



The Industrial Commission
Of Ohio
Division Of Safety & Hygiene
246 N. High St., Col. O. 43215

August 29, 1983

Legal Section
Industrial Commission of Ohio
246 North High Street
Columbus, Ohio 43215

O.D. 20115-22
Mary Grant

Owens-Corning
Obetz, Ohio

Dear Ms Spencer:

On June 7, 1983, and June 21, 1983, a visit was made by Robert Crackel to Owens-Corning, Power and Process Contracting Division, 2175 Broehm Road, Columbus, Ohio 43207. The purpose was to collect industrial hygiene data relative to the occupational disease claim of Mary Grant OD 20115-22. Ms Grant was diagnosed as having contracted non-specific rhinitis due to cutting fiberglass insulation.

According to the company's records, the claimant's work history was as follows:

12/21/69 to 5/30/79	Byron Lithograph	Spotter, packer, shipper
9/4/79 to 10/31/79	Owens-Corning	Assembly line
11/15/79 to 5/27/80	Columbus Products	Assembly line
5/8/81	Owens Corning	Unspecified
8/3/81	Owens Corning	Material Handler
11/16/81	Owens Corning	Machine Attendant
1/11/83	Owens Corning	Leave

The company manufactures fiberglass insulation blankets for nuclear reactor vessels. Ms Grant's job involved sewing blankets and cutting and stuffing in 24" X 48" rectangles of fiberglass measuring 1-1/2" to 2-1/2" thick. The large room she worked in is a "clean" environment which is air-conditioned and heated separately from the rest of the building. There was no local ventilation where the claimant worked. When she developed symptoms of rhinitis, she was given a 3M 9920 dust/fume/mist disposable respirator and a 3M 8500 particle mask disposable respirator. She wore no gloves, wore a duck cloth (canvas) smock, and washed with Superior Liquid Hand Soap.

According to a Material Safety Data Sheet received from the company (see attachment), the fiberglass is coated with a phenol-

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formaldehyde resin. Air sampling was performed at the company on June 21, 1983 in the breathing zone of an employee cutting the blankets. Tests were made for total dust, phenol dust, and free formaldehyde. A 6" square of insulation was also analyzed for release of free formaldehyde. The results were all negative (0.22 mg/M³ dust, <0.01 ppm phenol, <0.1 % formaldehyde released from square), except for free formaldehyde in the air (0.13 ppm).

The previous Threshold Limit Value for formaldehyde was a ceiling of 2 ppm; there is no current TLV because of suspected carcinogenicity. Thus, these results are comparatively low compared to 2 ppm, and most workers would be expected to become inured to formaldehyde exposures below 2 ppm.

However, ample evidence has been presented to show that some workers will develop eye and respiratory tract irritation well below these levels. Kerfoot found upper respiratory tract irritation, burning of the eyes and nose, sneezing, coughing and headaches at levels ranging from .25 ppm to 1.39 ppm and Bourne found burning, stinging eyes, headaches, and intolerable irritation of the eyes, nose and throat at levels between .13 to .45 ppm. (E. Kerfoot, "Formaldehyde and paraformaldehyde study in funeral homes," Am. Ind. Hyg. Assoc. J. 36:533 (1975), and H. Bourne, "Formaldehyde in wrinkle-proof apparel processes - tears for milady," Ind. Med. Surg. 28:232 (1959)) Based on their studies of mice and a review of the industrial hygiene literature, Kane and Alarie have recommended a TLV of .03 to .3 ppm ("Sensory irritation to formaldehyde and acrolein during single and repeated exposures in mice," Am. Ind. Hyg. Assoc. J. 38:509 (1977)).

In summary, the claimant was exposed to very low levels of formaldehyde during the cutting and sewing of fiberglass insulation blankets. Although most workers would suffer no lasting ill effects at these levels, many studies have shown severe and persistent eye and respiratory irritation to some workers at these same levels. There is ample industrial hygiene evidence to support a medical diagnosis of work-related rhinitis in this case.

Respectfully submitted,


Robert J. Crackel
Industrial Hygienist

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Enclosure: MSDS

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