# N,N-Dimethylethylamine

| CAS number: | 598-56-1 |
| --- | --- |
| Synonyms: | N,N-Dimethylethanamine |
| Chemical formula: | C4H11N |

Workplace exposure standard (amended)

| TWA: | **2 ppm (6 mg/m3)** |
| --- | --- |
| STEL: | **—** |
| Peak limitation: | **—** |
| Notations: | **—** |
| IDLH: | **—** |
| **Sampling and analysis:** The recommended value is quantifiable through available sampling and analysis techniques. | |

## Recommendation and basis for workplace exposure standard

A TWA of 2 ppm (6 mg/m3) is recommended to protect for eye irritation and visual disturbances in exposed workers.

Based on the data available, it is recommended that the STEL be removed.

## Discussion and conclusions

N,N-dimethylethylamine is used in the manufacture of other chemicals.

Critical effects of exposure are eye irritation and visual disturbances. Visual disturbances are reported in humans following exposure at 3.3 to 4.4 ppm (over an average of eight hours) including blurred vision or colour streaks caused by corneal oedema. Irritation of the eyes, nose and throat are reported at concentrations greater than 8 ppm with a NOAEC of 3 ppm. Volunteers exposed at 33 to 50 ppm for 15 minutes experienced irritation of the eye but no visual disturbances. Source concluded this indicates visual disturbance is dependent on exposure duration as well as peaks (DFG, 2016).

Based on the human studies reported, a TWA of 2 ppm is recommended to protect for irritation of the eye and visual disturbances in exposed workers.

The available data does not provide conclusive evidence of an immediate and severe effect within ten times of the recommended TWA and it is recommended that the STEL be removed.

## Recommendation for notations

Not classified as a carcinogen according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Not classified as a skin sensitiser or respiratory sensitiser according to the GHS.

There are insufficient data to recommend a skin notation.

# Appendix

### Primary sources with reports

| Source Year set Standard |
| --- |
| SWA 1991 TWA: 10 ppm (30 mg/m3); STEL: 15 ppm (45 mg/m3) | |
|  |
| ACGIH NA NA |
| No report. |
| DFG 2001 MAK: 2 ppm (6.1 mg/m3) |
| MAK protects against eye irritation and visual disturbances  Peak limitation of 5 ppm recommended to minimise irritation to the eyes and visual disturbances.  Summary of data:  No animal data reported in source.  Human data   * Concentration-dependent effects following exposure to 3.3–4.4 ppm (8 h average) include visual disturbances (blurred vision or colour streaks due to corneal oedema): * at ≥8 ppm reported irritation of eyes, nose and throat * NOEL of 3 ppm (10 mg/m3) derived from this study * Volunteers exposed at 33–50 ppm (100–165 mg/m3) for 15 min experience irritation of the eye but no visual disturbance; indicates visual disturbance dependant on exposure duration as well as peaks * 2 controlled studies with 8 h exposures comparing N,N-dimethylethylamine and triethylamine toxicity: * findings indicated triethylamine was twice as potent because of its higher solubility in fat that allows effective penetration of the layers of cornea * triethylamine with twice potency; NOAEC of 1.44 ppm, LOAEC of 3.12 ppm in humans; MAK of 1 ppm. |
| SCOEL NA NA |
| No report. |
| OARS/AIHA NA NA |
| No report. |
| HCOTN NA NA |
| No report. |

### Secondary source reports relied upon

NIL.

### Carcinogenicity — non-threshold based genotoxic carcinogens

| Is the chemical mutagenic? | No |
| --- | --- |
| **The chemical is not a non-threshold based genotoxic carcinogen.** |  |

## Notations

| Source | Notations |
| --- | --- |
| SWA | — |
| HCIS | NA |
| NICNAS | NA |
| EU Annex | NA |
| ECHA | — |
| ACGIH | NA |
| DFG | — |
| SCOEL | NA |
| HCOTN | NA |
| IARC | NA |
| US NIOSH | NA |

NA = not applicable (a recommendation has not been made by this Agency); — = the Agency has assessed available data for this chemical but has not recommended any notations

### Skin notation assessment

| Calculation |
| --- |
| Insufficient data to assign a skin notation. |

### IDLH

| Is there a suitable IDLH value available? | No |
| --- | --- |

## Additional information

| Molecular weight: | 73.14 |
| --- | --- |
| Conversion factors at 25°C and 101.3 kPa: | 1 ppm = 3 mg/m3; 1 mg/m3 = 0.334 ppm |
| This chemical is used as a pesticide: |  |
| This chemical is a biological product: |  |
| This chemical is a by-product of a process: |  |
| A biological exposure index has been recommended by these agencies: | ACGIH  DFG  SCOEL |

## Workplace exposure standard history

| Year | Standard |
| --- | --- |
| 1991 | TWA: 10 ppm (30 mg/m3); STEL: 15 ppm (45 mg/m3) |

## References

Deutsche Forschungsgemeinschaft (DFG) (2016) N,N-Dimethylethylamine – MAK value documentation.