

3 **CHEMICAL HAZARD**  
4 **COMMUNICATION**

5  
6 NIST S 7101.59

7 Approval Date: 03/27/2023

8 Effective Date:<sup>1</sup> 03/27/2023  
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11  
12 **1. PURPOSE**

13 The purpose of the NIST Chemical Hazard Communication Program is to ensure that the hazards  
14 of all chemicals resident at or shipped from a NIST workplace (see definition of “NIST  
15 Workplace”) are classified and communicated to potentially exposed employees, covered  
16 associates<sup>2</sup>, and other parties. This suborder also serves as NIST’s written hazard communication  
17 program, as required by Occupational Safety and Health Administration (OSHA) Hazard  
18 Communication Standard 29 CFR 1910.1200 (HCS).  
19  
20

21 **2. BACKGROUND**

22 The HCS was promulgated in 1994 to ensure that the hazards of all chemicals produced or  
23 imported are classified and that information concerning the classified hazards is transmitted to  
24 employers and employees. The HCS was revised in 2012 to align with the United Nations  
25 Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Revision 3  
26 and provide a common and coherent approach to classifying chemicals and communicating  
27 hazard information.  
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<sup>1</sup> For revision history, see Appendix A.

<sup>2</sup> The terms “Associate” and “Covered Associate” are defined as follows in NIST Order (O) 7101.00: Occupational Safety and Health Management System: “Associate” – An individual conducting work at NIST who is not a NIST employee. For a list of NIST associate types, click [here](#). “Covered Associate” – A NIST associate who performs work at a NIST workplace in accordance with NIST safety requirements. Covered associates include Foreign and Domestic Guest Researchers (including contractors who perform NIST R&D/technical work); Research Associates; Intergovernmental Agency Personnel Act assignees; Facility Users; Volunteer Students; and DOC employees who work at NIST workplaces.

29 The HCS requires chemical manufacturers and importers to classify the hazards of chemicals  
30 that they produce or import and to provide information about the chemical hazards through labels  
31 on shipped containers and more detailed information sheets called safety data sheets (SDSs).

32

33 The HCS requires employers to develop and implement a written hazard communication  
34 program, which describes how the employer will comply with the HCS requirements for  
35 preparing and distributing SDSs, labeling containers of chemicals in the workplace and  
36 containers being shipped to other workplaces, maintaining a list of the hazardous chemicals  
37 known to be present in the workplace, informing employees of the hazards of non-routine tasks,  
38 informing employees of the hazards associated with chemicals in unlabeled pipes in the  
39 workplace, providing employee training regarding chemical hazards and protective measures,  
40 and communicating chemical hazard information to other employers.

41

42 This suborder supersedes NIST Administrative Manual Subchapter 12.17, *Chemical Hazard*  
43 *Communication*, NIST Health and Safety Instruction # 7, *Hazard Communication*, and NIST  
44 Health and Safety Instruction # 15, *Chemical Container Labeling*.

45

46

### 47 **3. APPLICABILITY**

48 a. The provisions of this suborder apply to all NIST workplaces and to all NIST employees and  
49 covered associates who may be exposed to hazardous chemicals under normal conditions of  
50 use or in a foreseeable emergency (see definition of “Foreseeable Emergency”).

51

52 b. The provisions of this suborder apply to:

53

54 (1) Any chemical known to be present in a NIST workplace in such a manner that NIST  
55 employees or covered associates could be exposed under normal conditions of use or in a  
56 foreseeable emergency;<sup>3</sup> and

57

58 (2) Hazardous chemicals shipped from a NIST workplace.

59

60 c. Hazardous chemicals exempt from specific *labeling requirements* of this suborder<sup>4</sup> include:

61

62 (1) Any pesticide as such term is defined in the Federal Insecticide, Fungicide, and  
63 Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that

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<sup>3</sup> Chemicals within the scope of other NIST OSH suborders (e.g., compressed gases, cryogenics) shall comply with the applicable requirements of this and any other applicable NIST OSH suborder.

<sup>4</sup> Hazardous chemicals exempt from specific labeling requirements of this suborder shall be labeled in accordance with the labeling requirements of the applicable Act and regulations.

64 Act and labeling regulations issued under that Act by the Environmental Protection  
65 Agency;

66  
67 (2) Any chemical substance or mixture as such terms are defined in the Toxic Substances  
68 Control Act (15 U.S.C. 2601 et seq.), when subject to the labeling requirements of that  
69 Act and labeling regulations issued under that Act by the Environmental Protection  
70 Agency;

71  
72 (3) Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device  
73 or product, including materials intended for use as ingredients in such products (e.g.  
74 flavors and fragrances), as such terms are defined in the Federal Food, Drug, and  
75 Cosmetic Act (21 U.S.C. 301 et seq.) or the Virus-Serum-Toxin Act of 1913 (21 U.S.C.  
76 151 et seq.), and regulations issued under those Acts, when they are subject to the  
77 labeling requirements under those Acts by either the Food and Drug Administration or  
78 the Department of Agriculture;

79  
80 (4) Any distilled spirits (beverage alcohols), wine, or malt beverage intended for  
81 nonindustrial use, as such terms are defined in the Federal Alcohol Administration Act  
82 (27 U.S.C. 201 et seq.) and regulations issued under that Act, when subject to the labeling  
83 requirements of that Act and labeling regulations issued under that Act by the Bureau of  
84 Alcohol, Tobacco, Firearms and Explosives;

85  
86 (5) Any consumer product or hazardous substance as those terms are defined in the  
87 Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous  
88 Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer  
89 product safety standard or labeling requirement of those Acts, or regulations issued under  
90 those Acts by the Consumer Product Safety Commission; and,

91  
92 (6) Agricultural or vegetable seed treated with pesticides and labeled in accordance with the  
93 Federal Seed Act (7 U.S.C. 1551 et seq.) and the labeling regulations issued under that  
94 Act by the Department of Agriculture.

95  
96 d. Hazardous chemicals exempt from all requirements of this suborder are detailed in 29 CFR  
97 1910.1200(b)(6). These exemptions include, but are not limited to:

98  
99 (1) Hazardous waste<sup>5</sup>;

100  
101 (2) Tobacco or tobacco products;

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<sup>5</sup> Hazardous wastes at a NIST workplace shall comply with the requirements of NIST S 7301.4, *Hazardous Waste Accumulation*.

- 102 (3) Wood or wood products which have not been treated with a hazardous chemical covered  
103 by this standard, and wood which will not be subsequently sawed or cut, generating dust;  
104  
105 (4) Articles (see definition of “Article”);  
106  
107 (5) Food, beverages, drugs, and cosmetics intended for personal consumption in the  
108 workplace;  
109  
110 (6) Any consumer product that is used in the workplace for the purpose intended by the  
111 manufacturer or importer of the product and the use of which results in a duration and  
112 frequency of exposure that is not greater than the range of exposures that could  
113 reasonably be experienced by consumers when used for the purpose intended;  
114  
115 (7) Nuisance particles where the chemical manufacturer can establish that they do not pose  
116 any physical or health hazard;  
117  
118 (8) Ionizing and non-ionizing radiation<sup>6</sup>; and,  
119  
120 (9) Biological hazards<sup>7</sup>.

#### 123 4. REFERENCES

- 124 a. OSHA 29 CFR 1910.1200, [Hazard Communication](#)  
125  
126 b. OSHA 29 CFR 1910.1001, [Asbestos](#)  
127  
128 c. OSHA 29 CFR 1910.1003, [13 Carcinogens](#)  
129  
130 d. OSHA 29 CFR 1910.1017, [Vinyl Chloride](#)  
131  
132 e. OSHA 29 CFR 1910.1018, [Inorganic Arsenic](#)  
133  
134 f. OSHA 29 CFR 1910.1025, [Lead](#)  
135  
136 g. OSHA 29 CFR 1910.1026, [Chromium \(VI\)](#)  
137  
138 h. OSHA 29 CFR 1910.1027, [Cadmium](#)

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<sup>6</sup> Chemical hazards associated with sources of ionizing and non-ionizing radiation are not exempted from the requirements of this program.

<sup>7</sup> Chemical hazards associated with biological hazards are not exempted from the requirements of this program.

- 139 i. OSHA 29 CFR 1910.1028, [Benzene](#)  
140  
141 j. OSHA 29 CFR 1910.1029, [Coke Oven Emissions](#)  
142  
143 k. OSHA 29 CFR 1910.1044, [1,2-Dibromo-3-Chloropropane](#)  
144  
145 l. OSHA 29 CFR 1910.1045, [Acrylonitrile](#)  
146  
147 m. OSHA 29 CFR 1910.1047, [Ethylene Oxide](#)  
148  
149 n. OSHA 29 CFR 1910.1048, [Formaldehyde](#)  
150  
151 o. OSHA 29 CFR 1910.1050, [Methylenedianiline](#)  
152  
153 p. OSHA 29 CFR 1910.1051, [1,3-Butadiene](#)  
154  
155 q. OSHA 29 CFR 1910.1052, [Methylene Chloride](#)  
156  
157 r. OSHA 29 CFR 1910.1201, [Retention of DOT Markings, Placards, and Labels](#)  
158  
159 s. OSHA 29 CFR 1910.1450, [Occupational Exposure to Hazardous Chemicals in Laboratories](#)  
160  
161 t. OSHA 29 CFR 1926.59, [Hazard Communication in Construction](#)  
162  
163 u. OSHA 3371-08 2009, *Hazard Communication Guidance for Combustible Dusts*  
164  
165  
166 **5. APPLICABLE NIST OCCUPATIONAL SAFETY AND HEALTH SUBORDERS**  
167 a. NIST S 7101.60: *Chemical Management (Chemical Hygiene Plan)*  
168  
169 b. NIST S 7101.61: *Compressed Gas Safety*  
170  
171 c. NIST S 7101.28: *Contractor Safety*  
172  
173 d. NIST S 7101.52: *Cryogen Safety*  
174  
175 e. NIST S 7101.54: *Dispersible Engineered Nanomaterials*  
176  
177 f. NIST S 7101.21: *Personal Protective Equipment*  
178

- 179 g. NIST S 7101.29: *Procurement Safety*
- 180
- 181 h. NIST S 7101.23: *Safety Education and Training*
- 182
- 183 i. NIST S 7101.20: *Work and Worker Authorization Based on Hazard Reviews*
- 184
- 185

## 186 6. REQUIREMENTS

187 The requirements in this section address the issue of determining and classifying the potential  
188 hazards of chemicals resident at or shipped from a NIST workplace and communicating  
189 information concerning their hazards to employees, associates, and other parties. Some of the  
190 requirements in this suborder (e.g., chemical hazard classifications, SDSs, and training) may be  
191 integral to or result from the conduct of hazard reviews in accordance with NIST S 7101.20:  
192 *Work and Worker Authorization Based on Hazard Reviews* when the activity under review  
193 involves hazardous chemicals.

