

Idaho National Laboratory

HAZARD COMMUNICATION	Identifier: RD-2101
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Subcontractors	Program Requirements Document	eCR Number: 609405
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Manual: INL Subcontractor Requirements

Entire Document Changed

1. PURPOSE

This document provides requirements for the information and training to be given to all Subcontractor employees and visitors while working at the INL concerning chemical, physical, and biological workplace hazards. This document highlights requirements referenced in the "Source Documents" section, as well as Contractor requirements. Any applicable regulatory or Contractor requirements must be followed, with the most stringent requirement being met.

2. APPLICABILITY

This document applies to all subcontractors working at the INL as specified in their contract with Contractor. Stricter requirements may be imposed by subcontractors upon their employees or subtier contractors. The requirements of this document must be followed by subcontractors; however, the means of implementation may vary as determined by the subcontractor.

3. REQUIREMENTS**3.1 General Administration**

- 3.1.1 Each subcontractor shall have a written Hazard Communication program that complies with all requirements of 29 CFR 1910.1200, as referenced by 29 CFR 1926.59. Additional requirements specific to Hazard Communication are specified below.
- 3.1.2 A chemical inventory list shall be provided to the Contractor POC through the Contractor vendor data system utilizing form 432.21# "Subcontractor Reporting Form Chemical Inventory List."
- 3.1.3 Subcontractors shall not leave any of their hazardous chemicals on the job site after the project ends.
- 3.1.4 Subcontractors shall identify any physical or biological hazard, in compliance with RD -2000, Work Coordination and Hazard Control.

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3.2 Carcinogens

- 3.2.1 Less-hazardous substitutes shall be used in lieu of carcinogens, if an acceptable substitute is available.
- 3.2.2 Subcontractor management shall provide written justification for carcinogen use if requested by Contractor.
- 3.2.3 Procedures for carcinogen spill control (such as clean-up of spills or accidental releases) shall be written and shall be readily accessible and available for use.

3.3 Material Safety Data Sheets (MSDS)

- 3.3.1 If an MSDS does not exist for a chemical being used, the work shall be stopped until an MSDS is obtained.

4. DEFINITIONS

For definitions of terms used throughout the INL Subcontractor Requirements Manual, refer to LST-359.

5. REFERENCES**5.1 Source Documents**

29 CFR 1910, Subpart Z, Toxic and Hazardous Substances 29 CFR 1926.59, Hazard Communication

6. APPENDICES

Appendix A, Hazard Communication Labeling System

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Appendix A

Hazard Communication Labeling System

The Contractor labeling system is partially based on the National Fire Protection Association's (NFPA) 704 Hazard Identification System, which uses number and color codes to rank hazards of materials. This identification system is easily identified and is mainly to be used by emergency response personnel or transient employees. Flammability, health, and reactivity hazards are identified by color and rated on a scale of 0 (least serious) to 4 (most serious), depending on the degree of hazard presented. Special material hazards are also identified by a letter code or symbol. A majority of hazardous chemicals are shipped with this identification system on the container or it may be found on the MSDS. This identification system may represent a worst case scenario of the hazardous chemical if the identification system was based on 100% composition of the hazardous chemical. The identification system based on 100% composition may be used for a lesser percent composition of that hazardous chemical if the identification system for that lesser percentage is not available. A brief description of the hazard ranking system is given below.

The NFPA 704 document contains complete definitions of the types of hazards as well as specific quantitative criteria for assigning the numerical hazard rankings. Hazard rankings for individual chemicals can be found in the NFPA "Guide to Hazardous Chemicals"; the U.S. Coast Guard Manual, CHRIS, Volume 2; the National Safety Council's "Fundamentals of Industrial Hygiene"; manufacturer's MSDSs; and other sources.

Ranking	Description
Flammability (Red) 4	Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily (e.g., flammable gases or Class IA flammable liquids). These materials are extremely dangerous fire and explosion hazards, and should be used only under carefully controlled conditions.
3	Liquids and solids that can be ignited under almost all ambient temperatures and conditions (e.g., Class IB and Class IC flammable liquids). These materials are serious fire and explosion hazards at normal temperatures. Many common workplace solvents belong to this category.
2	Materials that must be moderately heated or exposed to relatively high ambient temperature before ignition can occur. These materials include combustible liquids having flash points between 100-200°F.

