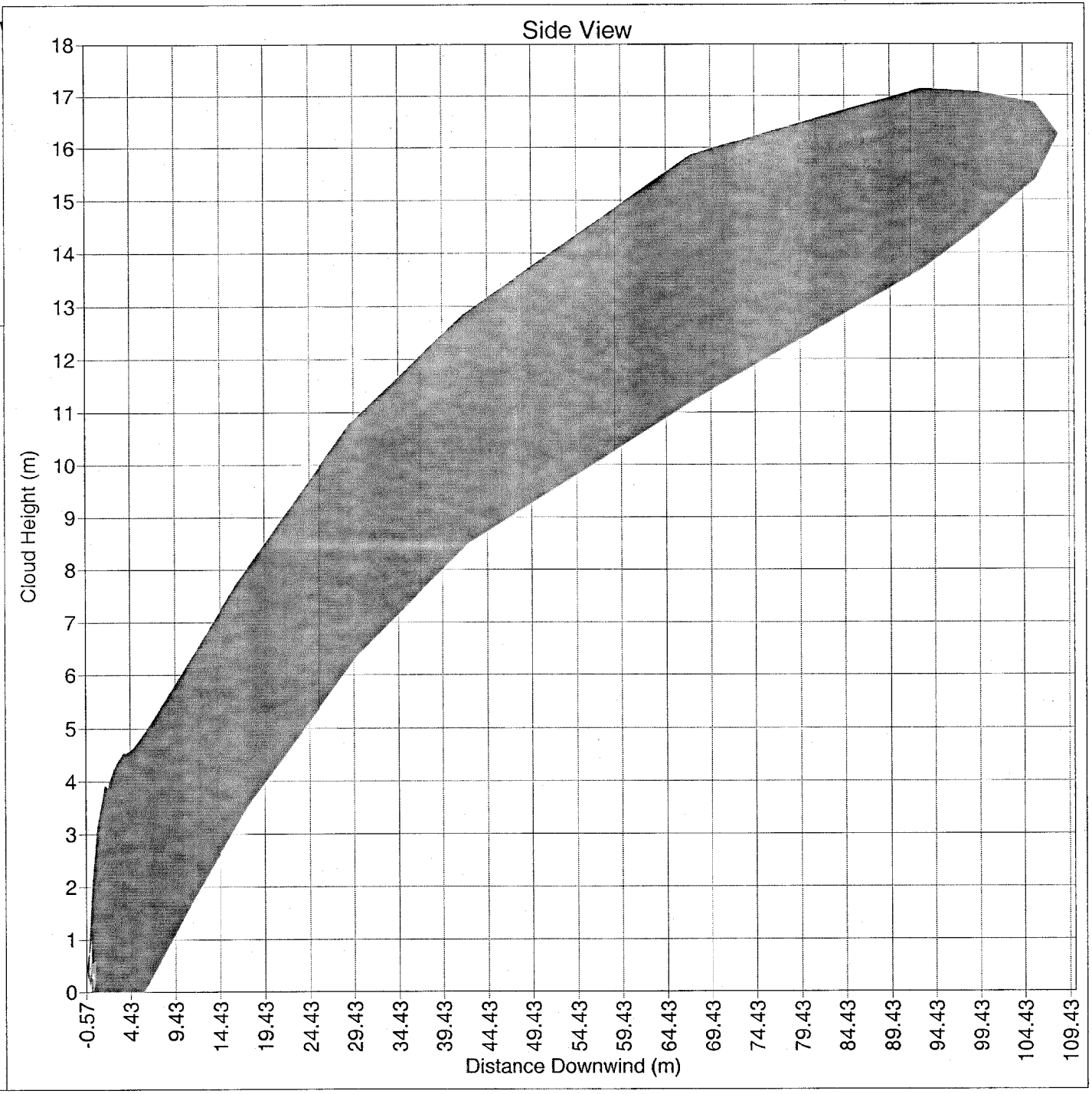
**PHAST v6.(**

| Downwind Distance m | C/Line Height m | C/Line Conc ppm | Plume Half-width m | Plume Depth From C/Line m | Vapor Temperature C | Liquid Fraction fraction | Time s | Liquid Temperature C | Centroid Velocity m/s |
|---|---|---|---|---|---|---|---|---|---|
| 2.72 | 1.64 | 7,448.27 | 3.21 | 2.44 | 25.17 | 0.00 | 5.84 | | 0.62 |
| 2.92 | 1.70 | 6,899.37 | 3.41 | 2.49 | 25.17 | 0.00 | 6.17 | | 0.63 |
| 3.11 | 1.75 | 6,457.35 | 3.61 | 2.52 | 25.17 | 0.00 | 6.48 | | 0.64 |
| 3.30 | 1.80 | 6,099.03 | 3.82 | 2.55 | 25.17 | 0.00 | 6.79 | | 0.65 |
| 3.50 | 1.84 | 5,807.77 | 4.03 | 2.57 | 25.18 | 0.00 | 7.10 | | 0.65 |
| 3.69 | 1.89 | 5,571.45 | 4.25 | 2.58 | 25.18 | 0.00 | 7.41 | | 0.66 |
| 3.88 | 1.94 | 5,381.14 | 4.49 | 2.58 | 25.18 | 0.00 | 7.71 | | 0.67 |
| 4.27 | 2.03 | 5,114.14 | 5.03 | 2.57 | 25.18 | 0.00 | 8.30 | | 0.68 |
| 4.66 | 2.13 | 4,973.20 | 5.73 | 2.48 | 25.19 | 0.00 | 8.88 | | 0.70 |
| 5.05 | 2.23 | 4,893.19 | 5.78 | 2.43 | 25.19 | 0.00 | 9.45 | | 0.71 |
| 5.44 | 2.33 | 4,814.80 | 5.81 | 2.39 | 25.19 | 0.00 | 10.01 | | 0.73 |
| 6.21 | 2.54 | 4,661.84 | 5.86 | 2.35 | 25.20 | 0.00 | 11.10 | | 0.74 |
| 7.75 | 2.97 | 4,370.93 | 5.94 | 2.30 | 25.21 | 0.00 | 13.20 | | 0.78 |
| 10.82 | 3.88 | 3,845.52 | 6.11 | 2.23 | 25.22 | 0.00 | 17.14 | | 0.85 |