- 194
- 195 a. Chemical Hazard Determinations and Classifications (required for potentially Hazardous  
196 Chemicals)
- 197

198 Chemical Hazard Determination is the process of identifying relevant data regarding the  
199 hazards of a chemical; reviewing the data to ascertain the hazards associated with the  
200 chemical by comparing the data with the criteria specified in the HCS for health and physical  
201 hazards; and deciding whether the chemical will be classified as hazardous (see definition of  
202 “Hazardous Chemical”).

203

204 Chemical Hazard Classification is a Chemical Hazard Determination with an additional  
205 determination of the degree of each health and physical hazard, where appropriate, by  
206 comparing the data with the criteria specified in the HCS for health and physical hazards.

### 207 (1) General Requirements

- 208
- 209
- 210 (a) Chemical hazard determinations and classifications shall be performed as early as  
211 possible, preferably prior to the chemical being produced or used.
- 212

- 213 (b) Chemical hazard determinations and classifications shall follow the procedures  
214 described in 29 CFR 1910.1200 - Appendices A and B to determine and classify the  
215 hazards of the chemicals, including determinations regarding when chemical mixtures  
216 are covered. When determining or classifying chemical mixtures produced or  
217 imported by NIST employees or associates, the information provided on the current  
218 SDSs of the individual ingredients may be relied upon, except where it is known or in

219 the exercise of reasonable diligence should have been known that the SDS misstates  
220 or omits information required by 29 CFR 1910.1200.  
221  
222 (c) Chemical hazard determinations and classifications shall identify and consider the full  
223 range of available scientific literature and other evidence concerning the potential  
224 hazards and shall consult:  
225  
226 i. 29 CFR 1910.1200-Appendix A regarding health hazards,  
227  
228 ii. 29 CFR 1910.1200-Appendix B regarding physical hazards,  
229  
230 iii. 29 CFR 1910.1200(c) regarding simple asphyxiant, pyrophoric gas, and hazard  
231 not otherwise classified (see definition “Hazard Not Otherwise Classified”)  
232 hazards, and  
233  
234 iv. 3371-08 2009 - *Hazard Communication Guidance for Combustible Dusts*  
235 regarding combustible dust hazards.  
236  
237 (d) Chemical hazard determinations shall determine all hazard classes described in 29  
238 CFR 1910.1200 that apply to the chemical being classified.  
239  
240 (e) Chemical hazard classifications shall determine all hazard classes<sup>8</sup> and, where  
241 appropriate, the category of each hazard class described in 29 CFR 1910.1200 that  
242 apply to the chemical being classified.  
243  
244 (f) Chemical hazard classifications for chemicals regulated by OSHA in the Chemical-  
245 Specific Health Standards shall be performed in compliance with the procedures  
246 described in the OSHA Chemical-Specific Health Standards, when applicable (see  
247 Appendix B of this suborder).  
248  
249 (g) Chemical hazard classifications shall be described in writing and include a  
250 description of the classification process, any relevant data regarding the chemical  
251 hazards, and a description of the basis of determination for any assigned hazard

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<sup>8</sup> HCS(2012) hazard classes include: acute toxicity, skin corrosion or irritation, serious eye damage or eye irritation, respiratory or skin sensitization, germ cell mutagenicity, carcinogenicity, reproductive toxicity, specific target organ toxicity, aspiration hazard, simple asphyxiant, explosive, flammable, oxidizer, self-reactive, pyrophoric, self-heating, organic peroxide, corrosive to metal, gas under pressure, in contact with water emits flammable gas, combustible dust, and hazards not otherwise classified (HNOC); some HCS(2012) hazard classes include additional criteria (e.g., route or frequency of exposure, physical state of chemical); see HCS(2012) for complete hazard class information.

252 classes and, where appropriate, the category of each hazard class described in 29 CFR  
253 1910.1200 that apply to the chemical being classified.

254  
255 (2) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Meets the  
256 Definition of “Laboratory Use”

257  
258 (a) Chemical hazard classifications shall be conducted for chemicals acquired at a NIST  
259 workplace that will be shipped from the NIST workplace, whenever the chemical  
260 users decide that the results of the chemical hazard classifications contained in the  
261 SDSs obtained from the suppliers shall not be relied upon<sup>9</sup> *and when SDSs were not*  
262 *provided by the suppliers.*

263  
264 (b) *Chemical hazard determinations shall be conducted for chemicals acquired at a NIST*  
265 *workplace that will not be shipped from the NIST workplace, whenever the chemical*  
266 *users decide that the results of the chemical hazard classifications contained in the*  
267 *SDSs obtained from the suppliers shall not be relied upon and when SDSs were not*  
268 *provided by the suppliers.*

269  
270 (c) Chemical hazard classifications shall be conducted for chemicals produced at a NIST  
271 workplace that will be shipped from the NIST workplace.

272  
273 (d) *Chemical hazard determinations shall be conducted for chemicals produced at a*  
274 *NIST workplace that will not be shipped from the NIST workplace.*

275  
276 (3) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Does Not Meet  
277 the Definition of “Laboratory Use”

278  
279 (a) Chemical hazard classifications shall be conducted for chemicals acquired at a NIST  
280 workplace, whenever the chemical users decide that the results of the chemical hazard  
281 classifications contained in the SDSs obtained from the suppliers shall not be relied  
282 upon<sup>10</sup>.

283  
284 (b) Chemical hazard classifications shall be conducted for chemicals produced at a NIST  
285 workplace.

286  
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<sup>9</sup> Chemical manufacturers should be contacted to communicate any discrepancies in the obtained SDSs and to request revised SDSs.

<sup>10</sup> Chemical manufacturers should be contacted to communicate any discrepancies in the obtained SDSs and to request revised SDSs.

- 288 b. Safety Data Sheets (required for Hazardous Chemicals)  
289  
290 (1) General Requirements  
291  
292 (a) SDSs shall include the same product identifier, name, address, and telephone number  
293 of the chemical manufacturer, importer, or other responsible party used on the  
294 container label.  
295  
296 (b) SDSs shall be in English.  
297  
298 (c) SDSs developed by or on behalf of employees or covered associates shall contain the  
299 section numbers and section headings in the order specified in 29 CFR Part  
300 1910.1200(g)(2) and include the information specified in 29 CFR Part 1910.1200-  
301 Appendix D.  
302  
303 i. If no relevant information is found for any sub-heading within a section on the  
304 SDS, the SDS shall be marked to indicate that no applicable information was  
305 found.  
306  
307 (d) SDSs developed by or on behalf of employees or covered associates shall contain  
308 information that accurately reflects the scientific evidence used in the associated  
309 Chemical Hazard Classifications.  
310  
311 (e) SDSs developed by or on behalf of employees or covered associates shall be revised  
312 within 3 months of employees or covered associates becoming newly aware of any  
313 significant information regarding the hazards of a chemical, or ways to protect against  
314 the hazards. The revised SDS shall be provided with all future shipped containers of  
315 the chemical. If the chemical is not currently being produced or imported at the NIST  
316 workplace, the SDS shall be revised before the chemical is introduced into or shipped  
317 from the NIST workplace again.  
318  
319 (f) SDSs for each hazardous chemical listed on a Hazardous Chemical Inventory List  
320 shall be readily accessible in the work area electronically<sup>11</sup> or in hard copy during  
321 each work shift when employees or covered associates are present.  
322  
323 (g) SDSs shall be readily available upon request and in accordance with the requirements  
324 of 29 CFR 1910.1020(e).  
325

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<sup>11</sup> “Readily accessible in the work area electronically” means that employees and covered associates can access SDSs on a NIST information-technology system in the work area.

- 326 (2) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Meets the  
327 Definition of “Laboratory Use”  
328
- 329 (a) SDSs received with incoming shipments shall be maintained and readily accessible in  
330 the work area electronically or in hard copy during each work shift when employees  
331 or covered associates are present.  
332
- 333 (b) SDSs shall be developed for chemicals acquired at a NIST workplace that will be  
334 shipped from the NIST workplace, whenever the chemical users decide that the  
335 results of the chemical hazard classifications contained in the SDSs obtained from the  
336 suppliers shall not be relied upon<sup>12</sup> and when SDSs were not provided by the  
337 suppliers.  
338
- 339 (c) SDSs shall be developed for chemicals produced at a NIST workplace that will be  
340 *shipped* from the NIST workplace.  
341
- 342 (3) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Does Not Meet  
343 the Definition of “Laboratory Use”  
344
- 345 (a) SDSs received with incoming shipments shall be maintained and readily accessible in  
346 the work area electronically or in hard copy during each work shift when employees  
347 or covered associates are present. *If an SDS was not provided with a shipment and not*  
348 *already possessed at the time of delivery, the SDS shall be obtained from the supplier*  
349 *as soon as possible.*  
350
- 351 (b) SDSs shall be developed for chemicals acquired at a NIST workplace that will be  
352 shipped from the NIST workplace, whenever the chemical users decide that the  
353 results of the chemical hazard classifications contained in the SDSs obtained from the  
354 suppliers shall not be relied upon<sup>13</sup>.  
355
- 356 (c) SDSs shall be developed for chemicals produced at a NIST workplace.  
357  
358  
359  
360  
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<sup>12</sup> Chemical manufacturers should be contacted to communicate any discrepancies in the obtained SDSs and to request revised SDSs.

<sup>13</sup> Chemical manufacturers should be contacted to communicate any discrepancies in the provided SDSs and to request revised SDSs.

362 (4) Hazardous Chemicals Shipped from a NIST Workplace

363  
364 (a) SDSs shall be provided with the initial shipment and upon request to each recipient.  
365 If the SDS has been revised, the revised SDS shall be provided with the first shipment  
366 to each recipient that occurs after the SDS has been revised.

367  
368 c. Labels and Other Forms of Warning

369  
370 (1) General Requirements

371  
372 (a) Labels and other forms of warning shall be prominently displayed.

373  
374 (b) Labels and other forms of warning shall be in English, legible, and contain  
375 information that is current.

376  
377 (c) Labels and other forms of warning shall be revised within 6 months of employees or  
378 covered associates becoming newly aware of significant information regarding the  
379 hazards of a chemical. The revised label shall be provided with all future shipped  
380 containers of the chemical. If the chemical is not currently present at the NIST  
381 workplace, labels and other forms of warning shall be revised before the chemical is  
382 introduced into or shipped from the NIST workplace again.

