by plants and animals. This study was designed to investigate the effects of selenium dioxide (SeO_2) and seleno-L-methionine (SeM) on the guinea pig lung. Three groups (n = 5) of male guinea pigs (206–445g) were anesthetized with Nembutal (25–30 mg/kg, ip). Pulmonary functional parameters such as the respiratory rate (f), tidal volume (TV), minute volume (MV), peak inspiratory flow (PIF), peak expiratory flow (PEF), lung resistance (RI), and compliance (Cdynl) were measured using the respiratory flow and the intrapleural pressure signals from the animal. Guinea pigs were treated intratracheally with saline, SeO_2 or SeM (0.06 mg Se in 15µl/100g). Pulmonary function was assessed after treatment. Results indicated that, exposure to SeO_2 decreased f and increased RI significantly ($p<0.05$) with a decrease in Cdynl. Despite the increased RI after SeM exposure, the overall effect by SeO_2 was more deleterious to the pulmonary system. This study was supported by the MUSC Institutional funds # 23030-CR10.

1236 CONTINUOUS FILAMENT GLASS (CFG) INSULATOR DOES NOT TRANSFER INTO MAINSTREAM SMOKE FROM ECLIPSE™ CIGARETTES.

M A Higuchi, W T Morgan, J E Swauger, P H Ayres, J H Corn, P A Deal, and A T Mosberg. *R J Reynolds Tobacco Company, Winston-Salem, NC.*

A study was conducted to determine if ECLIPSE™ cigarettes, which use a special form of continuous filament glass (CFG) as an insulator around the carbon heat source, yielded CFGs in mainstream smoke. After handling cartons of cigarettes using procedures that were designed to simulate commercial shipping conditions, cigarettes were smoked at a volume of 75 ml and a puff duration of 2 seconds, once every 35 seconds. These conditions were employed to maximize the probability that any potential transfer of CFG to ECLIPSE™ mainstream smoke would be detected. A 20-port rotary smoking machine with an electrostatic precipitation (EP) smoke trap (Heinrich-Borwaldt, Model RM 20 CS, International Planters Corp., Richmond, VA) was used to collect the smoke from 30 ECLIPSE™ cigarettes at 10 puffs per cigarette. CFGs were intentionally added to a series of smoke condensate samples to develop knowledge of the CFG recovery efficiency. Linear regression demonstrated that the recovery efficiency was 84% ($C.I._{95\%}$, 0.65, 1.04). An analysis of the power provided by this study suggested that a yield of 0.2 filaments per cigarette could be detected with 80% confidence. The number of CFGs collected from ECLIPSE™ cigarettes was not statistically distinguishable from background in the regression analysis. In addition, a t-test and a Wilcoxon rank sum test were conducted to compare the centers of the distributions of background samples with ECLIPSE™ condensate samples. No statistically significant differences were observed at a level of $p<0.05$ for both tests. Thus, under the conditions of this experiment, there was no evidence of mainstream smoke CFG transfer from the ECLIPSE™ cigarette.

1237 PULMONARY INFLAMMATION AND FIBROSIS IN RATS AFTER INTRATRACHEAL INSTILLATION OF ADIPIC ACID AND ADIPIC ACID MIXTURES.

A F Hubbs, J Y C Ma, D Frazer, W T Goldsmith, M Barger, L A Battelli, V A Robinson, D W Porter, V Castranova, V Vallyathan, and J Cocalis. *Health Effects Laboratory Division and DRDS, NIOSH, CDC, Morgantown, WV.*

Adipic acid is an aliphatic dicarboxylic acid which can be added to food in small quantities and is used for several other commercial purposes. During the production of polymers and in the sheet glass industry, respiratory exposures occur. There is no OSHA PEL for adipic acid and it has little or no odor. We have investigated the hypothesis that respiratory exposures to adipic acid are non-toxic. We conducted intratracheal instillation exposures to adipic acid and adipic acid mixtures at levels which would produce limited disease and no mortality with nuisance dusts. Intratracheal instillation of 2.5, 5, or 7 mgs of adipic acid in rats produced acute pulmonary cytotoxicity and inflammation. One day after instillation, lavage protein, LDH, and inflammatory cells were markedly increased. Histopathology confirmed acute pulmonary inflammation. Four weeks after exposure, pulmonary alterations persisted and were most pronounced in the rats receiving 7 mgs of adipic acid. Significant changes included hydroxyproline increases, histologic foci of pulmonary fibrosis, and persistent tachypnea. Neutralization of the pH ameliorated the toxicity. These findings suggest that high concentrations of adipic acid can cause persistent pulmonary structural and functional alterations. The proposed mechanism is the acidity and lipid solubility of this organic acid. Inhalation studies are planned.