| 16.97 | 5.64 | 2,992.15 | 6.37 | 2.19 | 25.25 | 0.00 | 24.21 | | 0.96 |
| 29.43 | 8.57 | 1,878.86 | 6.70 | 2.26 | 25.29 | 0.00 | 36.33 | | 1.15 |
| 42.06 | 10.67 | 1,235.55 | 6.75 | 2.20 | 25.35 | 0.00 | 46.37 | | 1.40 |
| 67.49 | 13.55 | 636.99 | 6.15 | 2.33 | 25.39 | 0.00 | 63.67 | | 1.56 |
| 93.02 | 15.41 | 379.97 | 4.12 | 1.73 | 25.44 | 0.00 | 79.13 | | 1.75 |
| 99.41 | 15.78 | 339.66 | 3.11 | 1.29 | 25.47 | 0.00 | 82.66 | | 1.87 |
| 105.80 | 16.12 | 310.09 | 1.67 | 0.74 | 25.48 | 0.00 | 86.05 | | 1.89 |
| 112.20 | 16.44 | 284.84 | 0.00 | 0.00 | 25.48 | 0.00 | 89.41 | | 1.92 |
| 124.98 | 17.03 | 243.20 | 0.00 | 0.00 | 25.49 | 0.00 | 96.06 | | 1.93 |
| 150.56 | 18.08 | 184.21 | 0.00 | 0.00 | 25.50 | 0.00 | 109.18 | | 1.97 |
| 201.73 | 19.75 | 117.64 | 0.00 | 0.00 | 25.51 | 0.00 | 134.79 | | 2.03 |
| 301.71 | 22.10 | 62.24 | 0.00 | 0.00 | 25.54 | 0.00 | 182.97 | | 2.12 |
| 401.69 | 23.78 | 39.06 | 0.00 | 0.00 | 25.57 | 0.00 | 228.74 | | 2.25 |
| 501.68 | 25.08 | 27.08 | 0.00 | 0.00 | 25.60 | 0.00 | 272.41 | | 2.33 |
| 601.68 | 26.15 | 20.04 | 0.00 | 0.00 | 25.62 | 0.00 | 314.69 | | 2.40 |

Study Folder: 7953-nov 2001 -

Audit No. 1318
Model : nuage tox
Ammoniac(55%)
Weather : Category 1.5/F
Material: AMMONIA
Averaging Time: Toxic(600s)
C/L Offset 0 m
Legend : Concentration
Time: 88.27 s

