

BC LIGHTRECYCLE LAMP PROCESSOR STANDARD



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Product Care Association

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BC LIGHTRECYCLE LAMP PROCESSOR STANDARD

FORWARD

The BC LightRecycle Lamp Processor Standard defines the minimum requirements for business and organizations to become an approved processor under Product Care Association's BC Lamps and Lighting Equipment Stewardship Program. This standard intends to ensure that lamps are managed and processed in a manner that will adequately safeguard the environment and worker health and safety. It also ensures that data is collected in order to track the materials. Product Care reserves the right to review and revise these standards on an on-going basis.

BACKGROUND

Many types of lamps are commonly used and are considered safe under normal conditions of use. The processing of lamps however requires some safety controls and measures, especially for lamps containing mercury, which is a highly toxic substance. The processors will be responsible for processing intact lamps from the program but should also have the ability to handle and process lamps that are incidentally broken. The processing and recycling of lamps typically involves some sort of mechanical dismantling and separation in which the lamps are broken. During the process of recycling lamps, if systems and procedures are not in place, there is potential risk of negative impact on the environment and employee health and safety. All processors and downstream processors (until the point where the components of the lamps become commodities usable to produce new products or the final disposition for disposal) will be required to be approved under this standard. Prior to becoming an approved processor, the processor will have had to go through the program's audit process as well as having audits performed for its downstream processors. It is the responsibility of the primary processor to ensure that program materials are sent to only approved downstream processors. The program will ensure ongoing compliance with the standard through the audit system.

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DISCLAIMER

The BC Lamp Processor Standard is not intended to absolve processors from the responsibility of compliance with any federal, provincial and/or municipal legislation and regulations applicable to the management of mercury-containing or other lamps, or the business operation of the processor. Nor is it intended to constitute or to provide legal advice. It is the responsibility of the processor to be aware of and abide by all such legislation and regulations.

1. GENERAL REQUIREMENTS

All Processors shall:

1.1. Possess a valid business license

1.2. Comply with all applicable federal, state, provincial and local/ municipal laws and regulations including but not limited to:

- Environmental Management Act
- BC Waste Management Act & Regulations
- Hazardous Waste Regulation
- Transportation of Dangerous Goods Act & Regulations
- Canadian Environmental Protection Act- Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulation
- Basel Convention on Control of Transboundary Movements of Hazardous Waste and Their Disposal
- Air emissions and effluent discharge bylaws and regulations
- U.S. Resource Conservation and Recovery Act
- Provincial/State Health and Safety Regulations

1.3. Prohibit the export of hazardous waste throughout the recycling chain to non-OECD/non-EU countries

1.4. Possess Comprehensive or Commercial General Liability Insurance including coverage for bodily injury, property damage, complete operations and contractual liability with combined single limits of not less than \$2 million per occurrence and \$2 million general aggregate

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- 1.5. Possess Environmental Liability Insurance with combined single limits of not less than \$2 million per occurrence and \$2 million general aggregate
- 1.6. List Product Care Association on the insurance policies (in 1.4 and 1.5) as an additional insured party
- 1.7. Possess and maintain in good standing workers compensation coverage as required under the Workers' Compensation Act of the designated program province and its Regulations or possess workers compensation coverage through either a provincial/state program or through private insurance policy
- 1.8. Maintain all records for a minimum of 3 years, including but not limited to manifests, other shipping documents, waste records and chain of custody for all lamp materials processed
- 1.9. Possess a valid provincial/state approved permit, plans, and approvals, as applicable
- 1.10. Possess a valid waste generator number or EPA identification number, as applicable
- 1.11. Possess a valid air emission permit and effluent discharge permit, as applicable
- 1.12. Maintain a documented closure plan that identifies at a minimum the financial requirements upon closure and the financial mechanism for ensuring the availability of such funds, such as a security or performance bond or other similar financial instruments, and how the existing inventory of products/waste will be managed
- 1.13. Maintain a process to provide written notice of closure to Product Care with a minimum of 90 days advance notice
- 1.14. Maintain a process to provide notice to Product Care of any incidents that required the assistance of first responders within 24 hours of the occurrence. Provide written notice of any regulatory orders or fines within 48 hours of receiving such orders or fines.
- 1.15. Allow PCA or its agent's access to the processors facility to conduct site inspections and audits in order to verify conformance with the BC LightRecycle Lamp Processor Standard. The processor agrees to provide any documentation requested by PCA or its agents

