

username

LOGIN

[New Account »](#)
[Forgot Password?](#)

Titanium Dioxide

GO

[Advanced Search »](#)
[Guns and Ordnance](#) » [Ammunition and Explosives](#)

Acute Inhalation Toxicity Effects of Explosively Disseminated - - XM82 Grenade - - Titanium Dioxide

Authors: [Roger J. Hilaski](#); [Jeffrey D. Bergmann](#); [John C. Carpin](#); [William T. Muse Jr](#); [Sandra A. Thomson](#); [CHEMICAL RESEARCH DEVELOPMENT AND ENGINEERING CENTER ABERDEEN PROVING GROUND MD](#)

Abstract: **Titanium dioxide** (TiO₂) is the major component for a proposed training smoke grenade (XM82). The American Conference of Governmental Industrial Hygienists has classified TiO₂ as a 'nuisance dust' with threshold limit value of 10 mg/m³ of total dust (<1% quartz). Adverse pulmonary effects from TiO₂ occur only when lung clearance mechanisms are overwhelmed. The purpose of this study was to determine acute toxicological effects in rats exposed by inhalation to explosively disseminated TiO₂ and the resultant by-products present in the aerosol. Groups of male, Fisher 344, rats were exposed by nose- only inhalation to three concentrations of TiO₂ dust for 30 min. The highest concentration was used as the 'worst case' field concentration. Two other concentrations were selected to produce a 'no adverse effect' level. Air-exposed and fuse/fuel exposed rats served as controls. Exposed rats and respective groups of controls were submitted for bronchoalveolar lavage, biochemical, physiological, and pathological evaluations at 24-hr and 14-days post exposure. The results indicate there were no irreversible adverse changes in the biological response of the rats exposed to TiO₂ from the XM82 grenade. **Titanium Dioxide** (TiO₂), Inhalation, Dust, XM82 Grenade.

  Adobe PDF - \$19.95

  Printed Format - \$22.95

 **ADD TO CART**

Please check the box for the format you wish to order.

[Shipping Terms](#)
[About Electronic Delivery](#)

 [Email This Abstract](#)

Limitations:  APPROVED FOR PUBLIC RELEASE

Description: Final rept. Aug 90-Jan 91

Pages: 34

Report Date: JUN 92

Report Number: A598352

 **Keywords relating to this report:**

- ✦ [*GRENADES](#)
- ✦ [*INHALATION](#)
- ✦ [*TITANIUM DIOXIDE](#)
- ✦ [*TOXICITY](#)
- ✦ [AEROSOLS](#)
- ✦ [AIR](#)
- ✦ [DUST](#)
- ✦ [FUELS](#)
- ✦ [LUNG](#)
- ✦ [MALES](#)
- ✦ [NOSES](#)
- ✦ [RATS](#)
- ✦ [RESPONSE](#)
- ✦ [SMOKE](#)

[« Back to search](#)