



Planning and Development Department
Toxics Management Division

August 2007

Manufactured Nanoscale Materials Health & Safety Disclosure

The City of Berkeley recently adopted a manufactured nanoscale material disclosure ordinance that has been incorporated into the hazardous materials business plan HMBP requirements (Title 15, Berkeley Municipal Code and by reference, Chapter 6.95 Division 20 of California Health & Safety Code). Facilities that produce or handle manufactured nanoscale materials (defined as manufactured chemicals that are engineered and which have one dimension less than 100 nanometers) are required to submit a report (incorporating the items listed on pages 2 and 3) to the Toxics Management Division (TMD) by June 1, of each year.

We have received much input from industry, legal firms, consultants, members of the public and regulators during the drafting of this reporting requirement. Our goal was to allow flexibility in reporting yet still require the facility to address the potential risks to its workers and the environment. It is our hope that the reporting requirements will change with time as we gather additional knowledge about safe handling of manufactured nanomaterials.

In an effort to contain costs of reporting, we adopted a system of prioritizing risk activities into control bands as listed in the guidance below. This requires a review of the available toxicological information for materials handled or you intend to handle and an exposure pathway study. An internal audit should be conducted to evaluate exposure potentials of your nanoscale materials throughout its lifecycle; from the point of generation or receipt to disposal. If an exposure potential is determined to exist, you must review the published data on the toxicity of the nanoscale materials in question. We recommend you use health professionals for this task. Based on the band of risk you identify in this evaluation, you should take appropriate measures to protect workers and the environment. If an exposure potential is present but insufficient toxicological information is available, a precautionary approach should be taken which assumes that the material is toxic.

Facilities that cannot predict their inventory for the reporting period should submit this report based on your best knowledge of the inventory for the year. You should use a risk-based approach and document your findings in the same manner as reported materials. However, you are not required to submit updated information unless specifically requested.

Please note that there is important information at the end of these instructions that you should read.

For additional information please contact:

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A. General Information

1. By June 1 of each year, provide a cover letter signed by senior member of the staff indicating the information in the report is accurate and precautions therein will be adhered to.
2. Fill out the company information (California OES Form 2730) unless you have already submitted this form in your Hazardous Materials Business Plan (HMBP).
3. Provide the common name of the nanoscale material or class of materials.
4. Where available, provide the Chemical Abstract Service (CAS) number. For mixtures, enter the CAS number of the individual chemicals. If there is no CAS number assigned to this material please indicate.
5. Provide the average and the maximum daily amount of the material stored onsite at any on time during the year. Specify the units used (use metric units where possible).
6. Provide the physicochemical properties of the nanoscale material. Include available information about the following: chemical form (e.g., solid, liquid), purity, particle dimensions, prediction of surface area with approximate mass, shape, aggregation potential, water solubility, flammability, flash point, and reactivity.
7. Provide the source of the material if it is not produced on site. Please provide the address and contact information for the site from which the material was obtained
8. Indicate the type of substrate used if any and any relevant toxicological information that may be important about the substrate.
9. Indicate the use within the site, intended downstream use, and information about the benefits of the applications.

B. Toxicology

10. Provide toxicological information about the nanoscale material. If available, include information regarding inhalation toxicity, dermal penetration and/or toxicity, and oral toxicity, mutagenicity/genotoxicity, and reproductive toxicity.
11. Provide ecological information about the nanoscale material, which may include: effects on organisms, degradation/biopersistence, and bioaccumulation potential.

C. Occupational and Environmental Protection

12. Provide safe handling information for the nanoscale material
13. Provide information about the potential exposure pathways and likelihood of exposure via these pathways.
14. Provide a list of personal protective equipment (PPE) used in production and handling of the nanoscale equipment
15. Provide descriptions of engineering and administrative controls, such as local exhaust ventilation or job rotation, that are used to reduce employee exposures.
16. Provide a training plan for employees who may come into contact with nanoscale material. Include safe handling procedures, release prevention, release mitigation and disposal methods
17. Provide the clean up methods and procedures for accidental spills or releases
18. Provide the container type that the nanoscale material is stored in. Please indicate if the material is stored in more than one type of container.
19. Provide a site map indicating safety equipment, spill mitigation equipment, engineering control equipment, storage areas, and process areas.

D. Control Band Measures

Review the data gathered and identify the chemicals by one of the Bands below. The list of Bands is not exhaustive and you should use best judgment for your reporting.

List the control measures adopted or proposed to be adopted that are commensurate with the Band Level you have identified for the nanoscale materials. If you intend to adopt control levels in the future, please indicate the timeline for adopting such control measures. Examples of control banding:

Band 1: Low potential toxicity and no exposure pathway. Little or no control measures.

Band 2: Moderate potential toxicity and exposure pathways. Moderate levels of control measures

Band 3: High potential for toxicity and possible exposure pathways. High levels of control measures.

Band 4: Unknown toxicity and possible exposure pathways. High levels of controls measures.

IMPORTANT NOTES:

- Where information is not available, please indicate this in the disclosure.
- For the purpose of efficiency you may refer to multiple manufactured nanoscale material as a single category in your submittal if they show similar behavior.
- Trade Secret: Please print "TRADE SECRET" on the top right of each page of the disclosure, which is subject to trade secret clause per California Health and Safety Code Section 25538. Trade secret status does not preclude you from submitting required information.
- If you have an internal procedure that addresses all the analyses indicated above, you can make a request to TMD to submit your report using your individual process.