morpholine

IDENTIFICATION NUMBERS

- **CAS:** 110-91-8
- **EC/EINECS:** 203-815-1
- **International Chemical Safety Card (ICSC):** 0302

MORE INFORMATION

- **Molecular Formula:** C4H9NO
- **Synonyms:** TETRAHIDRO-1,4-OXAZINA

USES

pesticide, solvent

CLASSIFICATION AND LABELLING (Regulation 1272/2008)

Symbols



GHS02

Flammable gases



GHS05

Corrosive to metals



GHS07

Acute toxicity (oral, dermal, inhalation

Signal word: **Danger**

H Phrases

H226 : Flammable liquid and vapour

Flam. Liq. (Cat. 3) : Flammable liquid

H332 : Harmful if inhaled

Acute Tox. (Cat. 4 *) : Acute toxicity

H312 : Harmful in contact with skin

Acute Tox. (Cat. 4 *) : Acute toxicity

H302 : Harmful if swallowed

Acute Tox. (Cat. 4 *) : Acute toxicity

H314 : Causes severe skin burns and eye damage

Skin Corr. (Cat. 1B) : Skin corrosion/irritation

Labelling

Concentration	Labelling
C >= 10 %	C; R34
1 % <= C < 10 %	Xi; R36/38

Specific health risks

According to IARC

Substances classified as carcinogens or mutagens Category 2 under the CLP Regulation (GHS), bearing H351 and/or H341 phrases. These are substances suspected of causing cancer or heritable genetic mutations in humans.

IARC GROUP

Grupo 3

IARC VOLUME

(VOL. 47, VOL. 71; 1999)

Occupational Exposure Limits (OEL)

Daily exposure limit values (VLA-ED) published by the Spanish National Institute of Safety and Health at Work (INSST). They represent the average concentration of a chemical agent in the worker's breathing zone, measured or calculated in a time-weighted manner for an 8-hour daily working period. (https://www.insst.es/valores-limites-de-exposicion)

OCCUPATIONAL EXPOSURE LIMITS

State / Form	TWA (ppm)	TWA (mg/m³)	STEL (ppm)	STEL (mg/m³)	Notes
—	10	36	20	72	VLIp

Restriction/prohibition regulations

Major accident hazards (Seveso)

Hazardous substances listed in Annex I of the Seveso III Directive (Directive 2012/18/EU), transposed in Spain by Royal Decree 840/2015. Their presence in industrial establishments in quantities equal to or above established thresholds triggers obligations to implement major accident risk control measures.

Substances under PACT evaluation

Substances under active regulatory monitoring through ECHA's PACT (Public Activities Coordination Tool). Allows tracking which regulatory authorities are examining a substance and what potential regulatory actions are being considered (restriction, SVHC identification, harmonised classification, etc.).