

The Amendment of Standards for Specification, Scope, Application and Limitation of Food Additives

MOHW Food No. 1081303010, 07 November, 2019

Appendix 2: Standards for Specification of Food Additives

07. Food quality improvement, fermentation and food processing agents

§ 07097

Nitrous oxide

SYNONYMS Dinitrogen oxide; Dinitrogen monoxide; INS No. 942

Definition Nitrous oxide, a colourless and non-flammable gas, commonly known as laughing gas, is manufactured by thermal decomposition processes of ammonium nitrate. The hot, corrosive mixture of gases are cooled to condense the steam and filtered to remove higher oxides of nitrogen. The gas is further purified in a train of three gas washes with base, acid and base again. Nitric oxide impurity, if present, is chelated out with ferrous sulfate, or reduced with iron metal, or oxidised and absorbed in a base as a higher oxide.

Chemical names Nitrous oxide

C.A.S. number 9000-69-5

Chemical formula N_2O

Formula weight 44.01

Assay Not less than 99 % (v/v)

DESCRIPTION Colourless, odourless gas

Characteristics

IDENTIFICATION

Solubility 1 volume dissolves in 1.4 volumes of water (20° 760 mm Hg). Freely soluble in alcohol; soluble in ether and in oils.

Infrared absorption Corresponds with the nitrous oxide standard
or Chromatography

PURITY

Carbon dioxide Not more than 0.03%(v/v)

Carbon monoxide Not more than 10 µl/l

Nitric oxide Not more than 1 µl/l

Nitrogen dioxide Not more than 1 µl/l

Halogens (as Cl) Not more than 5 µl/l

Ammonia Not more than 25 µl/l

Category Food additives category (07).

Functional uses Food quality improvement, fermentation and food processing agents.