383  
384 (2) Hazardous Chemicals at a NIST Workplace

385  
386 (a) Hazardous chemical containers shall be labeled, tagged, or marked with<sup>14</sup>:

387  
388 **EITHER**

389  
390 i. Shipped Container Label Information

391  
392 (i) Product identifier;

393  
394 (ii) Signal word, hazard statement(s), pictogram(s), and precautionary  
395 statement(s) in accordance with the requirements of 29 CFR 1910.1200-  
396 Appendix C, for each hazard class and associated hazard category for the  
397 hazardous chemical;

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<sup>14</sup> Hazardous chemicals at a NIST workplace exempt from specific labeling requirements of this suborder shall be labeled in accordance with the labeling requirements of the applicable Act and regulations (see Section 3c) and include the NIST Chemical Owner Name.

399 (iii) Name, address, and telephone number of the chemical manufacturer, importer,  
400 or other responsible party; and,

401  
402 (iv) NIST Chemical Owner Name<sup>15</sup>.

403  
404 **OR**

405  
406 ii. Workplace Container Label Information

407  
408 (i) Product identifier;

409  
410 (ii) Words, pictures, symbols, or combination thereof, which provide at least  
411 general information regarding the hazards of the chemicals, and which, in  
412 conjunction with the other information immediately available under NIST S  
413 7101.59: *Chemical Hazard Communication*, will provide employees and  
414 covered associates with the specific information regarding the physical and  
415 health hazards of the hazardous chemical; and

416  
417 (iii) NIST Chemical Owner Name<sup>16</sup>.

418  
419 (b) Existing labels on chemical containers entering a NIST workplace shall not be  
420 removed or defaced, unless the containers are immediately marked, labeled, or tagged  
421 with the required information<sup>17</sup>.

422  
423 (c) Alternate methods of labeling (e.g., signs, placards, process sheets, batch tickets,  
424 operating procedures, or other such written materials) may be used in lieu of affixing  
425 labels to individual stationary process containers<sup>18</sup>, as long as the alternative method:

426  
427 i. Identifies the containers to which it is applicable;

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<sup>15</sup> SRMs stored under the control of the Office of Reference Materials (ORM) are not required to be labeled with the NIST Chemical Owner Name.

<sup>16</sup> SRMs stored under the control of the ORM are not required to be labeled with the NIST Chemical Owner Name.

<sup>17</sup> If the acquired container no longer contains the originally-acquired chemical or the results of a chemical hazard classification identify that the existing label information is not current, the container should be re-marked, re-labeled or re-tagged to indicate the required label information for the current contents of the container. If the container is "Empty", it is recommended that a line be drawn through the original label and the container should be marked with the word "Empty" to indicate that the original chemical is no longer present.

<sup>18</sup> In certain "Laboratory Use" situations (e.g., when the container is too small to provide all required label elements), the Alternate Methods of Labeling may be employed for containers in the NIST workplace that are not stationary process containers; when feasible to do so, such containers shall be labeled with at least the Workplace Container Label Information [see Section 6c(2)(a)(ii)].

- 428
- 429           ii. Conveys the information required to be on a label in accordance with Section
- 430                 6c(2)(a) of this suborder; and
- 431
- 432           iii. Is readily accessible to the employees and covered associates in their work area
- 433                 throughout each work shift.
- 434
- 435         (d) Portable containers into which hazardous chemicals are transferred from labeled
- 436                 containers, and which are intended only for the immediate use (see definition of
- 437                 “Immediate Use”) of the employee or covered associate who performs the transfer,
- 438                 may be labeled but are not required to be.
- 439
- 440         (3) Hazardous Chemicals Shipped from a NIST Workplace
- 441
- 442         (a) Each hazardous chemical container leaving the NIST workplace shall be labeled,
- 443                 tagged, or marked with the following in a manner which does not conflict with the
- 444                 requirements of the Hazardous Materials Transportation Act (49 U.S.C. 1801 et seq.)
- 445                 and regulations issued under that Act by the Department of Transportation<sup>19</sup>:
- 446
- 447                 i. Product identifier;
- 448
- 449                 ii. Signal word, hazard statement(s), pictogram(s), and precautionary statement(s) in
- 450                         accordance with the requirements of 29 CFR 1910.1200-Appendix C, for each
- 451                         hazard class and associated hazard category for the hazardous chemical; and
- 452
- 453                 iii. Name, address, and telephone number of the chemical manufacturer, importer, or
- 454                         other responsible party. If the hazardous chemical was produced by NIST, the
- 455                         container shall be labeled, tagged, or marked with:
- 456
- 457                                 (i) National Institute of Standards and Technology;
- 458
- 459                                 (ii) NIST Responsible Party Name (i.e., OU/Division Name);
- 460
- 461                                 (iii) NIST Responsible Party Address (i.e., OU/Division Address); and,
- 462
- 463                                 (iv) NIST Responsible Party Telephone Number (i.e., OU/Division Telephone
- 464   Number for the NIST employee or covered associate who has been designated

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<sup>19</sup> Hazardous chemicals exempt from specific labeling requirements of this suborder shall be labeled in accordance with the labeling requirements of the applicable Act and regulations (see Section 3c).

465 to provide additional information on the hazardous chemical and appropriate  
466 emergency procedures, if necessary.)<sup>20</sup>.

467  
468 (b) The signal word, hazard statement(s), pictogram(s), and precautionary statement(s)  
469 shall be located together on the container label, tag, or mark.

470  
471 (4) Non-Hazardous Chemicals at a NIST Workplace

472  
473 (a) Non-Hazardous chemical containers should be labeled, tagged, or marked with:

- 474  
475 i. Product identifier; and,  
476  
477 ii. NIST Chemical Owner Name<sup>21</sup>.

478  
479 d. Hazardous Chemical Inventory Lists<sup>22</sup> (required for Hazardous Chemicals)

480  
481 (1) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Meets the  
482 Definition of “Laboratory Use”

483  
484 (a) Hazardous Chemical Inventory Lists shall be prepared and list all commercially-  
485 acquired hazardous chemicals<sup>23</sup> present in OU-assigned work areas.

486  
487 (b) Hazardous Chemical Inventory Lists shall include the product identifiers that are  
488 referenced on the corresponding container labels and SDSs of the hazardous  
489 chemicals present in OU-assigned work areas.

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<sup>20</sup> SRMs stored under the control of the ORM may be labeled with “National Institute of Standards and Technology”, the NIST Gaithersburg address, and the NIST Responsible Party Telephone Number to meet this requirement.

<sup>21</sup> SRMs stored under the control of the ORM are not required to be labeled with the NIST Chemical Owner Name.

<sup>22</sup> Hazardous chemicals that are owned by a NIST employee or covered associate shall be inventoried in CIMS. In select situations [e.g., Hollings inventory, SRMs stored under the control of the ORM], hazardous chemicals may be inventoried outside of CIMS; in such situations, OSHE shall be notified of the inventories and the Hazardous Chemical Inventory Lists shall be made readily available upon request electronically or in hard copy. It is recommended that in work areas in which individuals other than NIST employees or covered associates are conducting work (“multi-employer work areas”) or in work areas where not all of the hazardous chemicals are inventoried in CIMS, a master Hazardous Chemical Inventory List that represents all hazardous chemicals in the work area be printed and posted. Hazardous chemicals that are Biohazardous Materials or LC-RAM shall satisfy the CHC inventory requirements in accordance with the requirements specified in this program. Hazardous chemicals that are SNM-362 RAM shall satisfy the CHC inventory requirements in accordance with the requirements specified in NIST S 7201.01, Ionizing Radiation Safety – Radioactive Material at NIST Gaithersburg.

<sup>23</sup> Hazardous-chemical SRMs labeled for sale by NIST that are sold or transferred by ORM to employees or covered associates outside of ORM shall be considered commercially-acquired hazardous chemicals.

- 490 (c) Hazardous Chemical Inventory Lists shall be maintained and made readily available  
491 upon request electronically or in hard copy.  
492
- 493 (2) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Does Not Meet  
494 the Definition of “Laboratory Use”  
495
- 496 (a) Hazardous Chemical Inventory Lists shall be prepared and list all hazardous  
497 chemicals present in OU-assigned work areas.  
498
- 499 (b) Hazardous Chemical Inventory Lists shall include the product identifiers that are  
500 referenced on the corresponding container labels and SDSs of the hazardous  
501 chemicals present in OU-assigned work areas.  
502
- 503 (c) Hazardous Chemical Inventory Lists shall be maintained and made readily available  
504 upon request electronically or in hard copy.  
505

506 e. Hazardous Activities  
507

- 508 (1) The chemical hazards of routine and non-routine activities performed by NIST  
509 employees and covered associates shall be communicated to all NIST employees and  
510 covered associates who may be exposed to the hazardous chemicals in accordance with  
511 the training requirements of this suborder and the requirements of NIST S 7101.20:  
512 *Work and Worker Authorization Based on Hazard Reviews.*  
513
- 514 (2) For hazardous work involving exposure to respirable crystalline silica, the employee shall  
515 be:  
516
- 517 (a) Provided with information equivalent to that contained on a label and SDS for  
518 respirable crystalline silica; and  
519
- 520 (b) Informed of the following health hazards associated with exposure to respirable  
521 crystalline silica: cancer, lung effects, immune system effects, and kidney effects.  
522

523 This information shall be provided to the employee, as well as the first-level supervisor,  
524 along with the exposure monitoring assessment performed in accordance with NIST PR  
525 7101.29.01: *Respirable Crystalline Silica Safety Procedure.*  
526

527 f. Hazardous Chemicals in Pipes  
528

529 (1) The identities and hazards of hazardous chemicals located inside of pipes shall be  
530 communicated to all NIST employees and covered associates who may be exposed to the  
531 hazardous chemicals under normal conditions of use or in a foreseeable emergency (see  
532 definition of “Foreseeable Emergency”) in accordance with the training requirements of  
533 this suborder and the requirements of NIST S 7101.20: *Work and Worker Authorization*  
534 *Based on Hazard Reviews*.

535

536 g. Information and Training

537

538 (1) Training shall be provided, documented, and recorded in accordance with the  
539 requirements of the NIST S 7101.23: *Safety Education and Training*.

540

541 (2) All employees and covered associates to whom this suborder applies shall be provided  
542 with effective information and training on the hazardous chemicals in their work areas.  
543 Information and training may be designed to cover categories of hazards (e.g.,  
544 flammability, carcinogenicity) or specific chemicals; however, chemical-specific  
545 information must always be available through labels and other forms of warning and  
546 SDSs.

