

Sustainable Cleaning Program

With detailed chemical guidelines attached

Also includes addendum on vinegar as a cleaner.

MU
Campus
Facilities

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Custodial Services and Sustainability

Custodial Services is committed to cleaning to protect health without harming the environment. We seek to achieve this objective by using environmentally friendly chemicals, processes, and equipment that aid in protecting the environment as well as the health and safety of our employees, customers, and visitors to the campus buildings where we clean.

General principles of environmental stewardship for cleaning

In the development of our cleaning policies and processes, we are guided by the following principles.

1. Clean for health first and appearance second.
2. Minimize human exposure to contaminants and cleaning products.
3. Recognize cleaning as an environmental health benefit.
4. Commit to occupational development of cleaning personnel.
5. Communicate the value of healthy buildings.
6. Minimize chemical, particle and moisture residue when cleaning.
7. Ensure worker and occupant safety.
8. Contain and reduce all pollutants entering the building.
9. Dispose of cleaning products in environmentally safe ways.
10. Establish and document routine maintenance schedules.

Low Environmental Impact Cleaning Policy

Our cleaning policy seeks to have a low environmental impact through:

- Use of cleaning systems which reduce the amount of cleaning chemicals used and the amount of cleaning wastes created.
- Use of sustainable cleaning products.
- Use of chemical concentrates and appropriate, closed dilution systems.
- Proper training of custodial employees in the hazards and proper use of cleaning chemicals; in the proper use and care of equipment; in the use of appropriate and safe cleaning procedures; and in the proper disposal or recycling of unneeded chemicals, packaging materials, and other wastes created by the cleaning process.
- Use of equipment that reduces impact on Indoor Air Quality (IAQ).

Environmentally Preferable Cleaning Products and Supplies

Third party certification for routinely used cleaning chemicals

- All routinely used cleaning chemicals (including general purpose cleaners, floor cleaners, bathroom cleaners, glass cleaners and carpet cleaners but not including disinfectant cleaners) shall be certified by either Green Seal or Design for the Environment (DfE) as environmentally preferable cleaning products for institutional use. Disinfectant cleaners will be used only where necessary on surfaces where pathogens can collect and breed such as in restrooms or for cleanups of bloodborne pathogens. Hypochlorites (bleach) will not be used except for certain cleanups of bloodborne pathogens and for certain instances of mold remediation where other products cannot be used.



Exceptions and restricted use policies

- For some non-routine special cleaning tasks a Green Seal certified or DfE labeled product may not exist in a given category. In such cases, Custodial Services will seek to restrict and minimize use of the product. Product categories where this might apply include acid-cleaners for excessive mineral deposit build up and certain graffiti and stain removers for use where alternative environmentally preferable products do not work. Such products shall only be issued out by supervisors on a short term basis (less than one week) for use only on specified problem areas. Supervisors will track all issuances and returns of such products on custodial teams.
 - Exceptions to short term issuance may be needed in some special areas where ongoing use of a non-Green Seal product is the only practical solution. Such exceptions may be given if needed only after review of an Assistant Director of Facility Operations. Building coordinators and other key building occupants will be notified of possible needs to make exceptions and their input will be included in the review process. Building coordinators can also initiate requests that certain exceptions be considered. For example, in a building with numerous brass railings, the building coordinator might request on-going and regular use of a brass polish. In all cases, the health and safety concerns of custodians and building occupants will be priorities.
 - Special cleaning teams who respond regularly to cleaning emergencies will have access to restricted chemicals. Written tracking of such products will not be done on special cleaning teams. Special cleaning teams include only SWAT (“Special Work Assignment Team”), the Floor Crew team, and the garage cleaners. These teams respond to emergency cleaning situations on a regular basis and may need access to special graffiti removers, odor counteractants, special spot removing agents, or other special cleaning products on a recurring basis.



