

**Attachment 8a**

NIOSH Engineered Nanomaterials Survey (Screenshots)

## NIOSH Engineered Nanomaterials Survey

National Institute for Occupational Safety and Health (NIOSH) | CDC



Thank you in advance for participating in this survey.

The National Institute for Occupational Safety and Health (NIOSH) is sponsoring the survey. The purpose is to learn about how companies in engineered nanomaterials industries are using research findings, guidance documents, and other information developed by NIOSH and how that information is influencing occupational safety and health. NIOSH is part of the Centers for Disease Control and Prevention (CDC), and is not a regulatory agency. Our mission is to eliminate work-related illnesses and injuries through a focused program of research and prevention. RTI International is conducting the survey on behalf of NIOSH. RTI is a private, not-for-profit research organization based in North Carolina.

The information gathered from this survey will be used by NIOSH to enhance our understanding of how our efforts are influencing occupational safety and health across a range of engineered nanomaterial-related businesses.

The survey is voluntary and should take no longer than 20 minutes to complete. The information we collect will be summarized in an internal document. We will not identify you or your company in any documents or reports without your prior approval.

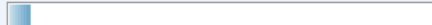
If you have questions about this survey, please do not hesitate to contact the RTI survey manager, Ryan Weber, at 1-800-123-4567 or our Help Desk at [nioshsurvey@rti.org](mailto:nioshsurvey@rti.org).

**This survey should be completed by the person in your company/organization who is the most knowledgeable about the safety and health programs at this location. This may be the environmental safety and health manager, for example, or a senior manager at this location.**

**LOCATION: "ABC Institute of Nanotechnology"**

**If there is someone else in your company/organization who would be a more knowledgeable respondent for this survey, please forward this survey to that individual. If more than one individual is needed to complete the survey, we ask that you work together to provide as much information as possible.**

**Save and Continue**

Progress  5%

**1. Does your company develop, manufacture, use, handle, distribute, analyze, or provide services related to engineered nanomaterials?**

For the purpose of this survey, the term "engineered nanomaterials" refers to a variety of purposefully engineered materials and structures that have at least one dimension that is in the order of 100 nanometers or less.

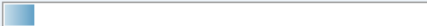
If you are not sure if the material is an engineered nanomaterial, you may need to consult with others (e.g., product manager, process engineer, purchasing agent, supplier or review product information (e.g., Safety Data Sheets)).

*(Check one.)*

- Yes
- No
- Don't Know

Previous

Save and Continue

Progress  7%


**2. Please indicate the commercial sector(s) where the engineered nanomaterials or the engineered nanomaterials-enabled products or services that your company provides are intended to be used.**

*(Check all that apply.)*

- Manufacturing the following products. Please specify:
- Agriculture, Forestry, Fishing, or Hunting (e.g., farming, crop production, animal production)
- Mining, Quarrying, or Oil and Gas Extraction
- Utilities (e.g., electric power [including solar], natural gas, water and sewage systems)
- Professional, Scientific, or Technical Services (e.g., R&D physical, engineering, life sciences, biotechnology)
- Waste Management and Remediation Services (e.g., land, site or building remediation)
- Other, please specify:

[Previous](#)

[Save and Continue](#)

Progress  10%

3. Your organization or company may have multiple locations (i.e. worksite, building, facility, plant, etc.).

Please respond only for the location or locations for which you have knowledge of safety and health programs. Throughout the survey we refer to these sites as "your location(s)."

What is the total number of individuals (employees and contractors) who work at your location(s)?

*(Check one.)*

- 1-10
- 11-50
- 51-250
- 251-500
- 501-1,000
- 1,001-5,000
- More than 5,000

Previous

Save and Continue

Progress  13%

**4. How many individuals have any contact with engineered nanomaterials at your location(s)? Include both employees and contractors with either regular or occasional contact with engineered nanomaterials.**

*Regular Contact* - Include employees that regularly handle or use engineered nanomaterials as a matter of routine during the course of their average work day.


*Occasional Contact* - Include employees that may have infrequent, short contact with engineered nanomaterials over the course of an average work day (i.e., an employee that moves through a space where engineered nanomaterials are being handled or used such as maintenance or janitorial staff).

(Check one.)

