



**Submission from  
Australian Manufacturing Workers Union**

**To the Senate Community Affairs Committee:  
Inquiry into Workplace Exposure to Toxic Dust**

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# Inquiry into workplace exposure to toxic dust

**This submission is very brief although it indicates our concern for both the lack of a comprehensive governmental response to a fast emerging issue for worker health and safety, nanotechnology and our continued frustration about the lack of regulatory and a preventative health response to a well known and old hazard, silica dust. The failure of the regulators to 1. lower the exposure standard of silica and 2. to provide air and workers surveillance is a sad indictment of our regulatory authorities and their industrial partners.**

**The AMWU is concerned that unless we address the potential environmental and worker health risks of nanotechnology, it is possible that a community backlash may delay and prevent the use of the potential benefits of nanotechnology.**

## **Silica**

The health effects of exposure to crystalline silica are well known and not disputed, however there is very little atmospheric surveillance or workers health surveillance, to indicate the extent of the human toll. Except for foundry workers, AMWU members are likely to be incidentally exposed to silica dust by working alongside other groups of workers have much more direct exposures e.g. sand blasters, concrete cutters.

The AMWU therefore wishes to support the recommendations and submission made on behalf of those workers by the ACTU and the CFMEU (Construction). In particular the AMWU supports

- Reduction of the exposure standard to 0.05 mgm/m<sup>3</sup>
- Worker health surveillance and health education
- Compliance activity by the regulators e.g. adherence to Codes and exposure standards.

## **Nanotechnology**

The use of man made nanoparticles appears to be exponential. Currently used in sunscreens and toothpaste, to fumed silica in car tyres, the potential and investment seem limitless. However these nanoparticles and nanofibres also have the potential to

- act as a gene vector
- enter the body via the lungs and/or skin
- cross the blood brain barrier
- Agglutination of red blood cells.<sup>1</sup>

So nano particles/fibres can enter the human body but their precise health effects are still open to further debate and research.

*"After the penetration, the distribution of the particles in the body is a strong function of the surface characteristics of the particles. ....The pharmaco-kinetic behaviour behaviour of different types of nanoparticles requires detailed*

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<sup>1</sup> *Nanoparticles Known and Unknown Health Risks*, Hoet et al, J Nanobiotechnology, 2004, 2:12, Dec 2004

*investigation and a data base of health risks associated with different nanoparticles...should be created."*<sup>2</sup>

### Learning from past mistakes

Unfortunately, the Australian industrial and regulatory world took until 2003 to ban asbestos, a deadly fibre of which the medical fraternity knew of its potential health effects in 1934<sup>3</sup>. Australia now has the unenviable distinction of having the highest mesothelioma rate in the industrialised world. It would be an act of negligence to future generations if we did not heed the concerns now being raised in the research community about the health effects of nanotechnology.

The analogy with asbestos is relevant as during the 1930s to 1980s, the use of asbestos was ubiquitous, due to its excellent properties; both in industry and our homes (prior to 1982 an estimated 1 in 3 homes had asbestos containing building products). Most urban dwellers have been exposed to asbestos fibres. Nanoparticles have widespread usages, from cosmetic products to foodstuffs to paints and industrial catalysts. Many of the uses will be beneficial and hence with the potential for great numbers of people to be exposed.

*" the novel properties that emerge as materials reach the nanoscale – changes in surface chemistry, reactivity, electrical conductivity etc – open the door to innovations in cleaner energy production, energy efficiency, water treatment....., that will provide direct environmental improvements. At the same time, these novel properties expose new risks to workers, consumers, the public and the environment. ....same nano materials appear to have potential to damage brain and lung tissue, to be mobile and persistent in the environment and to affect micro-organisms"*<sup>4</sup>.

### **Key areas for action**<sup>5</sup>

- Government needs to use its existing capabilities and authorities, or develop new ones as needed, to ensure that the risks of nanomaterials are identified before they are incorporated into products for commercial production. The processes for new chemicals under NICNAS may be one way of doing this, including the calling of a special inquiry on nanotechnology, under the auspices of NICNAS, CEPA and the ASCC. The AMWU supports the ACTU call for a national conference by the end of 2005.

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<sup>2</sup> Ibid , page 12

<sup>3</sup> "Looking back in light of present knowledge, it is impossible not to feel that opportunities for discovery and prevention [of asbestos disease] were badly missed."  
Thomas Legge, *Industrial Maladies* (Oxford, 1934 page 191).

<sup>4</sup> *Getting Nanotechnology Right the First Time*, Environmental Defense Fund, statement to the National Research Council, USA , 2005-08-05, page 2

<sup>5</sup> Some of these are adapted from the USA based Environmental Defense Fund Submission

- Research dollars need to be spent on health and environmental implications of nanotechnology, including collaborative research ventures with overseas bodies, to ensure that critical research is conducted to identify potential risks.
- Comprehensive management of those risks that are identified – from a full life-cycle perspective, taking into account worker safety, manufacturing waste, product use, and product disposal. An objective assessment is needed by the ASCC and the CEPA and the relevant state jurisdictions responsible for both the environment and workplaces– to identify changes needed to address current gaps and uncertainties that may be creating regulatory “nano-loopholes”.
- Urgent investigation and regulation of nanoparticle exposure levels to the lowest possible level, until a safe and healthy exposure standard can be adopted. The AMWU has grave concerns about the levels of exposures in scientific research and commercial R&D departments where regulators and unions often do not have any access or ability to investigate current exposure and control strategies. It has been our bitter experience that due to the new and exciting nature of the work worker health and safety is often jeopardised. This is based on our experience in the pharmaceutical industries.
- Industry itself needs to develop and drive widespread adoption of “standards of care” for responsible nanotechnology development. Such standards should employ comprehensive risk identification and management process both prior to and following commercialisation of nanomaterial – containing products.
- Government and industry needs to engage stakeholders outside government and industry – labour, health organisations, consumer advocates and environmental NGOs – whose constituencies stand to be both beneficiaries of this technology and those most likely to bear any risks that arise.

**The AMWU refers the Committee to the excellent discussion of many of these issues in the Friends of the Earth Submission. The AMWU would appreciate to appear before the Committee to further discuss our submission.**

**The AMWU supports the submissions of the ACTU, CFMEU and Friends of the Earth.**

**Deborah Vallance  
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