- 150 ppm
- 8E4 ppm
- 1.6E5 ppm
- 2.5E5 ppm



# MIXTURE DEFINITION DATA

**Unique Audit Number:** 1,167

**Study Folder:** 7953-nov 2001 -WC ammoniac

**PHAST v6.00**

**7953-nov 2001 -WC ammoniac**

**New Study**

Gas mix **CAS ID:** -1

**Overall Composition:**

| Component Name | CAS ID | Mass | Mole |
|---|---|---|---|
| AMMONIA | 7664417 | 221.40 | 13.00 |
| HYDROGEN | 1333740 | 153.20 | 75.99 |
| METHANE | 74828 | 176.50 | 11.00 |

**Liquid Composition:**

| Component Name | CAS ID | Mass | Mole |
|---|---|---|---|
| AMMONIA | 7664417 | 110.70 | 6.50 |
| HYDROGEN | 1333740 | 76.60 | 38.00 |
| METHANE | 74828 | 88.25 | 5.50 |

**Vapor Composition:**

| Component Name | CAS ID | Mass | Mole |
|---|---|---|---|
| AMMONIA | 7664417 | 110.70 | 6.50 |
| HYDROGEN | 1333740 | 76.60 | 38.00 |
| METHANE | 74828 | 88.25 | 5.50 |

# FIXED PROPERTY DATA

**Unique Audit Number:** 1,167

**Study Folder:** 7953-nov 2001 -WC ammoniac **PHAST v6.00**

7953-nov 2001 -WC ammoniac

New Study

| MATERIAL | Gas mix | DIPPR: | n/a |
|---|---|---|---|
| CAS Number | -1 | | |
| Critical Temperature | -174.23 | C | |
| Critical pressure | 29.7 | bar | |
| Normal Boiling Point | -251.80 | C | |
| Molecular Weight | 5.51 | | |
| Flammable/Toxic Flag | Both | | |
| Heat of Combustion | 546025.8 | kJ/kmol | |
| Lower Flammability Limit | 45,428.73 | ppm | |
| Upper Flammability Limit | 441,176.50 | ppm | |
| Combustion 'Ct | 0.26 | | |
| Combustion 'At | 1.09 | | |
| ERPG 1 | 192.31 | ppm | |
| ERPG 2 | 1,153.85 | ppm | |
| ERPG 3 | 5,769.23 | ppm | |
| Toxic Property N | | | |
| Toxic Property A | | | |
| Toxic Property B | | | |
| IDLH Concentration | | ppm | |
| STEL Concentration | | ppm | |
| Melting Point | -227.17 | C | |
| Reactivity with Atmosphere | Not Strongly Reactive | | |
| TNT Explosion Eff. | | percent | |
| Human Response Coefficient 1 | | | |
| Human Response Coefficient 2 | | | |
| Debilitation Factor Change 1 | | | |
| Debilitation Factor Change 2 | | | |
| Luminous / Smoky Flame Flag | Luminous | | |
| Maximum Surface Emissive Power | 186.01 | kW/m2 | |
| Emissive Pow er Log Scale | 4.03 | | |
| Equation of State Flag | Soave Redlich Kwong | | |
| Acid Association Flag | Not Modeled | | |
| Dimer Coefficient 1 | | | |
| Dimer Coefficient 2 | | | |
| Trimer Coefficient 1 | | | |
| Trimer Coefficient 2 | | | |
| Hexamer Coefficient 1 | | | |
| Hexamer Coefficient 2 | | | |
| Octamer Coefficient 1 | | | |
| Octamer Coefficient 2 | | | |
| Enthalpy Interpolation Range | | C | |
| Pool Fire Burn Rate Length | 0.89 | m | |
| Maximum Burn Rate | 0.05 | kg/m2.s | |
| Liquid / Wat er Surface Tension | 50.00 | dyne/cm | |
| Solubility in Water | 2.01 | | |
| Heat of Solution | 216.94 | kJ/kg | |
| Reaction with Water Model | None | | |

| | | |
|---|---|---|
| Water Heat Transfer Coefficient | 250.00 | W/m2.K |

7953-nov 2001 -WC ammoniac

New Study

explosion silo

Base Case

CASE Name: Data

## User-Defined Data

**Material**

| | | |
|---|---|---|
| Material Identifier | Gas mix | |

**TNT Explosion**

| | | |
|---|---|---|
| Minimum Distance | 0 | m |
| Maximum Distance | 300 | m |
| Flammable Mass | 24.3 | kg |
| Liquid Fraction | 0 | fraction |
| Mass Modification Factor | 1 | |

