

CHEMICAL HAZARD COMMUNICATION

NIST S 7101.59

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1. PURPOSE

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

2. BACKGROUND

The HCS was promulgated in 1994 to ensure that the hazards of all chemicals produced or imported are classified and that information concerning the classified hazards is transmitted to employers and employees. The HCS was revised in 2012 to align with the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Revision 3 and provide a common and coherent approach to classifying chemicals and communicating hazard information. The HCS again was revised in 2024 to be consistent with the GHS, primarily Revision 7.

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

The HCS requires employers to develop and implement a written hazard communication program, which describes how the employer will comply with the HCS requirements for preparing and distributing SDSs, labeling containers of chemicals in the workplace and containers being shipped to other workplaces, maintaining a list of the hazardous chemicals known to be present in the workplace, informing employees of the hazards of non-routine tasks, informing employees of the hazards associated with chemicals in unlabeled pipes in the

¹ For revision history, see Appendix A.

37 workplace, providing employee training regarding chemical hazards and protective measures,
38 and communicating chemical hazard information to other employers.

39

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

43

44

45 **3. APPLICABILITY**

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

49

50 b. The provisions of this suborder apply to:

51

52 (1) Any chemical known to be present in a NIST workplace in such a manner that NIST
53 employees or covered associates could be exposed under normal conditions of use or in a
54 foreseeable emergency;² and

55

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

57

58 c. Hazardous chemicals exempt from specific *labeling requirements* of this suborder³ include:

59

60 (1) Any pesticide as such term is defined in the Federal Insecticide, Fungicide, and
61 Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that
62 Act and labeling regulations issued under that Act by the Environmental Protection
63 Agency;

64

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

69

70 (3) Any food, food additive, color additive, drug, cosmetic, or medical or veterinary device
71 or product, including materials intended for use as ingredients in such products (*e.g.*,
72 flavors and fragrances), as such terms are defined in the Federal Food, Drug, and

² Chemicals within the scope of other NIST OSH suborders (*e.g.*, Compressed Gas Safety, Cryogen Safety) shall comply with the applicable requirements of this and any other applicable NIST OSH suborder.

³ 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.

- 73 Cosmetic Act (21 U.S.C. 301 et seq.) or the Virus-Serum-Toxin Act of 1913 (21 U.S.C.
74 151 et seq.), and regulations issued under those Acts, when they are subject to the
75 labeling requirements under those Acts by either the Food and Drug Administration or
76 the Department of Agriculture;
77
- 78 (4) Any distilled spirits (beverage alcohols), wine, or malt beverage intended for
79 nonindustrial use, as such terms are defined in the Federal Alcohol Administration Act
80 (27 U.S.C. 201 et seq.) and regulations issued under that Act, when subject to the labeling
81 requirements of that Act and labeling regulations issued under that Act by the Bureau of
82 Alcohol, Tobacco, Firearms and Explosives;
83
- 84 (5) Any consumer product or hazardous substance as those terms are defined in the
85 Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous
86 Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer
87 product safety standard or labeling requirement of those Acts, or regulations issued under
88 those Acts by the Consumer Product Safety Commission; and,
89
- 90 (6) Agricultural or vegetable seed treated with pesticides and labeled in accordance with the
91 Federal Seed Act (7 U.S.C. 1551 et seq.) and the labeling regulations issued under that
92 Act by the Department of Agriculture.
93
- 94 d. Hazardous chemicals exempt from all requirements of this suborder are detailed in 29 CFR
95 1910.1200(b)(6). These exemptions include, but are not limited to:
96
- 97 (1) Any hazardous waste⁴ as such term is defined by the Solid Waste Disposal Act, as
98 amended by the Resource Conservation and Recovery Act of 1976, as amended (42
99 U.S.C. 6901 et seq.), when subject to regulations issued under that Act by the
100 Environmental Protection Agency;
101
- 102 (2) Any hazardous substance as such term is defined by the Comprehensive Environmental
103 Response, Compensation and Liability Act (CERCLA) (42 U.S.C. 9601 et seq.) when
104 the hazardous substance is the focus of remedial or removal action being conducted
105 under CERCLA in accordance with Environmental Protection Agency regulations;
106
- 107 (3) Tobacco or tobacco products;
108

⁴ Hazardous wastes at a NIST workplace shall comply with the requirements of the site-specific hazardous waste program (e.g., NIST S 7301.06, *Chemical Waste Accumulation/Disposal at NIST Gaithersburg*, NIST S7301.07, *Chemical Waste Accumulation/Disposal at NIST Boulder*).

- 109 (4) Wood or wood products which have not been treated with a hazardous chemical covered
110 by this standard, and wood which will not be subsequently sawed or cut, generating
111 dust;
112
- 113 (5) Articles (see definition of “Article”);
114
- 115 (6) Food or alcoholic beverages which are sold, used, or prepared in a retail establishment
116 (such as a grocery store, restaurant, or drinking place), and foods intended for personal
117 consumption by employees while in the workplace;
118
- 119 (7) Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21
120 U.S.C. 301 *et seq.*), when it is in solid, final form for direct administration to the patient
121 (*e.g.*, tablets or pills); drugs which are packaged by the chemical manufacturer for sale to
122 consumers in a retail establishment (*e.g.*, over-the-counter drugs); and drugs intended for
123 personal consumption by employees while in the workplace (*e.g.*, first aid supplies);
124
- 125 (8) Cosmetics which are packaged for sale to consumers in a retail establishment, and
126 cosmetics intended for personal consumption by employees while in the workplace;
127
- 128 (9) Any consumer product or hazardous substance, as those terms are defined in the
129 Consumer Product Safety Act (15 U.S.C. 2051 *et seq.*) and Federal Hazardous
130 Substances Act (15 U.S.C. 1261 *et seq.*) respectively, where the employer can show that
131 it is used in the workplace for the purpose intended by the chemical manufacturer or
132 importer of the product, and the use results in a duration and frequency of exposure
133 which is not greater than the range of exposures that could reasonably be experienced by
134 consumers when used for the purpose intended;
135
- 136 (10) Nuisance particulates where the chemical manufacturer or importer can establish that
137 they do not pose any physical hazard, health hazard, or other hazards covered under the
138 HCS;
139
- 140 (11) Ionizing and non-ionizing radiation⁵; and,
141
- 142 (12) Biological hazards⁶.
143
144

145 4. REFERENCES

⁵ Chemical hazards associated with sources of ionizing and non-ionizing radiation are not exempted from the requirements of this program.

⁶ Chemical hazards associated with biological hazards are not exempted from the requirements of this program.

- 146 a. [EPA 40 CFR 751, Regulation of Certain Chemical Substances and Mixtures Under Section 6](#)
147 [of the Toxic Substances Control Act](#)
148
- 149 b. [OSHA 29 CFR 1910.1200: Hazard Communication](#)
150
- 151 c. [OSHA 29 CFR 1910.1001: Asbestos](#)
152
- 153 d. [OSHA 29 CFR 1910.1002: Coal Tar Pitch Volatiles](#)
154
- 155 e. [OSHA 29 CFR 1910.1003: 13 Carcinogens](#)
156
- 157 f. [OSHA 29 CFR 1910.1017: Vinyl Chloride](#)
158
- 159 g. [OSHA 29 CFR 1910.1018: Inorganic Arsenic](#)
160
- 161 h. [OSHA 29 CFR 1910.1024: Beryllium](#)
162
- 163 i. [OSHA 29 CFR 1910.1025: Lead](#)
164
- 165 j. [OSHA 29 CFR 1910.1026: Chromium \(VI\)](#)
166
- 167 k. [OSHA 29 CFR 1910.1027: Cadmium](#)
168
- 169 l. [OSHA 29 CFR 1910.1028: Benzene](#)
170
- 171 m. [OSHA 29 CFR 1910.1029: Coke Oven Emissions](#)
172
- 173 n. [OSHA 29 CFR 1910.1043: Cotton Dust](#)
174
- 175 o. [OSHA 29 CFR 1910.1044: 1,2-Dibromo-3-Chloropropane](#)
176
- 177 p. [OSHA 29 CFR 1910.1045: Acrylonitrile](#)
178
- 179 q. [OSHA 29 CFR 1910.1047: Ethylene Oxide](#)
180
- 181 r. [OSHA 29 CFR 1910.1048: Formaldehyde](#)
182
- 183 s. [OSHA 29 CFR 1910.1050: Methylenedianiline](#)
184
- 185 t. [OSHA 29 CFR 1910.1051: 1,3-Butadiene](#)

- 186
187 u. [OSHA 29 CFR 1910.1052: Methylene Chloride](#)
188
189 v. [OSHA 29 CFR 1910.1053: Respirable Crystalline Silica](#)
190
191 w. [OSHA 29 CFR 1910.1201: Retention of DOT Markings, Placards, and Labels](#)
192
193 x. [OSHA 29 CFR 1910.1450: Occupational Exposure to Hazardous Chemicals in](#)
194 [Laboratories](#)
195
196 y. [OSHA 29 CFR 1926.59: Hazard Communication in Construction](#)
197
198 z. [OSHA 29 CFR 1926.1101: Asbestos](#)
199
200 aa. [OSHA 29 CFR 1926.1102: Coal Tar Pitch Volatiles](#)
201
202 bb. [OSHA 29 CFR 1926.1103: 13 Carcinogens](#)
203
204 cc. [OSHA 29 CFR 1926.1104: alpha-Naphthylamine](#)
205
206 dd. [OSHA 29 CFR 1926.1106: Methyl Chloromethyl Ether](#)
207
208 ee. [OSHA 29 CFR 1926.1107: 3,3'-Dichlorobenzidine \(and its salts\)](#)
209
210 ff. [OSHA 29 CFR 1926.1108: bis-Chloromethyl Ether](#)
211
212 gg. [OSHA 29 CFR 1926.1109: beta-Naphthylamine](#)
213
214 hh. [OSHA 29 CFR 1926.1110: Benzidine](#)
215
216 ii. [OSHA 29 CFR 1926.1111: 4-Aminodiphenyl](#)
217
218 jj. [OSHA 29 CFR 1926.1112: Ethyleneimine](#)
219
220 kk. [OSHA 29 CFR 1926.1113: beta-Propiolactone](#)
221
222 ll. [OSHA 29 CFR 1926.1114: 2-Acetylaminofluorene](#)
223
224 mm. [OSHA 29 CFR 1926.1115: 4-Dimethylaminoazobenzene](#)
225

- 226 nn. [OSHA 29 CFR 1926.1116: *N-Nitrosodimethylamine*](#)
227
228 oo. [OSHA 29 CFR 1926.1117: *Vinyl Chloride*](#)
229
230 pp. [OSHA 29 CFR 1926.1118: *Inorganic Arsenic*](#)
231
232 qq. [OSHA 29 CFR 1926.1124: *Beryllium*](#)
233
234 rr. [OSHA 29 CFR 1926.62: *Lead*](#)
235
236 ss. [OSHA 29 CFR 1926.1126: *Chromium \(VI\)*](#)
237
238 tt. [OSHA 29 CFR 1926.1127: *Cadmium*](#)
239
240 uu. [OSHA 29 CFR 1926.1128: *Benzene*](#)
241
242 vv. [OSHA 29 CFR 1926.1144: *1,2-Dibromo-3-Chloropropane*](#)
243
244 ww. [OSHA 29 CFR 1926.1145: *Acrylonitrile*](#)
245
246 xx. [OSHA 29 CFR 1926.1147: *Ethylene Oxide*](#)
247
248 yy. [OSHA 29 CFR 1926.1148: *Formaldehyde*](#)
249
250 zz. [OSHA 29 CFR 1926.60: *Methylenedianiline*](#)
251
252 aaa. [OSHA 29 CFR 1926.1152: *Methylene Chloride*](#)
253
254 bbb. [OSHA 29 CFR 1926.1153: *Respirable Crystalline Silica*](#)
255
256 ccc. OSHA 3371-08 2009: *Hazard Communication Guidance for Combustible Dusts*
257
258

259 **5. APPLICABLE NIST DIRECTIVES**

- 260 a. NIST O 7101.00: [Occupational Safety and Health Management System](#)
261
262 b. NIST S 7101.60: [Chemical Management \(Chemical Hygiene Plan\)](#)
263
264 c. NIST S 7101.61: [Compressed Gas Safety](#)
265

- 266 d. NIST S 7101.28: *Non-R&D Contractor Safety* (Under development)
- 267
- 268 e. NIST S 7101.52: [*Cryogen Safety*](#)
- 269
- 270 f. NIST S 7101.54: [*Dispersible Engineered Nanomaterials*](#)
- 271
- 272 g. NIST S 7101.29: [*Medical Surveillance Program*](#)
- 273
- 274 h. NIST S 7101.21: [*Personal Protective Equipment*](#)
- 275
- 276 i. NIST S 7101.58: [*Respiratory Protection Program*](#)
- 277
- 278 j. NIST S 7101.23: [*Safety Education and Training*](#)
- 279
- 280 k. NIST S 7101.20: [*Work and Worker Authorization Based on Hazard Reviews*](#)
- 281
- 282 l. NIST S 7301.06: [*Chemical Waste Accumulation/Disposal at NIST-Gaithersburg Program*](#)
- 283
- 284 m. NIST S 7301.07: [*Chemical Waste Accumulation/Disposal at NIST-Boulder Program*](#)
- 285

287 6. REQUIREMENTS

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

- 295
- 296 a. Chemical Hazard Determinations and Classifications (required for potentially Hazardous
297 Chemicals)

298

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

304

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

308

309 (1) General Requirements

310

311 (a) Chemical hazard determinations and classifications shall be performed as early as
312 possible, preferably prior to the chemical being produced or used.

313

314 (b) Chemical hazard determinations and classifications shall follow the procedures
315 described in 29 CFR 1910.1200 - Appendices A and B to determine and classify the
316 hazards of the chemicals, including determinations regarding when chemical mixtures
317 are covered. When determining or classifying chemical mixtures produced or
318 imported by NIST employees or associates, the information provided on the current
319 SDSs of the individual ingredients may be relied upon, except where it is known or in
320 the exercise of reasonable diligence should have been known that the SDS misstates
321 or omits information required by 29 CFR 1910.1200.

322

323 (c) Chemical hazard determinations and classifications shall identify and consider the full
324 range of available scientific literature and other evidence concerning the potential
325 hazards and shall consult:

326

327 i. 29 CFR 1910.1200-Appendix A regarding health hazards,

328

329 ii. 29 CFR 1910.1200-Appendix B regarding physical hazards,

330

331 iii. 29 CFR 1910.1200(c) regarding simple asphyxiant, pyrophoric gas, and
332 hazard not otherwise classified (see definition “Hazard Not Otherwise
333 Classified”) hazards, and

334

335 iv. 3371-08 2009 - *Hazard Communication Guidance for Combustible Dusts*
336 regarding combustible dust hazards.

337

338 (d) Chemical hazard determinations shall determine all hazard classes described in 29
339 CFR 1910.1200 that apply to the chemical being classified.