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Ranking	Description
1	Materials that must be preheated before ignition can occur. In general, these materials have flash points higher than 200°F.
0	Materials that will not burn.
<p>NOTE: <i>The health hazard ranking is used to communicate only the acute health hazards; that is, the hazard resulting from short-term high-level exposure by contact, inhalation, or ingestion. Health effects resulting from chronic (long-term, low-level) exposure, such as from frequent workplace use, are described in the text section of the Contractor Hazard Communication label (INEL Form L-0442.11).</i></p>	
Health (Blue) 4	Materials that, on very short exposure, could cause death or major residual injury, even though prompt medical treatment was given. These materials are extremely toxic, and any exposure should be avoided.
3	Materials that, on short exposure, could cause serious temporary or residual injury, even though prompt medical treatment was given. These materials are severe health hazards. Special protective clothing and/or respiratory protection is required for working with these materials, to preclude any possibility of hazardous exposure.
2	Materials that, on intense or continued exposure, could cause temporary incapacitation or possible residual injury unless prompt medical treatment was given. Workplace use requires special ventilation, protective clothing, or respirators in cases where uncontrolled exposures would be hazardous.
1	Materials that, on exposure, cause irritation but only minor residual injury, even if no treatment was given. Protective equipment or special ventilation may be necessary in extreme exposures, but are usually not required.
0	Materials that, on exposure under fire conditions, would offer no hazard beyond that of ordinary combustible material. In the workplace, these materials usually present no special health hazards.
Reactivity (Yellow) 4	Materials that in themselves are readily capable of detonation, or of explosive decomposition, or reaction at normal temperatures and pressures. In case of fire or emergency involving these materials, the area should be evacuated.

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Ranking	Description
3	Materials that (1) in themselves are capable of detonation or explosive, reaction, but require a strong initiating source, or (2) must be heated under confinement before initiation, or (3) react explosively with water. These materials can be severe explosion hazards if mishandled.
2	Materials that (1) in themselves are normally unstable and readily undergo violent chemical change, but do not detonate, or (2) may react violently with water, or (3) may form potentially explosive mixtures with water.
1	Materials that in themselves are normally stable but which can (1) become unstable at elevated temperatures, or (2) react with water with some release of energy, but not violently.
0	Material that in themselves are normally stable, even when exposed to fire, and that do not react with water.
Special Information (White) The letter "W" with a horizontal line through the center.	Unusually water reactive.
OX	Oxidizing materials which decompose readily to yield oxygen when heated and may react readily with other chemicals.
ACID	Acids which react violently with alkali.
ALK	Alkali which reacts violently with acids.
COR	Corrosive
P	Material which may undergo polymerization yielding heat.

The Contractor label (Form 0442.11) requires inclusion of organ-specific health hazard information describing both short-term and long-term health effects and the body systems or organs which may be damaged. The health hazard section of the label must be completed, using information included on the MSDS, or as furnished by the S&H professional. The following health hazards must be identified in the label text

Health Hazard	Description	Examples
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Health Hazard	Description	Examples
Carcinogen	For labeling purposes, a chemical is considered to be a carcinogen if it: (a) has been evaluated by the International Agency for Research on Cancer (IARC), and found to be a carcinogen or potential carcinogen (IARC-1 or 2A); (b) is listed as a NTP-1 or 2 carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (latest edition); (c) is listed by the American Conference of Governmental Industrial Hygienists (ACGIH) as a confirmed or suspected human carcinogen (TLV-A1 or A2); or (d) is regulated by OSHA as a carcinogen; or (e) is an untested mixture containing at least 0.1 percent by weight or volume of a chemical which is considered to be a carcinogen by any one of criteria (a)-(d).	Asbestos, Formaldehyde, Zinc chromate
Reproductive Hazard	Chemicals that affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis) and can cause sterility, miscarriage, fetal injury, or birth defects.	Cellosolve (2-ethoxy ethanol), Lead
Irritant	A chemical, which is not corrosive, but causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. Effects include reddening, itching, or other irritation on contact.	Formaldehyde, Methylethyl ketone, Stoddard solvent
Corrosive	Chemicals that cause visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.	Sodium hydroxide, Sulfuric acid

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Health Hazard	Description	Examples
Sensitizer	Chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.	Epoxy resins, catalysts, Nickel Isocyanate
Hepatotoxin	Chemicals that produce liver damage.	Carbon tetrachloride, Chloroform
Nephrotoxin	Chemicals that produce kidney damage.	Cadmiunum, Arsenic
Neurotoxin	Chemical which produce their primary toxic effects on the brain and/or nervous system.	Lead, Mercury, Toluene
Hematological Agent	Chemicals that act on the blood or blood-forming (hematopoietic) elements.	Benzene, Carbon monoxide, Cyanides
Pulmonary Hazard	Chemicals that irritate or damage lung tissue.	Asbestos, Nitrogen dioxide, Silica