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Applicability: Green Cleaning

### **CONSUMABLES**

UNIVERSITY purchases and warehouses all CONSUMABLES, including:

- Paper Products (hand towels, toilet tissue)\*
- Trash can liners
- Hand soap
- Sanitary napkins
- Deodorizer

\*It is required that 100% of janitorial paper product purchases made by the UNIVERSITY be certified by either Green Seal (GS-01 for toilet tissue, paper towels, napkins), UL ECOLOGO (UL 175 for toilet tissue and hand towels) or the Forest Stewardship Council (for fiber procurement).

It is the CONTRACTOR's responsibility to:

- fill CONSUMABLE dispensers,
- install and remove trash can liners appropriate to the size of the trash can, and
- implement an effective inventory control system

CONSUMABLES purchased by UNIVERSITY are not to be used by CONTRACTOR for cleaning. CONTRACTOR must purchase materials used to clean. If any CONTRACTOR employee is observed cleaning any surface with paper products, a \$100 fine per incident will be levied.

### **LEAST, HARMFUL SUSTAINABLE CLEANING**

#### **INTRODUCTION**

The purpose and intent of the Green Cleaning program is to minimize exposure of chemical-based health, safety and environmental harm to property visitors and staff personnel from potentially hazardous chemical, biological and particle contaminants.

#### **Green Cleaning:**

- Is defined as a process of "cleaning to protect health without harming the environment."
- Refers to using cleaning methods with environmentally-friendly ingredients and chemicals to preserve human health and environmental quality.
- Techniques and products avoid the use of chemically-reactive and toxic, some of which emit volatile organic compounds causing respiratory and dermatological problems among other adverse effects. In addition to reducing VOCs, it is one aspect of the building maintenance plan that can reduce bacteria and fungi.

- These also describe the way residential and industrial cleaning products are manufactured, packaged and distributed. If the manufacturing process is environmentally-friendly and the products are biodegradable, then the term "green" or "eco-friendly" may apply.
- Prohibits cleaning products which contain various toxic chemicals (see below).
- The goal and expectation of the program is to utilize as many toxic-free cleaning products which leave no chemical residual in the air or on any surface after the cleaning activity is complete.

The product requirements included in the CONTRACTOR'S plan are meant to provide currently acceptable cleaning products; however, substitute products may be used, provided they meet similar green certification criteria AND are approved by LU Facilities and the Office of Sustainability.

The degree to which each CONTRACTOR is able to comply with the requirements will be a factor in the proposal evaluation process. In addition, CONTRACTOR'S use of products or processes that do not contain any environmental contaminants (Chemical Free Cleaning products) and help reduce the ecological impact of cleaning products that are flushed into the water supply/filtration system will also be a factor in the proposal evaluation process.

### **GREEN CLEANING POLICY**

This policy applies to cleaning procedures, cleaning material purchasing, cleaning equipment purchases, and cleaning services that occur inside and on the building site and grounds for all buildings on campus. The responsible party for this policy is the facilities services designee. The responsible party ensures that this policy is executed and that any contracted cleaning vendors under the UNIVERSITY'S control are aware of, and fully trained on, the procedures outlined in this policy. Further, the facilities designee is responsible for sharing this policy with the building representatives and encouraging policy adoption accordingly. They are also responsible for reviewing this policy for any significant changes on a regular basis. If at any time updates are required to this policy, the responsible party will ensure that the appropriate individuals are informed of the updates.

### **GENERAL REQUIREMENTS**

The UNIVERSITY and or its designee will be responsible for careful and considerate performance measuring, analysis, and reporting on management of its cleaning and janitorial maintenance services to reduce overall risk and provide a safe and effective work environment, while minimizing environmental impact. The following requirements are provided to produce this result in the area of green cleaning.

100% of cleaning chemicals are required to meet the requirements of Green Seal or UL ECOLOGO. The performance measurement unit for this will be by cost. The only exceptions to this requirement are: toilet bowl cleaners, floor wax, and one of the product lines used for Lehigh Athletics. This is because these situations required alternative products to sufficiently clean the area and cannot be replaced by green cleaning products at this time. Cleaning products may be concentrated and diluted through automated dilution control equipment to minimize worker exposure to concentrated chemicals and to minimize waste.