547

548 (3) All employees and covered associates to whom this suborder applies shall receive the  
549 following training at the time of their initial assignment to a NIST workplace:

550

551 (a) Training provided by OSHE on the details of this suborder, covering the following  
552 topics:

553

554 i. The requirements of 29 CFR 1910.1200;

555

556 ii. The location, availability, and requirements of this suborder, including the  
557 Hazardous Chemical Inventory List, Container Labeling and Other Forms of  
558 Warning, and SDSs required by this suborder and 29 CFR 1910.1200;

559

560 iii. An explanation of the labels received on containers acquired at a NIST  
561 workplace;

562

563 iv. An explanation of the labeling system employed at a NIST workplace; and

564

565 v. An explanation of the SDSs, including the order of information and how  
566 employees and covered associates can obtain and use appropriate hazard  
567 information.

568

- 569 (b) Information provided by the OU/division on the hazardous chemicals in the  
570 employee's or associate's work area(s), covering the following topics:  
571  
572 i. Any activities in the work area where hazardous chemicals are present;  
573  
574 ii. How to obtain access to the Hazardous Chemical Inventory List and SDSs for the  
575 hazardous chemicals in the work area.  
576  
577 (c) Training provided by the OU/division on the hazardous chemicals in the employee's  
578 or associate's work area(s), covering the following topics:  
579  
580 i. The physical, health, simple asphyxiation, combustible dust, and pyrophoric gas  
581 hazards, as well as the hazards not otherwise classified, of the hazardous  
582 chemicals in the work area;  
583  
584 ii. Measures employees and covered associates can take to protect themselves from  
585 these hazards, including specific procedures implemented to prevent exposure to  
586 the hazardous chemicals in the work area, such as appropriate work practices,  
587 emergency procedures, and personal protective equipment; and,  
588  
589 iii. Methods and observations that may be used to detect the presence or release of  
590 the hazardous chemicals in the work area.

591 Note: Training for a specific work area shall be provided in accordance with the  
592 requirements of the OU/division to which the specific work area is assigned.  
593

- 594 (4) All employees and covered associates to whom this suborder applies shall receive the  
595 following information whenever a new chemical hazard for which they previously have  
596 not been trained is introduced into their work area:

597 (a) Information provided by the OU/division, covering the following topics:

- 598  
599 i. Any operations in the work area where the new chemical hazard is present;  
600  
601

- 602 (5) All employees and covered associates to whom this suborder applies shall receive the  
603 following training whenever a new chemical hazard for which they previously have not  
604 been trained is introduced into their work area:

605 (a) Training provided by the OU/division, covering the following topics:

- 606  
607 i. A description of the new chemical hazard;  
608

- 609
- 610           ii. Measures employees and covered associates can take to protect themselves from
- 611           the new chemical hazard in the work area; and
- 612
- 613           iii. Methods and observations that may be used to detect the presence or release of
- 614           the new, chemical hazard in the work area.

615

616           Note: Training for a specific work area shall be provided in accordance with the

617           requirements of the OU/division to which the specific work area is assigned.

- 618
- 619           (6) All employees and covered associates to whom this suborder applies shall receive
- 620           information and training as specified in the OSHA Chemical-Specific Health Standards,
- 621           when applicable (see Appendix B).

622

623   h. Informing Other Employers

- 624
- 625           (1) The employers of personnel who are not NIST employees or covered associates and may
- 626           be exposed to hazardous chemicals owned by NIST employees and covered associates
- 627           under normal conditions of use or in a foreseeable emergency (see definition of
- 628           “Foreseeable Emergency”) shall be provided with the following upon request:

629

630           (a) On-site access to SDSs, either electronically or in hard copy, for the hazardous

631           chemicals to which their personnel may be exposed;

632

633           (b) Information on the training provided to their personnel on any precautionary

634           measures that their personnel need to take to protect themselves during the

635           workplace's normal operating conditions and in foreseeable emergencies; and

636

637           (c) Copies of this program, including a description of the labeling system used at

638           pertinent NIST workplaces.

639

640

641   **7. DEFINITIONS**

642   a.   Activity – An experiment, operation, process, or job, often comprising subtasks, conducted

643       to achieve a specific outcome.

644

645   b.   Article – A manufactured item (e.g., a plastic pipe, silicon wafer) other than a fluid or

646       particle: (i) which is formed to a specific shape or design during manufacture; (ii) which

647       has end use function(s) dependent in whole or in part upon its shape or design during end

648       use; and (iii) which under normal conditions of use does not release more than very small

649 quantities, e.g., minute or trace amounts of a hazardous chemical (as determined in 29 CFR  
650 1910.1200(d)), and does not pose a physical hazard or health risk to individuals.

651  
652 c. Biohazard – A biological material or agent that presents potential risk to the health of  
653 humans or other organisms either directly through infection or indirectly through damage  
654 to the environment. Biohazards include, but are not limited to, bacteria; fungi; viruses;  
655 parasites; rickettsia; biological toxins; prions; non-human mammalian cell lines and tissues;  
656 human specimens such as human blood, serum, plasma, blood products, primary and  
657 continuous human cell lines, unfixed human tissues, fecal materials, semen, vaginal  
658 secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal  
659 fluid, amniotic fluid, saliva, tears, sweat, breast milk, and urine; and recombinant DNA  
660 materials such as inserts or vectors that are known to express toxins, oncogenes, and/or  
661 virulent factors. Non-toxic proteins and commercially available enzymes, cell culture  
662 medium and supplements, reagents such as monoclonal antibodies, and random DNA base  
663 pairs are not considered biohazards.

664  
665 d. Biohazardous Material – See definition of biohazard.

666  
667 e. Chemical – Any substance or mixture of substances.

668  
669 f. Chemical Hazard Classification – To identify the relevant data regarding the hazards of a  
670 chemical; review those data to ascertain the hazards associated with the chemical; and  
671 decide whether the chemical will be classified as hazardous (see definition “Hazardous  
672 Chemical”). In addition, Chemical Hazard Classification for health and physical hazards  
673 includes the determination of the degree of hazard, where appropriate, by comparing the  
674 data with the HCS criteria for health and physical hazards.

675  
676 g. Chemical Hazard Determination – To identify the relevant data regarding the hazards of a  
677 chemical; review those data to ascertain the hazards associated with the chemical by  
678 comparing the data with the HCS criteria for health and physical hazards; and deciding  
679 whether the chemical will be classified as hazardous (see definition “Hazardous  
680 Chemical”). Chemical Hazard Determination does not include determining the degree of  
681 each health and physical hazard.

682  
683 h. Chemical Hazard Warning – Any words, pictures, symbols, or combination thereof that  
684 appears on a container label, other form of warning (e.g., placard, sign), or SDS which  
685 conveys the hazards of a chemical in a container.

686

- 687 i. Chemical Manufacturer – An employer with a workplace where chemical(s) are produced  
688 for use or distribution. Note: Laboratory employers that ship hazardous chemicals are  
689 considered to be either a chemical manufacturer or distributor.  
690
- 691 j. Chemical Name – The scientific designation of a chemical in accordance with the  
692 nomenclature system developed by the International Union of Pure and Applied Chemistry  
693 (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name that  
694 will clearly identify the chemical for the purpose of conducting a hazard classification.  
695
- 696 k. Chemical Owner – A NIST employee or covered associate whose name appears on one or  
697 more chemical containers.  
698
- 699 l. Chemical Owner Name – The first name or first initial and last name of the NIST Chemical  
700 Owner.  
701
- 702 m. CIMS (Chemical Inventory Management System) – A relational database system currently  
703 used by NIST for tracking chemical inventory, generating labels, and managing SDSs.  
704
- 705 n. Combustible Dust – A combustible particulate solid that presents a fire or deflagration  
706 hazard when suspended in air or some other oxidizing medium over a range of  
707 concentrations, regardless of particle size or shape.  
708
- 709 o. Common Name – Any designation or identification such as code name, code number, trade  
710 name, brand name or generic name used to identify a chemical other than by its chemical  
711 name.  
712
- 713 p. Consumer Product – Any article, or component part thereof, produced or distributed (i) for  
714 sale to a consumer for use in or around a permanent or temporary household or residence, a  
715 school, in recreation, or otherwise, or (ii) for the personal use, consumption or enjoyment  
716 of a consumer in or around a permanent or temporary household or residence, a school, in  
717 recreation, or otherwise.  
718
- 719 q. Container – Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank,  
720 or the like that contains a hazardous chemical. For purposes of this program, pipes or  
721 piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not  
722 considered to be containers.  
723
- 724 r. Distributor – A business, other than a chemical manufacturer or importer, which supplies  
725 hazardous chemicals to other distributors or to employers. Note: Laboratory employers that

- 726 ship hazardous chemicals are considered to be either a chemical manufacturer or  
727 distributor.
- 728
- 729 s. Document Custodian – An OSHE employee assigned to serve as the point of contact for a  
730 specific document and to carry out the responsibilities delineated in the Document and  
731 Record Control Program.
- 732
- 733 t. Exposure or Exposed – An employee is subjected in the course of employment to a  
734 chemical that is a physical or health hazard, and includes potential (e.g. accidental or  
735 possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g.  
736 inhalation, ingestion, skin contact or absorption).
- 737
- 738 u. Foreseeable Emergency – Any potential occurrence such as, but not limited to, equipment  
739 failure, rupture of containers, or failure of control equipment which could result in an  
740 uncontrolled release of a hazardous chemical into the workplace.
- 741
- 742 v. Hazard Category – The division of criteria within each hazard class, e.g., oral acute toxicity  
743 and flammable liquids include four hazard categories. These categories compare hazard  
744 severity within a hazard class and should not be taken as a comparison of hazard categories  
745 more generally.
- 746
- 747 w. Hazard Class – The nature of the physical or health hazards (e.g., flammable solid,  
748 carcinogen, oral acute toxicity).
- 749
- 750 x. Hazard Not Otherwise Classified (HNOC) – An adverse physical or health effect identified  
751 through evaluation of scientific evidence during the Chemical Hazard Classification or  
752 Chemical Hazard Determination process that does not meet the specified criteria for the  
753 physical and health hazard classes addressed in 29 CFR 1910.1200. This does not extend  
754 coverage to adverse physical and health effects for which there is a hazard class addressed  
755 in 29 CFR 1910.1200, but the effect either falls below the cut-off value/concentration limit  
756 of the hazard class or is under a GHS hazard category that has not been adopted by OSHA  
757 (e.g., acute toxicity Category 5).
- 758
- 759 y. Hazard Statement – A statement assigned to a hazard class and category that describes the  
760 nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
- 761
- 762 z. Hazardous Chemical – Any chemical which is classified as a physical hazard or a health  
763 hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise in  
764 accordance with 29 CFR 1910.1200.
- 765

