

SEMI S12-0298

GUIDELINES FOR EQUIPMENT DECONTAMINATION

1 Purpose

1.1 This document establishes guidelines for decontaminating equipment which has been exposed to hazardous materials and which is intended for further productive use. Equipment intended for further productive use may include, but is not limited to, that being offered for reuse, resale, repair, refurbishment, or relocation.

1.2 These guidelines should be adapted at each site with proper consideration given to local, state, national, and international regulations and organization policies.

2 Scope

2.1 These guidelines apply to the preparation for transfer or relocation of equipment which has been exposed to hazardous or toxic materials and may pose a threat to human health or the environment. These activities may include, but are not limited to, shutdown, dismantling, removing, labeling, and packaging prior to transport.

2.2 These guidelines describe minimum requirements for documentation of decontamination and notification of residual hazards associated with decontamination.

2.3 The level of decontamination required for equipment designated for reuse in the same service in the same location may be assessed on a case-by-case basis by the site Environmental, Health, and Safety organization.

2.4 These guidelines are intended to be used to ensure that decontamination prior to transport occurs to the greatest extent possible, while acknowledging practical limitations which may exist in individual circumstances.

NOTICE: This safety guideline does not purport to address all of the safety issues associated with its use. It is the responsibility of the users of this safety guideline to establish appropriate safety and health practices and determine the applicability of regulatory or other limitations prior to use.

3 Referenced Standards and Documents

3.1 None.

4 Limitations

4.1 These guidelines are not intended to address decontamination requirements for the preparation of equipment for final “end-of-life” disposal.

4.2 These guidelines are not intended to supersede applicable international, governmental, site, or original equipment manufacturer requirements.

5 Terminology

5.1 *decontamination* — the removal of materials in or on equipment.

5.2 *equipment* — process tools, chemical (liquid or gas) controls and delivery systems, ancillary support systems, structures, piping, ductwork, parts, and subassemblies (e.g., vacuum pumps, pump packages, effluent/exhaust treatment systems).

5.3 *hazardous material* — any chemical, substance, or compound which is defined or interpreted to pose risks or hazards to human health or the environment by applicable international, national, regional, or local laws or regulations.

5.4 *health hazard* — a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed persons. Health hazards include chemicals which are carcinogens, toxic or highly toxic materials, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes.

5.4.1 *transferor* — the party with physical custody of the equipment and responsibility for transfer.

5.4.2 *transferee* — the party who will receive physical custody of the equipment.

6 Responsibility

6.1 It is the responsibility of the equipment transferor to ensure the removal or minimization of all hazardous materials associated with the subject equipment prior to transfer or relocation. Hazards not addressed in the guideline may exist, including undissipated electrical charges or mechanical energy. It is recognized that, in many cases, complete chemical decontamination cannot be achieved without destruction of the equipment. The equipment transferor should ensure that *all* known remaining potential hazards are clearly identified to the transferee.

6.2 It is the responsibility of the equipment transferor to ensure residues, waste materials, and scrap parts/equipment that are generated as part of the equipment decontamination process are safely handled and appropriately disposed of as per local, state, national, and international regulations or standards.

7 Personnel Safety

7.1 Assessment and decontamination procedures should be performed only by properly trained and equipped personnel.

7.2 Any specific procedures used to follow these guidelines should be pre-approved by the site environmental, health, and safety organization prior to decontamination activities.

7.3 Assessment and decontamination procedures should include requirements for appropriate personal protective equipment.

8 Equipment Assessment Prior to Decontamination

8.1 An assessment should be performed on all equipment prior to transfer. Assessment of equipment should initially consider history of the equipment and visual inspection. If initial assessment shows a potential for equipment to have contacted hazardous materials during the life of the equipment, further assessment needs to be performed. (See the flowchart in Figure 1.)