In addition to meeting these certification standards, cleaning products must still fulfill the basic requirements for cost, performance, health, safety and environmental impact. In the end, all products must meet or exceed all federal, state and local standards for quality and safety requirements.

Green cleaning product requirements will be used in the development of performance measures for cleaning CONTRACTORS, and shall be written into each cleaning and maintenance contract. Review of

the program may include chemical use listing, safety/incident review and performance summary against pre-defined metrics.

Standards, product registrations and cleaning practices are constantly evolving. Cleaning Managers must keep abreast of developments and strive for continual improvement in performance and environmental achievement.

**GREEN CLEANING PRODUCT REQUIREMENTS:**

For the purposes of this policy, “aerosol” is defined as a dispenser that holds a substance under pressure and that can release it as a fine spray (usually by means of a propellant gas).

**Glass Cleaners, All Purpose Cleaners, General Purpose Cleaners and Washroom Cleaners** shall meet the following requirements:

- Shall be non-aerosol, non-streaking, non-abrasive, rinse free and may be concentrated or ready-to-use.
- Product will be used for cleaning glass, Plexiglas, plastic, mirrors, chrome, porcelain, tile, ceramic tile, fiberglass linoleum, painted and unpainted surfaces.
- Product must have the ability to dissolve fats, grease, inks, dirt or petroleum hydrocarbons.
- Be certified as GS-37 and/or UL 2759

**Toilet Bowl Cleaner.** Shall meet the following requirements:

- Product shall be non-corrosive, non-aerosol and fast penetrating to remove stains, eliminate and neutralize urine odors.
- Product will be used on porcelain and stainless steel.

**Basin Tub & Tile Cleaner.** Shall meet the following requirements:

- Product must be non-aerosol
- Effective for removing soap scum, suntan and body oils, mildew, lime, water scale and rust deposits.
- Product will be used on porcelain, tile, ceramic tile and fiberglass surfaces.
- Be certified as GS40 and/or UL 2759

**Other cleaning chemicals** not covered by GS-37 or UL 2759 (i.e. furniture polish, metal polish, disinfectants) shall meet the following requirements:

- Be certified as GS-34 and/or UL 2792 for Cleaning and Degreasing Compounds

**Odor Control** products shall be non-staining and meet the following requirements:

- Product must eliminate odors produced by cigar & cigarette smoke, urine & fecal matter, mildew, vomit, food spillage, garbage, cooked food, pets and perspiration.
- Be certified as UL 2798 Digestion Additives for Cleaning and Odor Control
- Be certified as UL 2791 Drain or Grease Traps Additives
- Be certified as UL 2796 Odor Control Additives

**Hand Soaps**

- Hand soaps shall be free of antimicrobial ingredients except as preservatives or where required by code or regulation (i.e. food service and healthcare)  
AND be certified as GS-41 and/or UL 2784
- Preference for the use of foaming dispensers to minimize product use

**Floor Care Products**

- Hard floors, including tile, concrete and wood surfaces will be cleaned with products certified as GS-40 and/or UL 2777
- When available, chemical concentrates dispensed from closed dilution systems must be used as alternatives to open dilution systems or non-concentrated products.
- Resilient tile and hard flooring coating systems, including floor finishes and restoration products shall be used in accordance with Green Seal GS-40 or UL 2777 standard and shall be highly durable in order to maintain an acceptable level of protection and gloss for a minimum of one (1) year before stripping/removal and recoating is necessary.

**Carpet Care**

Products shall meet the following requirements:

- Be certified as GS-37 and/or UL 2795

**Microfiber:**

The use of **microfiber** cloths and mops should be encouraged to improve cleanliness and to reduce the use of cleaning chemicals and water.

