


Appendix D

Dispersion Modeling Results (EPA RMP*Comp)



[Back](#)

Estimated Distance Calculation

 **Estimated distance to 1 psi overpressure:** 0.2 miles (0.3 kilometers)

This is the distance to the overpressure endpoint of 1 pound per square inch specified for this regulated substance under the RMP Rule.

Scenario Summary

Chemical: Silane
CAS number: 7803-62-5
Threat type: Flammable Gas
Scenario type: Worst-case
Quantity released: 13000 pounds
Release type: Vapor Cloud Explosion

Assumptions about this scenario

Wind speed: 1.5 meters/second (3.4 miles/hour)
Stability class: F
Air temperature: 77 degrees F (25 degrees C)



Breaking news

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**RMP*Comp**
RMP*Comp[Back](#)

Estimated Distance Calculation

 **Estimated distance to toxic endpoint:** 1.2 miles (1.9 kilometers)

This is the downwind distance to the toxic endpoint specified for this regulated substance under the RMP Rule. Report all distances shorter than 0.1 mile as 0.1 mile, and all distances longer than 25 miles as 25 miles.

Scenario Summary

Chemical: Ammonia (anhydrous)

CAS number: 7664-41-7

Threat type: Toxic Gas

Scenario type: Worst-case

Physical state: Liquefied under pressure

Quantity released: 22000 pounds

Release duration: 10 min

Release rate: 1210 pounds per minute

Mitigation measures: Release in enclosed space, in direct contact with outside air

Surrounding terrain type: Urban surroundings (many obstacles in the immediate area)

Toxic endpoint: 0.14 mg/L; basis: ERPG-2

Assumptions about this scenario

Wind speed: 1.5 meters/second (3.4 miles/hour)

Stability class: F

Air temperature: 77 degrees F (25 degrees C)



[Back](#)

Estimated Distance Calculation

 **Estimated distance to 1 psi overpressure:** 0.06 miles (0.1 kilometers)

This is the distance to the overpressure endpoint of 1 pound per square inch specified for this regulated substance under the RMP Rule.

Scenario Summary

Chemical: Silane
CAS number: 7803-62-5
Threat type: Flammable Gas
Scenario type: Alternative
Release duration: 212.32 minutes
Release type: Vapor Cloud Explosion
Hole or puncture area: 0.005 square inches
Tank pressure: 1400 psi
Tank temperature: 65 F
Release rate: 7.79 pounds per min

Mitigation measures: NONE

Assumptions about this scenario

Wind speed: 3 meters/second (6.7 miles/hour)
Stability class: D
Air temperature: 77 degrees F (25 degrees C)




USD/CNY -0.27%

Steele Creek

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RMP*Comp[Back](#)

Estimated Distance Calculation

 **Estimated distance to toxic endpoint:** <0.1 miles (<0.16 kilometers); report as 0.1 mile

This is the downwind distance to the toxic endpoint specified for this regulated substance under the RMP Rule. Report all distances shorter than 0.1 mile as 0.1 mile, and all distances longer than 25 miles as 25 miles.

Scenario Summary

Chemical: Ammonia (anhydrous)

CAS number: 7664-41-7

Threat type: Toxic Gas

Scenario type: Alternative

Physical state: Liquefied under pressure

Release duration: 35 minutes

Release rate: 3 pounds per min

Mitigation measures: Release in enclosed space, in direct contact with outside air

Surrounding terrain type: Urban surroundings (many obstacles in the immediate area)

Toxic endpoint: 0.14 mg/L; basis: ERPG-2

Assumptions about this scenario

Wind speed: 3 meters/second (6.7 miles/hour)

Stability class: D

Air temperature: 77 degrees F (25 degrees C)



Baxter Ln

Logistics Ln

Element Designs

Logistics Ln

Ross Distribution Center

Logistics Ln

Logistics Ln

Logistics Ln

Logistics Ln

Logistics Ln

Steele Creek

Steele Creek

73°F Mostly sunny

Taskbar icons: File Explorer, Edge, Mail, Photos, OneDrive, Chrome, File History, Settings, Cortana, Weather, Corn icon

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[Back](#)

Estimated Distance Calculation

 **Estimated distance to toxic endpoint:** 0.1 miles (0.2 kilometers)

This is the downwind distance to the toxic endpoint specified for this regulated substance under the RMP Rule. Report all distances shorter than 0.1 mile as 0.1 mile, and all distances longer than 25 miles as 25 miles.

Scenario Summary

Chemical: Hydrochloric acid
Initial concentration: 37 %
CAS number: 7647-01-0
Threat type: Toxic Liquid
Scenario type: Alternative
Liquid temperature: 72 F
Quantity released: 43.4 pounds
Release duration: 26 minutes
Storage type: Tank under atmospheric pressure
Hole or puncture area: 0.005 square inches
Height of liquid column above hole: 36 inches

Release rate: 1.67 pounds per min

Mitigation measures:
Diked area: 300 square feet
Dike height: .66 feet

Release rate to outside air: 0.271 pounds per minute
Surrounding terrain type: Urban surroundings (many obstacles in the immediate area)
Toxic endpoint: 0.03 mg/L; basis: ERPG-2

Assumptions about this scenario

Wind speed: 3 meters/second (6.7 miles/hour)
Stability class: D
Air temperature: 77 degrees F (25 degrees C)



Ross DC Truck Entrance

Department of Motor Vehicles

Food Lion

AVANTI TILE & STONE

The Trailer Store

Metrolina Collision Center

Element Designs

Ross Distribution Center

Fort Mill Elementary School #12

Beckett Farms Apartments

Mill House Apartments

Splashscapespro

Proline

Walnut Grove Christian School

Master Media Enterprises

Carolina Stars Gymnastics

Reverdy Ct

Saddle Ridge Rd

Bridle Path

Steele Creek

Highpoint at Fort Mill

Simon Cir

Willows at Fort Mill

Gold Hill Rd

Fort M

Edithson

Fort M

Forest Dr

Forest Dr

Forest Way Dr

Blankmanship Branch

Blankmanship Branch

Blankmanship Branch



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[Back](#)

Estimated Distance Calculation

Estimated distance to toxic endpoint: 0.1 miles (0.2 kilometers)

This is the downwind distance to the toxic endpoint specified for this regulated substance under the RMP Rule. Report all distances shorter than 0.1 mile as 0.1 mile, and all distances longer than 25 miles as 25 miles.

Scenario Summary

Chemical: Hydrofluoric acid
Initial concentration: 50 %
CAS number: 7664-39-3
Threat type: Toxic Liquid
Scenario type: Alternative
Liquid temperature: 72 F
Quantity released: 23.9 pounds
Release duration: 14 minutes
Storage type: Tank under atmospheric pressure
Hole or puncture area: 0.005 square inches
Height of liquid column above hole: 36 inches

Release rate: 1.71 pounds per min

Mitigation measures:
Diked area: 300 square feet
Dike height: .66 feet

Release rate to outside air: 0.0306 pounds per minute
Surrounding terrain type: Urban surroundings (many obstacles in the immediate area)
Toxic endpoint: 0.016 mg/L; basis: ERPG-2

Assumptions about this scenario

Wind speed: 3 meters/second (6.7 miles/hour)
Stability class: D
Air temperature: 77 degrees F (25 degrees C)