Evaluation Flow Diagram for Use Prior to Equipment Decontamination

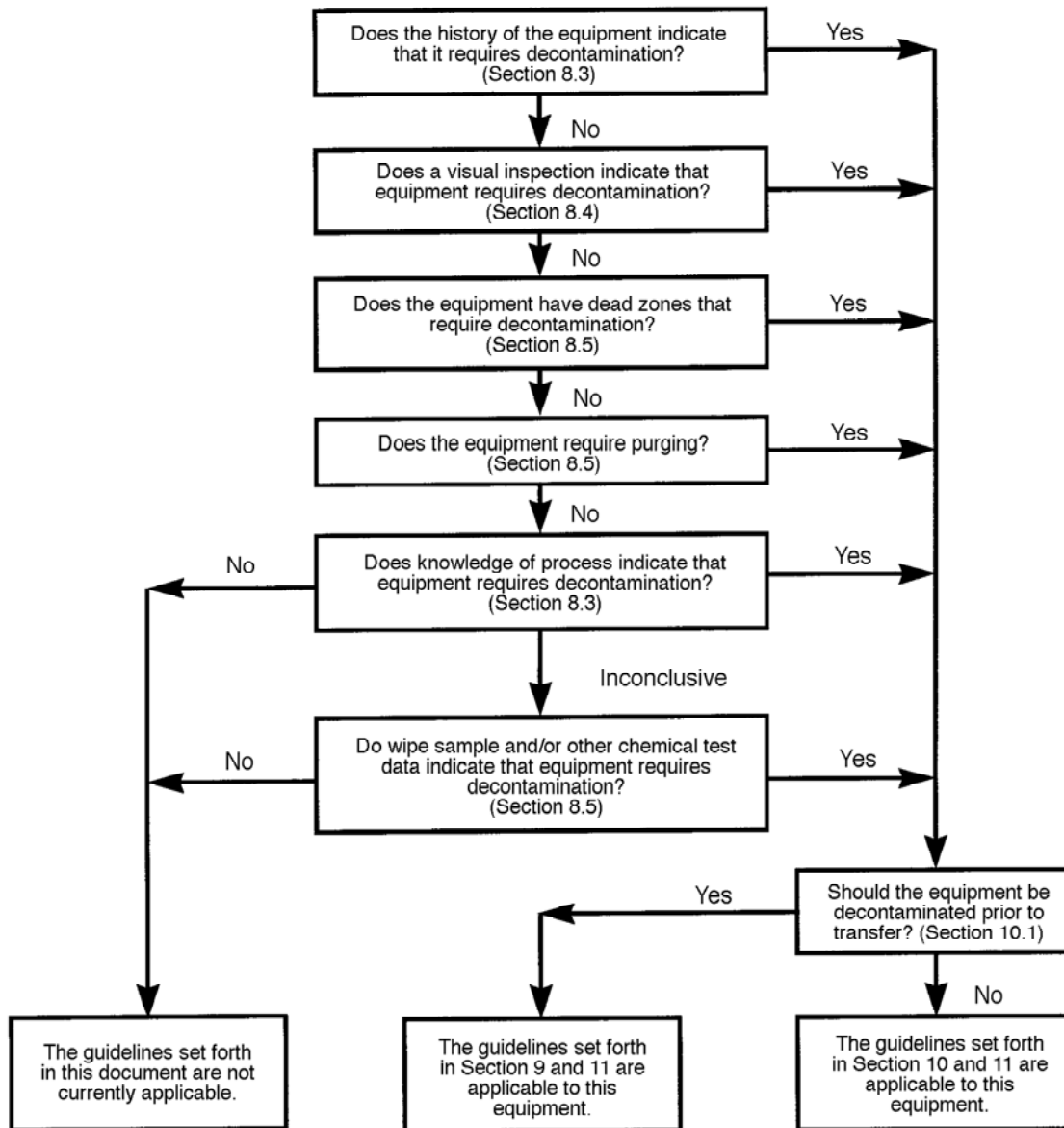


Figure 1
Equipment Assessment Flowchart

8.2 Prior to decontamination, the equipment should be evaluated for abnormalities or non-functionality that may affect the evaluation and decontamination efforts.

8.3 Decontamination should be performed on all areas of equipment which had potentially contacted hazardous materials during the life of the equipment, unless the areas are judged non-hazardous by the criteria set forth in this section. The areas to be decontaminated include external surfaces, internal areas which are accessible without disassembly, and areas accessible during normal operations. Normally inaccessible areas should be addressed on a case-by-case basis by the site Environmental, Health, and Safety organization. Normally removable parts may also require cleaning.