

INFORMATION SHEET

NANOTECHNOLOGY

Nanotechnology involves the manipulation of very small particles (10^{-9} to 10^{-7} metres) in both existing and new applications. Particles of nanosize are practically individual molecules or atoms, and display unique or enhanced properties. As Nanoparticles are so small they 'organise themselves' closely and bond together to form a 'molecular' sealed surface.

Nanomaterials also occur naturally in the environment and can be found in almost every substance including surface coatings.

The surface coatings industry therefore has a longstanding record of safe use of these materials.

For surface coatings utilizing nanotechnology, the functional film formed results in millions more of these particles being packed together in the same unit cross sectional area compared with a traditional paint or surface coating.

Nanotechnology is currently available in marine coatings, to aid in resisting algae grow; in protective coatings to help metal "repair itself" and in architectural coatings to help protect buildings from UV degradation.

Future potential applications and benefits could include scratch-free automotive or coated wood surfaces, permanent barnacle-free boat hulls or self-cleaning surfaces around the home and office.

Nano coatings can be applied to virtually any substrate surface including metal, ceramic, metal, concrete, plastic, masonry, chrome and steel.

The surface coatings industry also recognises that the unique properties associated with engineered nanomaterials may give rise to health and safety concerns in some circumstances.

The Australian Government currently regulates the use of nanotechnology in Australia through the National Industrial Chemicals Notification and Assessment Scheme (NICNAS) and SafeWork Australia.

NICNAS regulates nanomaterials through the same framework that exists for conventional industrial chemicals.

SafeWork Australia is conducting research into the potential health and safety implications from exposures to engineered nanomaterials in the workplace, including assessment of controls and procedures for measuring exposure. They use this information and the best available overseas data to inform policy for the best, safest use of nanotechnology.

This approach is consistent with recent Organisation of Economic Development recommendation that its member countries (70 countries, including Australia) apply existing international and national chemical regulatory frameworks to manage any risks associated with manufactured nanomaterials.