

Revised 9/17/19

September 18, 2019

To: Portland City Council

From: Theodora Tsongas, PhD, MS

Re: Comments to the Portland City Council on the Proposal by Zenith to receive, store, transfer, and load on marine vessels for transport MDI, methyl diphenyl isocyanate.

Good morning Mayor and Commissioners,

I am Dr. Theodora Tsongas, an environmental health scientist. I am speaking on behalf of Oregon Physicians for Social Responsibility and the Center for Sustainable Economy. I am here today to call your attention to the health effects of exposure to methyl diphenyl isocyanate (MDI).<sup>1</sup>

Zenith plans to apply for a permit to the City of Portland to build a pipeline to transfer MDI under Front Avenue.

MDI is a member of the family of hazardous chemical isocyanates. Most famous of the isocyanates is methyl isocyanate gas (MIC), the material released in Bhopal, India in 1984, which killed 3800 people and harmed many thousands more.<sup>2</sup> Concern raised by that devastating incident and others about lack of community preparedness, communication, and knowledge in preparation for industrial accidents resulted in the passing of the Federal Emergency Planning and Community Right-To-Know Act, also known as SARA Title III. This law is designed to help local communities protect public health, safety, and the environment from chemical hazards.

MDI is a diisocyanate. Diisocyanates are highly reactive compounds used in the production of polyurethane foams, elastomers, paints and adhesives. They are skin and lung sensitizers and are one of the most important causes of occupational asthma worldwide. MDI binds to DNA

---

<sup>1</sup> Pure MDI or 4,4'-diphenylmethane diisocyanate (MDI, CAS# 101-68-81), Polymeric MDI (pMDI, CAS# 9016-87-9), and MDI pre-polymers.

<sup>2</sup> On December 3, 1984, more than 40 tons of methyl isocyanate gas leaked from a pesticide plant in Bhopal, India, immediately killing at least 3800 people and causing significant morbidity and premature death for many thousands more (estimates go as high as 20,000). (E. Broughton, The Bhopal disaster and its aftermath: a review. *Environ Health*. 2005;4:6. doi: [10.1186/1476-069X-4-6](https://doi.org/10.1186/1476-069X-4-6))

and has been shown to induce gene mutations and chromosomal damage.<sup>3</sup> A metabolite of MDI, methylene dianiline, has been found in MDI exposed humans and is a carcinogen.<sup>4</sup>

Exposure can occur by inhalation and also by absorption through the skin. Sensitization may result from a single high exposure or intermittent low exposures. People who become sensitized to MDI may experience life-threatening asthma attacks when subsequently exposed to even extremely low levels of isocyanates. Do-it-yourselfers without appropriate personal protection are also at risk from these products. Consideration must also be given to possible differential effects on the health of infants, children and other sensitive subpopulations who might be at greater risk of exposure or be more sensitive to toxins than healthy adults.

In view of these health concerns, it is incumbent upon the City to give careful consideration before approving a permit that would allow Zenith to build a pipeline for MDI. There would always be the risk of accidental or intentional releases of MDI during storage at or transport of materials to or from the Zenith facility in Portland. We do not want to run the risk of becoming the next Bhopal. Lastly, the City must consider requiring companies engaged in moving toxic or flammable materials through the city to report to city officials the exact amounts and type of materials that are being moved - **prior** to moving them. This minimal level of public disclosure is necessary to save lives and it should be required here in Portland.

Thank you for your consideration of our concerns.

---

<sup>3</sup> Bolognesi C et al; Crit Rev Toxicol 31 (6): 737-72 (2001)

<sup>4</sup> NIOSH (2006). *National Institute for Occupational Safety and Health*. Preventing Asthma and Death from MDI Exposure During Spray-on Truck Bed Liner and Related Applications: NIOSHAAlert <<http://www.cdc.gov/niosh/docs/2006-149/default.html>>.

September 2019

To: Portland City Council

From: Theodora Tsongas, PhD, MS

Re: Comments to the Portland City Council on the Proposal by Zenith to receive, store, transfer, and load on marine vessels for transport MDI, methyl diphenyl isocyanate.

Good morning Mayor and Commissioners,

I am Dr. Theodora Tsongas, an environmental health scientist. I am here today to call your attention to the health effects of exposure to methyl diphenyl isocyanate (MDI). <sup>1</sup>

Zenith plans to apply for a permit to the City of Portland to build a pipeline to transfer MDI under Front Avenue.

MDI is a member of the family of hazardous chemical isocyanates. Most famous of the isocyanates is methyl isocyanate gas (MIC), the material released in Bhopal, India in 1984, which killed 3800 people and harmed many thousands more. <sup>2</sup> Concern raised by that devastating incident and others about lack of community preparedness, communication, and knowledge in preparation for industrial accidents resulted in the passing of the Federal Emergency Planning and Community Right-To-Know Act, also known as SARA Title III. This law is designed to help local communities protect public health, safety, and the environment from chemical hazards.