1238 CONTINUALLY-MEASURED FUNGAL PROFILES IN SICK BUILDING SYNDROME.

J J McGrath, W C Wong, J D Cooley, and D C Straus. *Department of Physiology, and Department of Microbiology and Immunology, Texas Tech University Health Sciences Center, Lubbock, TX.*

Fungi are a significant etiological factor in Sick Building Syndrome (SBS). Buildings whose occupants register complaints concerning their indoor air quality (IAQ) invariably have high concentrations of *Penicillium sp.* present in the air. Buildings whose occupants voice no IAQ complaints have an indoor air (IDA) fungal ecology very similar to the outside air (OSA) where *Cladosporium sp.* is the dominant microorganism. These studies were conducted in a documented sick building in a room experiencing IAQ problems to determine if the IDA fungal profile changed or remained constant over a six hr period. OSA samples were taken at the same time. Air samples were drawn for 5 min in triplicate by means of a two-stage Andersen Air Sampler on Sabouraud dextrose agar (SDA), pH 7.0 at 1000, 1100, 1200, 1300, 1400, and 1500 hr. inside and immediately outside the building. The dominant species collected in the air at both sites were *Penicillium sp., Cladosporium sp.*, and *Alternaria sp. Penicillium sp.* were always the dominant organisms in the sick room ranging from 150 colony forming units (cfu) per cubic meter of air (m^3) to 567 cfu/m^3; These values represented from 89.8 to 100% of the total fungi in the IDA. In the OSA over the same time period, *Cladosporium sp.* were dominant in four of the 6 hour samples (40.0 to 70.6%). In the two other OSA samples *Penicillium sp.* were dominant (52.7 to 79.6%). These data demonstrate that "sick" buildings tend to stay "sick" for extended periods of time, while the OSA fungal profile is continually changing. These studies were supported in part by QIC Systems

1239 USE OF ODOR THRESHOLD DATA AND SHOWER AIR MODELING TO DETERMINE ALLOWABLE LIMITS OF METHYL-TERTIARY BUTYL ETHER (MTBE) IN DRINKING WATER.

R O Richter[1], D Suder[2], and B D Kerger[1]. [1]*McLaren/Hart-ChemRisk, Irvine, CA, and* [2]*Precise Environmental Consultants, Davis, CA.*

The human and laboratory animal dose-response information currently available for MTBE indicate that acute toxicity or appreciable cancer risks are unlikely to occur at water concentrations where the MTBE cannot be readily detected by odor or taste. For example, investigators have reported taste thresholds of MTBE in water ranging from 39 to 134 µg/L. Similarly, reported air concentrations for odor detection (191 µg/m^3) and odor recognition of MTBE (288 to 451 µg/m^3) appear to vary over an approximate 2- to 3-fold range. Since it is conceivable that residential water use may largely exclude ingestion of local tap water, one way to determine the range of MTBE water concentrations associated with aesthetic problems or nuisance would be to estimate maximum shower air concentrations that would be readily detectable by residents. Using the indoor air modeling procedures of McKone (1987), we calculated the peak concentrations of MTBE that might occur in a small (1,100 square foot) home occupied by residents who take three showers (6.8 minute duration) and one bath each day. The model predicted that a peak air concentration of 191 µg/m^3, corresponding to the lowest reported odor detection threshold, may be generated by an MTBE water concentration as low as 22 µg/L. Shower air concentrations of 288 to 451 µg/m^3, corresponding to the range of reported odor recognition thresholds for MTBE, were generated by MTBE water concentrations in the range of 34 to 53 µg/L. The apparently low odor detection thresholds for MTBE would therefore provide a very conservative basis for an aesthetic water quality-based standard to prevent odor nuisance complaints.

1240 EFFECTS OF 13-WEEK WHOLE-BODY EXPOSURE TO TERTAMYL-METHYL ETHER (TAME) IN F344 RATS AND CD-1 MICE.

R C Mandella, and G M Hoffman. *Huntingdon Life Sciences, East Millstone, NJ.*

TAME is an aliphatic ether used as an oxygenate in gasoline to reduce carbon monoxide emissions. The inhalation toxicity of TAME was evaluated in male and female F344 rats and CD-1 mice after whole body exposure 6 hrs/day, 5 days/wk for 13 weeks. Rats were exposed to TAME vapors at 0, 250, 1500 and 3500 ppm. At 3500 ppm, there was a low incidence of mortality (2/102) and mean body weight and body weight gains were decreased. Prostration and lethargy were observed at 1500 and 3500 ppm. Platelet counts were increased at 3500 ppm in males and females and at 1500 ppm in males. Total serum protein, albumin and globulin were increased at 1500 and 3500