- 766 aa. Health Hazard – A chemical which is classified as posing one of the following hazardous  
767 effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye  
768 damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity;  
769 carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated  
770 exposure); or aspiration hazard. The criteria for determining whether a chemical is  
771 classified as a health hazard are detailed in 29 CFR 1910.1200-Appendix A.  
772
- 773 bb. Immediate Use – The hazardous chemical will be under the control of and used only by the  
774 person who transfers it from a labeled container and only within the work shift in which it  
775 is transferred.  
776
- 777 cc. Importer – The first business with employees within the Customs Territory of the United  
778 States which receives hazardous chemicals produced in other countries for the purpose of  
779 supplying them to distributors or employers within the United States.  
780
- 781 dd. Label – An appropriate group of written, printed or graphic information elements  
782 concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate  
783 container of a hazardous chemical, or to the outside packaging.  
784
- 785 ee. Label Elements – The specified pictogram, hazard statement, signal word and  
786 precautionary statement for each hazard class and category, as specified in 29 CFR  
787 1910.1200-Appendix C.  
788
- 789 ff. Laboratory – For the purposes of this program, a work area where the “Laboratory Use”  
790 (see definition of “Laboratory Use”) of hazardous chemicals occurs. It is a workplace  
791 where relatively small quantities of hazardous chemicals are used on a non-production  
792 basis.  
793
- 794 gg. Laboratory Scale – For the purposes of this program, scale of work in which the  
795 procedures/containers used for reactions, transfers, and other handling of chemicals are  
796 designed to be easily and safely carried out/manipulated by one person. "Laboratory Scale"  
797 excludes work whose purpose is to produce commercial quantities of materials.  
798
- 799 hh. Laboratory Use – For the purposes of this program, use of hazardous chemicals in which  
800 all of the following conditions are met:  
801
- 802 (1) Chemical manipulations are carried out on a "Laboratory Scale" (see definition of  
803 “Laboratory Scale”);  
804

- 805 (2) Multiple chemical procedures or chemicals are used<sup>24</sup>;  
806  
807 (3) The procedures involved are not part of a production process, nor in any way simulate a  
808 production process; and  
809  
810 (4) "Protective Laboratory Practices and Equipment" (see definition of "Protective  
811 Laboratory Practices and Equipment") are available and in common use to minimize  
812 the potential for employee exposure to hazardous chemicals.  
813
- 814 ii. LC RAM (Limited Control RAM) – RAM that is:  
815  
816 (1) Byproduct material exempted under 10 CFR 30;  
817  
818 (2) Unimportant quantities of source material as per 10 CFR 40.13;  
819 (3) RAM such as that described in 10 CFR 31.8, 10 CFR 40.22, and 10 CFR 70.19 that is  
820 not part of a GL device;  
821  
822 (4) Incidentally-Activated RAM; or  
823  
824 (5) Any other RAM determined by the RSO to warrant some degree of control for RSP  
825 purposes.  
826
- 827 jj. Mixture – A combination or a solution composed of two or more substances in which they  
828 do not react.  
829
- 830 kk. NIST Visitor – Any individual at a NIST workplace who is not a NIST employee or  
831 associate.  
832
- 833 ll. NIST Workplace – An establishment at one geographical location containing one or more  
834 "work areas" and at which NIST employees and covered associates conduct work (see  
835 definition of "Work Area"). NIST workplaces include, but are not limited to, NIST  
836 Gaithersburg, NIST Boulder, and NIST joint institutes.  
837
- 838 mm. Non-Hazardous Chemical – For the purposes of this program, any chemical that does not  
839 meet the definition of "Hazardous Chemical" (see definition "Hazardous Chemical").  
840
- 841 nn. Non-Laboratory Use – For the purposes of this program, use of hazardous chemicals that  
842 does not meet the definition of "Laboratory Use" (see definition of "Laboratory Use").

---

<sup>24</sup> [OSHA LOI # 20164](#) describes that "Multiple chemical procedures or chemicals are used" means "using chemicals in laboratory procedures", which includes scenarios involving a single chemical or single procedure.

- 843
- 844 oo. Organizational Unit (OU)-Assigned Space or Work Area – For the purposes of this  
845 program, a space or work area assigned to an OU in the NIST space management system  
846 maintained by the Office of Facilities and Property Management or assigned to an OU by  
847 another OU on a non-permanent basis (i.e., loaned).  
848
- 849 pp. Package – A receptacle and any other components or materials necessary for the receptacle  
850 to perform its containment function in conformance with the minimum packing  
851 requirements of the U. S. Department of Transportation's Hazardous Materials Regulations  
852 (49 CFR Parts 171 through 180).  
853
- 854 qq. Physical Hazard – A chemical that is classified as posing one of the following hazardous  
855 effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or  
856 gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to  
857 metal; gas under pressure; or in contact with water emits flammable gas. The criteria for  
858 determining whether a chemical is classified as a physical hazard are detailed in 29 CFR  
859 1910.1200-Appendix B.  
860
- 861 rr. Pictogram – A composition that may include a symbol plus other graphic elements, such as  
862 a border, background pattern, or color, that is intended to convey specific information  
863 about the hazards of a chemical. Eight pictograms are designated under 29 CFR 1910.1200  
864 for application to a hazard category.  
865
- 866 ss. Precautionary Statement – A phrase that describes recommended measures that should be  
867 taken to minimize or prevent adverse effects resulting from exposure to a hazardous  
868 chemical, or improper storage or handling.  
869
- 870 tt. Produce – To manufacture, process, formulate, blend, extract, generate, emit, package, or  
871 repackage.  
872
- 873 uu. Product Identifier – The name or number used for a hazardous chemical on a label or in the  
874 SDS. It provides a unique means by which the user can identify the chemical. The product  
875 identifier used shall permit cross-references to be made among the list of hazardous  
876 chemicals required in the written hazard communication program, the label and the SDS.  
877
- 878 vv. Protective Laboratory Practices and Equipment – Laboratory practices and equipment  
879 accepted by laboratory health and safety experts as effective, or that the employer can show  
880 to be effective, in minimizing the potential for employee exposure to hazardous chemicals.  
881

- 882 ww. Pyrophoric Gas – A chemical in a gaseous state that will ignite spontaneously in air at a  
883 temperature of 130 degrees F (54.4 degrees C) or below.  
884
- 885 xx. RAM (Radioactive Material) – Material permitted at NIST Gaithersburg under SNM-362, a  
886 GL, or as LC RAM.  
887
- 888 yy. Responsible Party – Someone who can provide additional information on the hazardous  
889 chemical and appropriate emergency procedures, if necessary.  
890
- 891 zz. Safety Data Sheet (SDS) – Written or printed material concerning a hazardous chemical  
892 that is prepared in accordance with paragraph (g) of 29 CFR 1910.1200.  
893
- 894 aaa. Shipped Container – Any container that leaves the NIST workplace.  
895
- 896 bbb. Signal Word – A word used to indicate the relative level of severity of hazard and alert the  
897 reader to a potential hazard on the label. The signal words used in 29 CFR 1910.1200 and  
898 this program are "DANGER" and "WARNING." "DANGER" is used for the more severe  
899 hazards, while "WARNING" is used for the less severe.  
900
- 901 ccc. Simple Asphyxiant – A substance or mixture that displaces oxygen in the ambient  
902 atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to  
903 unconsciousness and death.  
904
- 905 ddd. SNM (Special Nuclear Material) –  
906
- 907 (1) Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and  
908 any other material that the NRC determines to be SNM, but not including source  
909 material; or  
910
- 911 (2) Any material artificially enriched by any of the foregoing, but not including source  
912 material.  
913
- 914 eee. SNM-362 – A NRC license authorizing acquisition, use, transfer, and disposal of any  
915 chemical or physical form of the byproduct material specified in the license, but not  
916 exceeding quantities specified in the license, for purposes authorized by the license.  
917
- 918 fff. SNM-362 RAM – Byproduct material, source material, and SNM that is acquired,  
919 possessed, used, transferred, or disposed of under SNM-362.  
920

- 921 ggg. Specific Chemical Identity – The chemical name, Chemical Abstracts (CAS) Registry  
922 Number, or any other information that reveals the precise chemical designation of the  
923 substance.  
924
- 925 hhh. Stationary Process Container – A chemical process container that is not capable of being  
926 moved.  
927
- 928 iii. Substance – Chemical elements and their compounds in the natural state or obtained by any  
929 production process, including any additive necessary to preserve the stability of the product  
930 and any impurities deriving from the process used, but excluding any solvent which may be  
931 separated without affecting the stability of the substance or changing its composition.  
932
- 933 jjj. Use – To package, handle, react, emit, extract, generate as a byproduct, or transfer.  
934
- 935 kkk. Work Area – A defined space in a workplace where hazardous chemicals are produced or  
936 used to which there is a reasonable likelihood that workers present in the space could be  
937 exposed.
- 938 ll. Workplace – See definition “NIST Workplace”.  
939  
940

## 941 **8. ACRONYMS**

- 942 a. CFR – Code of Federal Regulations  
943
- 944 b. HCS – OSHA 29 CFR 1910.1200, *Hazard Communication in General Industry*  
945
- 946 c. NIST – National Institute of Standards and Technology  
947
- 948 d. ORM – Office of Reference Materials  
949
- 950 e. OSH – Occupational Safety and Health  
951
- 952 f. OSHA – Occupational Safety and Health Administration  
953
- 954 g. OSHE – Office of Safety, Health, and Environment  
955
- 956 h. OU – Organizational Unit  
957
- 958 i. SDS – Safety Data Sheet  
959  
960

961 **9. RESPONSIBILITIES**

962 a. OU Directors<sup>25</sup> are responsible for:

963  
964 (1) Establishing policies and procedures, as needed, for the requirements of this program to  
965 be met as it applies to their employees and covered associates and to hazardous chemicals  
966 in their OU-assigned space and ensuring that those policies and procedures are  
967 implemented; and

968  
969 (2) Ensuring subordinate managers have the authority, resources, and training needed to  
970 implement OU-established policies and procedures.

971  
972 b. Division Chiefs (or Equivalent)<sup>26</sup> are responsible for:

973  
974 (1) Implementing this program as it applies to activities involving their personnel and space  
975 in accordance with any applicable OU-established policies and procedures.

976  
977 c. Organizational Unit (OU)/Division Safety Personnel are responsible for:

978  
979 (1) Participating in the implementation of this program in accordance with any applicable  
980 OU/division-established policies and procedures.