340

341 (e) Chemical hazard classifications shall determine all hazard classes⁷ and, where
342 appropriate, the category of each hazard class described in 29 CFR 1910.1200 that

⁷ HCS 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

343 apply to the chemical being classified. The hazard classification shall include any
 344 hazards associated with the chemical’s intrinsic properties including:

- 345
- 346 i. A change in the chemical’s physical form; and,
- 347
- 348 ii. Chemical reaction products associated with known or reasonably anticipated
 349 uses or applications.
- 350
- 351 (f) Chemical hazard classifications and determinations for chemicals regulated by OSHA
 352 in the Chemical-Specific Health Standards shall be performed in compliance with the
 353 procedures described in the OSHA Chemical-Specific Health Standards, when
 354 applicable (see Appendix B of this suborder), and specific hazards shall be addressed
 355 with respect to the chemical (see Appendix C of this suborder).
- 356
- 357 (g) Chemical hazard classifications shall be described in writing and include a
 358 description of the classification process, any relevant data regarding the chemical
 359 hazards, and a description of the basis of determination for any assigned hazard
 360 classes and, where appropriate, the category of each hazard class described in 29 CFR
 361 1910.1200 that apply to the chemical being classified.

362

363 (2) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Meets the
 364 Definition of “Laboratory Use”

- 365
- 366 (a) Chemical hazard classifications shall be conducted for chemicals acquired at a NIST
 367 workplace that will be shipped from the NIST workplace, whenever the chemical
 368 users decide that the results of the chemical hazard classifications contained in the
 369 SDSs obtained from the suppliers shall not be relied upon⁸ and when SDSs were not
 370 provided by the suppliers.
- 371
- 372 (b) Chemical hazard determinations shall be conducted for chemicals acquired at a NIST
 373 workplace that will not be shipped from the NIST workplace, whenever the chemical
 374 users decide that the results of the chemical hazard classifications contained in the
 375 SDSs obtained from the suppliers shall not be relied upon and when SDSs were not
 376 provided by the suppliers.

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 hazard classes include additional criteria (*e.g.*, route or frequency of exposure, physical state of chemical); see the HCS for complete hazard class information.

⁸ Chemical manufacturers should be contacted to communicate any discrepancies in the obtained SDSs and to request revised SDSs.

- 377
378 (c) Chemical hazard classifications shall be conducted for chemicals produced at a NIST
379 workplace that will be shipped from the NIST workplace.
380
381 (d) Chemical hazard determinations shall be conducted for chemicals produced at a NIST
382 workplace that will not be shipped from the NIST workplace.
383
384 (3) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Does Not Meet
385 the Definition of “Laboratory Use”
386
387 (a) Chemical hazard classifications shall be conducted for chemicals acquired at a NIST
388 workplace, whenever the chemical users decide that the results of the chemical hazard
389 classifications contained in the SDSs obtained from the suppliers shall not be relied
390 upon⁹.
391
392 (b) Chemical hazard classifications shall be conducted for chemicals produced at a NIST
393 workplace.
394
395 b. Safety Data Sheets (required for Hazardous Chemicals)
396
397 (1) General Requirements
398
399 (a) SDSs shall include the same product identifier, name, address, and telephone number
400 of the chemical manufacturer, importer, or other responsible party used on the
401 container label.
402
403 (b) SDSs shall be in English.
404
405 (c) SDSs developed by or on behalf of employees or covered associates shall contain the
406 section numbers and section headings in the order specified in 29 CFR Part
407 1910.1200(g)(2) and include the information specified in 29 CFR Part 1910.1200-
408 Appendix D.
409
410 i. If no relevant information is found for any sub-heading within a section on the
411 SDS, the SDS shall be marked to indicate that no applicable information was
412 found.
413

⁹ Chemical manufacturers should be contacted to communicate any discrepancies in the obtained SDSs and to request revised SDSs.

- 414 (d) SDSs developed by or on behalf of employees or covered associates shall contain
415 information that accurately reflects the scientific evidence used in the associated
416 Chemical Hazard Classifications.
417
- 418 (e) SDSs developed by or on behalf of employees or covered associates shall be revised
419 within 3 months of employees or covered associates becoming newly aware of any
420 significant information regarding the hazards of a chemical, or ways to protect against
421 the hazards. The revised SDS shall be provided with all future shipped containers of
422 the chemical. If the chemical is not currently being produced or imported at the NIST
423 workplace, the SDS shall be revised before the chemical is introduced into or shipped
424 from the NIST workplace again.
425
- 426 (f) SDSs for each hazardous chemical listed on a Hazardous Chemical Inventory List
427 shall be readily accessible in the work area electronically¹⁰ or in hard copy during
428 each work shift when employees or covered associates are present.
429
- 430 (g) SDSs shall be readily available upon request and in accordance with the requirements
431 of 29 CFR 1910.1020(e).
432
- 433 (2) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Meets the
434 Definition of “Laboratory Use”
435
- 436 (a) SDSs received with incoming shipments shall be maintained and readily accessible in
437 the work area electronically or in hard copy during each work shift when employees
438 or covered associates are present.
439
- 440 (b) SDSs shall be developed for chemicals acquired at a NIST workplace that will be
441 shipped from the NIST workplace, whenever the chemical users decide that the
442 results of the chemical hazard classifications contained in the SDSs obtained from the
443 suppliers shall not be relied upon¹¹ and when SDSs were not provided by the
444 suppliers.
445
- 446 (c) SDSs shall be developed for chemicals produced at a NIST workplace that will be
447 *shipped* from the NIST workplace.
448

¹⁰ “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.

¹¹ Chemical manufacturers should be contacted to communicate any discrepancies in the obtained SDSs and to request revised SDSs.

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

451
452 (a) SDSs received with incoming shipments shall be maintained and readily accessible in
453 the work area electronically or in hard copy during each work shift when employees
454 or covered associates are present. *If an SDS was not provided with a shipment and not*
455 *already possessed at the time of delivery, the SDS shall be obtained from the supplier*
456 *as soon as possible.*

457
458 (b) SDSs shall be developed for chemicals acquired at a NIST workplace that will be
459 shipped from the NIST workplace, whenever the chemical users decide that the
460 results of the chemical hazard classifications contained in the SDSs obtained from the
461 suppliers shall not be relied upon¹².

462
463 (c) SDSs shall be developed for chemicals produced at a NIST workplace.

464
465 (4) Hazardous Chemicals Shipped from a NIST Workplace

466
467 (a) SDSs shall be provided with the initial shipment and upon request to each recipient.
468 If the SDS has been revised, the revised SDS shall be provided with the first shipment
469 to each recipient that occurs after the SDS has been revised.

470
471 c. Labels and Other Forms of Warning

472
473 (1) General Requirements

474
475 (a) Labels and other forms of warning shall be prominently displayed.

476
477 (b) Labels and other forms of warning shall be in English, legible, and contain
478 information that is current.

479
480 (c) Labels and other forms of warning shall be revised within 6 months of employees or
481 covered associates becoming newly aware of significant information regarding the
482 hazards of a chemical. The revised label shall be provided with all future shipped
483 containers of the chemical. If the chemical is not currently present at the NIST
484 workplace, labels and other forms of warning shall be revised before the chemical is
485 introduced into or shipped from the NIST workplace again.

486

¹² Chemical manufacturers should be contacted to communicate any discrepancies in the provided SDSs and to request revised SDSs.

487 (2) Hazardous Chemicals at a NIST Workplace

488

489 (a) Hazardous chemical containers shall be labeled, tagged, or marked with¹³:

490

491 **EITHER**

492

493 i. Shipped Container Label Information

494

495 (i) Product identifier;

496

497 (ii) Signal word, hazard statement(s), pictogram(s), and precautionary
498 statement(s) in accordance with the requirements of 29 CFR
499 1910.1200-Appendix C, for each hazard class and associated hazard
500 category for the hazardous chemical;

501

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

504

505 (iv) NIST Chemical Owner Name¹⁴.

506

507 **OR**

508

509 ii. Workplace Container Label Information

510

511 (i) Product identifier;

512

513 (ii) Words, pictures, symbols, or combination thereof, which provide at
514 least general information regarding the hazards of the chemicals, and
515 which, in conjunction with the other information immediately
516 available under NIST S 7101.59: *Chemical Hazard Communication*,
517 will provide employees and covered associates with the specific
518 information regarding the physical and health hazards of the hazardous
519 chemical; and

520

¹³ 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.

¹⁴ SRMs stored under the control of the Office of Reference Materials (ORM) are not required to be labeled with the NIST Chemical Owner Name.

- 521 (iii) NIST Chemical Owner Name¹⁵.
522
523 (b) Existing labels on chemical containers entering a NIST workplace shall not be
524 removed or defaced, unless the containers are immediately marked, labeled, or tagged
525 with the required information¹⁶.
526
527 (c) Alternate methods of labeling (*e.g.*, signs, placards, process sheets, batch tickets,
528 operating procedures, or other such written materials) may be used in lieu of affixing
529 labels to individual stationary process containers¹⁷, as long as the alternative method:
530
531 i. Identifies the containers to which it is applicable;
532
533 ii. Conveys the information required to be on a label in accordance with Section
534 6c(2)(a) of this suborder; and
535
536 iii. Is readily accessible to the employees and covered associates in their work
537 area throughout each work shift.
538
539 (d) Labeling for chemicals regulated by OSHA in the Chemical-Specific Health
540 Standards shall be performed in compliance with the procedures described in the
541 OSHA Chemical-Specific Health Standards, when applicable (see Appendix B of this
542 suborder), and additional labeling requirements shall be addressed with respect to the
543 chemical (see Appendix C of this suborder).
544
545 (e) Portable containers into which hazardous chemicals are transferred from labeled
546 containers, and which are intended only for the immediate use (see definition of
547 “Immediate Use”) of the employee or covered associate who performs the transfer,
548 may be labeled but are not required to be.
549
550 (3) Hazardous Chemicals Shipped from a NIST Workplace
551

¹⁵ SRMs stored under the control of the ORM are not required to be labeled with the NIST Chemical Owner Name.

¹⁶ 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.

¹⁷ 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)].

- 552 (a) Each hazardous chemical container leaving the NIST workplace shall be labeled,
553 tagged, or marked with the following in a manner which does not conflict with the
554 requirements of the Hazardous Materials Transportation Act (49 U.S.C. 1801 et seq.)
555 and regulations issued under that Act by the Department of Transportation¹⁸:
556
- 557 i. Product identifier;
 - 558
 - 559 ii. Signal word, hazard statement(s), pictogram(s) and precautionary statement(s)
560 in accordance with the requirements of 29 CFR 1910.1200-Appendix C, for
561 each hazard class and associated hazard category for the hazardous chemical;
562 and
 - 563
 - 564 iii. Name, address, and telephone number of the chemical manufacturer, importer,
565 or other responsible party. If the hazardous chemical was produced by NIST,
566 the container shall be labeled, tagged, or marked with:
567
 - 568 (i) National Institute of Standards and Technology;
 - 569
 - 570 (ii) NIST Responsible Party Name (*i.e.*, OU/Division Name);
 - 571
 - 572 (iii) NIST Responsible Party Address (*i.e.*, OU/Division Address); and,
 - 573
 - 574 (iv) NIST Responsible Party Telephone Number (*i.e.*, OU/Division
575 Telephone Number for the NIST employee or covered associate who
576 has been designated to provide additional information on the
577 hazardous chemical and appropriate emergency procedures, if
578 necessary.)¹⁹.
 - 579
- 580 (b) The signal word, hazard statement(s), pictogram(s), and precautionary statement(s)
581 shall be located together on the container label, tag, or mark.
582
- 583 (c) Pictograms
- 584
 - 585 i. Where a pictogram required by the Department of Transportation under title
586 49 of the Code of Federal Regulations appears on a shipped container, the

¹⁸ 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).

¹⁹ 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.

587 pictogram specified in Appendix C.4 of the HCS for the same hazard shall not
588 be required on the label.

589

590 (d) Bulk Shipments

591

592 i. The label for bulk shipments of hazardous chemicals shall be on the
593 immediate container, transmitted with the shipping papers or the bills of
594 lading, or, with the agreement of the receiving entity, transmitted by
595 technological or electronic means so that it is immediately available to
596 workers in printed form on the receiving end of shipment.

597

598 (e) Small Container Labelling

599

600 i. Where it is not feasible to use pull-out labels, fold-back labels, or tags containing
601 the full label information required [see Section 6c(3)(a)], containers less than or
602 equal to 100 ml capacity shall include, at a minimum, the following information
603 on the label of the container:

604

605 (i) Product identifier;

606

607 (ii) Signal word and pictogram(s) in accordance with the requirements of 29
608 CFR 1910.1200-Appendix C, for each hazard class and associated hazard
609 category for the hazardous chemical;

610

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

613

614 (iv) A statement that the full label information for the hazardous chemical is
615 provided on the immediate outer package.

616

617 ii. Where it is not feasible to use pull-out labels, fold-back labels, or tags containing
618 the full label information required [see Section 6c(3)(a)] or any label interferes
619 with the normal use of the container, containers less than or equal to 3 ml capacity
620 do not require a label but shall bear, at a minimum, the Product Identifier.

621

622 iii. The immediate outer package shall include:

623

624 (i) The full label information required [see Section 6c(3)(a)]; and,

625

626 (ii) A statement that the small container(s) inside must be stored in the immediate
627 outer package bearing the complete label when not in use.

628

629 (4) Non-Hazardous Chemicals at a NIST Workplace

630

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

632

633 i. Product identifier; and,

634

635 ii. NIST Chemical Owner Name²⁰.

636

637 d. Hazardous Chemical Inventory Lists²¹ (required for Hazardous Chemicals)

638

639 (1) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Meets the
640 Definition of “Laboratory Use”.

641

642 (a) Hazardous Chemical Inventory Lists shall be prepared and list all commercially-
643 acquired hazardous chemicals²² present in OU-assigned work areas.

644

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

648

649 (c) Hazardous Chemical Inventory Lists shall be maintained and made readily available
650 upon request electronically or in hard copy.

651

652 (2) Hazardous Chemicals at a NIST Workplace whose Use at that Workplace Does Not Meet
653 the Definition of “Laboratory Use”

²⁰ SRMs stored under the control of the ORM are not required to be labeled with the NIST Chemical Owner Name.

²¹ 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.

²² 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.

- 654
655 (a) Hazardous Chemical Inventory Lists shall be prepared and list all hazardous
656 chemicals present in OU-assigned work areas.
657
658 (b) Hazardous Chemical Inventory Lists shall include the product identifiers that are
659 referenced on the corresponding container labels and SDSs of the hazardous
660 chemicals present in OU-assigned work areas.
661
662 (c) Hazardous Chemical Inventory Lists shall be maintained and made readily available
663 upon request electronically or in hard copy.
664

665 e. Hazardous Activities

- 666
667 (1) The chemical hazards of routine and non-routine activities performed by NIST
668 employees and covered associates shall be communicated to all NIST employees and
669 covered associates who may be exposed to the hazardous chemicals in accordance with
670 the training requirements of this suborder and the requirements of NIST S 7101.20:
671 *Work and Worker Authorization Based on Hazard Reviews.*²³
672

673 f. Hazardous Chemicals in Pipes

- 674
675 (1) The identities and hazards of hazardous chemicals located inside of pipes shall be
676 communicated to all NIST employees and covered associates who may be exposed to the
677 hazardous chemicals under normal conditions of use or in a foreseeable emergency (see
678 definition of “Foreseeable Emergency”) in accordance with the training requirements of
679 this suborder and the requirements of NIST S 7101.20: *Work and Worker Authorization*
680 *Based on Hazard Reviews.*
681

682 g. Information and Training

- 683
684 (1) Training shall be provided, documented, and recorded in accordance with the
685 requirements of the NIST S 7101.23: *Safety Education and Training.*
686
687 (2) All employees and covered associates to whom this suborder applies shall be provided
688 with effective information and training on the hazardous chemicals in their work areas.
689 Information and training may be designed to cover categories of hazards (e.g.,

²³ As part of the risk assessment process, staff should consult with OSHE regarding the need for a health hazard evaluation if the work will be performed with a chemical that may have an adverse health effect if exposed to it. OSHE will perform evaluation, monitoring, and/or sampling in accordance with NIST S 7101.29 to determine whether the potential exposure is near or above any regulatory limits and the appropriate medical surveillance program to enroll in, if necessary.