Floor strippers, finishes and other floor care products

- Floor strippers and finishes used shall be Green Seal certified or DfE labeled for use in institutional environments with these exceptions.
 - Where the use of heavy duty base seal will lead to a more durable finish on porous floor and a decrease in the frequency of stripping, a sealer that is not green certified may be used as a base coat for green finish after review by an Assistant Director of Facility Operations.
 - Where old, non-green finishes prove resistant to removal by green certified strippers, a non-green stripper may be used in the particular area after review by an Assistant Director of Facility Operations.

- Where Green Seal categories do not exist for certain types of routine floor maintenance products, the products will be environmentally preferable. Neutralizers and defoamers used shall be phosphate-free. Restorer/maintainer products shall be zinc-free.

Hand soap

- Hand soap shall be Green Seal certified and shall be the foaming type.

Paper products and plastic liners

- Paper towels and toilet tissue shall meet or exceed EPA Comprehensive Procurement Guidelines for minimum post-consumer recycled fiber content.

- Plastic liners shall contain a minimum of 10% post-consumer recycled content.



Low environmental impact powered equipment

All new, powered custodial equipment being purchased will adhere to the following criteria.

- Vacuum cleaners (with the exception of battery sweeper noted below) meet requirements of the Carpet and Rug Institute Green Label Program and are capable of capturing 99.9% of particulates 1 micron or larger and operate with a sound level less than 70 dBA.
 - In some buildings with large amounts of open carpeted areas to be maintained, a battery powered sweeper vac not meeting CRI vacuum requirements will be used to augment vacuuming with a regular vacuum cleaner. These battery sweeper vacs are equipped with micro-dust filtration effective down to 3 microns and operate with a sound level less than 55 dBA and make it possible to clean the carpeted area more frequently with minimal disturbance to building occupants.
- Carpet extraction equipment meets at a minimum the Carpet and Rug Institute Bronze Seal of Approval
- Any powered hard floor maintenance equipment to be purchased (including floor buffers, burnishers and automatic scrubbers) shall operate at sound level less than 70 dBA and will be equipped with vacuums, guards and/or other devices for capturing fine particulates.
- No propane-powered floor equipment will be used thereby eliminating any potential for undesirable engine emissions.
- Automatic scrubbing machines to be purchased will be designed to dispense cleaning solutions at variable rates to optimize the use of cleaning chemicals and water. Scrubbers will also have controlled dilution rate equipment on board, or have procedures in place where chemical loading is only done through a controlled chemical measuring device.
- Environmentally friendly batteries (such as sealed gel and AGM batteries) shall be used where possible instead of wet cell, lead acid batteries. New battery equipment shall include sealed gel or AGM batteries if the option is available. As wet cell, lead acid batteries need to be replaced in current equipment, they shall be replaced with sealed gel or AGM batteries if the option is available.
- Periodic maintenance is performed and tracked on all battery-powered and electric equipment, other than vacuums, on at least a semi-annual basis to ensure proper functioning of equipment.



Reducing chemical waste and ensuring the efficient use of chemicals

- A dilution control dispenser system is used for cleaning chemicals routinely used in spray bottles and floor scrubbers in order to limit worker exposure to chemical concentrates while facilitating the proper dilution of chemical concentrates.
 - Chemical concentrates used in the dispenser are contained in tamper-resistant, spill-proof containers which prevent the concentrate from being accidentally spilled, splashed, squeezed, or otherwise easily taken out without damage to the container except by use of the dispensing unit.
 - The chemical concentrate container contains its own metering tip inside the container in order to ensure that the chemical is mixed at the proper dilution.
 - The dispenser system is equipped with required backflow protection.
- Cold water is used for mixing of cleaning chemicals.
- All new employees are trained in the safe and effective use of appropriate chemicals. Other employees receive refresher chemical training on an annual basis.
- Chemical storage guidelines are used to ensure safety and to reduce exposure of the building occupants to chemicals
 - Material Safety Data Sheets (MSDS) are available and accessible via MSDS Online which can be located on the Department of Environmental Health and Safety (EHS) web page in the chemical safety section: <http://ehs.missouri.edu/chem/msds-online.html>
 - All containers, including spray bottles, are labeled to be easily identifiable.
 - Unnecessary amounts of chemicals will not be stored in the custodial closets.
 - Custodial Services has detailed written Custodial Storage Guidelines which custodians are trained in and expected to follow.
- Microfiber rags and mops are used to facilitate cleaning with minimal, or no, use of chemicals.
- A dual bucket microfiber mop system is used for most routine mopping to reduce use of both chemicals and water.
- Microfiber dust mops requiring no chemical pre-treatment are used for routine dust mopping.

