IS FIBERGLASS A HEALTH HAZARD?

EMPIRE PACIFIC

Risk Management, Inc.

Company Name _____ Job Name _____

Everyone has heard about the association between lung cancer and asbestos. Since some forms of asbestos are similar in appearance to fiberglass fibers, many people wonder if handling fiberglass could also result in the development of cancer or other serious health hazards. Scientists have made over 400 studies of fiberglass in an attempt to answer this question. The conclusion is that it will not, because its properties are very different from asbestos. OSHA confirmed these findings in 1991 when it decided to regulate fiberglass as a nuisance dust, and not as a cancer causing agent. The state of California, nevertheless, still requires that fiberglass be labeled as a *potential* cancer causing agent.

The principal difference between glass fibers and asbestos fibers is their size and the way the fibers break down. Glass fibers are cylindrical *single* fibers that can never split lengthwise; they only break across the fiber. As they break, they form tiny fragments that no longer have the properties of a fiber. Asbestos fibers, on the other hand, are always present as bundles, never as a single fiber. Asbestos fibers fracture only *lengthwise* when the bundles break apart, releasing thousands of long tiny fibers. When these are inhaled, they become trapped in the small sacs of the lungs known as alveoli. Because asbestos fibers are long, sharp, and irritating to lung tissue, the alveoli close up and trap them in the lungs. This eventually results in the lungs becoming hard, fibrous and inelastic. Over time, the continued irritations cause cancer in some individuals.

Because fiberglass breaks *across* the fiber to form tiny fragments, the tissue response is very different when these particles are inhaled. When fiberglass fragments are inhaled and deposited in the small air sacs of the lung, the alveoli do not close up and trap the particles. The particles are expelled from the alveoli and there is a rapid clearance of fiberglass dust particles from the lungs.

However, fiberglass presents other problems-such as irritations of the eyes, skin, or respiratory tract. The mechanical action of the fibers scraping against skin may cause a condition known as dermatitis. To protect yourself, wear long sleeve shirts and pants to keep the fibers off your skin, and wear clean clothes every day. Gloves and eye protection may also help. Use soap and

warm water to remove any fibers that you do get on your skin. Dust is produced when mat or cloth is rolled out, where chopper guns are used, and in finishing operations where flashing is removed or sanding occurs. So always wear a dust mask in these areas to help avoid inhaling glass fibers.

The primary hazard associated with fiberglass is the chemicals used during the fabrication or lay up process. Styrene monomer, or raw resin, is catalyzed with an organic peroxide; the most common is *methyl ethyl ketone peroxide*. *Cobalt* compounds, often used as accelerators, can result in allergic dermatitis or asthma like conditions. *Acetone* is a central nervous system depressant used for clean up of tools, utensils, and spray equipment. The important thing to remember about these chemicals is that they are health hazards when inhaled; proper respiratory equipment must be worn and adequate ventilation provided. You should also be aware that these chemicals can form flammable or explosive concentrations at normal room temperatures, so proper handling and ventilation is essential.

Working with fiberglass material should not be dangerous *if* you are properly trained, and *if* you use appropriate protective equipment. Be sure to do so!

Safety Recommendations: _____

Job Specific Topics:_____

M.S.D.S Reviewed:_____

List of Attendees

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