

Round: 11A
Category: Chemistry
Time: 4 minutes

Mercury levels are a concern for people who eat certain seafood.

1. Where does most of the mercury in fish come from today? (2 pts)

2. Name two identifying characteristics of monomethylmercuric cation. (2 pts)

1)

2)

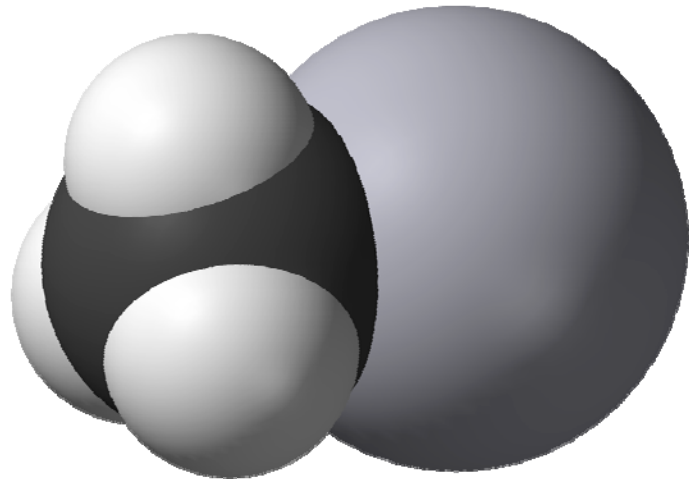


Figure 1: 3D Representation of a methylmercury cation

3. How is methylmercury formed? (1 pt)

4. What is the primary mechanism causing high levels of mercury in some fish? (2 pts)

5. Name five species of fish or shellfish that are likely to contain high concentrations of mercury. (5 pts)

6. Name five species of fish or shellfish that are likely to contain low concentrations of mercury. (5 pts)

7. Name three people who should be especially careful NOT to eat high levels of mercury. (3 pts)

ANSWER

ANSWER

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Mercury levels are a concern for people who eat certain seafood.

1. Where does most of the mercury in fish come from today?

From burning coal (2 pts). Mercury is naturally found in coal. When coal is burned, mercury is released into the environment.

2. Name two identifying characteristics of monomethylmercuric cation.

1 pt each for any two of the following (2 pts total):

- It is a methyl group bonded to a mercury atom.*
- It is an organometallic cation.*
- CH_3Hg^+ is its chemical formula.*

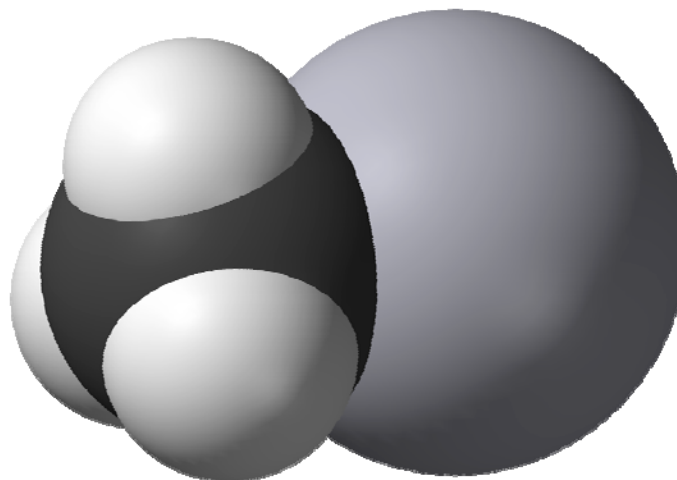


Figure 1: 3D Representation of a methylmercury cation

3. How is methylmercury formed?

Methylmercury is formed from inorganic mercury by marine anaerobic organisms (1 pt).

4. What is the primary mechanism causing high levels of mercury in some fish?

It is biomagnified up aquatic food chains (1 pt). Therefore, fish at the top of the food chain can reach high levels of mercury contamination in their bodies (1 pt).

5. Name five species of fish or shellfish that are likely to contain high concentrations of mercury.

1 pt each for any five of the following (5 pts total):

Swordfish

Orange Roughy

Shark

Tilefish

Mackerel

Northern Pike
Marlin
Tuna
Walleye
Largemouth Bass

6. Name five species of fish or shellfish that are likely to contain low concentrations of mercury.

1 pt each for any five of the following (5 pts total):

Atlantic Salmon
Clams
Salmon (Coho, King, OR Sockeye)
Mussels
Oysters
Prawns
Scallops
Shrimp
Squid
Tilapia
Herring

7. Name three people who should be especially careful NOT to eat high levels of mercury.

1 pt each for any three of the following (3 pts total):

Pregnant women
Women who might become pregnant
Nursing mothers
Young children