- None
- 1-10
- 11-50
- 51-250
- 251-500
- 501-1,000
- 1,001-5,000
- More than 5,000

[Previous](#)

[Save and Continue](#)

Progress  15%

**5. Which of the following describes how your company handles or relates to engineered nanomaterials at this location(s)?**

*(Check all that apply.)*

- Develop engineered nanomaterials
- Manufacture engineered nanomaterials
- Incorporate engineered nanomaterials into our products
- Develop applications or products that use engineered nanomaterials
- Repackage/distribute engineered nanomaterials
- Conduct laboratory scale-up of engineered nanomaterials
- Perform nanomaterials characterization
- Provide services using products containing engineered nanomaterials
- Conduct site visits to determine exposure to engineered nanomaterials
- Produce instruments for manufacturing, characterizing, and detection of engineered nanomaterials
- Dispose engineered nanomaterials
- Other, please specify:

**Previous**

**Save and Continue**

Progress  18%

**6. In what physical forms are engineered nanomaterials handled at your location(s)?**

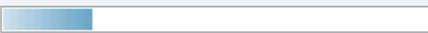
*(Check all that apply.)*

View their online medical record?

- Solid, freely mobile (e.g., dry powder)
- Contained in an aerosol
- Suspended in a liquid (e.g. water, solvent)
- Suspended in a matrix (e.g. polymer, paste)
- Solid, embedded, bound, or fixed in a material or product
- Other, please specify:

Previous

Save and Continue

Progress  21%

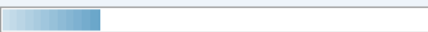
**7. On a typical day, what is the approximate quantity of engineered nanomaterials handled at your location(s)?**

*(Check one.)*

- Less than a kilogram (2.2 pounds)
- More than a kilogram (2.2 pounds)

Previous

Save and Continue

Progress  23%



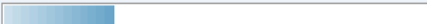
**8. What are the different types of engineered nanomaterials at your location(s)?**

*(Check all that apply.)*

- Nanoparticles. Please specify:
- Nanotubes, nanofibers, nanorods, or nanowires. Please specify:
- Nanosheets. Please specify:
- Nanofibrils cellulous
- Nanocrystalline cellulous
- Nanoclays
- Dendrimer
- Polymers
- Other, please specify:
- Don't know

[Previous](#)

[Save and Continue](#)

Progress  26%

9. Some government, non-profit, or for-profit organizations offer site visits or site consultations consisting of teams of experts that evaluate and provide recommendations regarding occupational safety and health practices.


Since 2005 have any of your location(s) hosted such a site visit or site consultation?

*(Check one.)*

- Yes
- No
- Don't Know

Previous

Save and Continue

Progress  28%


10. Who conducted the site visit(s) or site consultation(s) at your location(s)?

*(Check all that apply.)*

- CDC/NIOSH
- Other government organization
- Private company/consultant
- Academic institution(s)
- Other, please specify:

Previous

Save and Continue

Progress  31%


**11. Did the site visit(s) or site consultation(s) include feedback or recommendations for handling engineered nanomaterials?**

*(Check one.)*

- Yes
- No
- Don't Know

Previous

Save and Continue

Progress  34%

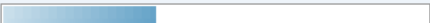
**12. Was any of the feedback or recommendations for handling of engineered nanomaterials from the site visit(s) or site consultation(s) implemented?**

*(Check one.)*

- Yes, all of them
- Yes, some of them
- No

Previous

Save and Continue

Progress  36%


**13. Which of the following resources have you used to acquire information about how to safely handle engineered nanomaterials?**

*(Check all that apply.)*

- Government publications/materials. Please specify. (Check all that apply.)
- Industry, scientific, or professional meetings, conferences, or tradeshows, please specify:
- Scientific articles, professional or industry publications, please specify:
- International publications (e.g. Safe Work Australia), please specify:
- Websites, blogs, and Internet search engines (e.g. Google, Bing)
- Informal discussions with professional contacts or peers
- Materials or publications developed by your
- Product manufacturer information (e.g.: Safety Data Sheets (SDS) or Pre-manufacturing Notices (PMN))
- Other, please specify:

**Previous**

**Save and Continue**

Progress  39%

**14. How has the information you acquired from any source about engineered nanomaterials been used?**

*(Check all that apply.)*

- Informed safety and health practices
- Informed policies for handling of engineered nanomaterials
- Incorporated into training materials
- Incorporate into product information (e.g., SDS)
- Modifications to products
- Modifications to processes
- Other, please specify:

**Previous**

**Save and Continue**

Progress  42%

**15. Does your location(s) implement a safety and health program for your employees?**

Safety and health programs may have a variety of names, including Accident Prevention Program, Injury and Illness Prevention Program, Comprehensive Safety and Health Program and, for laboratories, Chemical Hygiene Plan (CHP).