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2. ENVIRONMENTAL HEALTH & SAFETY (EHS) MANAGEMENT SYSTEM

All Processors shall implement and maintain a documented environmental health and safety management system (EHSMS) to ensure the identification and adequate controls over environmental and health & safety impacts associated with the operations of recycling lamps. Notwithstanding any legislative requirements, the EHSMS, shall at a minimum consist of the following:

- 2.1. Maintain a written policy approved by senior management outlining corporate commitment to environmental management and continuous improvement
- 2.2. Maintain a summary of current applicable statutes, regulations and other applicable requirements such as this standard that are relevant to the processor's operations
- 2.3. Maintain a documented process to identify, track, assess and ensure compliance with any changes to regulatory and other applicable requirements including this standard, on an ongoing basis, including but not limited to:
 - Environmental regulations
 - Waste and hazardous waste regulations
 - Occupational health and safety regulations
 - Air emissions and water discharge regulations
 - Transportation regulations
- 2.4. Implement and maintain an emergency response plan to prepare for and respond to emergencies including fires, spills, and medical
- 2.5. Maintain a documented process to record and track the results of an annual risk assessment of the potential environmental and health & safety impact of the operation and any corresponding corrective and/or preventive actions taken
- 2.6. Maintain a documented process for employees to report, record and investigate any accidents, injuries, spills, near misses and other incidents that could have resulted in an injury or an unauthorized release to the environment and any corresponding corrective and/or preventive actions taken
- 2.8. Maintain a documented process to communicate to employees the results of the risk assessment and investigations of any injuries, accidents, near misses, spills and unauthorized releases and the corresponding corrective/preventative actions taken

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2.9. Conduct and document a review of the EHSMS, by senior management, to ensure adequacy and effectiveness of the EHSMS. The review is required to be conducted at a minimum on an annual basis or:

- whenever new lamp processing equipment is installed;
- whenever existing lamp processing equipment is modified such that the modification may impact the environment and/or employee health & safety or;
- whenever there is substantial re-organization of personnel in lamp processing

3. ENVIRONMENTAL HEALTH & SAFETY (EHS) RISK ASSESSMENT

An EHS risk assessment shall be conducted on an annual basis to identify and assess the environmental and health and safety impacts of the entire operations. Should the operations undergo significant changes that introduces potential new risks/hazards or increases the severity of such hazards, a new risk assessment must be conducted; either task specific or for the entire facility, dependent on the amount of change to the operations. The EHS risk assessment shall include at a minimum the following:

3.1. A process to identify physical and chemical hazards and to assess the probability and severity such hazard

3.2. A process to identify areas with potential negative impacts to the environment and to assess the probability and severity of such hazard

3.3. A process to determine the appropriate level of control necessary to eliminate or effectively control the hazards

3.4. A process to identify the frequency and need for air quality monitoring/assessment, noise level monitoring/assessment, medical surveillance and the development and implementation of an exposure plan as required by regulation.

3.5. Maintain a documented process to communicate to employees the results of the EHS risk assessment and the process involved in assessing the environmental and health and safety impact of the entire operation

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4. ENVIRONMENTAL HEALTH & SAFETY (EHS) CONTROLS

All processors shall ensure that controls are in place to address the risks identified through the risk assessment process to prevent accidents, injuries, chemical exposure and unapproved releases to the environment. All processors, at a minimum shall:

- 4.1. Develop, maintain and document a training program for the handling and management of lamps including but not limited to:
 - Potential hazards and risks associated with handling of lamps
 - Proper and safe handling & storage of lamps
 - Proper use of processing and safety equipment including proper use and care of personal protective equipment
 - Proper spill/breakage clean up and management
 - Safety and emergency procedures
 - Accident/injury reporting and management
 - Emergency response plan
- 4.2. Implement and enforce hygiene practices, eating, drinking, smoking restrictions and decontamination procedures to minimize risk of exposure to hazardous materials
- 4.3. Implement and maintain good housekeeping procedures
- 4.4. Provide adequate personal protective equipment and spill response equipment
- 4.5. Provide physical guards to protect against mechanical hazard and other physical hazards
- 4.6. Conduct a baseline sampling program for noise level monitoring, air quality monitoring, effluent discharge and hazardous waste delisting and develop a sampling program based on the risk assessment and baseline testing results
- 4.7. Implement a medical surveillance program as needed based on the risk assessment and the baseline test results
- 4.8. Conduct and document on an annual basis, testing of the emergency response plan, review results, and revise as necessary
- 4.9. Conduct fire safety equipment inspection and testing at a minimum annually

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- 4.10. Implement and document an equipment inspection and maintenance schedule for any mechanical processing equipment and mechanical systems/apparatus engineered to reduce emissions and worker exposure
- 4.11. For automated equipment, ensure there is an emergency shut-off system and that it is tested regularly.
- 4.12. Designate a person in charge of ensuring environmental health and safety controls are adequate and effective within the entire operations of the facility and provide Product Care with the name, job title and responsibilities of the designated person. Notify Product Care within one week of any change.

