



Inhalation Toxicology >

International Forum for Respiratory Research
Volume 15, 2003 - Issue 14

33 | 12 | 3
Views | CrossRef citations to date | Altmetric

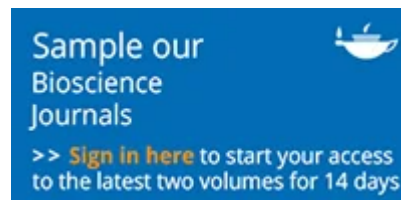
Pages 1421-1434 | Published online: 01 Oct 2008

Research Article

Pulmonary Effects and Clearance After Long-Term Inhalation of Potassium Octatitanate Whiskers in Rats

Hiroshi Yamato , Takako Oyabu, Akira Ogami, Yasuo Morimoto, Toshiaki Higashi, Isamu Tanaka, ... show all

 Cite this article  <https://doi.org/10.1080/08958370390248969>



 References  Citations  Metrics  Reprints & Permissions

Read this article

Abstract

The pulmonary effects of long-term inhalation of potassium octatitanate whisker (PT1), one of the durable man-made fibers (MMFs), were examined in rats. Male Wistar rats were exposed to PT1 by inhalation for 6 h/day, 5 days/wk for 1 yr. The daily average exposure concentration of PT1 aerosol was $2.2 \pm 0.7 \text{ mg/m}^3$ (111 ± 34 fiber/ml) during the exposure. Rats were sacrificed at 3 days, 6 mo, and 12 mo after 1 yr of inhalation exposure. The amount of deposited PT1 in rat lungs (lung burden) was $2.4 \pm 0.7 \text{ mg}$ and the deposition fraction was 7.2% at 3 days after 1 yr. The clearance

of inhaled PT1 after 1-yr inhalation was prolonged so that the biological half-life time (BHT) was difficult to estimate. The histopathological findings showed that mild fibrotic changes were observed around the macrophages that had engulfed the PT1 in the 3-day, 6-mo, and 12-mo rat sacrifice groups. As for pulmonary tumors, no malignant tumors were observed, although 2 adenomas at 6 mo and 1 adenoma and 1 squamous metaplasia at 12 mo after the exposure were found in the rat lungs.

[< Previous article](#)

[View issue table of contents](#)

[Next article >](#)

Log in via your institution

[> !\[\]\(339a16584d5da0f0a3ca4e9ec17bf6a1_img.jpg\) Access through your institution](#)

Log in to Taylor & Francis Online

[> Log in](#)

Restore content access

[> Restore content access for purchases made as guest](#)

Purchase options *

[Save for later](#)

PDF download + Online access

- 48 hours access to article PDF & online version
- Article PDF can be downloaded
- Article PDF can be printed

USD 65.00

[🛒 Add to cart](#)