



1,3,5-TRIMETHYLBENZENE

What is 1,3,5-TRIMETHYLBENZENE?

1,3,5-Trimethylbenzene (1,3,5-TMB), is a man-made liquid with a pleasant odor. It turns into a vapor easily. 1,3,5-TMB is also known as Mesitylene.

Where can 1,3,5-TMB be found and how is it used?

1,3,5-TMB is used in dyes, solvents, paint thinners and plastics. 1,3,5-TMB is emitted into the air by emissions from gasoline-powered vehicles, waste treatment plants and coal-fired power stations. 1,3,5-TMB occurs in petroleum and coal tar.

1,3,5-TMB is found at low levels in air and in water, including drinking water. It is also found at low levels in food. Often, it is in beef and pork flavorings. 1,3,5-TMB is found in some automobile engine treatments and some epoxies for home use.

How can people be exposed to 1,3,5-TMB?

You could be exposed to 1,3,5-TMB through:

Breathing vapors when filling a tank with gasoline.

Drinking small amounts of 1,3,5-TMB in drinking water, such as from groundwater near a waste site polluted with petroleum.

Touching water or food containing 1,3,5-TMB.

Eye Contact with 1,3,5-TMB vapors drifting into the eyes, such as when filling a vehicle with gasoline.

How does 1,3,5-TMB work and how can it affect my health?

Any exposure to 1,3,5-TMB is a medical emergency. Breathing high levels of 1,3,5-TMB causes an immediate build-up of fluid in the lungs, causing severe shortness of breath, coughing, and nose and throat irritation. Exposure to high levels causes headaches, tiredness, dizziness, lightheadedness or confusion.

Short-term health effects to 1,3,5-TMB include irritation and burning of the skin and eyes. Long-term health effects include liver damage and anemia (reduced ability of the blood to carry oxygen). Another lasting effect is an asthma-like allergy, with shortness of breath, wheezing, coughing and/or chest tightness.

How is 1,3,5-TMB poisoning treated?

The general treatment is to administer charcoal. In all cases of poisoning, seek medical treatment immediately. Physicians will treat the patient depending on circumstances and symptoms.



What should I do if exposed to 1,3,5-TMB?

If you breathe 1,3,5-TMD, get fresh air. Stay warm. Get medical help.

If you touch 1,3,5-TMD, take off all clothing and footwear that contacted it. Wash the skin with large amounts of lukewarm water and soap. Use a mild cream on the skin after washing. Get medical advice.

If you get 1,3,5-TMD in your eyes, flush eyes with clean lukewarm water right away. Keep flushing for at least 15 minutes. Keep the eyelids widely apart while flushing. Get medical advice.

If you swallow 1,3,5-TMD, do not vomit. Do not take anything to drink or eat. Get medical help.

What factors limit use or exposure to 1,3,5-TMB?

At work, limit exposure by following health and safety rules. Wear breathing protection and protective clothing. The general public should try not to breathe fumes when filling gasoline tanks. Keep children inside vehicles when filling up. Avoid sites polluted with petroleum products, such as gasoline. Do not drink water from these areas. Use bottled water or another water supply.

Is there a medical test to show whether I've been exposed to 1,3,5-TMB?

Medical tests can show benzenes in the body if tests are administered quickly. The chemical does not remain in the body for long.

Technical information for 1,3,5-TMB

CAS Number: 108-67-8

Chemical Formula: C₉H₁₂

Carcinogenicity (EPA): 1,3,5-TMB has not been evaluated by the EPA/IRIS program.

MCL (Drinking Water): There is no MCL for 1,3,5-TMB.

OSHA Standards: There is no OSHA standard.

NIOSH Standards: The NIOSH TWA for 10 hours per day, 5 days per week occupational exposure is 25 ppm (125 mg/m³). This limit is the limit for the total concentration of all TMB isomers, of which 1,3,5 TMB is only one.

References and Sources

American Conference of Governmental Industrial Hygienists (ACGIH). 2003. *Guide to Occupational Exposure Values*. Cincinnati, OH.

NIOSH Pocket Guide to Chemical Hazards. 2003. Atlanta, GA: U.S. Department of Health and Human Services.

NIOSH, International Chemical Safety Cards, 1,3,5-trimethylbenzene, <http://www.cdc.gov/niosh/ipcsneng/neng1155.html> - Accessed 1/4/10