MDI is a diisocyanate. Diisocyanates are highly reactive compounds used in the production of polyurethane foams, elastomers, paints and adhesives. They are skin and lung sensitizers and are one of the most important causes of occupational asthma worldwide.

Exposure can occur by inhalation and also by absorption through the skin. People who become sensitized to MDI may experience life-threatening asthma attacks when subsequently exposed to even extremely low levels of isocyanates. Do-it-yourselfers without appropriate personal protection are also at risk from these products. Consideration must also be given to possible differential effects on the health of infants, children and other sensitive subpopulations who might be at greater risk of exposure or be more sensitive to toxins than healthy adults.

---

<sup>1</sup> Pure MDI or 4,4'-diphenylmethane diisocyanate (MDI, CAS# 101-68-81), Polymeric MDI (pMDI, CAS# 9016-87-9), and MDI pre-polymers.

<sup>2</sup> On December 3, 1984, more than 40 tons of methyl isocyanate gas leaked from a pesticide plant in Bhopal, India, immediately killing at least 3800 people and causing significant morbidity and premature death for many thousands more (estimates go as high as 20,000). (E. Broughton, The Bhopal disaster and its aftermath: a review. *Environ Health*. 2005;4:6. doi: [10.1186/1476-069X-4-6](https://doi.org/10.1186/1476-069X-4-6))

MDI is a highly reactive chemical that binds to DNA and is probably genotoxic. MDI has been shown to induce gene mutations and chromosomal damage.<sup>3</sup>

In view of these health concerns, it is incumbent upon the City to give careful consideration before approving a permit that would allow Zenith to build a pipeline for MDI. There would always be the risk of accidental or intentional releases of MDI during storage at or transport of materials to or from the Zenith facility in Portland. We do not want to run the risk of becoming the next Bhopal. Lastly, the City must consider requiring companies engaged in moving toxic or flammable materials through the city to report to city officials the exact amounts and type of materials that are being moved - prior to moving them. This minimal level of public disclosure is required in other states and jurisdictions. It should be required here in Portland too.

Thank you for your consideration of my concerns.

---

<sup>3</sup> Bolognesi C et al; Crit Rev Toxicol 31 (6): 737-72 (2001)

**From:** [Elijah Cetas](#)  
**To:** [McClymont, Keelan](#)  
**Cc:** [Council Clerk – Testimony](#); [Moore-Love, Karla](#); [Lluvia Merello](#)  
**Subject:** Re: Testimony in September  
**Date:** Wednesday, July 3, 2019 9:58:24 AM

---

O.k., I'll sign up for 9/18 then. Thanks for your patience with this!  
Elijah

On Tue, Jul 2, 2019 at 4:58 PM McClymont, Keelan  
<[Keelan.McClymont@portlandoregon.gov](mailto:Keelan.McClymont@portlandoregon.gov)> wrote:

Hi Elijah,

Unfortunately, Communication spots are filled up for 9/11. Do you want to sign up for 9/18 (3 spots remaining) or 9/25 (all spots available, but Commissioner Fritz is absent)?

Thanks,

Keelan McClymont

Assistant Council Clerk | City of Portland

(503) 823-4085

**NOTICE:** The Council Clerk's Office (Room 130) is temporarily closed due to construction. Please visit Room 310 on the 3<sup>rd</sup> floor to drop off Council documents or to sign up for a Communication spot.

**From:** Elijah Cetas <[ecetas@sustainable-economy.org](mailto:ecetas@sustainable-economy.org)>  
**Sent:** Tuesday, July 2, 2019 4:49 PM  
**To:** Lluvia Merello <[lluvia@oregonpsr.org](mailto:lluvia@oregonpsr.org)>; McClymont, Keelan <[Keelan.McClymont@portlandoregon.gov](mailto:Keelan.McClymont@portlandoregon.gov)>  
**Cc:** Council Clerk – Testimony <[CCTestimony@portlandoregon.gov](mailto:CCTestimony@portlandoregon.gov)>; Moore-Love, Karla <[Karla.Moore-Love@portlandoregon.gov](mailto:Karla.Moore-Love@portlandoregon.gov)>  
**Subject:** Re: Testimony in September

Hello, Keelan, I would also like to sign up with Lluvia for the Sept 11 slot.

Let me know if that is still possible.

Thank you!