690 flammability, carcinogenicity) or specific chemicals; however, chemical-specific
691 information must always be available through labels and other forms of warning and
692 SDSs.

693
694 (3) All employees and covered associates to whom this suborder applies shall receive the
695 following training at the time of their initial assignment to a NIST workplace:

696
697 (a) Training provided by OSHE on the details of this suborder, covering the following
698 topics:

- 699
- 700 i. The requirements of 29 CFR 1910.1200;
 - 701
 - 702 ii. The location, availability, and requirements of this suborder, including the
703 Hazardous Chemical Inventory List, Container Labeling and Other Forms of
704 Warning, and SDSs required by this suborder and 29 CFR 1910.1200;
 - 705
 - 706 iii. An explanation of the labels received on containers acquired at a NIST
707 workplace;
 - 708
 - 709 iv. An explanation of the labeling system employed at a NIST workplace; and
710
 - 711 v. An explanation of the SDSs, including the order of information and how
712 employees and covered associates can obtain and use appropriate hazard
713 information.

714
715 (b) Information provided by the OU/division on the hazardous chemicals in the
716 employee's or associate's work area(s), covering the following topics:

- 717
- 718 i. Any activities in the work area where hazardous chemicals are present;
 - 719
 - 720 ii. How to obtain access to the Hazardous Chemical Inventory List and SDSs for
721 the hazardous chemicals in the work area.

722
723 (c) Training provided by the OU/division on the hazardous chemicals in the employee's
724 or associate's work area(s), covering the following topics:

- 725
- 726 i. The physical, health, simple asphyxiation, combustible dust, and pyrophoric
727 gas hazards, as well as the hazards not otherwise classified, of the hazardous
728 chemicals in the work area;

729

- 730 ii. Measures employees and covered associates can take to protect themselves
- 731 from these hazards, including specific procedures implemented to prevent
- 732 exposure to the hazardous chemicals in the work area, such as appropriate
- 733 work practices, emergency procedures, and personal protective equipment;
- 734 and,
- 735
- 736 iii. Methods and observations that may be used to detect the presence or release
- 737 of the hazardous chemicals in the work area.
- 738

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

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

741

- 742 (4) All employees and covered associates to whom this suborder applies shall receive the
- 743 following information whenever a new chemical hazard for which they previously have
- 744 not been trained is introduced into their work area:
- 745

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

747

- 748 i. Any operations in the work area where the new chemical hazard is present;
- 749

- 750 (5) All employees and covered associates to whom this suborder applies shall receive the
- 751 following training whenever a new chemical hazard for which they previously have not
- 752 been trained is introduced into their work area:
- 753

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

755

- 756 i. A description of the new chemical hazard;
- 757
- 758 ii. Measures employees and covered associates can take to protect themselves
- 759 from the new chemical hazard in the work area; and
- 760
- 761 iii. Methods and observations that may be used to detect the presence or release
- 762 of the new, chemical hazard in the work area.
- 763

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

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

766

- 767 (6) All employees and covered associates to whom this suborder applies shall receive
- 768 information and training from OSHE as specified in the OSHA Chemical-Specific Health

769 Standards, when applicable (see Appendix B) and specific information and training shall
770 be addressed with respect to the chemical (see Appendix C of this suborder).

771

772 h. Informing Other Employers

773

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

778

779 (a) On-site access to SDSs, either electronically or in hard copy, for the hazardous
780 chemicals to which their personnel may be exposed;

781

782 (b) Information on the training provided to their personnel on any precautionary
783 measures that their personnel need to take to protect themselves during the
784 workplace's normal operating conditions and in foreseeable emergencies; and

785

786 (c) Copies of this program, including a description of the labeling system used at
787 pertinent NIST workplaces.

788

789

790 **7. DEFINITIONS**

791 a. Activity – An experiment, operation, process, or job, often comprising subtasks, conducted to
792 achieve a specific outcome.

793

794 b. Article – A manufactured item (*e.g.*, a plastic pipe, silicon wafer) other than a fluid or
795 particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has
796 end use function(s) dependent in whole or in part upon its shape or design during end use;
797 and (iii) which under normal conditions of use does not release more than very small
798 quantities, *e.g.*, minute or trace amounts of a hazardous chemical (as determined in 29 CFR
799 1910.1200(d)), and does not pose a physical hazard or health risk to individuals.

800

801 c. Biohazard – A biological material or agent that presents potential risk to the health of
802 humans or other organisms either directly through infection or indirectly through damage to
803 the environment. Biohazards include, but are not limited to, bacteria; fungi; viruses;
804 parasites; rickettsia; biological toxins; prions; non-human mammalian cell lines and tissues;
805 human specimens such as human blood, serum, plasma, blood products, primary and
806 continuous human cell lines, unfixed human tissues, fecal materials, semen, vaginal
807 secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid,
808 amniotic fluid, saliva, tears, sweat, breast milk, and urine; and recombinant DNA materials

- 809 such as inserts or vectors that are known to express toxins, oncogenes, and/or virulent
810 factors. Non-toxic proteins and commercially available enzymes, cell culture medium and
811 supplements, reagents such as monoclonal antibodies, and random DNA base pairs are not
812 considered biohazards.
- 813
- 814 d. Biohazardous Material – See definition of biohazard.
- 815
- 816 e. Bulk Shipment – Any hazardous chemical transported where the mode of transportation
817 comprises the immediate container (*i.e.*, contained in tanker truck, rail car, or intermodal
818 container).
- 819
- 820 f. Chemical – Any substance or mixture of substances.
- 821
- 822 g. Chemical Hazard Classification – To identify the relevant data regarding the hazards of a
823 chemical; review those data to ascertain the hazards associated with the chemical; and decide
824 whether the chemical will be classified as hazardous (see definition “Hazardous Chemical”).
825 In addition, Chemical Hazard Classification for health and physical hazards includes the
826 determination of the degree of hazard, where appropriate, by comparing the data with the
827 HCS criteria for health and physical hazards.
- 828
- 829 h. Chemical Hazard Determination – To identify the relevant data regarding the hazards of a
830 chemical; review those data to ascertain the hazards associated with the chemical by
831 comparing the data with the HCS criteria for health and physical hazards; and deciding
832 whether the chemical will be classified as hazardous (see definition “Hazardous Chemical”).
833 Chemical Hazard Determination does not include determining the degree of each health and
834 physical hazard.
- 835
- 836 i. Chemical Hazard Warning – Any words, pictures, symbols, or combination thereof that
837 appears on a container label, other form of warning (*e.g.*, placard, sign), or SDS which
838 conveys the hazards of a chemical in a container.
- 839
- 840 j. Chemical Manufacturer – An employer with a workplace where chemical(s) are produced for
841 use or distribution. Note: Laboratory employers that ship hazardous chemicals are considered
842 to be either a chemical manufacturer or distributor.
- 843
- 844 k. Chemical Name – The scientific designation of a chemical in accordance with the
845 nomenclature system developed by the International Union of Pure and Applied Chemistry
846 (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name that will
847 clearly identify the chemical for the purpose of conducting a hazard classification.
- 848

- 849 l. Chemical Owner – A NIST employee or covered associate whose name appears on one or
850 more chemical containers.
851
- 852 m. Chemical Owner Name – The first name or first initial and last name of the NIST Chemical
853 Owner.
854
- 855 n. CIMS (Chemical Inventory Management System) – A relational database system currently
856 used by NIST for tracking chemical inventory, generating labels, and managing SDSs.
857
- 858 o. Combustible Dust – Finely divided solid particulates of a substance or mixture that pose a
859 flash-fire hazard or explosion hazard when dispersed in air or other oxidizing media.
860
- 861 p. Common Name – Any designation or identification such as code name, code number, trade
862 name, brand name or generic name used to identify a chemical other than by its chemical
863 name.
864
- 865 q. Consumer Product – Any article, or component part thereof, produced or distributed (i) for
866 sale to a consumer for use in or around a permanent or temporary household or residence, a
867 school, in recreation, or otherwise, or (ii) for the personal use, consumption or enjoyment of
868 a consumer in or around a permanent or temporary household or residence, a school, in
869 recreation, or otherwise.
870
- 871 r. Container – Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or
872 the like that contains a hazardous chemical. For purposes of this program, pipes or piping
873 systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered
874 to be containers.
875
- 876 s. Distributor – A business, other than a chemical manufacturer or importer, which supplies
877 hazardous chemicals to other distributors or to employers. Note: Laboratory employers that
878 ship hazardous chemicals are considered to be either a chemical manufacturer or distributor.
879
- 880 t. Document Custodian – An OSHE employee assigned to serve as the point of contact for a
881 specific document and to carry out the responsibilities delineated in the Document and
882 Record Control Program.
883
- 884 u. Exposure or Exposed – An employee is subjected in the course of employment to a
885 hazardous chemical, and includes potential (*e.g.*, accidental or possible) exposure.
886 "Subjected" in terms of health hazards includes any route of entry (*e.g.*, inhalation, ingestion,
887 skin contact or absorption.)
888

- 889 v. Foreseeable Emergency – Any potential occurrence such as, but not limited to, equipment
890 failure, rupture of containers, or failure of control equipment which could result in an
891 uncontrolled release of a hazardous chemical into the workplace.
892
- 893 w. Gas – a substance which (i) At 122 °F (50 °C) has a vapor pressure greater than 43.51 PSI
894 (300 kPa) (absolute); or (ii) Is completely gaseous at 68 °F (20 °C) at a standard pressure of
895 14.69 PSI (101.3 kPa).
896
- 897 x. Hazard Category – The division of criteria within each hazard class, *e.g.*, oral acute toxicity
898 and flammable liquids include four hazard categories. These categories compare hazard
899 severity within a hazard class and should not be taken as a comparison of hazard categories
900 more generally.
901
- 902 y. Hazard Class – The nature of the physical or health hazards (*e.g.*, flammable solid,
903 carcinogen, oral acute toxicity).
904
- 905 z. Hazard Not Otherwise Classified (HNOC) – An adverse physical or health effect identified
906 through evaluation of scientific evidence during the Chemical Hazard Classification or
907 Chemical Hazard Determination process that does not meet the specified criteria for the
908 physical and health hazard classes addressed in 29 CFR 1910.1200. This does not extend
909 coverage to adverse physical and health effects for which there is a hazard class addressed in
910 29 CFR 1910.1200, but the effect either falls below the cut-off value/concentration limit of
911 the hazard class or is under a GHS hazard category that has not been adopted by OSHA (*e.g.*,
912 acute toxicity Category 5).
913
- 914 aa. Hazard Statement – A statement assigned to a hazard class and category that describes the
915 nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
916
- 917 bb. Hazardous Chemical – Any chemical which is classified as a physical hazard or a health
918 hazard, a simple asphyxiant, combustible dust, or hazard not otherwise in accordance with 29
919 CFR 1910.1200.
920
- 921 cc. Health Hazard – A chemical which is classified as posing one of the following hazardous
922 effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye
923 damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity;
924 carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated
925 exposure); or aspiration hazard. The criteria for determining whether a chemical is classified
926 as a health hazard are detailed in 29 CFR 1910.1200-Appendix A.
927
- 928 dd. Immediate Outer Package – The first package enclosing the container of hazardous chemical.

- 929
- 930 ee. Immediate Use – The hazardous chemical will be under the control of and used only by the
- 931 person who transfers it from a labeled container and only within the work shift in which it is
- 932 transferred.
- 933
- 934 ff. Importer – The first business with employees within the Customs Territory of the United
- 935 States which receives hazardous chemicals produced in other countries for the purpose of
- 936 supplying them to distributors or employers within the United States.
- 937
- 938 gg. Inter-Company Transfer – Transporting hazardous chemicals from one company property to
- 939 another company property.
- 940
- 941 hh. Intra-Plant Transfer – Transporting hazardous chemicals from one location to another
- 942 location within the same building.
- 943
- 944 ii. Label – An appropriate group of written, printed or graphic information elements concerning
- 945 a hazardous chemical that is affixed to, printed on, or attached to the immediate container of
- 946 a hazardous chemical, or to the outside packaging.
- 947
- 948 jj. Label Elements – The specified pictogram, hazard statement, signal word and precautionary
- 949 statement for each hazard class and category, as specified in 29 CFR 1910.1200-Appendix C.
- 950
- 951 kk. Laboratory – For the purposes of this program, a work area where the “Laboratory Use” (see
- 952 definition of “Laboratory Use”) of hazardous chemicals occurs. It is a workplace where
- 953 relatively small quantities of hazardous chemicals are used on a non-production basis.
- 954
- 955 ll. Laboratory Scale – For the purposes of this program, scale of work in which the
- 956 procedures/containers used for reactions, transfers, and other handling of chemicals are
- 957 designed to be easily and safely carried out/manipulated by one person. "Laboratory Scale"
- 958 excludes work whose purpose is to produce commercial quantities of materials.
- 959
- 960 mm. Laboratory Use – For the purposes of this program, use of hazardous chemicals in which all
- 961 of the following conditions are met:
- 962
- 963 (1) Chemical manipulations are carried out on a "Laboratory Scale" (see definition of
- 964 “Laboratory Scale”);
- 965
- 966 (2) Multiple chemical procedures or chemicals are used²⁴;

²⁴ [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.

