

Materials Safety Bulletin

TMAH: New Hazard Awareness Concerning an Old Chemical

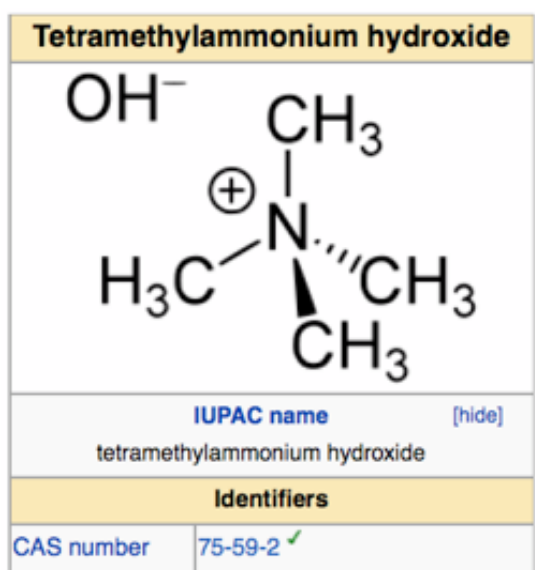
Tetramethylammonium hydroxide (TMAH) is widely used in micro- or nano-fabrication as an etchant and developer. In MSD, TMAH is typically one of several ingredients in commercial etching/stripping mixtures, although it may also be used as a pure chemical.

While it has long been known to be very toxic if ingested, recent industrial experience indicates that skin exposure may result in serious injury/illness or even death. Since 2007, there have been 3 recorded fatalities from skin exposure to TMAH solutions as dilute as 25%. Two of the recorded fatalities occurred due to heart attack despite immediate decontamination and prompt medical care. Thus skin, exposure to >1% TMAH over a few percent of the body must be treated as a life-threatening event. MSDSs may be out of date and not properly describe this high dermal toxicity

When handling this material, the minimum set of personal protective equipment includes: safety goggles (not glasses), disposable nitrile gloves, a buttoned lab coat, leg covering and closed-toe shoes. The disposable gloves may only provide brief protection and must be replaced if they are wetted. More protective gloves are the Stansolv or Tri-Ionic glove models sold by MAPA*.

In the event of a splash, contaminated clothing must be removed and the wetted area thoroughly washed with soap and water, using the emergency shower if necessary. Call 7-911 and summon emergency medical help.

You should not handle TMAH containing materials when working alone.



Tri-Ionic clean room gloves provide excellent protection from TMAH exposure.

* These types of gloves can be ordered through eBuy from GSS/LSS.