981  
982 d. Chemical Owners<sup>27</sup> are responsible for:

983  
984 (1) Ensuring that Chemical Hazard Classifications and Chemical Hazard Determinations  
985 have been performed in accordance with the requirements of this suborder for the  
986 chemicals they own;

987  
988 (2) Ensuring that labels and other forms of warning have been provided according to the  
989 requirements of this suborder for chemicals they own;

990  
991 (3) Taking appropriate action when notified by a user of a chemical container they own that  
992 the label on that container is illegible or contains information that is not current;

---

<sup>25</sup> For each of the laboratory divisions in Boulder, Colorado, the NIST Boulder Labs Director and the Laboratory Director for the division in question each have these responsibilities. They should work together to coordinate their respective policies and procedures to the maximum extent possible to minimize any additional and undue burden on the division, which must otherwise follow two different sets of policies and procedures.

<sup>26</sup> Some NIST OUs do not have Division Chiefs; these OUs shall designate other individuals to carry out these responsibilities.

<sup>27</sup> These responsibilities are those pertinent to this suborder only. Chemical Owners have other responsibilities described in other NIST OSH suborders, including NIST S 7101.60: *Chemical Management (Chemical Hygiene Plan)* and NIST S 7301.4, *Hazardous Waste Accumulation*.

- 993
- 994 (4) Ensuring that SDSs have been obtained, produced, maintained, and provided according to
- 995 the requirements of this suborder for chemicals they own;
- 996
- 997 (5) Ensuring that the Hazardous Chemical Inventory List has been maintained according to
- 998 the requirements of this suborder for the chemicals they own;
- 999
- 1000 (6) Ensuring that other employees and covered associates in the same work area will be
- 1001 informed when a new chemical hazard is to be introduced into the work area<sup>28</sup>; and
- 1002
- 1003 (7) Carrying out other duties as assigned for the chemicals they own in accordance with any
- 1004 applicable OU/division-established policies and procedures.
- 1005 e. Employees and Covered Associates are responsible for:
- 1006
- 1007 (1) Completing the training required by this program and their OUs/divisions and working in
- 1008 accordance with that training;
- 1009
- 1010 (2) Requesting additional training as needed or as conditions change;
- 1011
- 1012 (3) Knowing the requirements of this suborder;
- 1013
- 1014 (4) Knowing the chemical hazards in the specific work area;
- 1015
- 1016 (5) Ensuring that routine and non-routine activities will be performed according to the
- 1017 requirements of this suborder and any other applicable suborder;
- 1018
- 1019 (6) Knowing the method for obtaining access to the Hazardous Chemical Inventory List and
- 1020 SDSs for the hazardous chemicals in the specific work area;
- 1021
- 1022 (7) Reading chemical container labels, other forms of warning, and SDSs prior to using
- 1023 hazardous chemicals for the first time and as needed thereafter;
- 1024
- 1025 (8) Notifying the Chemical Owner if they identify a label on a chemical container that is
- 1026 illegible or contains information that is not current; and
- 1027
- 1028 (9) Contacting line managers, Organizational Unit (OU)/Divisional Safety Personnel, and/or
- 1029 the OSH program manager for this program regarding any questions related to the hazard

---

<sup>28</sup> Employees and covered associates who become aware of a new, chemical hazard in their work area shall inform their line management of the new, chemical hazard so that line management can ensure that the training requirements of this suborder are met.

1030 communication training and information provided on chemical container labels, other  
1031 forms of warning, and SDSs.

1032

1033 f. OSH Program Manager for this program is responsible for:

1034

1035 (1) Providing NIST employees and covered associates with straightforward interpretations  
1036 and explanations of how relevant regulations, codes, and standards in this program area  
1037 apply in the NIST environment; and

1038

1039 (2) Making this suborder available upon request and in accordance with the requirements of  
1040 29 CFR 1910.1020(e).

1041

1042

1043

1044

1045 **10. AUTHORITIES**

1046 There are no authorities specific to this suborder alone. For authorities applicable to all NIST OSH  
1047 suborders, see section 9 of NIST O 710.01.

1048

1049

1050 **11. DIRECTIVE OWNER**

1051 Chief Safety Officer

1052

1053

1054 **12. APPENDICES**

1055 a. Revision History

1056

1057 b. Chemicals Regulated in OSHA Chemical-Specific Health Standards

1058  
1059

### Appendix A. Revision History

Version	Approval Date	Effective Date	Brief Description of Change; Rationale
1	04/29/14	04/01/15	<ul style="list-style-type: none"> <li>None – Initial document</li> </ul>
2	02/08/15	10/01/16	<ul style="list-style-type: none"> <li>Minor revision to “Hazardous Chemical” definition. Minor revision for formatting.</li> <li>Addition of footnote and definitions pertaining to inventory requirements for Biohazardous Materials, LC-RAM, and SNM-362 RAM.</li> <li>Minor revision to Section 6g to differentiate between information requirements and training requirements.</li> <li>Added text to Section 9d to assign Chemical Owners the responsibility of ensuring that Chemical Hazard Classifications and Chemical Hazard Determinations have been performed in accordance with the requirements of the suborder.</li> <li>Minor revision to Section 6d to clarify Hazardous Chemical Inventory Lists requirements and to include a footnote pertaining to SRMs.</li> <li>Revised footnote 2 and changed “associate” to “covered associate” throughout suborder to update text with current NIST definitions of “associate” and “covered”.</li> </ul>
3	01/07/21	01/07/21	<ul style="list-style-type: none"> <li>Updated suborder and CFR links.</li> </ul>
4	03/27/23	03/27/23	<ul style="list-style-type: none"> <li>Updated Appendix B to include 29 CFR 1910.1002, 29 CFR 1910.1053, and 29 CFR 1926, Subpart Z (OSHA substance-specific standards). Updated CISPro to CIMS.</li> <li>Updated Version numbers and footer to current style.</li> </ul>

1060

## Appendix B. Chemicals Regulated in OSHA Chemical-Specific Health Standards

This appendix provides basic information regarding whether a chemical is within the scope and application of the OSHA Chemical-Specific Health Standards. The OSHA Chemical-Specific Health Standards (29 CFR 1910.1001 - 29 CFR 1910.1053, 29 CFR 1926.1101 – 29 CFR 1926.1153) provide numerous requirements (e.g., hazard communication, information and training, permissible exposure limits, and exposure monitoring/medical surveillance) for specific chemicals. The application and therefore applicable requirements of the OSHA Chemical-Specific Health Standards are determined by criteria such as chemical concentration, physical form, and use. The OSHA Chemical-Specific Health Standards should be consulted for detailed information regarding applicable requirements. The OSH Safety Program Manager for this program or another OSHE staff member will provide assistance upon request.

a. When the use of a chemical at a NIST workplace meets the definition of “Laboratory Use” and is within the scope and application of an OSHA Chemical-Specific Health Standard, OSHA 29 CFR 1910.1450, *Occupational Exposure to Hazardous Chemicals in Laboratories* supercedes the requirements of the particular OSHA Chemical-Specific Health Standard, except as follows:

(1) 1910.1450(a)(2)(i) For any OSHA health standard, only the requirement to limit employee exposure to the specific permissible exposure limit shall apply for laboratories, unless that particular standard states otherwise or unless the conditions of 1910.1450(a)(2)(iii) apply (see below);

(2) 1910.1450(a)(2)(ii) Prohibition of eye and skin contact where specified by any OSHA health standard shall be observed;

(3) 1910.1450(a)(2)(iii) Where the action level (or in the absence of an action level, the permissible exposure limit) is routinely exceeded for an OSHA regulated substance with exposure monitoring and medical surveillance requirements of 1910.1450(d) and 1910.1450(g)(1)(ii) shall apply.

Note: The hazard communication requirements of the OSHA Chemical-Specific Health Standards are not applicable to chemical uses that meet the definition of “Laboratory Use”.

b. When the use of a chemical at a NIST workplace does not meet the definition of “Laboratory Use” and is within the scope and application of an OSHA Chemical-Specific Health Standard, all requirements of the specific OSHA Chemical-Specific Health Standard are applicable, including the hazard communications requirements.

1101 (1) Non-laboratory use of a chemical for non-construction activities may be within the scope  
1102 and application of 29 CFR 1910.1001 - 29 CFR 1910.1053 (see below).

1103

1104 (2) Non-laboratory use of a chemical for construction activities may be within the scope and  
1105 application of 29 CFR 1926.1101 – 29 CFR 1926.1153 (see below).

1106

1107 c. Scope and Application of OSHA Chemical-Specific Health Standards:

1108

1109 (1) [29 CFR 1910.1001, \*Asbestos\*](#)

1110

1111 (a) This section applies to all occupational exposures to asbestos in all industries covered  
1112 by the Occupational Safety and Health Act, except:

1113

1114 i. This section does not apply to construction work as defined in 29 CFR  
1115 1910.12(b). (Exposure to asbestos in construction work is covered by 29 CFR  
1116 1926.1101.); and

1117

1118 ii. This section does not apply to ship repairing, shipbuilding and shipbreaking  
1119 employments and related employments as defined in 29 CFR 1915.4. (Exposure  
1120 to asbestos in these employments is covered by 29 CFR 1915.1001).

1121

1122 (2) [29 CFR 1910.1002, \*Coal Tar Pitch Volatiles\*](#)

1123

1124 (a) As used in 29 CFR 1910.1000 (Table Z-1), coal tar pitch volatiles include the fused  
1125 polycyclic hydrocarbons which volatilize from the distillation residues of coal,  
1126 petroleum (excluding asphalt), wood, and other organic matter. Asphalt (CAS 8052-  
1127 42-4, and CAS 64742-93-4) is not covered under the "coal tar pitch volatiles"  
1128 standard.

1129

1130 (3) [29 CFR 1910.1003, \*13 Carcinogens\*](#)

1131

1132 (a) This section applies to any area in which the 13 carcinogens addressed by this section  
1133 are manufactured, processed, repackaged, released, handled, or stored, but shall not  
1134 apply to transshipment in sealed containers, except for the labeling requirements  
1135 under paragraphs (e)(2), (3) and (4) of this section. The 13 carcinogens are the  
1136 following: 4-Nitrobiphenyl, Chemical Abstracts Service Register Number (CAS No.)  
1137 92933; alpha-Naphthylamine, CAS No. 134327; methyl chloromethyl ether, CAS No.  
1138 107302; 3,3'-Dichlorobenzidine (and its salts) CAS No. 91941; bis-Chloromethyl  
1139 ether, CAS No. 542881; beta-Naphthylamine, CAS No. 91598; Benzidine, CAS No.  
1140 92875; 4-Aminodiphenyl, CAS No. 92671; Ethyleneimine, CAS No. 151564; beta-

1141 Propiolactone, CAS No. 57578; 2-Acetylaminofluorene, CAS No. 53963; 4-  
1142 Dimethylaminoazo-benzene, CAS No. 60117; and N-Nitrosodimethylamine, CAS  
1143 No. 62759.