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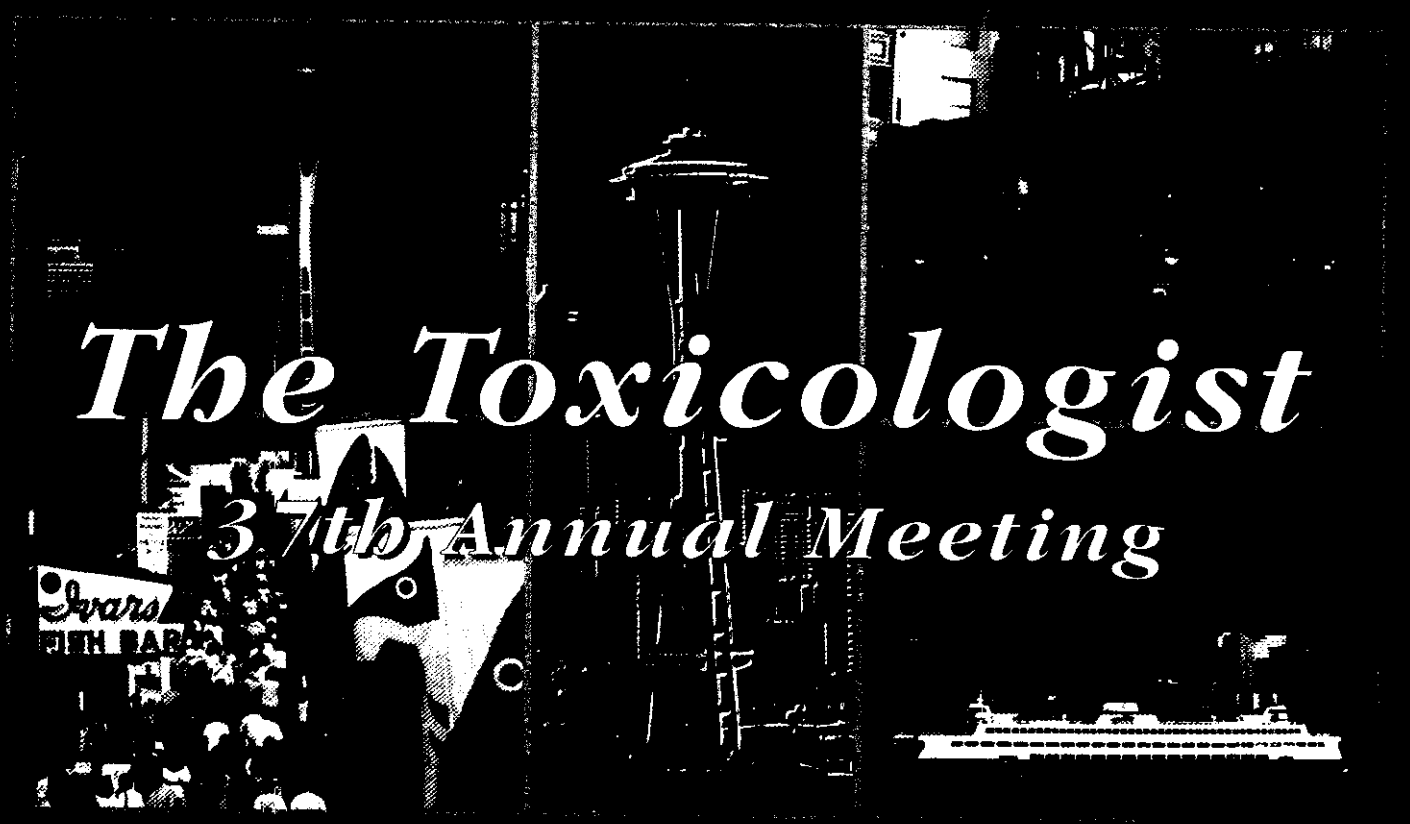

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Preface

This issue of *The Toxicologist* is devoted to the abstracts of the presentations for the symposium, platform, poster / discussion, workshop, roundtable, and poster sessions of the 37th Annual Meeting of the Society of Toxicology, held at the Washington State Convention Center, Seattle, Washington, March 1-5, 1998.

An alphabetical Author Index, cross referencing the corresponding abstract number(s), begins on page 407.

The issue also contains a Keyword Index (by subject or chemical) of all the presentations, beginning on page 433.

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