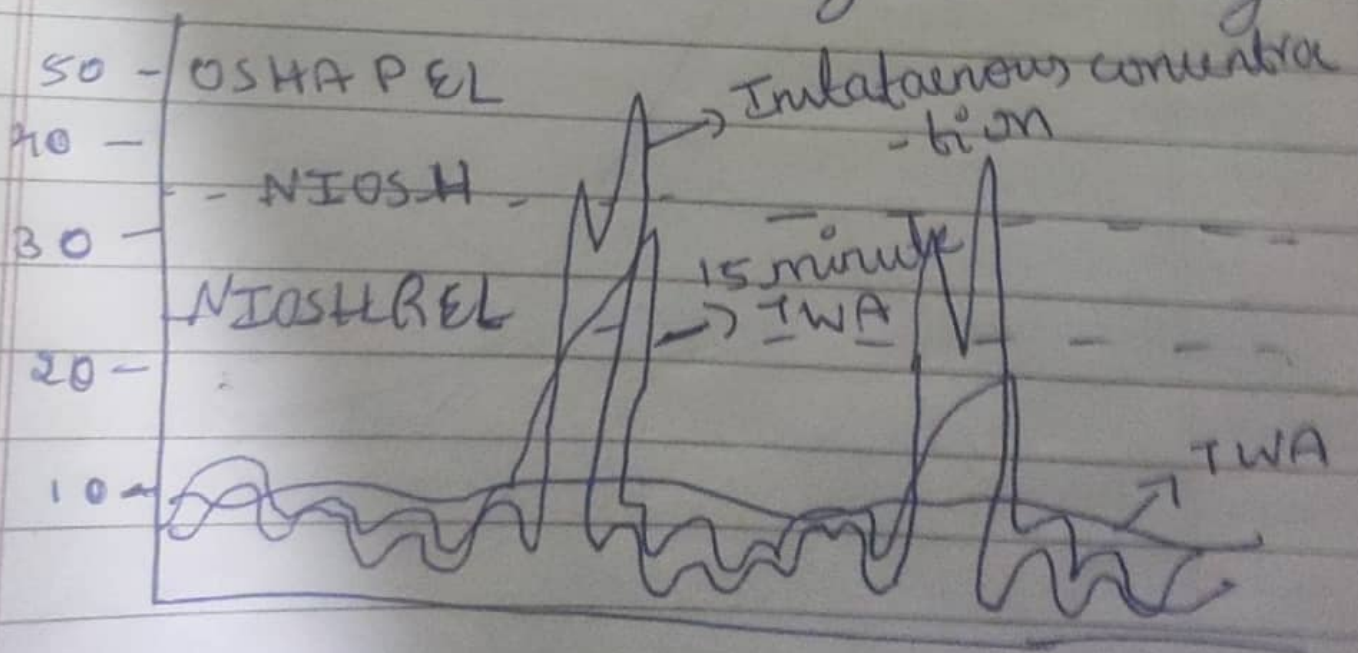


ii. The amount of exposure limits for anhydrous ammonia and other substances by various sources (OSHA, NIOSH) can be confusing. Ammonia sensors and associated detection equipment are crucial to ensuring the environmental situation.

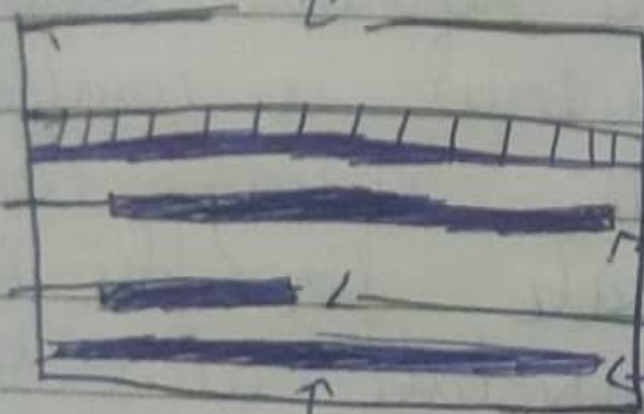
The below diagram shows the instantaneous ammonia concentration, time weighted average and a 15-minute time weighted average.



Electrochemical sensor

So this sensor use an electrolyte solution that reacts to ammonia and produces an electrical signal proportional to concentration

capillary diffusion barrier



Membrane

sensing electrode

reference electrode

counter electrode

schematic of electrolyte electrochemical sensor

The capillary diffusion barrier, filter and permeable membrane together control the amount of gas that is allowed to react with the electrolyte and keeps the electrolyte

from leaking out the sensor. The filter may be necessary to reduce iron sensitivity in certain situations and is typically activated charcoal.

The electrode is made of a material with which the target gas undergoes an oxidation or reduction reaction. The reference electrode is used to maintain a constant voltage on the sensing electrode to compensate for the degradation of electrolyte due to the reaction on the electrode surface.

The electrolyte facilitates the reaction between the electrode and gas and also carries charge between electrodes.

The life of sensor depends on the amount of ammonia that is exposed to and