1144  
1145 (b) This section shall not apply to the following:

- 1146
- 1147 i. Solid or liquid mixtures containing less than 0.1 percent by weight or volume of
  - 1148 4-Nitrobiphenyl; methyl chloromethyl ether; bis-chloromethyl ether; beta-
  - 1149 Naphthylamine; benzidine or 4-Aminodiphenyl; and
  - 1150
  - 1151 ii. Solid or liquid mixtures containing less than 1.0 percent by weight or volume of
  - 1152 alpha-Naphthylamine; 3,3'-Dichlorobenzidine (and its salts); Ethyleneimine; beta-
  - 1153 Propiolactone; 2-Acetylaminofluorene; 4-Dimethylaminoazobenzene, or N-
  - 1154 Nitrosodimethylamine.
  - 1155

1156 (4) [29 CFR 1910.1017, Vinyl Chloride](#)

1157

- 1158 (a) This section applies to the manufacture, reaction, packaging, repackaging, storage,
- 1159 handling or use of vinyl chloride or polyvinyl chloride, but does not apply to the
- 1160 handling or use of fabricated products made of polyvinyl chloride.
- 1161

- 1162 (b) This section applies to the transportation of vinyl chloride or polyvinyl chloride
- 1163 except to the extent that the Department of Transportation may regulate the hazards
- 1164 covered by this section.
- 1165

1166 (5) [29 CFR 1910.1018, Inorganic Arsenic](#)

1167

- 1168 (a) This section applies to all occupational exposures to inorganic arsenic except that this
- 1169 section does not apply to employee exposures in agriculture or resulting from
- 1170 pesticide application, the treatment of wood with preservatives or the utilization of
- 1171 arsenically preserved wood.
- 1172

1173 (6) [29 CFR 1910.1025, Lead](#)

1174

- 1175 (a) This section applies to all occupational exposure to lead, except:
- 1176

- 1177 i. This section does not apply to the construction industry or to agricultural
- 1178 operations covered by 29 CFR Part 1928.
- 1179

1180 (7) [29 CFR 1910.1026, Chromium \(VI\)](#)

- 1181  
1182 (a) This standard applies to occupational exposures to chromium (VI) in all forms and  
1183 compounds in general industry, except:  
1184  
1185 i. Exposures that occur in the application of pesticides regulated by the  
1186 Environmental Protection Agency or another Federal government agency (e.g.,  
1187 the treatment of wood with preservatives);  
1188  
1189 ii. Exposures to portland cement; or  
1190  
1191 iii. Where the employer has objective data demonstrating that a material containing  
1192 chromium or a specific process, operation, or activity involving chromium cannot  
1193 release dusts, fumes, or mists of chromium (VI) in concentrations at or above 0.5  
1194  $\mu\text{g}/\text{m}^3$  as an 8-hour time-weighted average (TWA) under any expected conditions  
1195 of use.  
1196

1197 (8) [29 CFR 1910.1027, Cadmium](#)  
1198

- 1199 (a) This standard applies to all occupational exposures to cadmium and cadmium  
1200 compounds, in all forms, and in all industries covered by the Occupational Safety and  
1201 Health Act, except the construction-related industries, which are covered under 29  
1202 CFR 1926.63.  
1203

1204 (9) [29 CFR 1910.1028, Benzene](#)  
1205

- 1206 (a) This section applies to all occupational exposures to benzene. Chemical Abstracts  
1207 Service Registry No. 71-43-2, except:  
1208  
1209 i. The storage, transportation, distribution, dispensing, sale or use of gasoline, motor  
1210 fuels, or other fuels containing benzene subsequent to its final discharge from  
1211 bulk wholesale storage facilities, except that operations where gasoline or motor  
1212 fuels are dispensed for more than 4 hours per day in an indoor location are  
1213 covered by this section.  
1214  
1215 ii. Loading and unloading operations at bulk wholesale storage facilities which use  
1216 vapor control systems for all loading and unloading operations, except for the  
1217 provisions of 29 CFR 1910.1200 as incorporated into this section and the  
1218 emergency provisions of paragraphs (g) and (i)(4) of this section.  
1219

- 1220           iii. The storage, transportation, distribution or sale of benzene or liquid mixtures  
1221           containing more than 0.1 percent benzene in intact containers or in transportation  
1222           pipelines while sealed in such a manner as to contain benzene vapors or liquid,  
1223           except for the provisions of 29 CFR 1910.1200 as incorporated into this section  
1224           and the emergency provisions of paragraphs (g) and (i)(4) of this section.  
1225
- 1226           iv. Containers and pipelines carrying mixtures with less than 0.1 percent benzene and  
1227           natural gas processing plants processing gas with less than 0.1 percent benzene.  
1228
- 1229           v. Work operations where the only exposure to benzene is from liquid mixtures  
1230           containing 0.5 percent or less of benzene by volume, or the vapors released from  
1231           such liquids until September 12, 1988; work operations where the only exposure  
1232           to benzene is from liquid mixtures containing 0.3 percent or less of benzene by  
1233           volume or the vapors released from such liquids from September 12, 1988, to  
1234           September 12, 1989; and work operations where the only exposure to benzene is  
1235           from liquid mixtures containing 0.1 percent or less of benzene by volume or the  
1236           vapors released from such liquids after September 12, 1989; except that tire  
1237           building machine operators using solvents with more than 0.1 percent benzene are  
1238           covered by paragraph (i) of this section.  
1239
- 1240           vi. Oil and gas drilling, production and servicing operations.  
1241
- 1242           vii. Coke oven batteries.  
1243
- 1244           viii.        The cleaning and repair of barges and tankers which have contained  
1245           benzene are excluded from paragraph (f) methods of compliance, paragraph (e)(1)  
1246           exposure monitoring-general, and paragraph (e)(6) accuracy of monitoring.  
1247           Engineering and work practice controls shall be used to keep exposures below 10  
1248           ppm unless it is proven to be not feasible.  
1249
- 1250       (10)       [29 CFR 1910.1029, Coke Oven Emissions](#)  
1251
- 1252           (a) This section applies to the control of employee exposure to coke oven emissions,  
1253           except that this section shall not apply to working conditions with regard to which  
1254           other Federal agencies exercise statutory authority to prescribe or enforce standards  
1255           affecting occupational safety and health.  
1256
- 1257       (11)       [29 CFR 1910.1044, 1,2-Dibromo-3-Chloropropane](#)  
1258

- 1259 (a) This section applies to occupational exposure to 1,2-dibromo-3-chloropropane  
1260 (DBCP), except:  
1261  
1262 i. Exposure to DBCP which results solely from the application and use of DBCP as  
1263 a pesticide; or  
1264  
1265 ii. The storage, transportation, distribution or sale of DBCP in intact containers  
1266 sealed in such a manner as to prevent exposure to DBCP vapors or liquid, except  
1267 for the requirements of paragraphs (i), (n) and (o) of this section.  
1268

1269 (12) [29 CFR 1910.1045, Acrylonitrile](#)  
1270

- 1271 (a) This section applies to all occupational exposures to acrylonitrile (AN), Chemical  
1272 Abstracts Service Registry No. 000107131, except:  
1273  
1274 i. This section does not apply to exposures which result solely from the processing,  
1275 use, and handling of the following materials:  
1276  
1277 (i) ABS resins, SAN resins, nitrile barrier resins, solid nitrile elastomers, and  
1278 acrylic and modacrylic fibers, when these listed materials are in the form of  
1279 finished polymers, and products fabricated from such finished polymers;  
1280  
1281 (ii) Materials made from and/or containing AN for which objective data is  
1282 reasonably relied upon to demonstrate that the material is not capable of  
1283 releasing AN in airborne concentrations in excess of 1 ppm as an eight (8)-  
1284 hour time-weighted average, under the expected conditions of processing, use,  
1285 and handling which will cause the greatest possible release; and  
1286  
1287 (iii) Solid materials made from and/or containing AN, which will not be heated  
1288 above 170 deg. F during handling, use, or processing.  
1289

1290 (13) [29 CFR 1910.1047, Ethylene Oxide](#)  
1291

- 1292 (a) This section applies to all occupational exposures to ethylene oxide (EtO), Chemical  
1293 Abstracts Service Registry No. 75-21-8, except:  
1294  
1295 i. This section does not apply to the processing, use, or handling of products  
1296 containing EtO where objective data are reasonably relied upon that demonstrate  
1297 that the product is not capable of releasing EtO in airborne concentrations at or

1298 above the action level under the expected conditions of processing, use, or  
1299 handling that will cause the greatest possible release.

1300  
1301 (14) [29 CFR 1910.1048, Formaldehyde](#)

1302  
1303 (a) This standard applies to all occupational exposures to formaldehyde, i.e. from  
1304 formaldehyde gas, its solutions, and materials that release formaldehyde.

1305  
1306 (15) [29 CFR 1910.1050, Methylenedianiline](#)

1307  
1308 (a) This section applies to all occupational exposures to MDA, Chemical Abstracts  
1309 Service Registry No. 101-77-9, except:

1310  
1311 i. Except as provided in paragraphs (a)(8) and (e)(5) of this section, this section  
1312 does not apply to the processing, use, and handling of products containing MDA  
1313 where initial monitoring indicates that the product is not capable of releasing  
1314 MDA in excess of the action level under the expected conditions of processing,  
1315 use, and handling which will cause the greatest possible release; and where no  
1316 "dermal exposure to MDA" can occur.

1317 ii. Except as provided in paragraph (a)(8) of this section, this section does not apply  
1318 to the processing, use, and handling of products containing MDA where objective  
1319 data are reasonably relied upon which demonstrate the product is not capable of  
1320 releasing MDA under the expected conditions of processing, use, and handling  
1321 which will cause the greatest possible release; and where no "dermal exposure to  
1322 MDA" can occur.

1323  
1324 iii. This section does not apply to the storage, transportation, distribution or sale of  
1325 MDA in intact containers sealed in such a manner as to contain the MDA dusts,  
1326 vapors, or liquids, except for the provisions of 29 CFR 1910.1200 and paragraph  
1327 (d) of this section.

1328  
1329 iv. This section does not apply to the construction industry as defined in 29 CFR  
1330 1910.12(b). (Exposure to MDA in the construction industry is covered by 29 CFR  
1331 1926.60).