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(3) The procedures involved are not part of a production process, nor in any way simulate a production process; and

(4) "Protective Laboratory Practices and Equipment" (see definition of "Protective Laboratory Practices and Equipment") are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

nn. LC RAM (Limited Control RAM) – RAM that is:

(1) Byproduct material exempted under 10 CFR 30;

(2) Unimportant quantities of source material as per 10 CFR 40.13;

(3) RAM such as that described in 10 CFR 31.8, 10 CFR 40.22, and 10 CFR 70.19 that is not part of a GL device;

(4) Incidentally-Activated RAM; or

(5) Any other RAM determined by the RSO to warrant some degree of control for RSP purposes.

oo. Liquid – A substance or mixture which at 122 °F (50 °C) has a vapor pressure of not more than 43.51 PSI (300 kPa (3 bar)), which is not completely gaseous at 68 °F (20 °C) and at a standard pressure of 101.3 kPa, and which has a melting point or initial melting point of 68 °F (20 °C) or less at a standard pressure of 14.69 PSI (101.3 kPa). Either ASTM D4359–90 (R2019) (incorporated by reference, see § 1910.6); or the test for determining fluidity (penetrometer test) prescribed in section 2.3.4 of ADR 2019 (incorporated by reference, see § 1910.6) can establish whether a viscous substance or mixture is a liquid if a specific melting point cannot be determined.

pp. Mixture – A combination or a solution composed of two or more substances in which they do not react.

qq. NIST Visitor – Any individual at a NIST workplace who is not a NIST employee or associate.

rr. NIST Workplace – An establishment at one geographical location containing one or more "work areas" and at which NIST employees and covered associates conduct work (see

- 1006 definition of “Work Area”). NIST workplaces include, but are not limited to, NIST
1007 Gaithersburg, NIST Boulder, and NIST joint institutes.
1008
- 1009 ss. Non-Hazardous Chemical – For the purposes of this program, any chemical that does not
1010 meet the definition of “Hazardous Chemical” (see definition “Hazardous Chemical”).
1011
- 1012 tt. Non-Laboratory Use – For the purposes of this program, use of hazardous chemicals that
1013 does not meet the definition of “Laboratory Use” (see definition of “Laboratory Use”).
1014
- 1015 uu. Organizational Unit (OU)-Assigned Space or Work Area – For the purposes of this
1016 program, a space or work area assigned to an OU in the NIST space management system
1017 maintained by the Office of Facilities and Property Management or assigned to an OU by
1018 another OU on a non-permanent basis (*i.e.*, loaned).
1019
- 1020 vv. Package – A receptacle and any other components or materials necessary for the receptacle
1021 to perform its containment function in conformance with the minimum packing
1022 requirements of the U. S. Department of Transportation's Hazardous Materials Regulations
1023 (49 CFR Parts 171 through 180).
1024
- 1025 ww. Physical Hazard – A chemical that is classified as posing one of the following hazardous
1026 effects: explosive; flammable (gases, liquids, or solids); aerosols; oxidizer (gases, liquids, or
1027 solids); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive
1028 to metal; gas under pressure; in contact with water emits flammable gas; or desensitized
1029 explosive. The criteria for determining whether a chemical is classified as a physical hazard
1030 are detailed in 29 CFR 1910.1200-Appendix B.
1031
- 1032 xx. Physician or other licensed health care professional (PLHCP) – an individual whose legally
1033 permitted scope of practice (*i.e.*, license, registration, or certification) allows the individual
1034 to independently provide or be delegated the responsibility to provide some or all of the
1035 health care services referenced in paragraph (i) of 29 CFR 1910.1200.
1036
- 1037 yy. Pictogram – A composition that may include a symbol plus other graphic elements, such as
1038 a border, background pattern, or color, that is intended to convey specific information about
1039 the hazards of a chemical. Eight pictograms are designated under 29 CFR 1910.1200 for
1040 application to a hazard category.
1041
- 1042 zz. Precautionary Statement – A phrase that describes recommended measures that should be
1043 taken to minimize or prevent adverse effects resulting from exposure to a hazardous
1044 chemical, or improper storage or handling.
1045

- 1046 aaa. Produce – To manufacture, process, formulate, blend, extract, generate, emit, package, or
1047 repackage.
1048
- 1049 bbb. Product Identifier – The name or number used for a hazardous chemical on a label or in the
1050 SDS. It provides a unique means by which the user can identify the chemical. The product
1051 identifier used shall permit cross-references to be made among the list of hazardous
1052 chemicals required in the written hazard communication program, the label and the SDS.
1053
- 1054 ccc. Protective Laboratory Practices and Equipment – Laboratory practices and equipment
1055 accepted by laboratory health and safety experts as effective, or that the employer can show
1056 to be effective, in minimizing the potential for employee exposure to hazardous chemicals.
1057
- 1058 ddd. RAM (Radioactive Material) – Material permitted at NIST Gaithersburg under SNM-362, a
1059 GL, or as LC RAM.
1060
- 1061 eee. Regulated Area – An area, demarcated by the employer, where:
1062
- 1063 (1) An employee's exposure to airborne concentrations of asbestos exceed, or there is a
1064 reasonable possibility they may exceed, the permissible exposure limits; or
1065
 - 1066 (2) An employee's airborne exposure exceeds, or can reasonably be expected to exceed,
1067 either the time-weighted average (TWA) permissible exposure limit (PEL) or short-term
1068 exposure limit (STEL); or
1069
 - 1070 (3) An employee's exposure to airborne concentrations of chromium (VI) exceeds, or can
1071 reasonably be expected to exceed, the PEL; or
1072
 - 1073 (4) An employee's exposure to airborne concentrations of cadmium exceeds, or can
1074 reasonably be expected to exceed the permissible exposure limit (PEL); or
1075
 - 1076 (5) Airborne concentrations of benzene exceed or can reasonably be expected to exceed, the
1077 permissible exposure limits, either the 8-hour time weighted average exposure of 1 ppm
1078 or the short-term exposure limit of 5 ppm for 15 minutes; or
1079
 - 1080 (6) Airborne concentrations of MDA exceed or can reasonably be expected to exceed, the
1081 permissible exposure limits, or where dermal exposure to MDA can occur; or
1082
 - 1083 (7) Airborne concentrations of BD exceed or can reasonably be expected to exceed the 8-
1084 hour time weighted average (8-hr TWA) exposure of 1 ppm or the short-term exposure
1085 limit (STEL) of 5 ppm for 15 minutes; or

- 1086
- 1087 (8) An employee's exposure to airborne concentrations of MC exceeds or can reasonably be
- 1088 expected to exceed either the 8-hour TWA PEL or the STEL; or
- 1089
- 1090 (9) An employee's exposure to airborne concentrations of respirable crystalline silica
- 1091 exceeds, or can reasonably be expected to exceed, the PEL.
- 1092
- 1093 fff. Released for Shipment – A chemical that has been packaged and labeled in the manner in
- 1094 which it will be distributed or sold.
- 1095
- 1096 ggg. Responsible Party – Someone who can provide additional information on the hazardous
- 1097 chemical and appropriate emergency procedures, if necessary.
- 1098
- 1099 hhh. Safety Data Sheet (SDS) – Written or printed material concerning a hazardous chemical that
- 1100 is prepared in accordance with paragraph (g) of 29 CFR 1910.1200.
- 1101
- 1102 iii. Shipped Container – Any container that leaves the NIST workplace.
- 1103
- 1104 jjj. Signal Word – A word used to indicate the relative level of severity of hazard and alert the
- 1105 reader to a potential hazard on the label. The signal words used in 29 CFR 1910.1200 and
- 1106 this program are "DANGER" and "WARNING." "DANGER" is used for the more severe
- 1107 hazards, while "WARNING" is used for the less severe.
- 1108
- 1109 kkk. Simple Asphyxiant – A substance or mixture that displaces oxygen in the ambient
- 1110 atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to
- 1111 unconsciousness and death.
- 1112
- 1113 III. SNM (Special Nuclear Material) –
- 1114
- 1115 (1) Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and
- 1116 any other material that the NRC determines to be SNM, but not including source
- 1117 material; or
- 1118
- 1119 (2) Any material artificially enriched by any of the foregoing, but not including source
- 1120 material.
- 1121
- 1122 mmm. SNM-362 – A NRC license authorizing acquisition, use, transfer, and disposal of any
- 1123 chemical or physical form of the byproduct material specified in the license, but not
- 1124 exceeding quantities specified in the license, for purposes authorized by the license, at
- 1125 NIST–Gaithersburg.

- 1126
1127 nnn. SNM-362 RAM – Byproduct material, source material, and SNM that is acquired,
1128 possessed, used, transferred, or disposed of under SNM-362.
1129
1130 ooo. Solid – A substance or mixture which does not meet the definitions of liquid or gas.
1131
1132 ppp. Specific Chemical Identity – The chemical name, Chemical Abstracts (CAS) Registry
1133 Number, or any other information that reveals the precise chemical designation of the
1134 substance.
1135
1136 qqq. Stationary Process Container – A chemical process container that is not capable of being
1137 moved.
1138
1139 rrr. Substance – Chemical elements and their compounds in the natural state or obtained by
1140 any production process, including any additive necessary to preserve the stability of the
1141 product and any impurities deriving from the process used, but excluding any solvent
1142 which may be separated without affecting the stability of the substance or changing its
1143 composition.
1144
1145 sss. Use – To package, handle, react, emit, extract, generate as a byproduct, or transfer.
1146
1147 ttt. Work Area – A defined space in a workplace where hazardous chemicals are produced or
1148 used to which there is a reasonable likelihood that workers present in the space could be
1149 exposed.
1150
1151 uuu. Workplace – See definition “NIST Workplace”.

1152
1153

8. ACRONYMS

- 1155 a. ABS – Acrylonitrile Butadiene Styrene
1156
1157 b. ACM – Asbestos-Containing Material
1158
1159 c. AN – Acrylonitrile
1160
1161 d. BD – 1,3-Butadiene
1162
1163 e. CBD – Chronic Beryllium Disease (Berylliosis)
1164
1165 f. CFR – Code of Federal Regulations

- 1166
1167 g. CIMS – Chemical Inventory Management System
1168
1169 h. DBCP – 1,2-Dibromo-3-Chloropropane
1170
1171 i. EtO – Ethylene Oxide
1172
1173 j. GHS – Globally Harmonized System of Classification and Labelling of Chemicals
1174
1175 k. HCS – Hazard Communication Standard (OSHA 29 CFR 1910.1200: *Hazard*
1176 *Communication in General Industry*)
1177
1178 l. HNOC – Hazard Not Otherwise Classified
1179
1180 m. LC-RAM – Limited Control Radioactive Material
1181
1182 n. MC – Methylene Chloride
1183
1184 o. MDA – Methylenediamine
1185
1186 p. NIST – National Institute of Standards and Technology
1187
1188 q. ORM – Office of Reference Materials
1189
1190 r. OSH – Occupational Safety and Health
1191
1192 s. OSHA – Occupational Safety and Health Administration
1193
1194 t. OSHE – Office of Safety, Health, and Environment
1195
1196 u. OU – Organizational Unit
1197
1198 v. PEL – Permissible Exposure Limit
1199
1200 w. PPM – Parts Per Million
1201
1202 x. PACM – Presumed Asbestos-Containing Material
1203
1204 y. RAM – Radioactive Material
1205

- 1206 z. RSO – Radiation Safety Officer
- 1207
- 1208 aa. RSP – Radiation Safety Program
- 1209
- 1210 bb. SAN – Styrene-Acrylonitrile Resin
- 1211
- 1212 cc. SDS – Safety Data Sheet
- 1213
- 1214 dd. SNM – Special Nuclear Material
- 1215
- 1216 ee. SRM – Standard Reference Material
- 1217
- 1218 ff. STEL – Short-Term Exposure Limit
- 1219
- 1220 gg. TWA – Time-Weighted Average
- 1221
- 1222

9. RESPONSIBILITIES

- 1224 a. OU Directors²⁵ are responsible for:
 - 1225
 - 1226 (1) Establishing policies and procedures, as needed, for the requirements of this program to
 - 1227 be met as it applies to their employees and covered associates and to hazardous chemicals
 - 1228 in their OU-assigned space and ensuring that those policies and procedures are
 - 1229 implemented; and
 - 1230
 - 1231 (2) Ensuring subordinate managers have the authority, resources, and training needed to
 - 1232 implement OU-established policies and procedures.
 - 1233
- 1234 b. Division Chiefs (or Equivalent)²⁶ are responsible for:
 - 1235
 - 1236 (1) Implementing this program as it applies to activities involving their personnel and space
 - 1237 in accordance with any applicable OU-established policies and procedures.
 - 1238
- 1239 c. Organizational Unit (OU)/Division Safety Personnel are responsible for:

²⁵ 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.

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

1240

1241 (1) Participating in the implementation of this program in accordance with any applicable
1242 OU/division-established policies and procedures.

1243

1244 d. Chemical Owners²⁷ are responsible for:

1245

1246 (1) Ensuring that Chemical Hazard Classifications and Chemical Hazard Determinations
1247 have been performed in accordance with the requirements of this suborder for the
1248 chemicals they own;

1249

1250 (2) Ensuring that labels and other forms of warning have been provided according to the
1251 requirements of this suborder for chemicals they own;

1252

1253 (3) Taking appropriate action when notified by a user of a chemical container they own that
1254 the label on that container is illegible or contains information that is not current;

1255

1256 (4) Ensuring that SDSs have been obtained, produced, maintained, and provided according to
1257 the requirements of this suborder for chemicals they own;

1258

1259 (5) Ensuring that the Hazardous Chemical Inventory List has been maintained according to
1260 the requirements of this suborder for the chemicals they own;

1261

1262 (6) Ensuring that other employees and covered associates in the same work area will be
1263 informed when a new chemical hazard is to be introduced into the work area²⁸; and

1264

1265 (7) Carrying out other duties as assigned for the chemicals they own in accordance with any
1266 applicable OU/division-established policies and procedures.

1267

1268 e. Employees and Covered Associates are responsible for:

1269

1270 (1) Completing the training required by this program and their OUs/divisions and working in
1271 accordance with that training;

1272

1273 (2) Requesting additional training as needed or as conditions change;

²⁷ 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)* NIST S 7301.06, *Chemical Waste Accumulation/Disposal at NIST Gaithersburg*, and NIST S7301.07, *Chemical Waste Accumulation/Disposal at NIST Boulder*.

²⁸ 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.

- 1274
- 1275 (3) Knowing the requirements of this suborder;
- 1276
- 1277 (4) Knowing the chemical hazards in the specific work area;
- 1278
- 1279 (5) Ensuring that routine and non-routine activities will be performed according to the
- 1280 requirements of this suborder and any other applicable suborder;
- 1281
- 1282 (6) Knowing the method for obtaining access to the Hazardous Chemical Inventory List and
- 1283 SDSs for the hazardous chemicals in the specific work area;
- 1284
- 1285 (7) Reading chemical container labels, other forms of warning, and SDSs prior to using
- 1286 hazardous chemicals for the first time and as needed thereafter;
- 1287
- 1288 (8) Notifying the Chemical Owner if they identify a label on a chemical container that is
- 1289 illegible or contains information that is not current; and
- 1290
- 1291 (9) Contacting line managers, Organizational Unit (OU)/Divisional Safety Personnel, and/or
- 1292 the OSH program manager for this program regarding any questions related to the hazard
- 1293 communication training and information provided on chemical container labels, other
- 1294 forms of warning, and SDSs.
- 1295
- 1296 f. OSHE Industrial Hygienists are responsible for:
- 1297
- 1298 (1) Performing a health hazard evaluation in accordance with the requirements of NIST S
- 1299 7101.29, *Medical Surveillance Program* when there is a recognized health hazard in the
- 1300 workplace from an OSHA Chemical-Specific Substance; and
- 1301
- 1302 (2) Providing training and information relevant to the OSHA Chemical-Specific Substance
- 1303 for which they may be exposed to.
- 1304
- 1305 g. OSH Program Manager for this program is responsible for:
- 1306
- 1307 (1) Providing NIST employees and covered associates with straightforward interpretations
- 1308 and explanations of how relevant regulations, codes, and standards in this program area
- 1309 apply in the NIST environment; and
- 1310
- 1311 Making this suborder available upon request and in accordance with the requirements of
- 1312 29 CFR 1910.1020.
- 1313

1314

1315 **10. AUTHORITIES**

1316 There are no authorities specific to this suborder alone. For authorities applicable to all NIST OSH
1317 suborders, see section 9 of NIST O 7101.00.

