

Technical Data Sheet

Product name:Morpholine

Cas No.: 110-91-8

Synonyms: 1-Oxa-4-azacyclohexane; Tetrahydro-2H-1,4-oxazine

Molecular Formula: C₄H₉NO

General description: Morpholine is colourless liquid.

ITEMS

SPECIFICATION

Morpholine %	≥99.5%
Moisture %	≤0.25%
Boiling range °C	126.0-129.0

Application

It is mainly used as raw material of medicine, rubber accelerator and fluorescent whitening agent. Morpholine is an intermediate of the fungicides enyl morpholine and flummorpholine and the organophosphorus insecticide thiophosphorion,etc.

General physical data

1. Information on basic physical and chemical properties

a) Appearance

Form: liquid

Colour: colourlesscolourless

b) Odour

unpleasant

c) pH

10.6 at 5 g/l at 20 °C (68 °F)

d) Melting point/freezing point

Melting point/range: -7 - -5 °C (19 - 23 °F) - lit.

e) Initial boiling point and boiling range

129 °C (264 °F) - lit.

f) Flash point

31 °C (88 °F) - closed cup

g) Upper/lower flammability or explosive limits

Upper explosion limit: 10.8 %(V)

Lower explosion limit: 1.8 %(V)

h) Vapour pressure

9.80 hPa (7.35 mmHg) at 20.3 °C (68.5 °F) - OECD Test Guideline 104

41 hPa (31 mmHg) at 38 °C (100 °F)

9 hPa (7 mmHg) at 20 °C (68 °F)

i) Vapour density

3.01 - (Air = 1.0)

j) Relative density

0.996 g/cm³ at 25 °C (77 °F) - lit.

k) Water solubility completely miscible

l) Partition coefficient: noctanol/water

log Pow: -2.55 at 25 °C (77 °F) - OECD Test Guideline 107

m) Auto-ignition temperature 255 °C (491 °F) at 1,013 hPa (760 mmHg)

Other safety information

Relative vapour density

3.01 - (Air = 1.0)

Transport and Packing

Morpholine is supplied in 200kg/drum, 4 drums packed into 1 pallet, 20 pallets loaded into 1FCL(16MT) . It is belongs to Hazard Class: 8+3 , UN2054 ,Packing Group: I .



Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Safety and Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.