*(Check one.)*

- Yes
- No

Previous

Save and Continue

Progress  44%

**16. Which of the following safety and health practices are used at your location(s)? For each practice that you identify, is there separate or specific guidance for its application to engineered nanomaterials?**

If the safety and health programs vary by location, please report the most typical for the locations for which you are knowledgeable, for example programs at your largest location or the most common programs across locations.

	Safety and health practices used at your location(s)? (CHECK ONE)		Separate or specific guidance for engineered nanomaterials? (CHECK ONE.)	
	Yes	No	Yes	No
<b>HAZARD IDENTIFICATION AND EVALUATION</b>				
Determination of routes of exposure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identification of processes or job tasks where workers may be exposed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Evaluation of new processes/procedures for hazards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Review of purchase orders for possible hazardous materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>PROTECTION</b>				
Use of exposure controls (elimination, substitution, engineering, administrative, Personal Protective Equipment [PPE])	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assessment of effectiveness of exposure controls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assessment of need for PPE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintenance of engineering controls (e.g., dust collection systems)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spill cleanup procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Waste management/disposal procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SCREENING OR MONITORING</b>				
Medical screening and surveillance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exposure monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>ADMINISTRATIVE OR PROCEDURAL</b>				
Systematic review and update of safe use procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Method for reporting hazards, illnesses, and injuries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Development of internal exposure guidelines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>OTHER</b>				
Please specify:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Previous](#)

[Save and Continue](#)

Progress  47%

**17. In cases where you do not have specific safety and health practices or guidelines for engineered nano-materials, what surrogate hazards or substances do you use to inform your safety and health practices or guidelines?**

*(Check all that apply.)*

- Nuclear hazards
- Asbestos
- Biohazards
- General chemical hazard. Please specify:
- Other. Please specify:
- None. We do not use other hazards or substance as a model for engineered nanomaterials

[Previous](#)

[Save and Continue](#)

Progress  50%



18. Which of the following engineering controls are used to reduce or prevent worker exposure to any potential chemical or material hazards at your location(s)? For each engineering control you identify, is that control required when working with engineered nanomaterials?

	Used to reduce any potential chemical or material hazard? (CHECK ONE.)		Required when working with engineered nanomaterials? (CHECK ONE.)	
	Yes	No	Yes	No
Separate HVAC system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pressure differentials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Designed or separate work areas (e.g., control room)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Closed system piping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cleanroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laboratory fume hood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laminar low flow ventilated enclosure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biosafety cabinet (BSC)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Glove box	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local exhaust ventilation (other than fume hood, BSC or glovebox)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High-efficiency particulate air (HEPA) filtration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ultra-low particulate air (ULPA) filtration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working with nanomaterial in a slurry or suspension	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other, please specify:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Progress  52%

**19. Which of the following personal protective equipment (PPE) is used by individuals working with engineered nanomaterials at your location(s)?**

*(Check all that apply.)*

- No PPE is used
- Coveralls or lab coats.
- Gloves
- Eye/face protection
- Shoe covers
- Hair bonnets
- Respirators.
- Other type of PPE, please specify:

**Previous**

**Save and Continue**

Progress



55%


20. Does your workforce receive any informal or formal training on the safe use or handling of engineered nanomaterials?

(Check one.)

- Yes
- No
- Don't Know

Previous

Save and Continue

Progress  57%

Q21. How is this training provided?

(Check all that apply.)

- Formal training from internal training staff and resources
- Informal training from colleagues and peers
- External or consultant training resources
- Other, please specify:

Previous

Save and Continue

Progress  60%

**Q22. For this question, employees are categorized by their level of possible contact with engineered nanomaterials.**

Regular Contact - Employees regularly handle or use engineered nanomaterials as a matter of routine during the course of their average work day.

Occasional Contact - Employees may have infrequent, short contact with engineered nanomaterials over the course of an average work day (i.e., an employee that moves through a space where engineered nanomaterials are being handled or used such as maintenance or janitorial staff).

