

CAMEO of EXERCISES

Find the following in the Chemical Information Database:

<i>Common Name</i>	<i>ERPG/ IDLH/TLV/TEEL</i>	<i>Health Hazards</i>
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UN/NA # 1969 _____

Make a list of CAA 112 ® (RMP) chemicals. How many have water solubility value greater than 1? Of those, how many are generally in liquid form? Of those, how many are a defined EHS?

ALOHA EXERCISES

Use ALOHA to model a release of 2500 pounds of ANHYDROUS AMMONIA over a 10-minute period. Weather conditions are:

Wind Speed:	15 mph
Wind Direction:	SSE
Cloud Cover:	9
Temperature:	75 F
Inversion:	no
Relative Humidity:	80 %

What is the Maximum Plume Distance when the LOC =

IDLH	_____
ERPG-1	_____
ERPG-2	_____
TLV-STEL	_____

If the tank were 30,000 gallon, 40 feet long, 85% full, and the release was via a 3" broken pipe located on the bottom of the tank, how long would it take the tank to empty?

MARPLOT EXERCISES

Create and print a MARPLOT map displaying the 4 ALOHA plumes for ANHYDROUS AMMONIA

Use your MARPLOT county map for this exercise.

- 1) Locate a spot for your fictitious release to occur.
- 2) Use the “Sharing” menu to display the ALOHA IDLH plume.
- 3) Go to the “List” menu.
- 4) Create a new map layer titled “ANHYDROUS AMMONIA RELEASE”
- 5) Select the “Polygon” tool from the left toolbar
- 6) Use your mouse to “draw” a copy of the ALOHA plume area.
- 7) Name the “object” “AMMONIA RELEASE with IDLH = 300 ppm”
- 8) Make the object color “PINK” and select a “Fill Pattern”
- 9) Select “OK”. Is your plume displayed correctly on the map?
- 10) Repeat steps 2 – 9 with these changes:
 - a. Make a new ALOHA plume for LOC = ERPG-1
 - b. Object name is “AMMONIA RELEASE with ERPG-1 = 25 ppm”
 - c. Make the color BLUE and the fill pattern different
- 11) Repeat steps 2 – 9 with these changes:
 - a. Make a new ALOHA plume for LOC = ERPG-2
 - b. Object name is “AMMONIA RELEASE with ERPG-2 = 150 ppm”
 - c. Make the color RED and the fill pattern different
- 12) Repeat steps 2 – 9 with these changes:
 - a. Make a new ALOHA plume for LOC = TLV-STEL
 - b. Object name is “AMMONIA RELEASE with TLV-STEL = 35 ppm”
 - c. Make the color GREEN and the fill pattern different
- 13) Repeat steps 2 – 9 with these changes:
 - a. Make a new ALOHA plume for a WORST-CASE release of 85% of the tank volume using ERPG-2 for the LOC.
 - b. Object name is “AMMONIA ENTIRE TANK SPILL—LOC = 150 ppm”
 - c. Make the color YELLOW and the fill pattern different
- 14) Save it as a bitmap file to your desktop (use the “File” menu). Make sure to give it a name!
- 15) Minimize all screens until you can see your desktop. Use a “photo editor” program to open the bitmap you just saved. You can now “edit” the picture using the photo editor functions. Edit the photo and print it.
- 16) You should now be able to e-mail the picture. If you can, e-mail it to someone you know or someone in your office, then print it again.
- 17) You may also “Export” the picture to other MARPLOT users as a “.mie” file. The other MARPLOT users would “Import” the .mie file, and the picture will appear EXACTLY as it does on your computer.

LandView 5 EXERCISES

Use your LandView 5 CD-ROM to produce a population estimate for each of the above AMMONIA plumes.

- 1) use a MARPLOT Search function
 - a. select a plume,
 - b. do a search in MARPLOT for “things that are inside of or touched by” the “currently selected object” in the “Census Block Points” layer
 - c. MARPLOT will give you a list of Census Block Points, you will select the “Show All On Map” button
 - d. You should then see a group of the block points with each surrounded by the red squares indicating they are “selected”
 - e. After that, go to the “Sharing” menu, select “LandView” then “Get Info” and you should then see a page (in LandView) for one of the block points.
 - f. Select the “Summarize” button to see the numbers for all the block points added up.

CAMEO answers.

UN/NA # 1969: ISOBUTANE

NFPA FIRE = 4
NFPA HEALTH = 0
NFPA REACTIVE = 0

IDLH = none given
TEEL-1 = 400 ppm
TEEL-2 = 3000 ppm
TEEL-3 = 15000 ppm
LEL = 1.8 %; 18000 ppm

CAA 112 ® = 170
Soluble>1 = 15
Liquid = 8
EHS = 4

ALOHA answers

With the information given, you would use the **DIRECT/CONTINUOUS** source option set for “**250 pounds/min for 10 minutes**”. Your answers may differ from mine according to the “Site Data/Location” you select. I am using Oklahoma City, which, after all, is the center of the CAMEO universe.

What is the Maximum Plume Distance when the LOC =

IDLH	364 yards
ERPG-1	1556 yards
ERPG-2	536 yards
TLV-STEL	1263 yards

If the tank were 30,000 gallon, 40 feet long, 85% full, and the release was via a 3” broken pipe located on the bottom of the tank, how long would it take the tank to empty? Or, better said, how long until the ammonia is all released and evaporated? Given that the ambient temperature is 75 degrees, it won’t take long for the liquid ammonia to be gone.

33 minutes

Maximum footprint distance for the tank release using ERPG-2 = 150 ppm for the LOC.

2.0 miles