**Vacuum Machines**

Vacuum Cleaning equipment must meet the following requirements

- “Certification” by the Carpet & Rug Institute’s (CRI) Green Label program to ensure that they capture small particles. All equipment should have Sealed HEPA filtration.
- High speed machines must have dust shrouds and filtration systems.
- Floor burnishers include active-vacuum attachments to capture small particles.

**Powered Equipment**

- Vacuum Cleaners shall meet the requirements of CRI Green Labeled vacuums
- Carpet Extraction Equipment shall meet the requirements of CRI Bronze Seal of Approval, at a minimum.
- Hot water extraction equipment shall be capable of removing sufficient moisture such that carpets can dry in less than 24 hours.
- Automatic Floor Scrubbing Machines shall be equipped with variable-speed chemical feed pumps to minimize the use of cleaning chemicals.
- Floor Burnishers shall contain shrouds and active vacuum attachments to capture particles produced during use
- Propane-powered floor equipment shall have high-efficiency, low-emissions engines
- All new batteries purchased for battery powered equipment shall be equipped with environmentally preferable gel batteries when available.
- Powered maintenance equipment should be equipped with vacuums, guards and/or other devices for capturing fine particulates.
- Where appropriate, active micro fiber technology shall be used to reduce cleaning chemical consumptions and prolong life of disposable scrubbing pads.
- Powered equipment will be ergonomically designed to minimize vibration, noise and user fatigue.

- Equipment shall have rubber bumpers to reduce potential damage to building surfaces
- Chemical Free Cleaning products will leave no chemical residual in the air or on any surface after the cleaning activity.

**Reporting on Janitorial Powered Equipment**

- Documentation shall be provided to demonstrate compliance with these requirements.
- A log shall be kept for all powered janitorial equipment to document the list of equipment and MSDS books kept with all equipment.

**Carpet Extraction Equipment** shall meet the requirements of:

- CRI Bronze Seal of Approval at a minimum
- Hot water extraction equipment shall be capable of removing sufficient moisture such that carpets can dry in less than 24 hours.
- Low environmental impact janitorial equipment includes the use of durable carpet care equipment, such as upright, backpack and wide area vacuums equipped with power heads meeting or exceeding the Carpet and Rug Institute “Green Label” and capable of capturing 96% of particulates 0.3 microns in size.
- Carpet extraction equipment shall be capable of removing sufficient moisture such that carpets can dry in less than 24 hours. Carpet care equipment shall be electric or battery powered and shall have a maximum sound level less than 70dBA.
- Wherever possible, carpet extraction method that reduces or eliminates the use of chemicals.
- Relevant maintenance/restoration practices and the dates of these activities.
- The duration between extraction cycles.

**Recycling programs** should be maintained and expanded if possible.

**Training** is an essential part of a successful Green Cleaning program, including the procedural training for cleaning personnel as well as for other building occupants, including staff and even visitors to help maintain a healthy environment. For example, visitors should understand what is required of them when using the building such as returning chairs and tables to their original places so that cleaning personnel can focus on cleaning.

**We also require that an audit system** be implemented to:

- Use Software systems similar to the **ICM** Performance Measurement system to monitor and improve cleanliness performance,
- Ensure that cleaning vendors are following guidelines given to them, and
- Identify areas where further “greening” of cleaning and other building maintenance efforts can be made.

**Avoid** the use of products containing chemicals hazardous to the environment or to those using the chemicals. For an up-to-date list and rating of hazardous chemicals review the information provided by the Janitorial Products Pollutions Prevention Project at:

[www.westp2net.org/janitorial/tools/riskevaluation.htm](http://www.westp2net.org/janitorial/tools/riskevaluation.htm).