1318

1319

1320 **11. DIRECTIVE OWNER**

1321 Chief Safety Officer

1322

1323

1324 **12. APPENDICES**

1325 a. Revision History

1326

1327 b. Chemicals Regulated in OSHA Chemical-Specific Health Standards (Scope and Application)

1328

1329 c. Chemicals Regulated in OSHA Chemical-Specific Health Standards (Hazard Communication
1330 Requirements)

1331

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"> None – Initial document
2	02/08/15	10/01/16	<ul style="list-style-type: none"> Minor revision to “Hazardous Chemical” definition. Minor revision for formatting. Addition of footnote and definitions pertaining to inventory requirements for Biohazardous Materials, LC-RAM, and SNM-362 RAM. Minor revision to Section 6g to differentiate between information requirements and training requirements. 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. Minor revision to Section 6d to clarify Hazardous Chemical Inventory Lists requirements and to include a footnote pertaining to SRMs. Revised footnote 2 and changed “associate” to “covered associate” throughout suborder to update text with current NIST definitions of “associate” and “covered”.
3	01/07/21	01/07/21	<ul style="list-style-type: none"> Updated suborder and CFR links.
4	03/27/23	03/27/23	<ul style="list-style-type: none"> Updated Appendix B to include 29 CFR 1910.1002, 29 CFR 1910.1053, and 29 CFR 1926, Subpart Z (OSHA Chemical-Specific Health Standards). Updated CISPro to CIMS. Updated Version numbers and footer to current style.

Version	Approval Date	Effective Date	Brief Description of Change; Rationale
5	03/03/25	03/03/25	<ul style="list-style-type: none"> • Updated Sections 6a, 6c, and 6g to include hazard communication requirements of 29 CFR 1910 and 29 CFR 1926, Subpart Z (OSHA Chemical-Specific Health Standards). • Added a definition (regulated area) and acronyms (PEL, TWA). • Updated Version numbers. • Updated title for Appendix B to clarify that it provides scope and application content for OSHA Chemical-Specific Health Standards. • Added Appendix C to describe hazard communication requirements for OSHA Chemical-Specific Health Standards and moved associated content from Section 6 to appendix C. • Updated the entire document to reflect HCS2024, revision to 29 CFR 1910.1200. • Updated Appendix C to include SDS requirements for SDSs specified in 40 CFR 751 (2024).

1332

1333 **Appendix B. Chemicals Regulated in OSHA Chemical-Specific Health Standards (Scope**
1334 **and Application)**

1335
1336 This appendix provides basic information regarding whether a chemical is within the scope and
1337 application of the OSHA Chemical-Specific Health Standards. The OSHA Chemical-Specific
1338 Health Standards (29 CFR 1910.1001 - 29 CFR 1910.1053, 29 CFR 1926.1101 – 29 CFR
1339 1926.1153) provide numerous requirements (*e.g.*, hazard communication, information and
1340 training, permissible exposure limits, and exposure monitoring/medical surveillance) for specific
1341 chemicals. The application and therefore applicable requirements of the OSHA Chemical-
1342 Specific Health Standards are determined by criteria such as chemical concentration, physical
1343 form, and use. The OSHA Chemical-Specific Health Standards should be consulted for detailed
1344 information regarding applicable requirements. The OSH Safety Program Manager for this
1345 program or another OSHE staff member will provide assistance upon request.

1346
1347 When the use of a chemical at a NIST workplace is within the scope and application of an
1348 applicable OSHA Chemical-Specific Health Standard, specific hazard communication
1349 requirements apply (see Appendix C).

1350
1351 a. When the use of a chemical at a NIST workplace meets the definition of “Laboratory Use”
1352 and is within the scope and application of an OSHA Chemical-Specific Health Standard,
1353 OSHA 29 CFR 1910.1450, *Occupational Exposure to Hazardous Chemicals in Laboratories*
1354 supercedes the requirements of the particular OSHA Chemical-Specific Health Standard,
1355 except as follows:

1356
1357 (1) 1910.1450(a)(2)(i) For any OSHA health standard, only the requirement to limit
1358 employee exposure to the specific permissible exposure limit shall apply for laboratories,
1359 unless that particular standard states otherwise or unless the conditions of
1360 1910.1450(a)(2)(iii) apply (see below);

1361
1362 (2) 1910.1450(a)(2)(ii) Prohibition of eye and skin contact where specified by any OSHA
1363 health standard shall be observed;

1364
1365 (3) 1910.1450(a)(2)(iii) Where the action level (or in the absence of an action level, the
1366 permissible exposure limit) is routinely exceeded for an OSHA regulated substance with
1367 exposure monitoring and medical surveillance requirements of 1910.1450(d) and
1368 1910.1450(g)(1)(ii) shall apply.

1369
1370 Note: The hazard communication requirements of the OSHA Chemical-Specific Health
1371 Standards are not applicable to chemical uses that meet the definition of “Laboratory
1372 Use”.

- 1373
- 1374 b. When the use of a chemical at a NIST workplace does not meet the definition of “Laboratory
- 1375 Use” and is within the scope and application of an OSHA Chemical-Specific Health
- 1376 Standard, all requirements of the specific OSHA Chemical-Specific Health Standard are
- 1377 applicable, including the hazard communications requirements.
- 1378
- 1379 (1) Non-laboratory use of a chemical for non-construction activities may be within the scope
- 1380 and application of 29 CFR 1910.1001 - 29 CFR 1910.1053 (see below).
- 1381
- 1382 (2) Non-laboratory use of a chemical for construction activities may be within the scope and
- 1383 application of 29 CFR 1926.1101 – 29 CFR 1926.1153 (see below).
- 1384
- 1385 c. Scope and Application of OSHA Chemical-Specific Health Standards:
- 1386
- 1387 (1) [29 CFR 1910.1001: Asbestos](#)
- 1388
- 1389 (a) This section applies to all occupational exposures to asbestos in all industries covered
- 1390 by the Occupational Safety and Health Act, except:
- 1391
- 1392 i. This section does not apply to construction work as defined in 29 CFR
- 1393 1910.12(b). (Exposure to asbestos in construction work is covered by 29 CFR
- 1394 1926.1101.); and
- 1395
- 1396 ii. This section does not apply to ship repairing, shipbuilding and shipbreaking
- 1397 employments and related employments as defined in 29 CFR 1915.4.
- 1398 (Exposure to asbestos in these employments is covered by 29 CFR
- 1399 1915.1001).
- 1400
- 1401 (2) [29 CFR 1910.1002: Coal Tar Pitch Volatiles](#)
- 1402
- 1403 (a) As used in 29 CFR 1910.1000 (Table Z-1), coal tar pitch volatiles include the fused
- 1404 polycyclic hydrocarbons which volatilize from the distillation residues of coal,
- 1405 petroleum (excluding asphalt), wood, and other organic matter. Asphalt (CAS 8052-
- 1406 42-4, and CAS 64742-93-4) is not covered under the "coal tar pitch volatiles"
- 1407 standard.
- 1408
- 1409 (3) [29 CFR 1910.1003: 13 Carcinogens](#)
- 1410
- 1411 (a) This section applies to any area in which the 13 carcinogens addressed by this section
- 1412 are manufactured, processed, repackaged, released, handled, or stored, but shall not

1413 apply to transshipment in sealed containers, except for the labeling requirements
1414 under paragraphs (e)(2), (3) and (4) of this section. The 13 carcinogens are the
1415 following: 4-Nitrobiphenyl, Chemical Abstracts Service Register Number (CAS No.)
1416 92933; alpha-Naphthylamine, CAS No. 134327; methyl chloromethyl ether, CAS No.
1417 107302; 3,3'-Dichlorobenzidine (and its salts) CAS No. 91941; bis-Chloromethyl
1418 ether, CAS No. 542881; beta-Naphthylamine, CAS No. 91598; Benzidine, CAS No.
1419 92875; 4-Aminodiphenyl, CAS No. 92671; Ethyleneimine, CAS No. 151564; beta-
1420 Propiolactone, CAS No. 57578; 2-Acetylaminofluorene, CAS No. 53963; 4-
1421 Dimethylaminoazo-benzene, CAS No. 60117; and N-Nitrosodimethylamine, CAS
1422 No. 62759.

1423
1424 (b) This section shall not apply to the following:

- 1425
- 1426 i. Solid or liquid mixtures containing less than 0.1 percent by weight or volume
1427 of 4-Nitrobiphenyl; methyl chloromethyl ether; bis-chloromethyl ether; beta-
1428 Naphthylamine; benzidine or 4-Aminodiphenyl; and
 - 1429
 - 1430 ii. Solid or liquid mixtures containing less than 1.0 percent by weight or volume
1431 of alpha-Naphthylamine; 3,3'-Dichlorobenzidine (and its salts);
1432 Ethyleneimine; beta-Propiolactone; 2-Acetylaminofluorene; 4-
1433 Dimethylaminoazobenzene, or N-Nitrosodimethylamine.
 - 1434

1435 (4) [29 CFR 1910.1017: Vinyl Chloride](#)

1436

- 1437 (a) This section applies to the manufacture, reaction, packaging, repackaging, storage,
1438 handling or use of vinyl chloride or polyvinyl chloride, but does not apply to the
1439 handling or use of fabricated products made of polyvinyl chloride.
- 1440

- 1441 (b) This section applies to the transportation of vinyl chloride or polyvinyl chloride
1442 except to the extent that the Department of Transportation may regulate the hazards
1443 covered by this section.
- 1444

1445 (5) [29 CFR 1910.1018: Inorganic Arsenic](#)

1446

- 1447 (a) This section applies to all occupational exposures to inorganic arsenic except that this
1448 section does not apply to employee exposures in agriculture or resulting from
1449 pesticide application, the treatment of wood with preservatives or the utilization of
1450 arsenically preserved wood.
- 1451

1452 (6) [29 CFR 1910.1024: Beryllium](#)

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- (a) This standard applies to occupational exposure to beryllium in all forms, compounds, and mixtures in general industry, 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) (§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.

(7) [29 CFR 1910.1025: Lead](#)

- (a) This section applies to all occupational exposure to lead, except:
 - i. This section does not apply to the construction industry or to agricultural operations covered by 29 CFR Part 1928.

(8) [29 CFR 1910.1026: Chromium \(VI\)](#)

- (a) This standard applies to occupational exposures to chromium (VI) in all forms and compounds in general industry, 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/m³ as an 8-hour time-weighted average (TWA) under any expected conditions of use.

(9) [29 CFR 1910.1027: Cadmium](#)

1493 (a) This standard applies to all occupational exposures to cadmium and cadmium
1494 compounds, in all forms, and in all industries covered by the Occupational Safety and
1495 Health Act, except the construction-related industries, which are covered under 29
1496 CFR 1926.63.

1497
1498 (10) [29 CFR 1910.1028: Benzene](#)

1499
1500 (a) This section applies to all occupational exposures to benzene. Chemical Abstracts
1501 Service Registry No. 71-43-2, except:

1502
1503 i. The storage, transportation, distribution, dispensing, sale or use of gasoline,
1504 motor fuels, or other fuels containing benzene subsequent to its final discharge
1505 from bulk wholesale storage facilities, except that operations where gasoline
1506 or motor fuels are dispensed for more than 4 hours per day in an indoor
1507 location are covered by this section.

1508
1509 ii. Loading and unloading operations at bulk wholesale storage facilities which
1510 use vapor control systems for all loading and unloading operations, except for
1511 the provisions of 29 CFR 1910.1200 as incorporated into this section and the
1512 emergency provisions of paragraphs (g) and (i)(4) of this section.

1513
1514 iii. The storage, transportation, distribution or sale of benzene or liquid mixtures
1515 containing more than 0.1 percent benzene in intact containers or in
1516 transportation pipelines while sealed in such a manner as to contain benzene
1517 vapors or liquid, except for the provisions of 29 CFR 1910.1200 as
1518 incorporated into this section and the emergency provisions of paragraphs (g)
1519 and (i)(4) of this section.

1520
1521 iv. Containers and pipelines carrying mixtures with less than 0.1 percent benzene
1522 and natural gas processing plants processing gas with less than 0.1 percent
1523 benzene.

1524
1525 v. Work operations where the only exposure to benzene is from liquid mixtures
1526 containing 0.5 percent or less of benzene by volume, or the vapors released
1527 from such liquids until September 12, 1988; work operations where the only
1528 exposure to benzene is from liquid mixtures containing 0.3 percent or less of
1529 benzene by volume or the vapors released from such liquids from September
1530 12, 1988, to September 12, 1989; and work operations where the only
1531 exposure to benzene is from liquid mixtures containing 0.1 percent or less of
1532 benzene by volume or the vapors released from such liquids after September

1533 12, 1989; except that tire building machine operators using solvents with more
1534 than 0.1 percent benzene are covered by paragraph (i) of this section.

- 1535
- 1536 vi. Oil and gas drilling, production and servicing operations.
- 1537
- 1538 vii. Coke oven batteries.
- 1539
- 1540 viii. The cleaning and repair of barges and tankers which have contained benzene
1541 are excluded from paragraph (f) methods of compliance, paragraph (e)(1)
1542 exposure monitoring-general, and paragraph (e)(6) accuracy of monitoring.
1543 Engineering and work practice controls shall be used to keep exposures below
1544 10 ppm unless it is proven to be not feasible.

1545

1546 (11) [29 CFR 1910.1029: *Coke Oven Emissions*](#)

- 1547
- 1548 (a) This section applies to the control of employee exposure to coke oven emissions,
1549 except that this section shall not apply to working conditions with regard to which
1550 other Federal agencies exercise statutory authority to prescribe or enforce standards
1551 affecting occupational safety and health.

1552

1553 (12) [29 CFR 1910.1043: *Cotton Dust*](#)

- 1554
- 1555 (a) This section, in its entirety, applies to the control of employee exposure to cotton dust
1556 in all workplaces where employees engage in yarn manufacturing, engage in slashing
1557 and weaving operations, or work in waste houses for textile operations.
- 1558
- 1559 (b) This section does not apply to the handling or processing of woven or knitted
1560 materials; to maritime operations covered by 29 CFR Parts 1915 and 1918; to
1561 harvesting or ginning of cotton; or to the construction industry.
- 1562
- 1563 (c) Only paragraphs (h) Medical surveillance, (k)(2) through (4) Recordkeeping -
1564 Medical Records, and appendices B, C and D of this section apply in all workplaces
1565 where employees exposed to cotton dust engage in cottonseed processing or waste
1566 processing operations.
- 1567
- 1568 (d) This section applies to yarn manufacturing and slashing and weaving operations
1569 exclusively using washed cotton (as defined by paragraph (n) of this section) only to
1570 the extent specified by paragraph (n) of this section.
- 1571

1572 (e) This section, in its entirety, applies to the control of all employees exposure to the
1573 cotton dust generated in the preparation of washed cotton from opening until the
1574 cotton is thoroughly wetted.

1575
1576 (f) This section does not apply to knitting, classing or warehousing operations except
1577 that employers with these operations, if requested by NIOSH, shall grant NIOSH
1578 access to their employees and workplaces for exposure monitoring and medical
1579 examinations for purposes of a health study to be performed by NIOSH on a sampling
1580 basis.

1581
1582 (13) [29 CFR 1910.1044: 1,2-Dibromo-3-Chloropropane](#)

- 1583
1584 (a) This section applies to occupational exposure to 1,2-dibromo-3-chloropropane
1585 (DBCP), except:
- 1586
1587 i. Exposure to DBCP which results solely from the application and use of DBCP
1588 as a pesticide; or
 - 1589
1590 ii. The storage, transportation, distribution or sale of DBCP in intact containers
1591 sealed in such a manner as to prevent exposure to DBCP vapors or liquid,
1592 except for the requirements of paragraphs (i), (n) and (o) of this section.

