

CAMEOfm/ALOHA EXERCISES

- 1) Open the Chemical Library
- 2) Find the following chemical information:

Chemical Name : _____

CAS # : _____

UN/NA# : 1008

NFPA RATINGS:

FIRE : _____

HEALTH : _____

REACTIVE : _____

SPECIAL : _____

IDLH : _____

ERPG -2 : _____

TEEL-2 : _____

OTHER INFO: _____

Chemical Name : Starts with letter "Fu"

CAS # : _____

DOT Label : POISON

UN/NA# : contains numbers "57"

NFPA RATINGS:

FIRE : _____

HEALTH : _____

REACTIVE : _____

SPECIAL : _____

IDLH : _____

ERPG -2 : _____

TEEL-2 : _____

OTHER INFO: white crystal; found in a rural,
agricultural area

The chemical in # 1 from page 1 is BORON TRIFLUORIDE.

Question 1: Can you model a BORON TRIFLUORIDE release using ALOHA?

Question 2: In what physical state does ALOHA need BORON TRIFLUORIDE to model a release at “ambient temperature”?

Question 3: Use ALOHA to model a release based on the following parameters.

Location	use your own location
Chemical	boron trifluoride
Atmospheric	
Wind speed	10 mph
Wind direction	N
Cloud cover	5
Temperature	70
Humidity	50%
Source	
	Direct / Instantaneous
	1000 pounds

Question 4: Display the footprint.

Use the CAMEO Chemical Library to determine the following Level Of Concern values:

ERPG-1
ERPG-2
ERPG-3

Question 5: Run ALOHA plumes for all 3 available LOC values. Make sure to change your units from ppm to mg/m³!

MARPLOT EXERCISES

Create and print a MARPLOT map displaying a radius for the 3 ALOHA plumes for BORON TRIFLUORIDE from the above scenario.

Use your MARPLOT county map for this exercise.

- 1) Create a new map layer titled "BORON TRIFLUORIDE RELEASE"
- 2) Locate a spot for your fictitious release to occur.
- 3) Use the Sharing Menu to display the ERPG-1 ALOHA footprint
- 4) Use the Polygon Tool to trace around the footprint; when finished, select "OK"
- 5) Name the new "object" "BT with ERPG = 2 mg/m³"
- 6) Make the object color "PINK" and select a "Fill Pattern"
- 7) Select "OK".
- 8) Repeat steps 4 – 7 with these changes:
 - a. Change LOC to ERPG-2; display footprint on map
 - b. Object name is "BT with ERPG = 30 mg/m³"
 - c. Make the color BLUE and the fill pattern different
- 9) Repeat steps 4 – 7 with these changes:
 - a. Change LOC to ERPG-3 display footprint on map
 - b. Object name is "BT with ERPG = 100 mg/m³"
 - c. Make the color RED and the fill pattern different
- 10) Print the map.
- 11) Save it as a bitmap file to your desktop (use the "File" menu). Make sure to give it a name!
- 12) 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.
- 13) 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.
- 14) 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.

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LandView 5 EXERCISES

Use your Landview 5 CD-ROM to produce a population estimate for each Mustard Gas plume.

- 1) Use the 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.

ANSWERS

CAMEO/ALOHA answers

Chemical Name: BORON TRIFLUORIDE

CAS # : 7637-07-2

UN/NA# : 1008

NFPA RATINGS:

FIRE : 0

HEALTH : 4

REACTIVE : 1

SPECIAL :

IDLH : 25 ppm

ERPG -2 : 30 mg/m³

TEEL-2 : blank

OTHER INFO: air-reactive, water-reactive; highly toxic, inhalation hazard; absorption hazard; Level A protection; etc.

Chemical Name : CARBOFURAN or CALCIUM CYANIDE

(given that the product was found in a rural area, the more likely answer is CARBOFURAN as the General Description lists its use as a pesticide)

CAS # : 1563-66-2

UN/NA# : 2757

NFPA RATINGS:

FIRE : blank

HEALTH : blank

REACTIVE : blank

SPECIAL : blank

IDLH : blank

ERPG -2 : blank

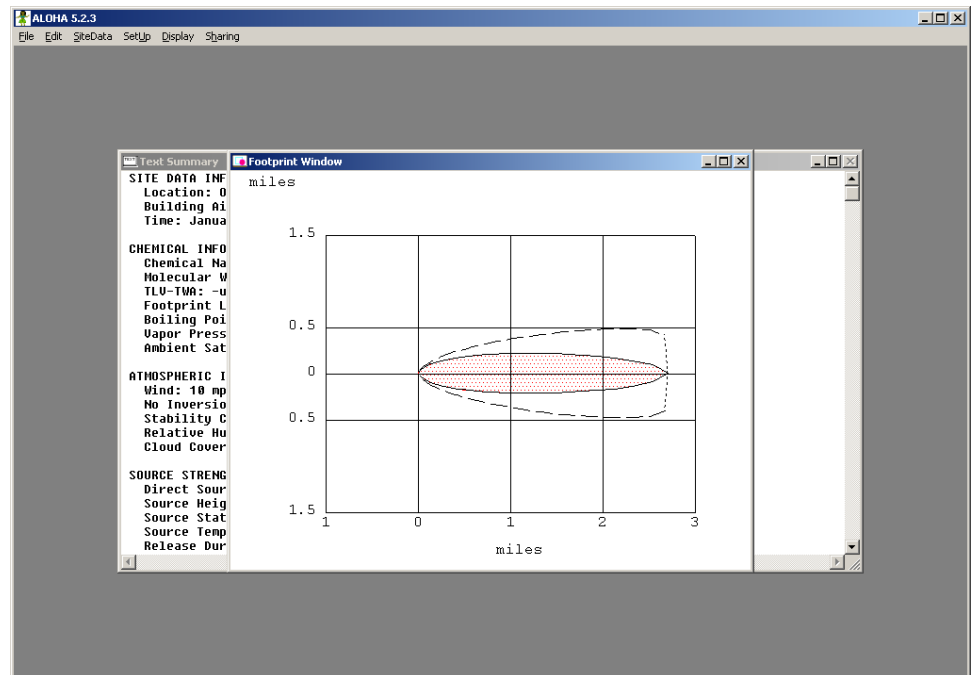
TEEL-2 : blank

OTHER INFO: very toxic, may be fatal if swallowed or absorbed through skin, produces dangerous fumes if burning, water-soluble, dike runoff....etc.

Question 1: Yes, BORON TRIFLUORIDE can be modeled using ALOHA.

Question 2: ALOHA will model BORON TRIFLUORIDE in either Liquid or Gaseous state. To model as a Liquid, the "temperature" must be given -148 and -196 degrees. Unlikely temperatures in most scenarios. Gaseous is more likely ALOHA scenario.

Question 3:



Here is a sample of the above image saved as a “bitmap” with text that was added using “Paint” software. Of course, this is only a sample. The black background with “pastel-colored” text shows nicely on my computer screen; it doesn’t show up as well as an inserted bitmap.