5. MATERIAL HANDLING

All Processors shall:

- 5.1. Maintain adequate security measures to prevent unauthorized access to premise and storage areas
- 5.2. Ensure that unprocessed lamps and hazardous components are stored and processed in an area that is protected from environmental elements and away from drains and catch basins
- 5.3. Ensure that lamps are processed within 90 days of receipt and all resulting downstream products/commodities are shipped to approved downstream processors within 120 days of receipt
- 5.4. Provide the program with written 90 day notification of intentions to change downstream processors and await written approval from program prior to changing downstream processors
- 5.5. Maintain evidence of permits or licenses of transporters utilized for transportation of hazardous waste
- 5.6. Maintain evidence of permits/approvals/license of downstream processors/service providers utilized for hazardous waste management
- 5.7. Commit to a system of continuous improvement with respect to moving materials up the recycling hierarchy and to notify the program of any new opportunities or technologies to move the final destination of materials up the pollution prevention hierarchy.

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6. ADMINISTRATION

All processors shall:

6.1 Maintain and document a tracking system for the facility that includes at a minimum the following information at the receiving and processing stages for all program materials on a monthly basis:

- Date shipment was received
- Generator name corresponding to shipment
- Bill of lading or manifest number corresponding to each shipment
- Quantity of lamps per each lamp technology corresponding to each shipment
- Verification that shipment was inspected by appropriate personnel and corresponds to Bill of Lading/Manifest information

6.2 Maintain and document a monthly Inventory of lamp volumes at the facility that includes at a minimum the following information :

- Date shipment was received
- Generator name corresponding to shipment
- Bill of Lading or Manifest Number corresponding to each shipment
- Quantity of lamps per each lamp technology corresponding to each shipment
- Weight of constituent components in Inventory

6.3 Maintain and document a monthly and annual record of the downstream flow and handling of lamps from receipt at processor's facility to each point of final disposition, including details on how the various components are processed at each point and the amounts /percentages sent to each downstream processor. Product Care will treat specific downstream processor names as confidential.

6.4 Provide certificates of recycling for all program material processed on a monthly basis

6.5 Provide training with respect to proper completion of shipping documents and record keeping to applicable and appropriate personnel

6.6 Designate a person in charge of maintaining required documents and provide Product Care with the name, job title and responsibilities of the designated person.

7. DEFINITIONS

Mercury-containing lamps – are compact fluorescent lamps (CFL), fluorescent tubes, high intensity discharge lamps (HID) and other lamp technologies that use mercury to generate light.

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- 7.1 “Downstream Processor” means an entity that receives material from a primary recycler or other downstream processors for additional processing and/or disposition.
- 7.2 “Generator” means an entity possessing end-of-life lamps and from which a shipment to the processor originates
- 7.3 “Inventory” refers to LightRecycle program products received by the facility but not yet processed, or the constituent components not yet shipped to downstream processors for additional processing
- 7.4 “Point of final disposition” means a point in the downstream flow of materials where the separated materials generated from the processing of lamps become commodities used to produce new products or the materials are disposed of.
- 7.5 “Pollution prevention hierarchy” is as follows in descending order of preference, such that pollution prevention is not undertaken at one level unless or until all feasible opportunities for pollution prevention at a higher level have been undertaken:
- a. reduce the environmental impact of producing the product by eliminating toxic components and increasing energy and resource efficiency;
 - b. redesign the product to improve reusability or recyclability;
 - c. eliminate or reduce the generation of unused portions of a product that is consumable;
 - d. reuse the product;
 - e. recycle the product;
 - f. recover material or energy from the product, or
 - g. otherwise dispose of the waste from the product in compliance with all applicable federal, state, provincial and local/ municipal laws and regulations
- 7.6 “Processing” is the process by which end-of-life lamps are manually or mechanically broken down into constituent parts and recoverable components are retrieved
- 7.7 “Processor” is an entity that manages the processing of end-of-life lamps and ensures recoverable components are sent to downstream processors for additional processing and/or final disposition

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