1593
1594 (14) [29 CFR 1910.1045: Acrylonitrile](#)

- 1595
1596 (a) This section applies to all occupational exposures to acrylonitrile (AN), Chemical
1597 Abstracts Service Registry No. 000107131, except:
- 1598
1599 i. This section does not apply to exposures which result solely from the
1600 processing, use, and handling of the following materials:
- 1601
1602 (i) ABS resins, SAN resins, nitrile barrier resins, solid nitrile elastomers,
1603 and acrylic and modacrylic fibers, when these listed materials are in
1604 the form of finished polymers, and products fabricated from such
1605 finished polymers;
 - 1606
1607 (ii) Materials made from and/or containing AN for which objective data is
1608 reasonably relied upon to demonstrate that the material is not capable
1609 of releasing AN in airborne concentrations in excess of 1 ppm as an
1610 eight (8)-hour time-weighted average, under the expected conditions

1611 of processing, use, and handling which will cause the greatest possible
1612 release; and

1613
1614 (iii) Solid materials made from and/or containing AN, which will not be
1615 heated above 170 deg. F during handling, use, or processing.
1616

1617 (15) [29 CFR 1910.1047: Ethylene Oxide](#)

1618
1619 (a) This section applies to all occupational exposures to ethylene oxide (EtO), Chemical
1620 Abstracts Service Registry No. 75-21-8, except:

1621
1622 i. This section does not apply to the processing, use, or handling of products
1623 containing EtO where objective data are reasonably relied upon that
1624 demonstrate that the product is not capable of releasing EtO in airborne
1625 concentrations at or above the action level under the expected conditions of
1626 processing, use, or handling that will cause the greatest possible release.
1627

1628 (16) [29 CFR 1910.1048: Formaldehyde](#)

1629
1630 (a) This standard applies to all occupational exposures to formaldehyde, *i.e.*, from
1631 formaldehyde gas, its solutions, and materials that release formaldehyde.
1632

1633 (17) [29 CFR 1910.1050: Methylenedianiline](#)

1634
1635 (a) This section applies to all occupational exposures to MDA, Chemical Abstracts
1636 Service Registry No. 101-77-9, except:

1637
1638 i. Except as provided in paragraphs (a)(8) and (e)(5) of this section, this section
1639 does not apply to the processing, use, and handling of products containing
1640 MDA where initial monitoring indicates that the product is not capable of
1641 releasing MDA in excess of the action level under the expected conditions of
1642 processing, use, and handling which will cause the greatest possible release;
1643 and where no "dermal exposure to MDA" can occur.
1644

1645 ii. Except as provided in paragraph (a)(8) of this section, this section does not
1646 apply to the processing, use, and handling of products containing MDA where
1647 objective data are reasonably relied upon which demonstrate the product is not
1648 capable of releasing MDA under the expected conditions of processing, use,
1649 and handling which will cause the greatest possible release; and where no
1650 "dermal exposure to MDA" can occur.

- 1651
1652 iii. This section does not apply to the storage, transportation, distribution or sale
1653 of MDA in intact containers sealed in such a manner as to contain the MDA
1654 dusts, vapors, or liquids, except for the provisions of 29 CFR 1910.1200 and
1655 paragraph (d) of this section.
1656
1657 iv. This section does not apply to the construction industry as defined in 29 CFR
1658 1910.12(b). (Exposure to MDA in the construction industry is covered by 29
1659 CFR 1926.60).
1660
1661 v. Except as provided in paragraph (a)(8) of this section, this section does not
1662 apply to materials in any form which contain less than 0.1 percent MDA by
1663 weight or volume.
1664
1665 vi. Except as provided in paragraph (a)(8) of this section, this section does not
1666 apply to "finished articles containing MDA."

1667
1668 (18) [29 CFR 1910.1051: 1,3-Butadiene](#)

- 1669
1670 (a) This section applies to all occupational exposures to 1,3-Butadiene (BD), Chemical
1671 Abstracts Service Registry No. 106-99-0, except as provided in paragraph (a)(2) of
1672 this section.

1673
1674 (19) [29 CFR 1910.1052: Methylene Chloride](#)

- 1675
1676 (a) This section applies to all occupational exposures to methylene chloride (MC),
1677 Chemical Abstracts Service Registry Number 75-09-2, in general industry,
1678 construction and shipyard employment.

1679
1680 (20) [29 CFR 1910.1053: Respirable Crystalline Silica](#)

- 1681
1682 (a) This section applies to all occupational exposures to respirable crystalline silica,
1683 except:
1684
1685 i. Construction work as defined in 29 CFR 1910.12(b) (occupational exposures
1686 to respirable crystalline silica in construction work are covered under 29 CFR
1687 1926.1153);
1688
1689 ii. Agricultural operations covered under 29 CFR part 1928; and
1690

- 1691 iii. Exposures that result from the processing of sorptive clays.
1692
- 1693 (b) This section does not apply where the employer has objective data demonstrating that
1694 employee exposure to respirable crystalline silica will remain below 25 micrograms
1695 per cubic meter of air (25 µg/m³) as an 8-hour time-weighted average (TWA) under
1696 any foreseeable conditions.
1697
- 1698 (c) This section does not apply if the employer complies with 29 CFR 1926.1153 and:
1699
- 1700 i. The task performed is indistinguishable from a construction task listed on
1701 Table 1 in paragraph (c) of 29 CFR 1926.1153; and
1702
- 1703 ii. The task will not be performed regularly in the same environment and
1704 conditions.
1705
- 1706 (21) [29 CFR 1926.1101: Asbestos](#)
1707
- 1708 (a) This section regulates asbestos exposure in all work as defined in 29 CFR 1910.12(b),
1709 including but not limited to the following:
1710
- 1711 i. Demolition or salvage of structures where asbestos is present;
1712
- 1713 ii. Removal or encapsulation of materials containing asbestos;
1714
- 1715 iii. Construction, alteration, repair, maintenance, or renovation of structures,
1716 substrates, or portions thereof, that contain asbestos;
1717
- 1718 iv. Installation of products containing asbestos;
1719
- 1720 v. Asbestos spill/emergency cleanup; and
1721
- 1722 vi. Transportation, disposal, storage, containment of and housekeeping activities
1723 involving asbestos or products containing asbestos, on the site or location at
1724 which construction activities are performed.
1725
- 1726 vii. Coverage under this standard shall be based on the nature of the work
1727 operation involving asbestos exposure.
1728
- 1729 viii. This section does not apply to asbestos-containing asphalt roof coatings,
1730 cements and mastics.

- 1731
- 1732 (22) [29 CFR 1926.1102: Coal Tar Pitch Volatiles](#)
- 1733
- 1734 (a) The requirements applicable to construction work under this section are identical to
- 1735 those set forth at [1910.1002](#) of this chapter (see above, 29 CFR 1910.1002).
- 1736
- 1737 (23) [29 CFR 1926.1103: 13 Carcinogens \(4-Nitrobiphenyl, etc.\)](#)
- 1738
- 1739 (a) The requirements applicable to construction work under this section are identical to
- 1740 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1741
- 1742 (24) [29 CFR 1926.1104: alpha-Naphthylamine](#)
- 1743
- 1744 (a) The requirements applicable to construction work under this section are identical to
- 1745 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1746
- 1747 (25) [29 CFR 1926.1106: Methyl Chloromethyl Ether](#)
- 1748
- 1749 (a) The requirements applicable to construction work under this section are identical to
- 1750 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1751
- 1752 (26) [29 CFR 1926.1107: 3,3'-Dichlorobenzidine \(and its salts\)](#)
- 1753
- 1754 (a) The requirements applicable to construction work under this section are identical to
- 1755 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1756
- 1757 (27) [29 CFR 1926.1108: bis-Chloromethyl Ether](#)
- 1758
- 1759 (a) The requirements applicable to construction work under this section are identical to
- 1760 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1761
- 1762 (28) [29 CFR 1926.1109: beta-Naphthylamine](#)
- 1763
- 1764 (a) The requirements applicable to construction work under this section are identical to
- 1765 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1766
- 1767 (29) [29 CFR 1926.1110: Benzidine](#)
- 1768
- 1769 (a) The requirements applicable to construction work under this section are identical to
- 1770 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).

- 1771
- 1772 (30) [29 CFR 1926.1111: 4-Aminodiphenyl](#)
- 1773
- 1774 (a) The requirements applicable to construction work under this section are identical to
- 1775 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1776
- 1777 (31) [29 CFR 1926.1112: Ethyleneimine](#)
- 1778
- 1779 (a) The requirements applicable to construction work under this section are identical to
- 1780 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1781
- 1782 (32) [29 CFR 1926.1113: beta-Propiolactone](#)
- 1783
- 1784 (a) The requirements applicable to construction work under this section are identical to
- 1785 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1786
- 1787 (33) [29 CFR 1926.1114: 2-Acetylaminofluorene](#)
- 1788
- 1789 (a) The requirements applicable to construction work under this section are identical to
- 1790 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1791
- 1792 (34) [29 CFR 1926.1115: 4-Dimethylaminoazobenzene](#)
- 1793
- 1794 (a) The requirements applicable to construction work under this section are identical to
- 1795 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1796
- 1797 (35) [29 CFR 1926.1116: N-Nitrosodimethylamine](#)
- 1798
- 1799 (a) The requirements applicable to construction work under this section are identical to
- 1800 those set forth at [1910.1003](#) of this chapter (see above, 29 CFR 1910.1003).
- 1801
- 1802 (36) [29 CFR 1926.1117: Vinyl Chloride](#)
- 1803
- 1804 (a) The requirements applicable to construction work under this section are identical to
- 1805 those set forth at [1910.1017](#) of this chapter (see above, 29 CFR 1910.1017).
- 1806
- 1807 (37) [29 CFR 1926.1118: Inorganic Arsenic](#)
- 1808
- 1809 (a) The requirements applicable to construction work under this section are identical to
- 1810 those set forth at [1910.1018](#) of this chapter (see above, 29 CFR 1018).

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(38) [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.

(39) [29 CFR 1926.62: Lead](#)

- (a) This section applies to all construction work where an employee may be occupationally exposed to lead. All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a)(2) is covered by this standard. Construction work is defined as work for construction, alteration and/or repair, including painting and decorating. It includes but is not limited to the following:
 - i. Demolition or salvage of structures where lead or materials containing lead are present;
 - ii. Removal or encapsulation of materials containing lead;
 - iii. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;
 - iv. Installation of products containing lead;
 - v. Lead contamination/emergency cleanup;
 - vi. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed, and

1851
1852 vii. Maintenance operations associated with the construction activities described
1853 in this paragraph.

1854
1855 (40) [29 CFR 1926.1126: Chromium \(VI\)](#)

1856
1857 (a) This standard applies to occupational exposures to chromium (VI) in all forms and
1858 compounds in construction, except:

- 1859
1860 i. Exposures that occur in the application of pesticides regulated by the
1861 Environmental Protection Agency or another Federal government agency
1862 (e.g., the treatment of wood with preservatives);
1863
1864 ii. Exposures to portland cement; or
1865
1866 iii. Where the employer has objective data demonstrating that a material
1867 containing chromium or a specific process, operation, or activity involving
1868 chromium cannot release dusts, fumes, or mists of chromium (VI) in
1869 concentrations at or above 0.5 µg/m³ as an 8-hour time-weighted average
1870 (TWA) under any expected conditions of use.

1871
1872 (41) [29 CFR 1926.1127: Cadmium](#)

1873
1874 (a) This standard applies to all occupational exposures to cadmium and cadmium
1875 compounds, in all forms, in all construction work where an employee may potentially
1876 be exposed to cadmium. Construction work is defined as work involving
1877 construction, alteration and/or repair, including but not limited to the following:

- 1878
1879 i. Wrecking, demolition or salvage of structures where cadmium or materials
1880 containing cadmium are present;
1881
1882 ii. Use of cadmium containing-paints and cutting, brazing, burning, grinding or
1883 welding on surfaces that were painted with cadmium-containing paints;
1884
1885 iii. Construction, alteration, repair, maintenance, or renovation of structures,
1886 substrates, or portions thereof, that contain cadmium, or materials containing
1887 cadmium;
1888
1889 iv. Cadmium welding; cutting and welding cadmium-plated steel; brazing or
1890 welding with cadmium alloys;

- 1891
1892 v. Installation of products containing cadmium;
1893
1894 vi. Electrical grounding with cadmium welding, or electrical work using
1895 cadmium-coated conduit;
1896
1897 vii. Maintaining or retrofitting cadmium-coated equipment;
1898
1899 viii. Cadmium contamination/emergency cleanup; and
1900
1901 ix. Transportation, disposal, storage, or containment of cadmium or materials
1902 containing cadmium on the site or location at which construction activities are
1903 performed.
1904

1905 (42) [29 CFR 1926.1128: Benzene](#)

- 1906
1907 (a) The requirements applicable to construction work under this section are identical to
1908 those set forth at [1910.1028](#) of this chapter (see above, 29 CFR 1910.1028).
1909

1910 (43) [29 CFR 1926.1144: 1,2-Dibromo-3-Chloropropane](#)

- 1911
1912 (a) The requirements applicable to construction work under this section are identical to
1913 those set forth at [1910.1044](#) of this chapter (see above, 29 CFR 1910.1044).
1914

1915 (44) [29 CFR 1926.1145: Acrylonitrile](#)

- 1916
1917 (a) The requirements applicable to construction work under this section are identical to
1918 those set forth at [1910.1045](#) of this chapter (see above, 29 CFR 1910.1045).
1919

1920 (45) [29 CFR 1926.1147: Ethylene Oxide](#)

- 1921
1922 (a) The requirements applicable to construction work under this section are identical to
1923 those set forth at [1910.1047](#) of this chapter (see above, 29 CFR 1910.1047).
1924

1925 (46) [29 CFR 1926.1148: Formaldehyde](#)

- 1926
1927 (a) The requirements applicable to construction work under this section are identical to
1928 those set forth at [1910.1048](#) of this chapter (see above, 29 CFR 1910.1048).
1929

1930 (47) [29 CFR 1926.60: Methylenedianiline](#)

- 1931
- 1932 (a) This section applies to all construction work as defined in 29 CFR 1910.12(b), in
- 1933 which there is exposure to MDA, including but not limited to the following:
- 1934 i. Construction, alteration, repair, maintenance, or renovation of structures,
- 1935 substrates, or portions thereof, that contain MDA;
- 1936
- 1937 ii. Installation or the finishing of surfaces with products containing MDA;
- 1938
- 1939 iii. MDA spill/emergency cleanup at construction sites; and
- 1940
- 1941 iv. Transportation, disposal, storage, or containment of MDA or products
- 1942 containing MDA on the site or location at which construction activities are
- 1943 performed.
- 1944
- 1945 (b) Except as provided in paragraphs (a)(7) and (f)(5) of this section, this section does not
- 1946 apply to the processing, use, and handling of products containing MDA where initial
- 1947 monitoring indicates that the product is not capable of releasing MDA in excess of the
- 1948 action level under the expected conditions of processing, use, and handling which will
- 1949 cause the greatest possible release; and where no "dermal exposure to MDA" can
- 1950 occur.
- 1951
- 1952 (c) Except as provided in paragraph (a)(7) of this section, this section does not apply to
- 1953 the processing, use, and handling of products containing MDA where objective data
- 1954 are reasonably relied upon which demonstrate the product is not capable of releasing
- 1955 MDA under the expected conditions of processing, use, and handling which will
- 1956 cause the greatest possible release; and where no "dermal exposure to MDA" can
- 1957 occur.
- 1958
- 1959 (d) Except as provided in paragraph (a)(7) of this section, this section does not apply to
- 1960 the storage, transportation, distribution or sale of MDA in intact containers sealed in
- 1961 such a manner as to contain the MDA dusts, vapors, or liquids, except for the
- 1962 provisions of 29 CFR 1910.1200 and paragraph (e) of this section.
- 1963
- 1964 (e) Except as provided in paragraph (a)(7) of this section, this section does not apply to
- 1965 materials in any form which contain less than 0.1% MDA by weight or volume.
- 1966
- 1967 (f) Except as provided in paragraph (a)(7) of this section, this section does not apply to
- 1968 "finished articles containing MDA."
- 1969

1970 (g) Where products containing MDA are exempted under paragraphs (a)(2) through
1971 (a)(6) of this section, the employer shall maintain records of the initial monitoring
1972 results or objective data supporting that exemption and the basis for the employer's
1973 reliance on the data, as provided in the recordkeeping provision of paragraph (o) of
1974 this section.

