

AMMONIA SOLUTION

Prepared at the 46th JECFA (1996), published in FNP 52 Add 4 (1996) superseding specifications prepared at the 19th JECFA (1975), published in NMRS 55B (1976) and in FNP 52 (1992) under the name Ammonium Hydroxide. Metals and arsenic specifications revised at the 59th JECFA (2002)
An ADI 'not limited' was established at the 9th JECFA (1965)

SYNONYMS

Ammonium hydroxide, strong ammonia solution, aqueous ammonia, INS No. 527

DEFINITION

Chemical names	Ammonia solution
C.A.S. number	7664-41-7 (ammonia) 1336-21-6 (aqueous ammonia)
Chemical formula	NH ₃ (aqueous)
Formula weight	17.03
Assay	Not less than 27% and not more than 30%

DESCRIPTION

Clear, colourless liquid having an exceedingly pungent, characteristic odour. Upon exposure to air it loses ammonia rapidly

FUNCTIONAL USES Acidity regulator

CHARACTERISTICS

IDENTIFICATION

<u>Test for ammonia</u>	Hold a glass rod, wet with hydrochloric acid, near the sample. Dense white fumes are produced.
<u>Specific gravity</u> (Vol. 4)	d (25,25): about 0.90

PURITY

<u>Non-volatile residue</u>	Not more than 0.02% by the following procedure: Evaporate 11 ml (10 g) of the sample in a tared platinum or porcelain dish to dryness, dry at 105° for 1 h, cool and weigh
<u>Readily oxidizable substances</u>	Dilute 4 ml of the sample with 6 ml of water, and add a slight excess of dilute sulfuric acid TS and 0.1 ml of 0.1N potassium permanganate. The pink colour does not completely disappear within 10 min.
<u>Lead</u>	Not more than 2 mg/kg Determine using an atomic absorption technique appropriate to the specified level. The selection of sample size and method of sample preparation may be based on the principles of the method described in Volume 4, "Instrumental

Methods.”

METHOD OF ASSAY Tare accurately a 125-ml glass-stoppered conical flask containing 35.0 ml of 1N sulfuric acid. Cool the sample in the original bottle to 10° or lower. Partially fill a 10-ml graduated pipet from near the bottom (do not use vacuum for drawing up the sample). Wipe off any liquid adhering to the outside of the pipet and discard the first ml. Hold the pipet just above the surface of the acid and transfer 2 ml into the flask, leaving at least 1 ml in the pipet. Stopper the flask, mix and weigh again to obtain the weight of the sample. Add methyl red TS and titrate the excess acid with 1N sodium hydroxide. Subtract the excess sulfuric acid from the total sulfuric acid (35.0 ml) to find the ml used to neutralize the sample. Each ml of 1N sulfuric acid used to neutralize the ammonia is equivalent to 17.03 mg of NH₃.