

Chem 4860**Assignment: Permissible Exposure Levels**

You are the Health and Safety Engineer for large chemical manufacturing plant. The Vice President of operations has informed you that your company is about to manufacture a new product that will be using the chemical 2-4-dimethyl-DEATH in the process. The section of your plant that will be making this new chemical is not equipped with a chemical hood and test trials have shown that throughout the course of production the daily air concentrations of the 2-4 dimethyl –DEATH vary considerably throughout the production area. Installing a new fume hood would be very costly; consequently, your Vice President does not want to do this if there is no need to. However, the employee labor union is very uneasy about the health risks and is threatening to strike if the company moves forward with its plans. You are asked to do an air survey to determine if the Permissible Exposure Levels are exceeded. You are to issue a joint statement to management and employees as to the safety of the new process based on your findings.

You know that the Permissible Exposure Level-Time Weighted Average (PEL-TWA) is 65 ppm with a Ceiling value of 125 ppm. Your air monitoring readings show that the employee exposures will be as follows:

Time	Concentration in ppm
8:00 to 8:20	5.10
8:20 to 9:05	42.82
9:05 to 9:20	60.11
9:20 to 9:45	65.33
9:45 to 11:00	75.66
11:00 to 11:30	78.05
11:30 to Noon	80.75
Noon to 1:00	0.00
1:00 to 2:00	70.62
2:00 to 3:05	66.00
3:05 to 3:30	64.2
3:30 to 4:00	59.10

YOUR ASSIGNMENT

Prepare a 3-4 page statement addressing these concerns and your findings. Remember you must convince both management and employees that your findings are accurate and in the best interest of the company and the employees safety. Sometimes in a situation like this you lose either way since the company may not want to spend the money on what is needed and/or the employees do not want to accept the fact that they may need to be working with a dangerous chemical without a fume hood. Of course, you need to do what is right regardless of the outcome but do it very diplomatically with and understanding of each sides concerns. Sometimes the way you present you case makes all the difference in the world as to how well it will be received by each side. Your in a tough situation either way.

POINTS THAT MUST BE ADDRESSED:

What will your recommendation to management and to the employee union be?

Can the process be safely implemented without a chemical hood?

How can you justify your answer based on the calculated TWA.

What is the calculated TWA to the nearest hundredth of a ppm.

Show how you calculated the TWA so that they will believe you.

How do you explain to them exactly what a PEL-TWA is?

How do you convince them that a PEL-TWA is a legitimate measure to use? (Remember that the employees are thinking I don't want any exposure at all)

Remember most of them don't even know what a PEL is so you may need to do some education?

You can do it in Power Point if you think that will make a better presentation but whatever you say make sure you back it up. There are a lot of non-believers on both sides.