# Mica

| CAS number: | 12001-26-2 |
| --- | --- |
| Synonyms: | Phlogopite, muscovite, lepidolite, zimmwaldite, roscoelite |
| Chemical formula: | K2Al4(Al2Si6O20)(OH)4 |
| Structural formula: | — |

Workplace exposure standard (retained)

| TWA: | **2.5 mg/m3** |
| --- | --- |
| STEL: | **—** |
| Peak limitation: | **—** |
| Notations: | **—** |
| IDLH: | **1,500 mg/m3** |
| **Sampling and analysis:** The recommended value is quantifiable through available sampling and analysis techniques. | |

## Recommendation and basis for workplace exposure standard

A TWA of 2.5 mg/m3 is recommended to protect for pneumoconiosis in exposed workers.

## Discussion and conclusions

Mica is used in a variety of products including pharmaceuticals, paint, wallpaper and as an insulator in electrical equipment.

The critical effect of exposure is pneumoconiosis.

There are limited exposure data available. Contamination of mica dust with other minerals, such as silica, is common and reports often involve co-exposures. As such, an inhalation dose-response relationship cannot be clearly defined due to interference from these confounders (HCOTN, 2000). Pneumoconiosis is reported in Indian mica workers (chest x-rays) exposed at approximately 3 mg/m3 for eighteen years (ACGIH, 2018). However, there are limited data available supporting a dose-related effect based on concentration and duration of exposure. The recommended TLV-TWA form ACGIH (2018) is based on these data.

Based on limited available data, a TWA of 2.5 mg/m3 is recommended to be retained to limit potential pneumoconiosis in exposed workers.

## 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: 2.5 mg/m3 | |
|  |
| ACGIH 2001 TLV-TWA: 3 mg/m3 |
| TLV-TWA recommended to minimise the risk of pneumoconiosis.  Summary of data:  Human Data:   * Evidence of a dose-related occupational pneumoconiosis upon clinical examination in 57 workers: * no workers with pneumoconiosis at <10 mppcf (millions of particles per cubic foot) * 3 cases exposed at 18 mppcf for 18, 20 or 26 yr * 3 cases exposed at 40 mppcf for 10, 17 or 23 yr * 2 cases exposed at 50 mppcf for 24 or 46 yr. * Evidence of pneumoconiosis (chest x-rays) in workers exposed at 20 mppcf (3 mg/m3) for 18 yr.   Animal Data:   * Nodules produced on anterior abdomen wall following intraperitoneal injection of suspension of mica dust in saline guinea pigs.   Insufficient data were available for a TLV-STEL or Skin, SEN or carcinogenicity notations. |
| DFG NA NA |
| No report. |
| SCOEL NA NA |
| No report. |
| OARS/AIHA NA NA |
| No report. |
| HCOTN 2000 TWA: 2.5 mg/m3 (respirable dust); 5 mg/m3(total dust) |
| Summary of additional data:  Human Data:   * Contamination of mica dust with other minerals such as silica is common; reports often involve co-exposures; an inhalation dose-response relationship cannot be defined due to interference from confounding factors * Epidemiological and toxicological evidence indicates that the cytotoxic and fibrogenic potential of mineralogically pure mica is low * Epidemiological studies did not indicate mica as carcinogen. |

### 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 | NA |
| ACGIH | — |
| DFG | NA |
| SCOEL | NA |
| HCOTN | — |
| 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? | Yes |
| --- | --- |

## Additional information

| Molecular weight: | 256.24 |
| --- | --- |
| 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) (2000) Mica. Health-based reassessment of administrative occupational exposure limits. The Hague: Health Council of the Netherlands; publication no. 1999/15OSH/011.

US National Institute for Occupational Safety and Health (NIOSH) (1994) Immediately dangerous to life or health concentrations – Mica.