Tetramethylammonium Hydroxide (TMAH or TMAOH)

- **Physical Properties**
  - Colorless to yellow-colored liquid
  - Odorless if pure, or ammonia odor if impure with trimethylamine
  - Strong base
  - Usually sold as a weight solution in water (25%) or MeOH (20%)

- **Toxicity**
  - Highly toxic by skin absorption, inhalation, or ingestion
  - Corrosive (severe burns)
  - Weak inhibitor of acetylcholinesterase
  - Symptoms: blurred or double vision; pinpoint pupils; changes in heart rate and blood pressure; abdominal cramping; nausea and vomiting; diarrhea; excessive salivation, sweating, or bronchial secretions; urinary incontinence; muscle twitching; tremors or convulsions
  - Extreme cases can lead to death
    - Skin exposure to >1% TMAOH over a few percent of the body must be treated as life-threatening
    - Concentration of TMAOH and percent body surface area are the most important factors associated with poisoning, while time to decontamination does not appear important
  - Cannot be made nonpoisonous

- **Handling**
  - Follow all standard procedures for dangerous chemicals, including reviewing safety and proper handling, notifying safety officers, wearing PPE, and never working alone
    - Stansolv or Tri-Ionic glove models sold by MAPA are best

- **First Aid**
  - Remove contaminated clothing, and immediately flush exposed area with cold, running water for 15 minutes
  - Get medical attention immediately