Elijah

On Mon, Jul 1, 2019 at 8:09 PM Lluvia Merello <[lluvia@oregonpsr.org](mailto:lluvia@oregonpsr.org)> wrote:

thank you, I will be there in plenty of time Sept 11th

Lluvia

On Mon, Jul 1, 2019 at 4:35 PM Council Clerk – Testimony  
<[CCTestimony@portlandoregon.gov](mailto:CCTestimony@portlandoregon.gov)> wrote:

Thank you Lluvia. You are confirmed for the September 11<sup>th</sup> meeting. There will be 5 communications that will last 3 minutes each. The Communications will be from 9:30 to 9:45. I'm not sure yet what the order will be for the 5 Communications, so I would recommend that you be there by 9:30 in case you are called first. Please let me know if you need any additional information about Communications to Council.

Keelan McClymont

Assistant Council Clerk | City of Portland

(503) 823-4085

**NOTICE:** The Council Clerk's Office (Room 130) is temporarily closed due to construction. Please visit Room 310 on the 3<sup>rd</sup> floor to drop off Council documents or to sign up for a Communication spot.

**From:** Lluvia Merello <[lluvia@oregonpsr.org](mailto:lluvia@oregonpsr.org)>

**Sent:** Monday, July 1, 2019 2:06 PM

**To:** Council Clerk – Testimony <[CCTestimony@portlandoregon.gov](mailto:CCTestimony@portlandoregon.gov)>

**Cc:** Elijah Cetas <[ecetas@sustainable-economy.org](mailto:ecetas@sustainable-economy.org)>; Moore-Love, Karla  
<[Karla.Moore-Love@portlandoregon.gov](mailto:Karla.Moore-Love@portlandoregon.gov)>

**Subject:** Re: Testimony in September

Hello Keelan,

Thank you for the dates! My name is Lluvia Merello and I would love to sign up for any of the following dates to speak on Zenith and Fossil Fuel related issues.

Sept 4: 2 spots available (all Council members present)

Sept 11: 4 spots available (all Council members present)

Sept 18: 5 spots available (all Council members present)

Sept 25: 5 spots available (Commissioner Fritz is absent)

you can reach me through email or phone [lluvia@oregonpsr.org](mailto:lluvia@oregonpsr.org) or 541-505-4741

Please let me know if I need to provide any more information to get signed up to speak

Lluvia

On Mon, Jul 1, 2019 at 2:01 PM Council Clerk – Testimony  
<[CCTestimony@portlandoregon.gov](mailto:CCTestimony@portlandoregon.gov)> wrote:

Hi Elijah,

I have listed the availability for September Communication spots below. Let me know if any of these dates will work for you:

Sept 4: 2 spots available (all Council members present)

Sept 11: 4 spots available (all Council members present)

Sept 18: 5 spots available (all Council members present)

Sept 25: 5 spots available (Commissioner Fritz is absent)

Keelan McClymont

Assistant Council Clerk | City of Portland

(503) 823-4085

**NOTICE:** The Council Clerk's Office (Room 130) is temporarily closed due to  
rd

construction. Please visit Room 310 on the 3 floor to drop off Council documents or to sign up for a Communication spot.

**From:** Elijah Cetas <[ecetas@sustainable-economy.org](mailto:ecetas@sustainable-economy.org)>

**Sent:** Monday, July 1, 2019 1:47 PM

**To:** McClymont, Keelan <[Keelan.McClymont@portlandoregon.gov](mailto:Keelan.McClymont@portlandoregon.gov)>; Council Clerk – Testimony <[CCTestimony@portlandoregon.gov](mailto:CCTestimony@portlandoregon.gov)>; Moore-Love, Karla <[Karla.Moore-Love@portlandoregon.gov](mailto:Karla.Moore-Love@portlandoregon.gov)>

**Cc:** Lluvia Merello <[lluvia@oregonpsr.org](mailto:lluvia@oregonpsr.org)>

**Subject:** Testimony in September

Hi Keelan and Karla,

I'm writing you to see which days are available for testimony in September. My colleague, Lluvia Merello, and I would like to speak about fossil fuel infrastructure.

Thank you!

Elijah

--

Elijah Cetas

(503) 789 2352

Center for Sustainable Economy

<http://sustainable-economy.org/>

--

Lluvia Merello

Energy Justice Organizer

[lluvia@oregonpsr.org](mailto:lluvia@oregonpsr.org)

(541)-505-4741 (mobile)

Pronouns: she/her/hers

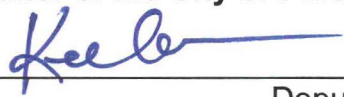


3

871

Request of Elijah Cetas to address Council regarding fossil fuel infrastructure  
(Communication)

SEP 18 2019  
PLACED ON FILE

Filed SEP 10 2019  
**MARY HULL CABALLERO**  
Auditor of the City of Portland  
By   
Deputy

COMMISSIONERS VOTED AS FOLLOWS:		
	YEAS	NAYS
1. Fritz		
2. Fish		
3. Hardesty		
4. Eudaly		
Wheeler		