**TNT Explosion Parameters**

| | | |
|---|---|---|
| TNT Explosion efficiency | 100 | percent |

## Consequence Results

### Explosion Effects: Early Explosion

Early Explosions are assumed to be centered at the release location
Explosion Model Used : TNT

| | | | Category 1.5/F |
|---|---|---|---|
| Supplied Flammable Mass | | kg | 24.3 |
| | | | Distance (m) at Overpressure Levels |
| | | | Category 1.5/F |
| Overpressure | 0.0206843 | bar | 265.642 |
| Overpressure | 0.0689476 | bar | 109.155 |
| Overpressure | 0.206843 | bar | 53.2233 |
| | | | Used Mass (kg) at Overpressure Levels |
| | | | Category 1.5/F |
| Overpressure | 0.0206843 | bar | 24.3 |
| Overpressure | 0.0689476 | bar | 24.3 |
| Overpressure | 0.206843 | bar | 24.3 |

### Weather Conditions

| | | Category 1.5/F |
|---|---|---|
| Wind Speed | m/s | 1.5 |
| Pasquill Stability | | F |
| Surface Roughness Parameter | | |
| Atmospheric Temperature | C | 25 |
| Surface Temperature | C | 25 |
| Relative Humidity | fraction | 0.5 |

7953-nov 2001 -WC ammoniac

New Study

explosion silo

Base Case

Data

Weather: Category 1.5/F

Speed: 1.50 m/s Stability: F

7953-nov 2001 -WC ammoniac\New Study\explosion silo

**User-Defined Quantities**

| | | |
|---|---|---|
| Material | Gas mix | |
| Flammable Mass in Cloud | 24.30 | kg |
| Minimum Distance of Interest | 0.00 | m |
| Maximum Distance of Interest | 300.00 | m |
| Distance Step Size | 1.00 | m |
| TNT Efficiency | 100.00 | percent |
| Air / Ground Burst | Air Burst | |

**Calculated Quantities**

**Radii at Overpressures (gauge) :**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| At | 0.02 | bar | : | 265.64 | m | for mass | 24.30 kg |
| At | 0.07 | bar | : | 109.15 | m | for mass | 24.30 kg |
| At | 0.21 | bar | : | 53.22 | m | for mass | 24.30 kg |

**Details of Over-Pressures**

| Distance m | Over-Pressure bar |
|---|---|
| 0.00 | 1.00 |
| 1.00 | 1.00 |
| 2.00 | 1.00 |
| 3.00 | 1.00 |
| 4.00 | 1.00 |
| 5.00 | 1.00 |
| 6.00 | 1.00 |
| 7.00 | 1.00 |
| 8.00 | 1.00 |
| 9.00 | 1.00 |
| 10.00 | 1.00 |
| 11.00 | 1.00 |
| 12.00 | 1.00 |
| 13.00 | 1.00 |
| 14.00 | 1.00 |
| 15.00 | 1.00 |
| 16.00 | 1.00 |

| Distance m | Over-Pressure bar |
|---|---|
| 17.00 | 1.00 |
| 18.00 | 1.00 |
| 19.00 | 1.00 |
| 20.00 | 1.00 |
| 21.00 | 1.00 |
| 22.00 | 0.93 |
| 23.00 | 0.86 |
| 24.00 | 0.80 |
| 25.00 | 0.74 |
| 26.00 | 0.69 |
| 27.00 | 0.65 |
| 28.00 | 0.61 |
| 29.00 | 0.57 |
| 30.00 | 0.54 |
| 31.00 | 0.51 |
| 32.00 | 0.48 |
| 33.00 | 0.46 |
| 34.00 | 0.43 |
| 35.00 | 0.41 |
| 36.00 | 0.39 |
| 37.00 | 0.38 |
| 38.00 | 0.36 |
| 39.00 | 0.34 |
| 40.00 | 0.33 |
| 41.00 | 0.32 |
| 42.00 | 0.30 |
| 43.00 | 0.29 |
| 44.00 | 0.28 |
| 45.00 | 0.27 |
| 46.00 | 0.26 |
| 47.00 | 0.25 |
| 48.00 | 0.24 |
| 49.00 | 0.24 |
| 50.00 | 0.23 |
| 51.00 | 0.22 |
| 52.00 | 0.21 |
| 53.00 | 0.21 |
| 54.00 | 0.20 |
| 55.00 | 0.20 |
| 56.00 | 0.19 |
| 57.00 | 0.18 |
| 58.00 | 0.18 |
| 59.00 | 0.17 |
| 60.00 | 0.17 |
| 61.00 | 0.17 |
| 62.00 | 0.16 |
| 63.00 | 0.16 |
| 64.00 | 0.15 |