**Prohibited Chemicals:**

Prohibited materials include:		
Acetone (MEK – methylethyl ketone) Ammonia Ammonia hydroxide Bleach Butoxyethanol Descalers Easy-Off Glycol ethers Lye Lysol Ozone-depleting compounds Pine oils Powdered cleaners Steel Wool Solvents	<b>Products containing:</b> Alkylphenol Coconut Diethanolamide Coconut Oil Diethanolamine Dibutyl phthalate Diethanolamine Diethylene Glycol Monomethyl Ether Diethylene Glycol Ethoxylates Monoethyl Ether N-methyl Pyrrolidinone Nonlphenol Propylene Glycol	<b>Metals, including but not limited to:</b> Arsenic Cadmium Chromium Cobalt Lead Mercury Nickel Selenium Zinc
All purpose cleaners should not have chelating agents, no silicates and be VOC-free		
Other: Gasoline, Kerosene		

### Reports & Logs:

A **Cleaning Chemical log** will be kept that details all cleaning chemicals purchased. Attachments to the log shall include manufacturer’s Material Safety Data Sheets. The log shall identify:

1. An GHS and/or label from the manufacturer specifying that the product meets the VOC content level for the appropriate product category as found in the California Code of Regulations.
2. A copy of the Green Seal or UL ECOLOGO Certification, OR
3. If the product has not been certified by Green Seal or UL ECOLOGO, the manufacturer will provide test data documenting that the product meets each of the environmental health & safety criteria set forth in the Green Seal and/or UL ECOLOGO Standard.

On an annual basis, the responsible party will review all purchases and compare them against the policy goals. If the policy goals are not being met, the responsible party will take corrective action, typically in the form of providing education to the individuals in charge of procurement on the goals and sustainability criteria outlined in this policy.

A **Floor Care log** will be maintained which lists all floor care equipment including vacuums (e.g. upright, backpack, wide area and wet/dry) and equipment used for maintaining resilient and hard floors (e.g. buffers, burnishers, and auto-scrubbers). Documentation will be kept on each piece of equipment identifying performance capabilities.

1. A floor maintenance plan will be kept which details the number of coats of floor finish being applied as the base coat and top coats, along with relevant maintenance/restoration practices. A log shall be kept identifying:
  - i. The dates of floor finish application activities.

- ii. The dates of floor finish restoration and maintenance activities.
- iii. The duration between stripping and recoat cycles.

A log shall be kept for all powered cleaning equipment. The log should identify the date of purchase and all repair and maintenance activities

**Minimum Chemical Requirements:**

Ref	RISK	ACCEPTABLE LIMITS	HIGH EXPOSURE RISK
G.1	Carcinogens Reproductive Toxins	In concentrated form, this product will contain less than 0.1% by weight of any ingredient that is a Carcinogen or Reproductive Toxin.  See Annual Report on Carcinogens ( <a href="http://ntp-server.niehs.nih.gov">http://ntp-server.niehs.nih.gov</a> ) or California Safe Drinking Water ( <a href="http://www.oehha.org/prop65.html">www.oehha.org/prop65.html</a> ) Or OSHA at ( <a href="http://www.osha-slc.gov/SLTC/carcinogens.html">www.osha-slc.gov/SLTC/carcinogens.html</a> ) & ( <a href="http://www.osha-slc.gov/SLTC/reproductivehazards.html">www.osha-slc.gov/SLTC/reproductivehazards.html</a> )	Propylene Glycol; Diethanolamine; Diethylene Glycol Monomethyl Ether; Diethylene Glycol Monoethyl Ether;n-methyl Pyrrolidinone; Coconut Diethanolamide; Coconut Oil Diethanolamine.
G.2	Neurotoxins	In concentrated form, this product will contain less than 0.1% by weight of any ingredient that has an effect on the human nervous system.  See Integrated Risk Information System (IRIS) ( <a href="http://www.epa.gov/iriswebp/iris/index.html">www.epa.gov/iriswebp/iris/index.html</a> ) and ( <a href="http://www.cdc.gov/niosh/87104_48.html">www.cdc.gov/niosh/87104_48.html</a> )	Propylene Glycol; Acetone; Methyl Ethyl Ketone; Trichloroethylene; Benzyl Alcohol; Hexylene Glycol; Propylene Glycol Monomethyl Ether; Toluene; Cyclohexanol; n-hexane; Diethylene Glycol Monoethyl Ether; Diethylene Glycol Monobutyl Ether; Perchloroethylene; Xylene; Butoxy Propanol; Naptha; Stoddard Solvent; Ethyl Alcohol; Isopropyl Alcohol; Ammonia
G.3	Flammability	In concentrated form, this product will have a flash point of 140°F or higher. The lowest flash point for any individual ingredient within the product must be less than 5% of the concentrated	OSHA Class II and Class I (Combustible) liquids with a flashpoint above 100F and below 140F.

