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8EHQ-1093-5936

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8EHQ-92-5936
SP002 10/25/93

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89948000016

Re: Union Carbide's July 21, 1992 (et seq.) TSCA 8(e)
Submission Concerning Triethylene Glycol (CASRN 112-27-6)
[No. "8EHQ" Number Has Been Received from EPA]

Dear Sir or Madam:

8EHQ-92-5936
FDN: 88920004582

As a follow-up to the above-noted submission, Union Carbide Corporation ("Union Carbide") herewith submits the following abstracts of 2 technical papers which will be presented at the 1994 Annual Meeting of the Society of Toxicology (Dallas, TX; March 13-17, 1994):

- (1) "Sensory Irritation Study of Triethylene Glycol Aerosol in ND4 Swiss Webster Mice", by B. Ballantyne, M. S. Werley, W. M. Snellings, and H. D. Burleigh-Flayer.
- (2) "Developmental Toxicity Evaluation of Triethylene Glycol (TEG) Administered by Gavage to CD® Rats and CD® -1 Mice", by T. L. Neepser-Bradley, L. C. Fisher, B. L. Butler, M. F. Kubena, and B. Ballantyne.

While no claim of confidentiality is made, the Agency is advised that the publication rights to this information are the property of Union Carbide.

Please contact the undersigned with questions, if any, at 203/794-5230.

Very truly yours,

William C. Kuryla, Ph.D.
Associate Director
Product Safety

WCK/cr
Attachments

3 pgs. teg

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**Society of Toxicology
1994 Annual Meeting
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Carefully read the abstract instructions (attached). Return this form by **October 1, 1993**, to: Program Committee, c/o Executive Secretary, Society of Toxicology, 1101 Fourteenth Street, N.W., Suite 1100, Washington, D.C. 20005-5601. Submit original abstract form, two copies of this page, and non-refundable abstract submission fee of \$30 PER ABSTRACT. Abstract submitters are still required to register and pay the fee for the Annual Meeting. No cash or purchase orders will be accepted. *Submission Questions?* Please call Dawn Caruso at SOT Headquarters, (202) 371-1393; fax: (202) 371-1090.

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STAY WITHIN BLUE LINES — CUT & PASTE IS ACCEPTABLE

SENSORY IRRITATION STUDY OF TRIETHYLENE GLYCOL AEROSOL IN ND4 SWISS WEBSTER MICE. B. Ballantyne, M S Werley, W M Snellings, and H D Burleigh-Flaver. Bushy Run Research Center/Union Carbide Corporation, Export, PA

During normal uses of triethylene glycol (TEG), airborne exposure to low vapor concentrations can occur (vapor pressure < 0.1 torr). Applications which could result in the generation of a high aerosol concentration might produce peripheral sensory irritation and distracting and/or physically incapacitating effects (Ballantyne, 1993). These factors would be important in assigning a workplace exposure limit. Therefore, TEG aerosol was investigated for its potential to produce respiratory rate depression using a validated method for assessing sensory irritation (Kane *et al.*, 1980). Groups of four male ND4 Swiss Webster Mice were exposed, nose only, for 30 minutes to TEG aerosols (MMAD 2.45-3.10 μm) at analytical concentrations of 3.60, 4.55, 4.74, and 5.10 mg/l. The corresponding respiratory rate depressions were 15.2, 27.3, 58.1, and 43.7%. Maximum decreases in respiratory rate occurred within 15-25 minutes of the start of exposure and were sustained for the exposure period. There was a characteristic concentration-dependent lengthening of the expiratory phase of the respiratory cycle. From the concentration-response relationship, the RD_{50} was calculated to be 5.14 mg/l. Using a prediction factor of 0.03 RD_{50} (Alarie *et al.*, 1981), adequate protection from sensory irritation would be obtained at a TEG aerosol concentration of 150 mg/m^3 .

ADDITIONAL FIRST AUTHOR INFORMATION:

Please type an X in the appropriate spaces.

1. Name and address of senior (first) author:
Senior (first) authors can submit only one abstract for the meeting and are expected to present the abstract at the meeting.

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STAY WITHIN BLUE LINES — CUT & PASTE IS ACCEPTABLE

DEVELOPMENTAL TOXICITY EVALUATION OF TRIETHYLENE GLYCOL (TEG) ADMINISTERED BY GAVAGE TO CD⁰ RATS AND CD⁻¹ MICE. T L Neeper-Bradley, L C Fisher, B L Butler, M F Kubena and B Ballantyne. Bushy Run Research Center/Union Carbide Corporation, Export, PA.

Timid-pregnant CD⁰ rats and CD⁻¹ mice were treated daily during organogenesis (gd 6-15) with undiluted TEG (CAS # 112-7-6) by gavage at doses of 0.0 (deionized water), 0.5, 5.0, or 10.0 ml/kg/day (mice) and 1.0, 5.0 and 10.0 ml/kg/day (rats). Dose volumes were based on periodic dam body weights beginning on gd 6. Dams were observed daily and gestational body weights and water and food consumption were measured throughout gestation. At necropsy on gd 21 (rats) or gd 18 (mice), dams were evaluated for body weight, liver and kidney weights and implantation sites. Maternal kidneys from control and high dose levels were examined by light microscopy. In rat dams, reduced body weight gain and food consumption and increased water consumption were observed during treatment at 10.0 ml/kg/day; maternal food consumption was also reduced in rats during treatment with 5.0 ml TEG/kg/day. In both species, audible/rapid respiration, hypoactivity, and increased relative kidney weights were observed in dams given 10.0 ml TEG/kg/day. In mouse fetuses, delayed ossification in the head and cervical regions and in the appendicular skeleton was noted at 10.0 ml/kg/day. Poor ossification, in one skull bone, the supraoccipital, was noted in mouse fetuses at 5.0 ml/kg/day. In rat fetuses, perturbations in skeletal structure and ossification patterns in the thoracic region were noted at 10.0 ml/kg/day. In addition, rat fetal body weights were reduced at 10.0 ml/kg/day. Maternal kidney histology was normal in both species. Based on the effects observed in rodent fetuses, TEG produced developmental toxicity at large doses when administered by gavage to pregnant CD⁰ rats and CD⁻¹ mice. No biologically significant embryotoxicity or teratogenicity was observed at any dosage employed.

ADDITIONAL FIRST AUTHOR INFORMATION:

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