1975

1976 (48) [29 CFR 1926.1152: Methylene Chloride](#)

1977

1978 (a) The requirements applicable to construction employment under this section are
1979 identical to those set forth at 29 CFR [1910.1052](#) (see above, 29 CFR 1910.1052).

1980

1981 (49) [29 CFR 1926.1153: Respirable Crystalline Silica](#)

1982

1983 (a) This section applies to all occupational exposures to respirable crystalline silica in
1984 construction work, except where employee exposure will remain below 25
1985 micrograms per cubic meter of air ($25 \mu\text{g}/\text{m}^3$) as an 8-hour time-weighted average
1986 (TWA) under any foreseeable conditions.

1987 **Appendix C. Chemicals Regulated in OSHA Chemical-Specific Health Standards (Hazard**
1988 **Communication Requirements)**

1989
1990 This appendix provides hazard communication requirements for chemicals regulated in the
1991 OSHA Chemical-Specific Health Standards (29 CFR 1910.1001 - 29 CFR 1910.1053, 29 CFR
1992 1926.1101 – 29 CFR 1926.1153). The OSHA Chemical-Specific Health Standards should be
1993 consulted for detailed information regarding applicable requirements. The OSH Safety Program
1994 Manager for this program or another OSHE staff member will provide assistance upon request.

1995
1996 When the use of a chemical at a NIST workplace is within the scope and application of an
1997 applicable OSHA Chemical-Specific Health Standard (see Appendix B), the following specific
1998 hazard communication requirements shall be addressed with respect to the chemical being used.

- 1999
2000 a. 13 Carcinogens
- 2001
 - 2002 (1) Hazards
 - 2003
 - 2004 (a) 4-Nitrobiphenyl: Cancer.
 - 2005
 - 2006 (b) alpha-Naphthylamine: Cancer; skin irritation; and acute toxicity effects.
 - 2007
 - 2008 (c) Methyl Chloromethyl Ether: Cancer; skin, eye and respiratory effects; acute toxicity
2009 effects; and flammability.
 - 2010
 - 2011 (d) 3,3'-Dichlorobenzidine (and its salts): Cancer and skin sensitization.
 - 2012
 - 2013 (e) bis-Chloromethyl Ether: Cancer; skin, eye, and respiratory tract effects; acute
2014 toxicity effects; and flammability.
 - 2015
 - 2016 (f) beta-Naphthylamine: Cancer and acute toxicity effects.
 - 2017
 - 2018 (g) Benzidine: Cancer and acute toxicity effects.
 - 2019
 - 2020 (h) 4-Aminodiphenyl: Cancer.
 - 2021
 - 2022 (i) Ethyleneimine: Cancer; mutagenicity; skin and eye effects; liver effects; kidney
2023 effects; acute toxicity effects; and flammability.
 - 2024
 - 2025 (j) beta-Propiolactone: Cancer; skin irritation; eye effects; and acute toxicity effects.
 - 2026

- 2027 (k) 2-Acetylaminofluorene: Cancer.
2028
2029 (l) 4-Dimethylaminoazobenzene: Cancer; skin effects; and respiratory tract irritation.
2030
2031 (m)N-Nitrosodimethylamine: Cancer; liver effects; and acute toxicity effects.
2032
2033 (2) Labels and Other Information
2034
2035 (a) Labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other
2036 products containing the 13 Carcinogens or to their containers and address the
2037 following hazards.
2038
2039 i. 4-Nitrobiphenyl: Cancer.
2040
2041 ii. alpha-Naphthylamine: Cancer; skin irritation; and acute toxicity effects.
2042
2043 iii. Methyl Chloromethyl Ether: Cancer; skin, eye and respiratory effects; acute
2044 toxicity effects; and flammability.
2045
2046 iv. 3,3'-Dichlorobenzidine (and its salts): Cancer and skin sensitization.
2047
2048 v. bis-Chloromethyl Ether: Cancer; skin, eye, and respiratory tract effects; acute
2049 toxicity effects; and flammability.
2050
2051 vi. beta-Naphthylamine: Cancer and acute toxicity effects.
2052
2053 vii. Benzidine: Cancer and acute toxicity effects.
2054
2055 viii. 4-Aminodiphenyl: Cancer.
2056
2057 ix. Ethyleneimine: Cancer; mutagenicity; skin and eye effects; liver effects; kidney
2058 effects; acute toxicity effects; and flammability.
2059
2060 x. beta-Propiolactone: Cancer; skin irritation; eye effects; and acute toxicity effects.
2061
2062 xi. 2-Acetylaminofluorene: Cancer.
2063
2064 xii. 4-Dimethylaminoazobenzene: Cancer; skin effects; and respiratory tract
2065 irritation.
2066

- 2067 xiii. N-Nitrosodimethylamine: Cancer; liver effects; and acute toxicity effects.
2068
- 2069 (3) Information and Training
2070
- 2071 (a) Employees and covered associates exposed to the 13 Carcinogens shall have access to
2072 labels on containers of the 13 Carcinogens and to safety data sheets and be trained in
2073 accordance with 29 CFR 1910.1003.
2074
- 2075 b. 1,2-Dibromo-3-Chloropropane (DBCP)
2076
- 2077 (1) Hazards
2078
- 2079 (a) Cancer; reproductive effects; liver effects; kidney effects; central nervous system
2080 effects; skin, eye and respiratory tract irritation; and acute toxicity effects.
2081
- 2082 (2) Labels and Other Information
2083
- 2084 (a) Containers of DBCP-contaminated protective devices or work clothing which are to
2085 be taken out of change rooms or the workplace for cleaning, maintenance or disposal
2086 shall be labeled.
2087
- 2088 (b) Portable vacuum units used to collect DBCP shall be labeled.
2089
- 2090 (c) Labels shall include the following information: CONTAMINATED WITH 1,2-
2091 Dibromo-3-chloropropane (DBCP), MAY CAUSE CANCER.
2092
- 2093 (d) Signage shall be posted to clearly indicate all regulated areas and include the
2094 following information: DANGER; 1,2-Dibromo-3-chloropropane; MAY CAUSE
2095 CANCER; WEAR RESPIRATORY PROTECTION IN THIS AREA;
2096 AUTHORIZED PERSONNEL ONLY.
2097
- 2098 (3) Information and Training
2099
- 2100 (a) Employees and covered associates exposed to DBCP shall have access to labels on
2101 containers of DBCP and to safety data sheets and be trained in accordance with 29
2102 CFR 1910.1044.
2103
- 2104 c. 1,3-Butadiene (BD)
2105
- 2106 (1) Hazards

- 2107
- 2108 (a) Cancer; eye and respiratory tract irritation; central nervous system effects; and
- 2109 flammability.
- 2110
- 2111 (2) Information and Training
- 2112
- 2113 (a) Employees and covered associates exposed to BD shall have access to labels on
- 2114 containers of BD and to safety data sheets and be trained in accordance with 29 CFR
- 2115 1910.1051.
- 2116
- 2117 d. Acrylonitrile (AN)
- 2118
- 2119 (1) Hazards
- 2120
- 2121 (a) Cancer; central nervous system effects; liver effects; skin sensitization; skin,
- 2122 respiratory, and eye irritation; acute toxicity effects; and flammability.
- 2123
- 2124 (2) Labels and Other Information
- 2125
- 2126 (a) Signage shall be posted to clearly indicate all workplaces where AN concentrations
- 2127 exceed the permissible exposure limits and include the following information:
- 2128 DANGER; ACRYLONITRILE (AN); MAY CAUSE CANCER; RESPIRATORY
- 2129 PROTECTION MAY BE REQUIRED IN THIS AREA; AUTHORIZED
- 2130 PERSONNEL ONLY.
- 2131
- 2132 (3) Information and Training
- 2133
- 2134 (a) Employees and covered associates exposed to AN above the action level, whose
- 2135 exposures are maintained below the action level by engineering and work practice
- 2136 controls, or who are subject to potential skin or eye contact with liquid AN shall have
- 2137 access to labels on containers of AN and AN-based materials and to safety data sheets
- 2138 and be trained in accordance with 29 CFR 1910.1045.
- 2139
- 2140 e. Asbestos
- 2141
- 2142 (1) Hazards
- 2143
- 2144 (a) Cancer and lung effects.
- 2145
- 2146 (2) Labels and Other Information

- 2147
- 2148 (a) Labels shall be affixed to containers of contaminated protective devices or work
- 2149 clothing, which are to be taken out of change rooms or the workplace for cleaning,
- 2150 maintenance or disposal.
- 2151
- 2152 (b) Labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other
- 2153 products containing asbestos fibers, or to their containers.
- 2154
- 2155 (c) Labels shall not be required where:
- 2156
- 2157 i. Asbestos fibers have been modified by a bonding agent, coating, binder, or other
- 2158 material provided that the manufacturer can demonstrate that during any
- 2159 reasonably foreseeable use, handling, storage, disposal, processing, or
- 2160 transportation, no airborne concentrations of fibers of asbestos in excess of the
- 2161 TWA permissible exposure level and/or excursion limit will be released; or
- 2162
- 2163 ii. Asbestos is present in a product in concentrations less than 1.0%.
- 2164
- 2165 iii. Labels shall include the following information: DANGER; CONTAINS
- 2166 ASBESTOS FIBERS; MAY CAUSE CANCER; CAUSES DAMAGE TO
- 2167 LUNGS; DO NOT BREATHE DUST; AVOID CREATING DUST.
- 2168
- 2169 (d) Signage may be posted in lieu of labels so long as they contain the information
- 2170 required for labeling.
- 2171
- 2172 (e) Labels or signage shall be affixed or posted to previously installed ACM and/or
- 2173 PACM, when identified, so that employees and associates will be notified of what
- 2174 materials contain ACM and/or PACM.
- 2175
- 2176 (f) Labels and signage shall be attached in areas where they will clearly be noticed by
- 2177 employees and associates who are likely to be exposed, such as at the entrance to
- 2178 mechanical room/areas.
- 2179
- 2180 (3) Information and Training
- 2181
- 2182 (a) Employees and covered associates exposed to airborne concentrations of asbestos at
- 2183 or above the PEL (an airborne concentration of asbestos in excess of 0.1 fiber per
- 2184 cubic centimeter of air as an eight (8)-hour time-weighted average (TWA) and/or
- 2185 excursion limit (an airborne concentration of asbestos in excess of 1.0 fiber per cubic
- 2186 centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes)

2187 shall have access to labels on containers of asbestos and to safety data sheets and be
2188 trained in accordance with 29 CFR 1910.1001 or 29 CFR 1926.1101, whichever is
2189 applicable.

2190

2191 f. Benzene

2192

2193 (1) Hazards

2194

2195 (a) Cancer; central nervous system effects; blood effects; aspiration; skin, eye, and
2196 respiratory tract irritation; and flammability.

2197

2198 (2) Labels and Other Information

2199

2200 (a) Signage shall be posted at entrances to regulated areas and include the following
2201 information: DANGER; BENZENE; MAY CAUSE CANCER; HIGHLY
2202 FLAMMABLE LIQUID AND VAPOR DO NOT SMOKE; WEAR RESPIRATORY
2203 PROTECTION IN THIS AREA; AUTHORIZED PERSONNEL ONLY.

2204

2205 (3) Information and Training

2206

2207 (a) Employees and covered associates exposed to benzene shall have access to labels on
2208 containers of benzene and to safety data sheets and be trained in accordance with 29
2209 CFR 1910.1028.

2210

2211 b. Beryllium

2212

2213 (1) Hazards

2214

2215 (a) Cancer; lung effects (CBD and acute beryllium disease); beryllium sensitization; skin
2216 sensitization; and skin, eye, and respiratory tract irritation.

2217

2218 (2) Labels and Other Information

2219

2220 (a) Containers of contaminated personal protective clothing or equipment required that
2221 will be removed from the workplace for laundering, cleaning, maintenance or
2222 disposal shall be labeled.

2223

2224 (b) Containers that contain at least 0.1 percent beryllium by weight or are materials
2225 contaminated with beryllium that are transferred for disposal, recycling, or reuse
2226 (except for intra-plant transfers) shall be labeled.

- 2227
- 2228 (c) Containers of clothing, equipment, and materials contaminated with beryllium, shall
- 2229 be labeled.
- 2230
- 2231 (d) Labels shall include the following information: DANGER; CONTAINS
- 2232 BERYLLIUM; MAY CAUSE CANCER; CAUSES DAMAGE TO LUNGS; AVOID
- 2233 CREATING DUST; DO NOT GET ON SKIN.
- 2234
- 2235 (e) Signage shall be posted at entrances to regulated areas and include the following
- 2236 information: DANGER; REGULATED AREA; BERYLLIUM; MAY CAUSE
- 2237 CANCER; CAUSES DAMAGE TO LUNGS; AUTHORIZED PERSONNEL
- 2238 ONLY; WEAR RESPIRATORY PROTECTION AND PERSONAL PROTECTIVE
- 2239 CLOTHING AND EQUIPMENT IN THIS AREA.
- 2240
- 2241 (3) Information and Training
- 2242
- 2243 (a) Beryllium: Employees and covered associates exposed to beryllium shall have access
- 2244 to labels on containers of beryllium and to safety data sheets and be trained in
- 2245 accordance with 29 CFR 1910.1024.
- 2246
- 2247 c. Cadmium
- 2248
- 2249 (1) Hazards
- 2250
- 2251 (a) Cancer; lung effects; kidney effects; and acute toxicity effects.
- 2252
- 2253 (2) Labels and Other Information
- 2254
- 2255 (a) Bags or containers of contaminated protective clothing and equipment that are to be
- 2256 taken out of the change rooms or the workplace for laundering, cleaning, maintenance
- 2257 or disposal shall be labeled.
- 2258
- 2259 (b) Bags or containers of waste, scrap, debris, bags, containers, personal protective
- 2260 equipment, and clothing contaminated with cadmium and consigned for disposal shall
- 2261 be labeled.
- 2262
- 2263 (c) Shipping and storage containers containing cadmium or cadmium compounds shall be
- 2264 labeled.
- 2265

- 2266 (d) Installed cadmium products, where feasible, shall have a visible label or other
2267 indication that cadmium is present.
2268
- 2269 (e) Labels shall include at least the following information: DANGER; CONTAINS
2270 CADMIUM; MAY CAUSE CANCER; CAUSES DAMAGE TO LUNGS AND
2271 KIDNEYS; AVOID CREATING DUST.
2272
- 2273 (3) Information and Training
2274
- 2275 (a) Employees and covered associates exposed to cadmium shall have access to labels on
2276 containers of cadmium and to safety data sheets and be trained in accordance with 29
2277 CFR 1910.1027 or 29 CFR 1926.1127, whichever is applicable.
2278
- 2279 d. Chromium (IV)
2280
- 2281 (1) Hazards
2282
- 2283 (a) Cancer, eye irritation, and skin sensitization.
2284
- 2285 (2) Labels and Other Information
2286
- 2287 (a) Bags or containers of contaminated protective clothing or equipment that are removed
2288 from change rooms for laundering, cleaning, maintenance, or disposal shall be labeled
2289 in accordance with 29 CFR 1910.1200.
2290
- 2291 (b) Bags or containers of waste, scrap, debris, and any other materials contaminated with
2292 chromium (VI) that are consigned for disposal shall be labeled in accordance with 29
2293 CFR 1910.1200.
2294
- 2295 (3) Information and Training
2296
- 2297 (a) Employees and covered associates exposed to chromium (IV) shall have access to
2298 labels on containers of chromium (IV) and to safety data sheets and be trained in
2299 accordance with 29 CFR 1910.1026 or 29 CFR 1926.1126, whichever is applicable.
2300
- 2301 e. Coke Oven Emissions
2302
- 2303 (1) Labels and Other Information
2304

2305 (a) Containers of contaminated protective clothing and equipment shall be labeled and
2306 include the following information: CONTAMINATED WITH COKE EMISSIONS;
2307 MAY CAUSE CANCER; DO NOT REMOVE DUST BY BLOWING OR
2308 SHAKING.

