To: Campagna, Philip[Campagna.Philip@epa.gov]
From: Kelly, Jack (R3 Phila.)
Sent: Sun 1/12/2014 6:49:47 PM
Subject: Fw: Poison Control tox info, MSDS, and prelim air and water screening info for EPA OSCs

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From: Markiewicz, Karl
Sent: Friday, January 10, 2014 3:51:39 PM
To: Kelly, Jack (R3 Phila.); Linden, melissa; Matlock, Dennis
Cc: Werner, Lora; Burns, Francis
Subject: Re: Poison Control tox info, MSDS, and prelim air and water screening info for EPA OSCs

All,

This is a good summary. I'm guessing that the methoxymethyl-CHM (ether component) is resp for licorice odor and probably has an odor threshold in ppb or ppt range. Not sure at what level methyl-CHM you start sensing the licorice odor.

Karl

From: Kelly, Jack (R3 Phila.)
Sent: Friday, January 10, 2014 3:42:34 PM
To: Linden, melissa; Matlock, Dennis
Cc: Markiewicz, Karl; Werner, Lora; Burns, Francis
Subject: Fw: Poison Control tox info, MSDS, and prelim air and water screening info for EPA OSCs

Per the recent conference about air monitoring, here is what I take from Karl and Lora's emails in brief:

- The air health criteria for similar compounds are very high (none for the mixture itself), meaning not vey toxic;
- the vapor pressure value indicates you won't find much in the air;
- no info on odor thresholds but for one or more of the compounds in the mixture, it/they must be pretty darn low (meaning, despite two statements above, it may be hard to convince folks don't worry since they may smell it)

Ccing Karl and Lora in case I am wrong. (PS this has happened before)

From Karl earlier today...
We believe the licorice odor is related to the 4-(MethoxyMethyl) cyclohexaneMethanol(98955-27-2) in the mixture. There's even less chemical and toxicity information for this chemical. I haven't located any tox studies, vapor pressure or other information.

Eastman Crude MCHM

Weight %	Component	CAS Registry No.
68 . 89%	4-methylcyclohexanemethanol	34885-03-5
4 – 22%	4-(methoxymethyl)cyclohexanemethanol	98955-27-2
4 – lO%	water	7732-18-5
5%	methyl4-methylcyclohexanecarboxylate	51181-40-9
1%	dimethyl l,4-cyclohexanedicarboxylate	94-60-0
1%	methanol	67-56-1
1-2%	l,4-cyclohexanedimethanol	105-08-8

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2

From: Werner, Lora
Sent: Friday, January 10, 2014 10:22:00 AM
To: Matlock, Dennis; Kelly, Jack (R3 Phila.)
Cc: Larry Cseh; Ioven, Dawn; Anthony F Pizon
Subject: Poison Control tox info, MSDS, and prelim air and water screening info for EPA OSCs

Oh happy EPA R3 OSCs

Below is what the WV Poison Control Center is sharing about the incident (thank you Tony!!), the MSDS sheet we have, and Karl's prelim tox review from last night. There isn't a lot of tox data on this one and no info on the odor threshold unfortunately. The MSDS includes a toxicological reference of 825 mg/kg LD-50 for rats.

The water screening level being employed is 1 ppm and is very conservative and should be well below health effects. Larry derived it from the LD-50 with uncertainties applied for going from rats to humans, susceptible populations, and then rounded down from 8 to 1 due to use of LD-50 (if I have that right –any errors in translation are mine, sorry in advance Larry if I am inaccurate there).

On the air side, we aren't aware of any specific screening values for 4-methylcyclohexane methanol, NIOSH has a REL for a similar chemical (methylcyclohexane) of 400 ppm (OSHA PEL 500 ppm); and for another similar chemical (methycyclohexanol) of 50 ppm (OSHAL PEL 100 ppm).

Call if you want to discuss! I know you are en route now, Den. Lora

From: Markiewicz, Karl
Sent: Thursday, January 09, 2014 8:45 PM
To: Werner, Lora
Subject: Re: SPOT Report--Charleston West Virginia

Hello Lora,

I think the "do not use" order and subsequent state of emergency is related to lack of toxicity information rather than known hazard.

From Chemspider: It has a low vapor pressure (0.133 mmHg at 25C) and high boiling point (192C at 760mmHg) so its not moving into the air. The density is 0.884 g/cm3 so its a floater.

I think its an eye and skin irritant based on structure. Can't find any tox specific studies.

Karl

January 9, 2014

CONTAMINATED WATER INCIDENT (as of 19:30)

INVOLVED CHEMICAL:

Reported to be 4-methylcyclohexane methanol

CAS: 34885-03-5

Multiple other synonyms

DOSE:

Unknown at this time how much went into the water system. Dilution will limit the exposure but without specific information regarding the leak/spill, the actual dose is unknown.

There may also be a lag between when the chemical entered the water and when that water appears in homes and businesses.

TOXICITY:

No information is available for this chemical. Based on the chemical's structure, it is assumed that it may have the properties of higher alcohols and/or phenol-like solvents.

The WV Poison Center will update this information if more becomes available.

SYMPTOMS:

Assuming the above, symptoms would be expected to occur shortly after exposure. Therefore, if there are no symptoms, and water has been used for bathing, teeth brushing, or drinking during the day today, it is likely that no acute symptoms will develop.

Skin irritation is possible

Vomiting is possible

CNS depression if a large exposure

Whether or not the above occurs would depend on dose and individual sensitivity.

It is important to note that unusual smells, odors, and taste can cause nausea and headaches. These symptoms are not due to toxic effects but are a response to unusual smells/tastes.

CURRENT TRIAGE RECOMMENDATIONS (19:30 01-09-14):

If no symptoms are present, do nothing and follow recommendations not to use the water for drinking or bathing.

If mild symptoms are present (mild skin irritation, mild vomiting), the Poison Center is attempting to manage these cases at home.

If callers are reporting significant symptoms, the Poison Center is referring these individuals in.

If callers are reporting symptoms that are likely related to a medical event, the Poison Center is referring these individuals in.

HOSPITAL MANAGEMENT RECOMMENDATIONS:

Please let the Poison Center know about these cases.

Treatment is symptomatic and supportive. There is no specific/antidotal treatment.

Ensure that a co-existing or coincidental medical event is not occurring.

Lora Siegmann Werner, MPH

Regional Director, Region 3

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