| Distance m | Over-Pressure bar |
|---|---|
| 65.00 | 0.15 |
| 66.00 | 0.15 |
| 67.00 | 0.14 |
| 68.00 | 0.14 |
| 69.00 | 0.14 |
| 70.00 | 0.13 |
| 71.00 | 0.13 |
| 72.00 | 0.13 |
| 73.00 | 0.13 |
| 74.00 | 0.12 |
| 75.00 | 0.12 |
| 76.00 | 0.12 |
| 77.00 | 0.12 |
| 78.00 | 0.11 |
| 79.00 | 0.11 |
| 80.00 | 0.11 |
| 81.00 | 0.11 |
| 82.00 | 0.11 |
| 83.00 | 0.10 |
| 84.00 | 0.10 |
| 85.00 | 0.10 |
| 86.00 | 0.10 |
| 87.00 | 0.10 |
| 88.00 | 0.09 |
| 89.00 | 0.09 |
| 90.00 | 0.09 |
| 91.00 | 0.09 |
| 92.00 | 0.09 |
| 93.00 | 0.09 |
| 94.00 | 0.09 |
| 95.00 | 0.08 |
| 96.00 | 0.08 |
| 97.00 | 0.08 |
| 98.00 | 0.08 |
| 99.00 | 0.08 |
| 100.00 | 0.08 |
| 101.00 | 0.08 |
| 102.00 | 0.08 |
| 103.00 | 0.07 |
| 104.00 | 0.07 |
| 105.00 | 0.07 |
| 106.00 | 0.07 |
| 107.00 | 0.07 |
| 108.00 | 0.07 |
| 109.00 | 0.07 |
| 110.00 | 0.07 |
| 111.00 | 0.07 |
| 112.00 | 0.07 |

| Distance m | Over-Pressure bar |
|---|---|
| 113.00 | 0.07 |
| 114.00 | 0.06 |
| 115.00 | 0.06 |
| 116.00 | 0.06 |
| 117.00 | 0.06 |
| 118.00 | 0.06 |
| 119.00 | 0.06 |
| 120.00 | 0.06 |
| 121.00 | 0.06 |
| 122.00 | 0.06 |
| 123.00 | 0.06 |
| 124.00 | 0.06 |
| 125.00 | 0.06 |
| 126.00 | 0.06 |
| 127.00 | 0.06 |
| 128.00 | 0.05 |
| 129.00 | 0.05 |
| 130.00 | 0.05 |
| 131.00 | 0.05 |
| 132.00 | 0.05 |
| 133.00 | 0.05 |
| 134.00 | 0.05 |
| 135.00 | 0.05 |
| 136.00 | 0.05 |
| 137.00 | 0.05 |
| 138.00 | 0.05 |
| 139.00 | 0.05 |
| 140.00 | 0.05 |
| 141.00 | 0.05 |
| 142.00 | 0.05 |
| 143.00 | 0.05 |
| 144.00 | 0.05 |
| 145.00 | 0.05 |
| 146.00 | 0.05 |
| 147.00 | 0.05 |
| 148.00 | 0.04 |
| 149.00 | 0.04 |
| 150.00 | 0.04 |
| 151.00 | 0.04 |
| 152.00 | 0.04 |
| 153.00 | 0.04 |
| 154.00 | 0.04 |
| 155.00 | 0.04 |
| 156.00 | 0.04 |
| 157.00 | 0.04 |
| 158.00 | 0.04 |
| 159.00 | 0.04 |
| 160.00 | 0.04 |

