# Dimethylsulfamoyl chloride

| CAS number: | 13360-57-1 |
| --- | --- |
| Synonyms: | — |
| Chemical formula: | C2H6ClNO2S |

Workplace exposure standard (new)

| TWA: | **—** |
| --- | --- |
| STEL: | **—** |
| Peak limitation: | **—** |
| Notations: | **Carc. 1B, Sk.** |
| IDLH: | **—** |
| **Sampling and analysis:** N/A | |

## Recommendation and basis for workplace exposure standard

A TWA is not recommended as there are insufficient data available.

Given the limited data available from the primary sources, it is recommended that a review of additional sources be conducted at the next scheduled review.

## Discussion and conclusions

Dimethylsulfamoyl chloride is used in pharmaceutical drug manufacture.

Limited toxicological data are available with the critical effect likely to be cancer. After subcutaneous administration to rats, dimethylsulfamoyl chloride induced malignant tumours at the injection site in a high percentage of animals. It is structurally like dimethylcarbamoyl chloride which produced marked local carcinogenicity in animals after inhalation, intratracheal or subcutaneous administration. According to its direct chemical reactivity and to its structural analogy to dimethylcarbamoyl chloride, a genotoxic effect is possible. However, insufficient data exists to confirm the mechanism of action for carcinogenicity (DFG, 2003; SCOEL, 2009).

There are insufficient data to derive a health-based workplace exposure standard and a review of additional sources is recommended at the next scheduled review.

## Recommendation for notations

Classified as a category 1B 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 recommended based on evidence of dermal absorption in animals.

# Appendix

### Primary sources with reports

| Source Year set Standard |
| --- |
| SWA NA NA | |
| No report. |
| ACGIH NA NA |
| No report. |
| DFG 2003 Not assigned |
| No MAK assigned due to demonstrated carcinogenicity in animals and cancer risk exists in humans  Summary of data:  Structurally similar to dimethylcarbamoyl chloride  Human data:   * No information on toxic effects in humans identified.   Animal data   * 40 wk subcutaneous administration to rats 10 and 100 mg/kg/wk reported malignant tumours at the injection site in a high percentage of animals * 1 mg/kg/wk intratracheal instillation for 102 wk evidence of malignant tumours not as pronounced * Dimethylcarbamoyl chloride revealed marked local carcinogenicity in animals after inhalation, intratracheal or subcutaneous administration * Dimethylsulfamoyl chloride is locally acting carcinogen without very pronounced effects * LD50:527 mg/kg (rats, dermal); carcinogenic risk is increased even with small percutaneously absorbed amounts. |
| SCOEL 2009 Not assigned |
| Summary of additional data:   * Insufficient data to perform a quantitative risk assessment; not feasible to derive a health-based limit * According to its direct chemical reactivity and to its structural analogy to dimethylcarbamoyl chloride, a genotoxic effect appears almost likely * Skin absorption classification. |
| OARS/AIHA NA NA |
| No report. |
| HCOTN NA NA |
| No report. |

### Secondary source reports relied upon

| Source |  | Year | Additional information |
| --- | --- | --- | --- |
| ECHA |  | 2019 | No additional data. |

### Carcinogenicity — non-threshold based genotoxic carcinogens

| Is the chemical mutagenic? | Insufficient data |
| --- | --- |
| Is the chemical carcinogenic with a mutagenic mechanism of action? | Insufficient data |
| **Insufficient data are available to determine if the chemical is a non-threshold based genotoxic carcinogen.** | |

## Notations

| Source | Notations |
| --- | --- |
| SWA | NA |
| HCIS | Carcinogenicity – category 1B |
| NICNAS | NA |
| EU Annex | Carcinogenicity – category 1B |
| ECHA | Carc. 1B |
| ACGIH | NA |
| DFG | Cat. 2, H (skin) |
| SCOEL | Skin |
| 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 |
| --- |
| |  |  |  |  | | --- | --- | --- | --- | | Adverse effects in human case study: |  |  |  | | Dermal LD50 ≤1000 mg/kg: | yes | 3.00 |  | | Dermal repeat-dose NOAEL ≤200 mg/kg: |  |  |  | | Dermal LD50/Inhalation LD50 <10: |  |  |  | | *In vivo* dermal absorption rate >10%: |  |  |  | | Estimated dermal exposure at WES >10%: |  |  |  | |  |  | 3 | **consider assigning a skin notation** | |

### IDLH

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

## Additional information

| Molecular weight: | 143.59 |
| --- | --- |
| 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

Deutsche Forschungsgemeinschaft (DFG) (2003) Dimethylsulfamoyl chloride – MAK value documentation.

European Chemicals Agency (ECHA) (2019) Dimethylsulfamoyl chloride – REACH assessment.

EU Scientific Committee on Occupational Exposure Limits (SCOEL) (2009) Recommendation from the Scientific Committee on Occupational Exposure Limits for Dimethylsulfamoyl chloride. SCOEL/SUM/151.

Tenth Adaptation to Technical Progress Commission Regulation (EU) No 2017/776 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (the CLP Regulation).