VCC Submission to MOL on 1mg/m3 PVC Dust OEL Proposal – March 16, 2000

1) The Ontario Vinyl Industry

Responsible Industry: This industry is concerned about worker health and is committed to ensuring that any exposures are minimized for any materials which would have an adverse effect on health, and supports MOL initiatives to improve worker health where this would flow from reduced exposure. As evidence of this commitment, the Vinyl Council has recently introduced an Environmental Management Program (EMP) modeled on the principles of Responsible Care® and compatible with ISO 14001. The ethic of the EMP, combined with the good business sense of maintaining a healthy workforce, clearly encourages the vinyl industry to protect workers from any health hazards posed by dust. It is with this mind-set that the industry approaches the issue of limits for vinyl dust

Vinyl Council of Canada (VCC): The VCC is an operating council of the Canadian Plastics Industry Association. VCC's 23 members work together, to protect our environment during the manufacturing, use, recycling and disposal of vinyl products. VCC produces educational materials about the safety and performance of vinyl and promotes the benefits of vinyl products. The VCC is leading the industry's participation in the current OEL consultative process

Structure: The industry in Ontario consists of two polymer resin plants, several separate compounding facilities and ~150 sites where vinyl is processed into products such as pipe, siding, flexible and rigid sheet, film, window and door profiles, flooring, wire and cable etc. The larger processors have their own compounding facilities. The industry is growing at ~5% per annum. Some larger processors are branch plants of multinational companies, whereas the smaller companies are generally Canadian owned.

Sales: The sales value of the monomer, polymer and processing operations is estimated at $2.5 to 3 billion. Based on US research, the full economic value to Ontario, of this industry and its peripheral activities, amounts to $5+ billion

Employees: The labour intensity per unit of sales grows through the chain. It is estimated that ~10,000 work in the resin and processing components of the industry.

Eco-efficiency: Vinyl products are eco-efficient due to their durability and resulting long life, high strength to weight ratio, low maintenance, low rate of failure and minimal consumption of non-renewable resources

2) Sources of PVC dust

The three distinct steps in producing most vinyl products, such as pipes, siding, window profiles or sheet, are polymerization, compounding and processing. Certain items will require a further fabrication or converting step. Polymerization is done in the presence of water so dust is only possible towards the end of the process, after the dryer. Potential sources could be the flanges, seals and valves from the pneumatic transfer system, as well as the bag-houses that filter out the transport air. The screens and bulk loading areas are sources of dust, which is why these are usually equipped with dust extractors.

Compounding can be done at a stand-alone facility or be part of a large processor's operation. When PVC resin is moved pneumatically from bulk transport to the storage silos, as well as from storage to dry blending, the PVC resin and any associated dust is contained, so the only sources of dust are possible leaks from flanges etc. and filtering of transport air. However PVC is also moved in 1000kg Super Sacs, which can create dust on filling and emptying. Dry blending can be open, though with dust extraction usually in place. During compounding the lighter filler, pigment and impact modifier particles, added manually from bags, are more likely contributors to dust than PVC. For long runs, in large processing facilities, the compound is often pneumatically transported, either as pellets or powder, to the shape making equipment, such as an extruder or injection moulding machine. For smaller runs, and smaller operations, compound is contained in 600kg boxes or 25 kg bags and introduced manually or by vacuum. Pellets offer minimal dust generation for the compound. The processing step does not give rise to any dust, but subsequent cutting, trimming and fabricating can generate dust, which should be extracted away and reprocessed.