# o-chlorotoluene

| CAS number: | 95-49-8 |
| --- | --- |
| Synonyms: | 2-Chloro-1-methyl benzene, 2-chlorotoulene,  halso 99, o-tolyl chloride, UN 2238 (DOT),  1-chloro-2-methylbenzene, o-chlorotoluene |
| Chemical formula: | C7H7Cl |
| Structural formula: | — |

Workplace exposure standard (retained)

| TWA: | **50 ppm (259 mg/m3)** |
| --- | --- |
| STEL: | **—** |
| Peak limitation: | **—** |
| Notations: | **—** |
| IDLH: | **—** |
| Sampling and analysis: |  |

## Recommendation and basis for workplace exposure standard

A TWA of 50 ppm (259 mg/m3) is recommended to protect for systemic effects and potential irritant effects in exposed workers.

## Discussion and conclusions

o-Chlorotoluene is used as a solvent and intermediate in the synthesis of other organic chemicals, dyes, pharmaceuticals and synthetic rubber compounds.

There are limited data available in humans. Two industry communications stated that their production workers never had skin irritation, dermatitis or any other form of poisoning from exposures at the workplace. No effects are reported in rats exposed at 500 ppm (2,635 mg/m3) in a sub-chronic inhalational study. A three-month oral study reported a NOAEL of 20 mg/kg/day in male rats for decreased body weight gain and an increase in relative adrenal weight.

After applying and uncertainty factor of 10 to the inhalational NOAEC of 500 ppm reported in rats for interspecies variability, the recommended TWA is expected to protect systemic and irritant effects.

## 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.

A skin notation is not recommended based on the available evidence.

# Appendix

### Primary sources with reports

| Source Year set Standard |
| --- |
| SWA 1991 TWA: 50 ppm (259 mg/m3) | |
|  |
| ACGIH 2001 TLV-TWA: 50 ppm (259 mg/m3) |
| There are limited data available. TLV-TWA based on good occupational hygiene practice and should minimise the potential risk of ocular, dermal and respiratory tract irritation.  Summary of data:  Human data:   * 2 separate industry communications stated that production workers never presented with skin irritation, dermatitis or other form of poisoning from exposure (no further information) * No further data presented.   Animal data:   * LD50: >1,600 mg/kg (rats, oral) * Limited toxicity studies available; reported ocular, dermal and respiratory tract irritation * 3 rats exposed to ~4,000 ppm for 6 h: * loss of coordination >1.5 h * prostration >1.75 h * tremors >2 h. |
| DFG NA NA |
| No report. |
| SCOEL NA NA |
| No report. |
| OARS/AIHA NA NA |
| No report. |
| HCOTN 2004 TWA: 50 ppm (250 mg/m3) |
| Current administrative OEL and not health-based.  Summary of additional data:   * No human data on effects following exposure identified * Odour threshold reported at 0.3 ppm (1.7 mg/m3) * Conflicting data in animals regarding skin and eye irritation; * all experimental data on irritation is unpublished * No indication for skin sensitisation * LC50:>20,583 mg/m3 (1 h, male rat and male mouse) * Dermal LD50: >1,083 mg/kg bw in rats and >2,165 mg/kg bw in rabbits * No effects induced in rats exposed at 500 ppm (2,635 mg/m3) 6 h/d, 5 d/wk for 3 wk * Primary effects in inhalational studies included laboured breathing, loss of co-ordination, prostration and narcosis; * lethargy, diminished response to noise, blood around the nostrils and decreased BW reported in after intermittent exposure at 1000 ppm in rats * slight irritation, CNS depression and increased liver weights (in males only) reported after consecutive exposure at 760 ppm in rats * 3 mo oral study identified a NOAEL of 20 mg/kg in male rats for decrease in body weight gain and increased relative adrenal weights * Based on the reported oral NOAEL, allometric scaling factor of 4 conversion to worker inhalation exposure (70 kg, 10 m3,5 d/wk) and the application of an uncertainty factor of 18, a TWA of 2 mg/m3 (0.4 ppm) is recommended * Negative in a range of genotoxicity tests. |

### 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 | Skin |
| 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 |
| --- |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Conclusion:** |  |  |  |  |  |  |  | |  |  | Adverse effects in human case study: | no |  |  |  |  | |  |  | Dermal LD50 ≤1000 mg/kg: | no |  |  |  |  | |  |  | Dermal repeat-dose NOAEL ≤200 mg/kg: |  |  |  |  |  | |  |  | Dermal LD50/Inhalation LD50 <10: |  |  |  |  |  | |  |  | *In vivo* dermal absorption rate >10%: |  |  |  |  |  | | Estimated dermal exposure at WES >10%: | | |  |  |  |  |  | |  |  |  |  |  | **a skin notation is not warranted** | | | |

### IDLH

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

## Additional information

| Molecular weight: | 126.59 |
| --- | --- |
| 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) (2004) 2-Chlorotoluene. Health-based reassessment of administrative occupational exposure limits. The Hague: Health Council of the Netherlands; publication no. 2000/15OSH/099.