No contact - Employees do not have any type of contact with engineered nanomaterials

**For each level of employee at your location(s), indicate if they receive training on the following practices regarding the safe use or handling of engineered nanomaterials. Include full-time staff, part-time staff, contractors working onsite, and/or temporary staff.**

	Employees with...			Training not provided
	Regular Contact	Occasional Contact	No Contact	
Types of engineered nanomaterials and general engineered nanomaterial awareness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Where to locate information about the safety and health practices regarding engineered nanomaterials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Routes of exposure to engineered nanomaterials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use or maintenance of exposure controls (elimination, substitution, engineering, administrative, PPE) for engineered nanomaterials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use or maintenance of respirators for engineered nanomaterials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Procedures for spill cleanup, waste management, or disposal procedures of engineered nanomaterials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Method for reporting hazards, illnesses and injuries related to engineered nanomaterials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Save and Continue**

Progress  63%

23. Is worker awareness or knowledge of engineered nanomaterials assessed at your location(s)?

*(Check one.)*

- Yes
- No
- Don't Know

Previous

Save and Continue

Progress  65%

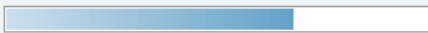
24. How is it assessed?

*(Check all that apply.)*

- Periodic surveys
- Random inspections
- Regular inspections
- Other, please specify:

Previous

Save and Continue

Progress  68%


**25. What type of process emission or exposure monitoring is conducted at your location(s)?**

*(Check all that apply.)*

- None. Monitoring is not conducted
- Filter-based air sampling for mass
- Filter-based air sampling for electron microscopy
- Direct reading particle counters
- Wipe sampling
- Other, please specify:

**Previous**

**Save and Continue**

Progress  71%

**26. When is process emission or exposure monitoring conducted?**

*(Check all that apply.)*

- Initial process start-up
- Changes in process or control(s)
- During upset conditions (i.e., response conditions, in response to a spill or similar unanticipated event)
- Periodically (e.g., annually)
- Other, please specify:

Previous

Save and Continue

Progress  73%

**27. Does your company produce documents related to engineered nanomaterials?**

*(Check one.)*

- Yes
- No
- Don't Know

Previous

Save and Continue


Progress  76%

**Q28. What types of documents related to engineered nanomaterials are produced?**

*(Check all that apply.)*

- Journal articles
- Scientific publications
- Articles for trade magazines
- Comments on public policies that are intended to be disseminated (either within or outside of your company)
- Comments or input on NIOSH documents
- Comments or input to industry or materials standards
- Comments or input to professional, scientific or trade associations
- Blogs
- Safety Data Sheets
- Instructions for how to use your products or guidance for measuring engineered nanomaterials
- Information provided to your customers along with your products or services
- Information from your company's standard operating procedures or practices for the handling or use of engineered nanomaterials
- Other, please specify:

**Save and Continue**

Progress  78%



29. Does your company have an occupational safety and health office, department, or individual?

(Check one.)

- Yes
- No
- Don't Know

Previous

Save and Continue

Progress  81%

30. How many occupational safety and health (OS&H) professionals are employed at your location(s)?

An OS&H professional is someone who has a degree in OS&H or certification from a nationally recognized accrediting body and who devotes a significant portion of their work time to OS&H responsibilities. Be sure to count yourself if applicable.

(Write in the number of OS&H professionals.)

- Don't Know

Previous

Save and Continue

Progress  84%

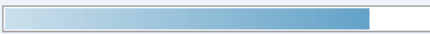
31. Altogether, how long have you worked with engineered nanomaterials?

(Enter number of years.)

Years

Previous

Save and Continue


Progress  86%

32. What is your current position at your company?

Please specify:

Previous

Save and Continue

Progress  89%

33. Do you have any certification in occupational safety and health (OS&H)? For example, Certified Industrial Hygienist (CIH), Certified Safety Professional (CSP), or Chemical Hazardous Material Manager (CHHM).

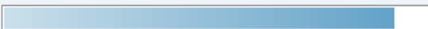
(Check one.)

Yes, please specify:

No

Previous

Save and Continue

Progress  92%

34. Are your responsibilities regarding occupational safety and health your:

(Check one.)

Full-time responsibility

Part-time responsibility


Other duty as assigned (i.e., responsibilities are done with other responsibilities)

None of the above

Other, please specify:

Previous

Save and Continue

Progress  94%

35. Is there any other information on occupational safety and health regarding engineered nanomaterials you wish you add?

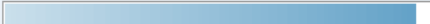
*(Check one.)*

No

Yes, please specify:

Previous


Save and Continue

Progress  97%

Thank you for your participation.

Previous

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Progress  100%