1332  
1333 v. Except as provided in paragraph (a)(8) of this section, this section does not apply  
1334 to materials in any form which contain less than 0.1 percent MDA by weight or  
1335 volume.

1336

1337 vi. Except as provided in paragraph (a)(8) of this section, this section does not apply  
1338 to "finished articles containing MDA."  
1339

1340 (16) [29 CFR 1910.1051, 1,3-Butadiene](#)  
1341

1342 (a) This section applies to all occupational exposures to 1,3-Butadiene (BD), Chemical  
1343 Abstracts Service Registry No. 106-99-0, except as provided in paragraph (a)(2) of  
1344 this section.  
1345

1346 (17) [29 CFR 1910.1052, Methylene Chloride](#)  
1347

1348 (a) This section applies to all occupational exposures to methylene chloride (MC),  
1349 Chemical Abstracts Service Registry Number 75-09-2, in general industry,  
1350 construction and shipyard employment.  
1351

1352 (18) [29 CFR 1910.1053, Respirable Crystalline Silica](#)  
1353

1354 (a) This section applies to all occupational exposures to respirable crystalline silica,  
1355 except:  
1356

1357 i. Construction work as defined in 29 CFR 1910.12(b) (occupational exposures to  
1358 respirable crystalline silica in construction work are covered under 29 CFR  
1359 1926.1153);  
1360

1361 ii. Agricultural operations covered under 29 CFR part 1928; and  
1362

1363 iii. Exposures that result from the processing of sorptive clays.  
1364

1365 (b) This section does not apply where the employer has objective data demonstrating that  
1366 employee exposure to respirable crystalline silica will remain below 25 micrograms  
1367 per cubic meter of air (25 µg/m<sup>3</sup>) as an 8-hour time-weighted average (TWA) under  
1368 any foreseeable conditions.  
1369

1370 (c) This section does not apply if the employer complies with 29 CFR 1926.1153 and:  
1371

1372 i. The task performed is indistinguishable from a construction task listed on Table 1  
1373 in paragraph (c) of 29 CFR 1926.1153; and  
1374

1375 ii. The task will not be performed regularly in the same environment and conditions.  
1376

- 1377 (19) [29 CFR 1926.1101, \*Asbestos\*](#)  
1378  
1379 (a) This section regulates asbestos exposure in all work as defined in 29 CFR 1910.12(b),  
1380 including but not limited to the following:  
1381  
1382 i. Demolition or salvage of structures where asbestos is present;  
1383  
1384 ii. Removal or encapsulation of materials containing asbestos;  
1385  
1386 iii. Construction, alteration, repair, maintenance, or renovation of structures,  
1387 substrates, or portions thereof, that contain asbestos;  
1388  
1389 iv. Installation of products containing asbestos;  
1390  
1391 v. Asbestos spill/emergency cleanup; and  
1392  
1393 vi. Transportation, disposal, storage, containment of and housekeeping activities  
1394 involving asbestos or products containing asbestos, on the site or location at  
1395 which construction activities are performed.  
1396  
1397 vii. Coverage under this standard shall be based on the nature of the work operation  
1398 involving asbestos exposure.  
1399  
1400 viii. This section does not apply to asbestos-containing asphalt roof coatings,  
1401 cements and mastics.  
1402  
1403 (20) [29 CFR 1926.1102, \*Coal Tar Pitch Volatiles\*](#)  
1404  
1405 (a) The requirements applicable to construction work under this section are identical to  
1406 those set forth at [1910.1002](#) of this chapter (see above, 29 CFR 1910.1002).  
1407  
1408 (21) [29 CFR 1926.1103, \*13 Carcinogens \(4-Nitrobiphenyl, etc.\)\*](#)  
1409  
1410 (a) The requirements applicable to construction work under this section are identical to  
1411 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).  
1412  
1413 (22) [29 CFR 1926.1104, \*alpha-Naphthylamine\*](#)  
1414  
1415 (a) The requirements applicable to construction work under this section are identical to  
1416 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).

- 1417
- 1418 (23) [29 CFR 1926.1106, Methyl Chloromethyl Ether](#)
- 1419
- 1420 (a) The requirements applicable to construction work under this section are identical to
- 1421 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1422
- 1423 (24) [29 CFR 1926.1107, 3,3'-Dichlorobenzidine \(and its salts\)](#)
- 1424
- 1425 (a) The requirements applicable to construction work under this section are identical to
- 1426 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1427
- 1428 (25) [29 CFR 1926.1108, bis-Chloromethyl Ether](#)
- 1429
- 1430 (a) The requirements applicable to construction work under this section are identical to
- 1431 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1432
- 1433 (26) [29 CFR 1926.1109, beta-Naphthylamine](#)
- 1434
- 1435 (a) The requirements applicable to construction work under this section are identical to
- 1436 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1437
- 1438 (27) [29 CFR 1926.1110, Benzidine](#)
- 1439
- 1440 (a) The requirements applicable to construction work under this section are identical to
- 1441 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1442
- 1443 (28) [29 CFR 1926.1111, 4-Aminodiphenyl](#)
- 1444
- 1445 (a) The requirements applicable to construction work under this section are identical to
- 1446 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1447
- 1448 (29) [29 CFR 1926.1112, Ethyleneimine](#)
- 1449
- 1450 (a) The requirements applicable to construction work under this section are identical to
- 1451 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1452
- 1453 (30) [29 CFR 1926.1113, beta-Propiolactone](#)
- 1454
- 1455 (a) The requirements applicable to construction work under this section are identical to
- 1456 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).

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(31) [29 CFR 1926.1114, 2-Acetylaminofluorene](#)

(a) The requirements applicable to construction work under this section are identical to those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).

(32) [29 CFR 1926.1115, 4-Dimethylaminoazobenzene](#)

(a) The requirements applicable to construction work under this section are identical to those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).

(33) [29 CFR 1926.1116, N-Nitrosodimethylamine](#)

(a) The requirements applicable to construction work under this section are identical to those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).

(34) [29 CFR 1926.1117, Vinyl Chloride](#)

(a) The requirements applicable to construction work under this section are identical to those set forth at [1910.1017](#) of this chapter (see above, 29 CFR 1910.1017).

(35) [29 CFR 1926.1118, Inorganic Arsenic](#)

(a) The requirements applicable to construction work under this section are identical to those set forth at [1910.1018](#) of this chapter (see above, 29 CFR 1018).

(36) [29 CFR 1926.1124, Beryllium](#)

(a) This standard applies to occupational exposure to beryllium in all forms, compounds, and mixtures in construction, except those articles and materials exempted by paragraphs (a)(2) and (a)(3) of this standard.

(b) This standard does not apply to articles, as defined in the Hazard Communication standard (HCS) (29 CFR 1910.1200(c)), that contain beryllium and that the employer does not process.

(c) This standard does not apply to materials containing less than 0.1% beryllium by weight where the employer has objective data demonstrating that employee exposure to beryllium will remain below the action level as an 8-hour TWA under any foreseeable conditions.

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(37) [29 CFR 1926.1126, Chromium \(VI\)](#)

- (a) This standard applies to occupational exposures to chromium (VI) in all forms and compounds in construction, except:
  - i. Exposures that occur in the application of pesticides regulated by the Environmental Protection Agency or another Federal government agency (e.g., the treatment of wood with preservatives);
  - ii. Exposures to portland cement; or
  - iii. Where the employer has objective data demonstrating that a material containing chromium or a specific process, operation, or activity involving chromium cannot release dusts, fumes, or mists of chromium (VI) in concentrations at or above 0.5 µg/m<sup>3</sup> as an 8-hour time-weighted average (TWA) under any expected conditions of use.

(38) [29 CFR 1926.1127, Cadmium](#)

- (a) This standard applies to all occupational exposures to cadmium and cadmium compounds, in all forms, in all construction work where an employee may potentially be exposed to cadmium. Construction work is defined as work involving construction, alteration and/or repair, including but not limited to the following:
  - i. Wrecking, demolition or salvage of structures where cadmium or materials containing cadmium are present;
  - ii. Use of cadmium containing-paints and cutting, brazing, burning, grinding or welding on surfaces that were painted with cadmium-containing paints;
  - iii. Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain cadmium, or materials containing cadmium;
  - iv. Cadmium welding; cutting and welding cadmium-plated steel; brazing or welding with cadmium alloys;
  - v. Installation of products containing cadmium;

- 1537 vi. Electrical grounding with cadmium welding, or electrical work using cadmium-  
1538 coated conduit;  
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1540 vii. Maintaining or retrofitting cadmium-coated equipment;  
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1542 viii. Cadmium contamination/emergency cleanup; and  
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1544 ix. Transportation, disposal, storage, or containment of cadmium or materials  
1545 containing cadmium on the site or location at which construction activities are  
1546 performed.  
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- 1548 (39) [29 CFR 1926.1128, Benzene](#)  
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1550 (a) The requirements applicable to construction work under this section are identical to  
1551 those set forth at [1910.1028](#) of this chapter (see above, 29 CFR 1910.1028).  
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- 1553 (40) [29 CFR 1926.1144, 1,2-Dibromo-3-Chloropropane](#)  
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1555 (a) The requirements applicable to construction work under this section are identical to  
1556 those set forth at [1910.1044](#) of this chapter (see above, 29 CFR 1910.1044).  
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- 1558 (41) [29 CFR 1926.1145, Acrylonitrile](#)  
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1560 (a) The requirements applicable to construction work under this section are identical to  
1561 those set forth at [1910.1045](#) of this chapter (see above, 29 CFR 1910.1045).  
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- 1563 (42) [29 CFR 1926.1147, Ethylene Oxide](#)  
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1565 (a) The requirements applicable to construction work under this section are identical to  
1566 those set forth at [1910.1047](#) of this chapter (see above, 29 CFR 1910.1047).  
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- 1568 (43) [29 CFR 1926.1148, Formaldehyde](#)  
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1570 (a) The requirements applicable to construction work under this section are identical to  
1571 those set forth at [1910.1048](#) of this chapter (see above, 29 CFR 1910.1048).  
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- 1573 (44) [29 CFR 1926.1152, Methylene Chloride](#)  
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1575 (a) The requirements applicable to construction employment under this section are  
1576 identical to those set forth at 29 CFR [1910.1052](#) (see above, 29 CFR 1910.1052).

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(45) [29 CFR 1926.1153, Respirable Crystalline Silica](#)

- (a) This section applies to all occupational exposures to respirable crystalline silica in construction work, except where employee exposure will remain below 25 micrograms per cubic meter of air ( $25 \mu\text{g}/\text{m}^3$ ) as an 8-hour time-weighted average (TWA) under any foreseeable conditions.