# Paraffin wax (fume)

| CAS number: | 8002-74-2 |
| --- | --- |
| Synonyms: | Hard paraffin fume, hydrocarbon waxes, ceratak, gatch, hard paraffin, slopvox, paraffin |
| Chemical formula: | CnH2n+2 |
| Structural formula: | — |

Workplace exposure standard (retained)

| TWA: | **2 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 mg/m3 is recommended to protect for nausea and discomfort due to odour and possible respiratory tract irritation in exposed workers.

## Discussion and conclusions

Paraffin is used for making candles, as a sealant or coating for paper and food products, extracting perfumes from flowers and as a chewing gum base.

Intrinsic toxicity is low and odour can be nauseating and objectionable due to oily properties. There is also the potential for irritation of the respiratory tract following inhalation.

A mild laxative effect is reported when ingested. A concentration of between 0.6 to 1 mg/m3 is reported as mildly disagreeable. In other workplace studies, concentrations below 2 mg/m3 produced no discomfort or complaints (ACGIH, 2018). Undiluted pure paraffin wax does not cause irritation to the skin of rabbits and no effects are reported in dogs dosed with sub-chronic oral administration of 10 to 3,000 mg/kg/day (HCOTN, 2003).

A TWA of 2 mg/m3 by ACGIH (2018) and HCOTN (2003 is recommended to be retained. It is considered to protect for discomfort and possible respiratory tract irritation (ACGIH, 2018).

## 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: 2 mg/m3 | |
|  |
| ACGIH 2001 TLV-TWA: 2 mg/m3 |
| TLV-TWA recommended to minimise the potential for irritation of the respiratory tract and possible nausea from the objectionable odour.  Summary of data:  Low intrinsic toxicity.  Human data:   * Considered non-toxic * Mild laxative effect when ingested * Working near molten paraffin is reported as nauseating and uncomfortable * Paraffin spray objectionable because of its odour and oily physical properties * In one workroom 0.6–1 mg/m3 was reported as mildly disagreeable * In other plants, concentrations below 2 mg/m3 produced no discomfort or complaints.   No animal data.  Insufficient data to recommend a skin, sensitiser or carcinogen notation or a TLV-STEL. |
| DFG NA NA |
| No report. |
| SCOEL NA NA |
| No report. |
| OARS/AIHA NA NA |
| No report. |
| HCOTN 2003 TWA 8 hours: 2 mg/m3 |
| Administrative OEL.  Summary of additional data:   * Undiluted pure paraffin wax did not cause irritation to the skin of rabbits * No effects in dogs dosed with sub-chronic oral administration of 10 to 3,000 mg/kg/d * The toxicological database considered too poor to justify recommendation of a health‑based OEL. |

### 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 | NA |
| HCIS | NA |
| NICNAS | NA |
| EU Annex | NA |
| ECHA | NA |
| ACGIH | NA |
| DFG | NA |
| 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: | 350-420 range |
| --- | --- |
| Conversion factors at 25°C and 101.3 kPa: | 1 ppm = Number mg/m3; 1 mg/m3 = Number 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 |
| --- | --- |
| Click here to enter year |  |

## References

American Conference of Industrial Hygienists (ACGIH®) (2018) TLVs® and BEIs® with 7th Edition Documentation, CD-ROM, Single User Version. Copyright 2018. Reprinted with permission. See the [*TLVs® and BEIs® Guidelines section*](http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations) on the ACGIH website.

Health Council of the Netherlands (HCOTN) (2003) Paraffin wax (fume). Health-based Reassessment of Administrative Occupational Exposure Limits. The Hague: Health Council of the Netherlands; publication no. 2000/15OSH/064.