

25 to 37 volumes of methane and oxygen to prevent combustion of nitrogen.

Ethylene (C_2H_4) is absorbed by bromine water or fuming sulphuric acid. The acid must be so concentrated that when the temperature is lowered crystals of pyrosulphuric acid will separate.

Sulphuretted Hydrogen (H_2S) is determined by lead acetate, also by drawing the gas through iodine water, and potassium iodide with starch in it. The operation is stopped as soon as the liquid becomes colorless.

Nitrous Acid (HNO_2) is determined with concentrated H_2SO_4 , or a solution of potassium permanganate acidulated with H_2SO_4 .

Sulphur dioxide (SO_2) is determined with KOH, or solution of iodine.

Bromine, hydrochloric acid and chlorine are also absorbed by KOH.

Nitrogen has no absorbent.

A solution of KOH for testing is usually made by mixing one part of caustic potash and two parts of water.

An ammoniacal solution of silver nitrate is made by dissolving some crystals of silver nitrate in distilled water and adding just enough aqua ammonia to redissolve the precipitate formed.

An ammoniacal or acid solution of cuprous chloride may be made as follows: Cover the bottom of a bottle of two litre capacity with a layer of copper oxide three eighths of an inch deep. Place in the bottle a number of pieces of rather stout copper wire reaching from top to bottom. The bundle should be one inch in diameter. Fill the bottle with common hydrochloric acid of 1.10 sp. gr. The bottle is occasionally shaken and when the solution is colorless or nearly so, it is poured into smaller bottles containing copper wire. Care should be taken