		<p>product.</p> <p>See OSHA Regulations (29 CFR) Hazard Communication – 1910.1200. Or Pensky-Martens Closed Tester (ASTM Z11.24-1979 (ASTM D 56-79 for liquids.</p>	
G.4	Corrosivity (pH)	<p>In its contracted form, this product must have a pH of grater than 2.0 and less than 12.5.</p> <p><i>See EPA Standard Method 9040B: pH SW-846</i></p>	EPA Standard Method 940B
G.5	Volatile Organic Compounds (VOC)	<p>In its diluted form, this product must have a VOC content equal or less than the label specified percentage.</p> <p><i>See California Air Resource Board method 310:</i>  <a href="http://www.arb.ca.gov/testmeth/cptm/es_05.pfd">www.arb.ca.gov/testmeth/cptm/es_05.pfd</a></p>	VOC content of greater than 1% by weight at the diluted use point. Air Freshener-Room Deodorant (Liquid) greater than 18%- Gel at greater than 3%; General Purpose Cleaner greater than 4%; Glass Cleaner at greater than 4%; all other products at greater than 10%.
G.6	Endocrine Disrupters	<p>In its contracted form, this product must contain a combined total of less than 0.1% by weight of any ingredient that is known or suspected as an Endocrine Disrupter on its MSDS or label materials.</p> <p><i>See State of Washington C11399 for Environmentally Preferable Products</i></p>	<p>Dibutyl Phthalates; 4-Nonyphenoxy Ethanol; p-Octylphenol diethoxylate; Octylphenol ethoxylate; Octylphenol; Tetramethylbutyl)phenoxy ethanol; p-tert-octylphenoxypolyethoxyethanol; Dodecylphenol Ethoxylates; Nonylphenol Polyethylene Oxide; Nonylphenol-9; C9 Branded Alkylphenol Ethoxylate; C8 Branded Alkylphenol Ethoxylate; Octylphenoxypoly (ethoxyethanol); Nonylphenol Monoethoxylate.</p>
G.7	Aerosol Container	<p>No pressurized products may be used.</p> <p>No Reference</p>	No aerosol products are acceptable.
G.8	Eye Irritation	<p>In its concentrated form, this product must have an eye irritation core of Category IV (Mild) per the EPA scale or Green Seal GS-37.</p> <p><i>See OPPTS Toxicology Standards:</i>  <a href="http://www.epa.gov/opptsfrs/OPPTS_Harmonized/870_Health_Effects_Test_Guidlines/">www.epa.gov/opptsfrs/OPPTS_Harmonized/870_Health_Effects_Test_Guidlines/</a></p>	In concentrated form, a weighted average of any ingredient above 1% with a “Warning or Caution” label. Any eye irritation rating of more then III.II or I per the EPA scale