| Distance m | Over-Pressure bar |
|---|---|
| 161.00 | 0.04 |
| 162.00 | 0.04 |
| 163.00 | 0.04 |
| 164.00 | 0.04 |
| 165.00 | 0.04 |
| 166.00 | 0.04 |
| 167.00 | 0.04 |
| 168.00 | 0.04 |
| 169.00 | 0.04 |
| 170.00 | 0.04 |
| 171.00 | 0.04 |
| 172.00 | 0.04 |
| 173.00 | 0.04 |
| 174.00 | 0.04 |
| 175.00 | 0.04 |
| 176.00 | 0.04 |
| 177.00 | 0.03 |
| 178.00 | 0.03 |
| 179.00 | 0.03 |
| 180.00 | 0.03 |
| 181.00 | 0.03 |
| 182.00 | 0.03 |
| 183.00 | 0.03 |
| 184.00 | 0.03 |
| 185.00 | 0.03 |
| 186.00 | 0.03 |
| 187.00 | 0.03 |
| 188.00 | 0.03 |
| 189.00 | 0.03 |
| 190.00 | 0.03 |
| 191.00 | 0.03 |
| 192.00 | 0.03 |
| 193.00 | 0.03 |
| 194.00 | 0.03 |
| 195.00 | 0.03 |
| 196.00 | 0.03 |
| 197.00 | 0.03 |
| 198.00 | 0.03 |
| 199.00 | 0.03 |
| 200.00 | 0.03 |
| 201.00 | 0.03 |
| 202.00 | 0.03 |
| 203.00 | 0.03 |
| 204.00 | 0.03 |
| 205.00 | 0.03 |
| 206.00 | 0.03 |
| 207.00 | 0.03 |
| 208.00 | 0.03 |

| Distance m | Over-Pressure bar |
|---|---|
| 209.00 | 0.03 |
| 210.00 | 0.03 |
| 211.00 | 0.03 |
| 212.00 | 0.03 |
| 213.00 | 0.03 |
| 214.00 | 0.03 |
| 215.00 | 0.03 |
| 216.00 | 0.03 |
| 217.00 | 0.03 |
| 218.00 | 0.03 |
| 219.00 | 0.03 |
| 220.00 | 0.03 |
| 221.00 | 0.03 |
| 222.00 | 0.03 |
| 223.00 | 0.03 |
| 224.00 | 0.03 |
| 225.00 | 0.03 |
| 226.00 | 0.03 |
| 227.00 | 0.03 |
| 228.00 | 0.03 |
| 229.00 | 0.02 |
| 230.00 | 0.02 |
| 231.00 | 0.02 |
| 232.00 | 0.02 |
| 233.00 | 0.02 |
| 234.00 | 0.02 |
| 235.00 | 0.02 |
| 236.00 | 0.02 |
| 237.00 | 0.02 |
| 238.00 | 0.02 |
| 239.00 | 0.02 |
| 240.00 | 0.02 |
| 241.00 | 0.02 |
| 242.00 | 0.02 |
| 243.00 | 0.02 |
| 244.00 | 0.02 |
| 245.00 | 0.02 |
| 246.00 | 0.02 |
| 247.00 | 0.02 |
| 248.00 | 0.02 |
| 249.00 | 0.02 |
| 250.00 | 0.02 |
| 251.00 | 0.02 |
| 252.00 | 0.02 |
| 253.00 | 0.02 |
| 254.00 | 0.02 |
| 255.00 | 0.02 |
| 256.00 | 0.02 |

| Distance m | Over-Pressure bar |
|---|---|
| 257.00 | 0.02 |
| 258.00 | 0.02 |
| 259.00 | 0.02 |
| 260.00 | 0.02 |
| 261.00 | 0.02 |
| 262.00 | 0.02 |
| 263.00 | 0.02 |
| 264.00 | 0.02 |
| 265.00 | 0.02 |
| 266.00 | 0.02 |
| 267.00 | 0.02 |
| 268.00 | 0.02 |
| 269.00 | 0.02 |
| 270.00 | 0.02 |
| 271.00 | 0.02 |
| 272.00 | 0.02 |
| 273.00 | 0.02 |
| 274.00 | 0.02 |
| 275.00 | 0.02 |
| 276.00 | 0.02 |
| 277.00 | 0.02 |
| 278.00 | 0.02 |
| 279.00 | 0.02 |
| 280.00 | 0.02 |
| 281.00 | 0.02 |
| 282.00 | 0.02 |
| 283.00 | 0.02 |
| 284.00 | 0.02 |
| 285.00 | 0.02 |
| 286.00 | 0.02 |
| 287.00 | 0.02 |
| 288.00 | 0.02 |
| 289.00 | 0.02 |
| 290.00 | 0.02 |
| 291.00 | 0.02 |
| 292.00 | 0.02 |
| 293.00 | 0.02 |
| 294.00 | 0.02 |
| 295.00 | 0.02 |
| 296.00 | 0.02 |
| 297.00 | 0.02 |
| 298.00 | 0.02 |
| 299.00 | 0.02 |
| 300.00 | 0.02 |