2309
2310 (b) Signage shall be posted at entrances to regulated areas and include the following
2311 information: DANGER; COKE OVEN EMISSIONS; MAY CAUSE CANCER; DO
2312 NOT EAT, DRINK OR SMOKE; WEAR RESPIRATORY PROTECTION IN THIS
2313 AREA; AUTHORIZED PERSONNEL ONLY.

2314
2315 (c) Signage shall be posted in the areas where the permissible exposure limit is exceeded
2316 and include the following information: WEAR RESPIRATORY PROTECTION IN
2317 THIS AREA.

2318
2319 (2) Information and Training

2320
2321 (a) Coke Oven Emissions: Employees and covered associates exposed to coke oven
2322 emissions shall have access to labels on containers of chemicals and
2323 substances associated with coke oven processes and to safety data sheets and be
2324 trained in accordance with 29 CFR 1910.1029.

2325
2326 f. Cotton Dust

2327
2328 (1) Labels and Other Information

2329
2330 (a) Signage shall be posted in each work area where the permissible exposure limit for
2331 cotton dust is exceeded and include the following information: DANGER; COTTON
2332 DUST; CAUSES DAMAGE TO LUNGS (BYSSINOSIS); WEAR RESPIRATORY
2333 PROTECTION IN THIS AREA.

2334
2335 g. Ethylene Oxide (EtO)

2336
2337 (1) Hazards

2338
2339 (a) Cancer; reproductive effects; mutagenicity; central nervous system; skin sensitization;
2340 skin, eye and respiratory tract irritation; acute toxicity effects; and flammability.

2341
2342 (2) Labels and Other Information

2343

- 2344 (a) Containers of EtO whose contents are capable of causing employee exposure at or
2345 above the action level or whose contents may reasonably be foreseen to cause
2346 employee exposure above the excursion limit shall be labeled (reaction vessels,
2347 storage tanks, and pipes or piping systems are not considered to be containers).
2348
- 2349 (b) Signage shall be posted demarcating regulated areas and entrances or access ways to
2350 regulated areas and include the following information: DANGER; ETHYLENE
2351 OXIDE; MAY CAUSE CANCER; MAY DAMAGE FERTILITY OR THE
2352 UNBORN CHILD; RESPIRATORY PROTECTION AND PROTECTIVE
2353 CLOTHING MAY BE REQUIRED IN THIS AREA; AUTHORIZED PERSONNEL
2354 ONLY.
2355
- 2356 (3) Information and Training
2357
- 2358 (a) Employees and covered associates exposed to EtO shall have access to labels on
2359 containers of EtO and to safety data sheets and be trained in accordance with 29 CFR
2360 1910.1047.
2361
- 2362 h. Formaldehyde
2363
- 2364 (1) Hazards
2365
- 2366 (a) Cancer; skin and respiratory sensitization; eye, skin and respiratory tract irritation;
2367 acute toxicity effects; and flammability.
2368
- 2369 (2) Labels and Other Information
2370
- 2371 (a) Containers of contaminated clothing and equipment shall be labeled and include the
2372 following information: DANGER; FORMALDEHYDE-CONTAMINATED
2373 [CLOTHING] EQUIPMENT; MAY CAUSE CANCER; CAUSES SKIN, EYE,
2374 AND RESPIRATORY IRRITATION; DO NOT BREATHE VAPOR; DO NOT GET
2375 ON SKIN.
2376
- 2377 (b) Containers of formaldehyde-contaminated waste and debris resulting from leaks or
2378 spills shall be labeled warning of formaldehyde's presence and of the hazards
2379 associated with formaldehyde.
2380
- 2381 (c) Materials capable of releasing formaldehyde at levels above 0.5 ppm shall be labeled
2382 to address all health and physical hazards, including cancer and respiratory
2383 sensitization, and shall contain the hazard statement "May Cause Cancer."

- 2384
- 2385 (d) Materials capable of releasing formaldehyde at levels of 0.1 ppm to 0.5 ppm, shall be
- 2386 labeled to identify that the product contains formaldehyde, list the name and address
- 2387 of the responsible party, and state that physical and health hazard information is
- 2388 readily available from the employer and from safety data sheets.
- 2389
- 2390 (e) Signage shall be posted at storage areas for contaminated clothing and equipment and
- 2391 include the following information: DANGER; FORMALDEHYDE-
- 2392 CONTAMINATED [CLOTHING] EQUIPMENT; MAY CAUSE CANCER;
- 2393 CAUSES SKIN, EYE AND RESPIRATORY IRRITATION; DO NOT BREATHE
- 2394 VAPOR; DO NOT GET ON SKIN.
- 2395
- 2396 (3) Information and Training
- 2397
- 2398 (a) Employees and covered associates exposed to formaldehyde shall have access to
- 2399 labels on containers of formaldehyde and to safety data sheets and be trained in
- 2400 accordance with 29 CFR 1910.1048.
- 2401
- 2402 i. Inorganic Arsenic
- 2403
- 2404 (1) Hazards
- 2405
- 2406 (a) Cancer; liver effects; skin effects; respiratory irritation; nervous system effects; and
- 2407 acute toxicity effects.
- 2408
- 2409 (2) Labels and Other Information
- 2410
- 2411 (a) Containers of contaminated protective clothing and equipment in the workplace or
- 2412 which are to be removed from the workplace shall be labeled and include the
- 2413 following information: DANGER: CONTAMINATED WITH INORGANIC
- 2414 ARSENIC. MAY CAUSE CANCER. DO NOT REMOVE DUST BY BLOWING
- 2415 OR SHAKING. DISPOSE OF INORGANIC ARSENIC CONTAMINATED WASH
- 2416 WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE OR
- 2417 FEDERAL REGULATIONS.
- 2418
- 2419 (b) Labels shall not be required when the inorganic arsenic in the product is bound in
- 2420 such a manner so as to make unlikely the possibility of airborne exposure to inorganic
- 2421 arsenic (Possible examples of products not requiring labels are semiconductors, light
- 2422 emitting diodes and glass.).
- 2423

2424 (c) Signage shall be posted at entrances to regulated areas and include the following
2425 information: DANGER; INORGANIC ARSENIC; MAY CAUSE CANCER; DO
2426 NOT EAT, DRINK OR SMOKE; WEAR RESPIRATORY PROTECTION IN THIS
2427 AREA; AUTHORIZED PERSONNEL ONLY.

2428

2429 (3) Information and Training

2430

2431 (a) Employees and covered associates exposed to inorganic arsenic shall have access to
2432 labels on containers of inorganic arsenic and to safety data sheets and be trained in
2433 accordance with 29 CFR 1910.1018.

2434

2435 j. Lead

2436

2437 (1) Hazards

2438

2439 (a) Reproductive/developmental toxicity; central nervous system effects; kidney effects;
2440 blood effects; and acute toxicity effects.

2441

2442 (2) Labels and Other Information

2443

2444 (a) Containers of contaminated protective clothing and equipment shall be labeled with
2445 the following information: DANGER: CLOTHING AND EQUIPMENT
2446 CONTAMINATED WITH LEAD. MAY DAMAGE FERTILITY OR THE
2447 UNBORN CHILD. CAUSES DAMAGE TO THE CENTRAL NERVOUS
2448 SYSTEM. DO NOT EAT, DRINK OR SMOKE WHEN HANDLING. DO NOT
2449 REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD
2450 CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE
2451 LOCAL, STATE, OR FEDERAL REGULATIONS.

2452

2453 (b) Signage shall be posted in each work area where the PEL is exceeded and include the
2454 following information: DANGER; LEAD; MAY DAMAGE FERTILITY OR THE
2455 UNBORN CHILD; CAUSES DAMAGE TO THE CENTRAL NERVOUS
2456 SYSTEM; DO NOT EAT, DRINK OR SMOKE IN THIS AREA.

2457

2458 (3) Information and Training

2459

2460 (a) Employees and covered associates exposed to lead shall have access to labels on
2461 containers of lead and to safety data sheets and be trained in accordance with 29 CFR
2462 1910.1025 or 29 CFR 1926.62, whichever is applicable.

2463

- 2464 k. Methylene Chloride (MC)
2465
2466 (1) Hazards
2467
2468 (a) Cancer, cardiac effects (including elevation of carboxyhemoglobin), central nervous
2469 system effects, liver effects, and skin and eye irritation.
2470
2471 (2) Safety Data Sheets
2472
2473 (a) The following text shall be provided in SDS Section 1c and 15.
2474
2475 i. After February 3, 2025, this chemical substance (as defined in TSCA section
2476 3(2))/product cannot be distributed in commerce to retailers. After January 28,
2477 2026, this chemical substance (as defined in TSCA section 3(2))/product is and
2478 can only be distributed in commerce or processed with a concentration of
2479 methylene chloride equal to or greater than 0.1% by weight for the following
2480 purposes: (1) Processing as a reactant; (2) Processing for incorporation into a
2481 formulation, mixture, or reaction product; (3) Processing for repackaging; (4)
2482 Processing for recycling; (5) Industrial or commercial use as a laboratory
2483 chemical; (6) Industrial or commercial use as a bonding agent for solvent
2484 welding; (7) Industrial and commercial use as a paint and coating remover from
2485 safety critical, corrosion-sensitive components of aircraft and spacecraft; (8)
2486 Industrial and commercial use as a processing aid; (9) Industrial and commercial
2487 use for plastic and rubber products manufacturing; (10) Industrial and commercial
2488 use as a solvent that becomes part of a formulation or mixture, where that
2489 formulation or mixture will be used inside a manufacturing process, and the
2490 solvent (methylene chloride) will be reclaimed; (11) Industrial and commercial
2491 use in the refinishing for wooden furniture, decorative pieces, and architectural
2492 fixtures of artistic, cultural or historic value until May 8, 2029; (12) Industrial and
2493 commercial use in adhesives and sealants in aircraft, space vehicle, and turbine
2494 applications for structural and safety critical non-structural applications until May
2495 8, 2029; (13) Disposal; and (14) Export.
2496
2497 (3) Information and Training
2498
2499 (a) Employees and covered associates exposed to MC shall have access to labels on
2500 containers of MC and to safety data sheets and be trained in accordance with 29 CFR
2501 1910.1052.
2502
2503 l. Methylenediamine (MDA)

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(1) Hazards

(a) Cancer; liver effects; and skin sensitization.

(2) Labels and Other Information

(a) Containers of MDA-contaminated protective work clothing or equipment which are to be taken out of change rooms or the workplace for cleaning, maintenance, or disposal, shall be labeled to warn of the hazards of MDA.

(b) Containers of MDA-contaminated clothing to be transported shall be labeled to warn of the hazards of MDA.

(c) Signage shall be posted demarcating regulated areas and entrances or access ways to regulated areas and include the following information: DANGER; MDA; MAY CAUSE CANCER; CAUSES DAMAGE TO THE LIVER; RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING MAY BE REQUIRED IN THIS AREA; AUTHORIZED PERSONNEL ONLY.

(3) Information and Training

(a) Employees and covered associates exposed to MDA shall have access to labels on containers of MDA and to safety data sheets and be trained in accordance with 29 CFR 1910.1050 or 29 CFR 1926.60, whichever is applicable.

m. Respirable Crystalline Silica

(1) Hazards

(a) Respirable Crystalline Silica: Cancer, lung effects, immune system effects, and kidney effects.

(2) Labels and Other Information

(a) Signage shall be posted at all entrances to regulated areas and include the following information: DANGER; RESPIRABLE CRYSTALLINE SILICA; MAY CAUSE CANCER; CAUSES DAMAGE TO LUNGS; WEAR RESPIRATORY PROTECTION IN THIS AREA; AUTHORIZED PERSONNEL ONLY.

2544 (3) Information and Training

2545

2546 (a) Employees and covered associates exposed to respirable crystalline silica, except
2547 where employee exposure will remain below 25 micrograms per cubic meter of air
2548 ($25 \mu\text{g}/\text{m}^3$) as an 8-hour time-weighted average (TWA) under any foreseeable
2549 conditions, shall have access to labels on containers of crystalline silica and safety
2550 data sheets and be trained in accordance with 29 CFR 1910.1053 or 29 CFR
2551 1926.1153, whichever is applicable (see NIST PR 7101.29.01: *Respirable*
2552 *Crystalline Silica Safety Procedure*).

2553

2554 n. Vinyl Chloride

2555

2556 (1) Hazards

2557

2558 (a) Cancer; central nervous system effects; liver effects; blood effects; and flammability.

2559

2560 (2) Labels and Other Information

2561

2562 (a) Containers of polyvinyl chloride resin waste from chemical reactors (*e.g.*, process
2563 equipment used to perform chemical reactions) or other waste contaminated with
2564 vinyl chloride shall be labeled and include the following information:
2565 CONTAMINATED WITH VINYL CHLORIDE; MAY CAUSE CANCER.

2566

2567 (b) Signage shall be posted at entrances to regulated areas and include the following
2568 information: DANGER; VINYL CHLORIDE; MAY CAUSE CANCER;
2569 AUTHORIZED PERSONNEL ONLY.

2570

2571 (c) Signage shall be posted at areas containing hazardous operations or where
2572 emergencies currently exist and include the following information: DANGER;
2573 VINYL CHLORIDE; MAY CAUSE CANCER; WEAR RESPIRATORY
2574 PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA; AUTHORIZED
2575 PERSONNEL ONLY.

2576

2577 (3) Information and Training

2578

2579 (a) Employees and covered associates exposed to vinyl chloride shall have access to
2580 labels on containers of vinyl chloride and to safety data sheets and be trained in
2581 accordance with 29 CFR 1910.1017.