		Series)	
G.9	Skin Absorption	Individual ingredients or products exhibiting less than 1% of the Prohibited chemicals noted.  <i>See OPPTS Toxicology Standards:</i> <a href="http://www.epa.gov/opptsfrs/OPPTS_Harmonized/870_Health_Effects_Test_Guidelines/Series">www.epa.gov/opptsfrs/OPPTS_Harmonized/870_Health_Effects_Test_Guidelines/Series</a> )	Isopropanol; 2-butoxyethanol; Acetone; 1,1,1-TCE; Napthalene; Ethylene glycol; Diethylene Glycol Monobutyl Ether; Tetrachloroethylene; Monoethanolamine; Xylene.
G.10	Volatile Organic Chemicals (VOC's)	In diluted form, this product shall contain no more than 50% of the allowable VOC content specified.  <i>See California Air Resources Board Method</i> <a href="http://www.arb.ca.gov.testmeth/cptm/es_05.pfd">www.arb.ca.gov.testmeth/cptm/es_05.pfd</a> )	Any product that exceeds 100% of its allowable VOC content.
G.11	Phosphates (Eutrophication)	In diluted form, this product shall contain no more than 0.5% phosphorous by weight.  <i>See EPA 600/R97/072</i> ( <a href="http://www.epa.gov/cgi-bin/claritgw">www.epa.gov/cgi-bin/claritgw</a> ) at "phosphorus test or 600R97072"	Any product that contain more than 0.5% phosphorous by weight.
G.12	Toxicity (Oral LD50)	In concentrated form, as a whole or on a weighted average of LD50's for each ingredient of the product is equal to 1% or more by weight, is greater than 2,000 mg/kg. Alternatively, that the product as a whole meets Level 1 acute oral toxicity (LD>5,000 mg/kg),  <i>See OPPTS harmonized test guidelines:</i> <a href="http://www.epa.gov/docs/OPPTS_Harmonized/870_Health_Effects_Test_Guidelines/Series/870-1100.pfd">www.epa.gov/docs/OPPTS_Harmonized/870_Health_Effects_Test_Guidelines/Series/870-1100.pfd</a> )	The absence of acute oral toxicity test data, an authoritative Certification, LD50 test report or clear MSDS clarification.
G.13	Toxicity Aquatic	Not toxic to aquatic life, for chemicals containing < 1% disinfectant properties..  <i>See EPA Environmental Effects Testing Guidelines:</i> <a href="http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Tile_40/40cfr797_00.html">www.access.gpo.gov/nara/cfr/cfrhtml_00/Tile_40/40cfr797_00.html</a> ) .	A cleaner that contains greater than 1% of any added disinfectant ingredient or more than 5% organic mater for a combined disinfectant/cleaner..
G.14	Biodegradability	In its concentrated form, each ingredient as a whole (or any ingredient comprising 5% or more) meets the Organization for Economic Cooperation and Development	5% or less of the product is biodegradable. Does not meet the requirements of Green Seal GS-37

		(OECD)criteria for biodegradability. See ( <a href="http://www.iso.org/iso/en/StandardsQueryForm">www.iso.org/iso/en/StandardsQueryForm</a> )	
G.15	Fragrances	The product, in part or as a whole in a concentrated form contains a combined total of 1% or less of any non-functional fragrance ingredient; or SARA 313 listed hazardous materials.  See( <a href="http://www.pa.gov/tri/chemical/chemlist2001.pfd">www.pa.gov/tri/chemical/chemlist2001.pfd</a> )	A product that contains a combined total of more than 1% of any non-functional fragrance ingredient; or SARA 313 listed hazardous materials.
G.16	Dyes	The product, in part or as a whole in a concentrated form contains a combined total of 1% or less of any coloring agent that are non-functional; or SARA 313 listed hazardous materials.  See( <a href="http://www.pa.gov/tri/chemical/chemlist2001.pfd">www.pa.gov/tri/chemical/chemlist2001.pfd</a> )	A product that contains a combined total of more than 1% of any dyes that are non-functional; or SARA 313 listed hazardous materials.
G.17	Concentrates	A product that requires the addition of water prior to use.	A product that includes all water needed for effective use or requires no addition of water prior to use.
G.18	Recyclable Packaging	All containers are made with materials that are reusable, recyclable or returnable.	Some or all containers are not made with materials that are reusable, recyclable or returnable.
G.19	Chemical Free	Chemical Free Cleaning products will leave no chemical residual in the air or on any surface after the cleaning activity.  See "Chemical Free Cleaning Chemical Guideline"	Product leaves a chemical residue in the air and/or on a surface.

### Material Safety Data Sheets

SERVICE PROVIDER will submit Globally Harmonized System (GHS) on all products within ten (10) working days prior to contract start-up, in a form acceptable to the designated UNIVERSITY representative(s). Globally Harmonized System (GHS)sheets must be displayed for all chemicals and supplies used.