## Appendix A: Recommended Nanomaterial Risk Levels (NRL)

<table>
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<th>NRL</th>
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</table>
| 1   | Polymer matrix | Standard Laboratory Practices including:  
• Lab Safety Plan should be updated with NRL defined  
• Labeling of storage containers of nanomaterials with both the chemical contents and the nanostructure form | Fume hood or biological safety cabinet (Class II Type A1, A2 vented via a thimble connection, B1 or B2) | Standard PPE (lab coat, gloves, safety glasses with side shields) |
| 2   | Liquid dispersion | NRL-1 practice plus:  
• Use secondary containment for containers that store nanomaterials  
• Wipe contaminated areas with wet disposable wipes  
• Dispose of contaminated cleaning materials as segregated nanomaterial waste | Fume hood or biological safety cabinet (Class II Type A1, A2 vented via a thimble connection, B1 or B2) or approved vented enclosure (e.g., Flow Sciences vented balance safety enclosure [VBSE]) | NRL-1 practice plus:  
• Nitrile gloves  
• Safety goggles |
| 3   | Dry powders or aerosols | NRL-2 practice plus:  
• Vacuum with HEPA-equipped hand vacuum cleaner  
• Label work areas with “Caution Hazardous Nanoscale Materials in Use” | Fume hood or biological safety cabinet (Class II Type A1, A2 vented via a thimble connection, B1 or B2) or approved vented enclosure (e.g., Flow Sciences vented balance safety enclosure [VBSE]). HEPA filtered exhaust preferred for fume hoods containing particularly “dusty” operations. | NRL-2 practice plus:  
• N95 respirators are required if work operation must be done outside of containment. |
| 4   | Dry Powders or aerosols of parent materials with known toxicity or hazards | NRL-3 practice plus:  
• Baseline medical evaluation or employees including physical exam, pulmonary function test (PFT) and routine blood work.  
• Access to the facility should be permitted only to people who are knowledgeable about the hazards of the material and the specific control measures implemented to avoid exposures and/or environmental releases. These control measures should include work practices (SOPs), engineering controls, spill and emergency procedures, personal protective equipment, disposal procedures, and decontamination/clean up procedures. Department procedures should address the designation and posting of the laboratory, how access will be controlled, and any required entry and exit protocols. | Fume hood or biological safety cabinet (Class II Type B1 or B2) or glove box or approved vented enclosure (e.g., Flow Sciences vented balance safety enclosure [VBSE]). HEPA filtered exhaust with Bag-In/Bag-Out capability preferred for hoods, BSCs, and gloveboxes. | NRL-3 practice plus:  
• Need determined and respirator selected with reference to the engineering controls in use and potential for aerosol generation |