Reducing Solid Waste

- Chemicals are purchased in concentrated form whenever possible to decrease packaging and container wastes.
- Long lasting, reusable microfiber cleaning cloths are used instead of paper products for routine cleaning.
- Long lasting microfiber mops and dust mops, which are capable of being laundered hundreds of time, are used instead of cotton mops for routine mopping and dust-mopping.
- Custodians are trained to recycle cardboard boxes, plastic containers and other packaging materials from cleaning supplies.

Vacuumping and carpet care

- Vacuumps are equipped with filter bags and filters; filters are cleaned or changed as recommended by the manufacturer.
- Vacuum bags are inspected at the beginning of the shift and periodically throughout the day for every 2 hours of use or more often when cleaning areas with visible loose soils. Bags are emptied or replaced when half full or when indicated by the bag sensor.
- Vacuuming is done according to a pre-determined schedule. Public entrances, lobbies, hallways, and auditoriums are vacuumed daily. Areas less heavily trafficked are scheduled for less frequent vacuuming. Additional vacuuming is also done, as needed, to address special cleaning concerns
- Carpets in public areas are checked according to a regular schedule (at least yearly), but carpet extraction cleaning is done only when needed. A low moisture mode of cleaning will be used if extraction is not needed.
- Carpet extraction is done during hours when building occupancy is minimal.
- When carpet extraction is done, sufficient moisture is removed from the carpet and sufficient airflow is provide so that carpets dry in less than 12 hours.
- Building coordinators are notified in advance of scheduled non-routine carpet cleaning operations.

Entryways

- Publicly used exterior walkways are kept clean and free of debris through daily cleaning. Where feasible, such cleaning is done for a distance of at least 20 feet out from the entrance.
- 10-12 feet of interior walk off matting is used at all public building entrances except in locations where the shape or function of the area makes it impossible or impractical.
- Entrance mats purchased shall be a superior grade scraper/wiper matting with raised ridges to assist in soil removal and with high absorbency.
- Entrance mats purchased shall be of eco-friendly construction with carpet top made of 100% post consumer recycled PET polyester fiber reclaimed from used plastic bottles and with backing made from at least 15% post consumer recycled rubber from tires.
- At times of purchase, consideration of entrance mats with recycled materials shall be weighed along with other factors. Mat performance (the ability to capture and hold soils), durability, and cleanability will be the primary factors considered in mat selection.
- Entrance mats are vacuumed on a daily basis, and possibly more under special circumstances.
- Further cleaning (beyond vacuuming) of entrance mats is done on an as-needed basis only.

Hard surface floor care

- Hard floors are cleaned on a predetermined scheduled based on use of floor.
- Either vacuums or microfiber dust mops with no chemical pre-spray are used to remove loose soils from hard surface floors.
- Microfiber damp mops with dual bucket systems are used for most routine mopping to reduce amount of chemical and water used.
- Auto scrubbers are used in large areas
- Periodic gloss restoration with restorer is used to extend the time between deep scrub cycles. Deep scrubbing and recoating are used to extend the time between stripping cycles.
- Burnishing and other periodic maintenance is done only if sufficient floor finish exists on the floor surface to protect the underlying floor from being degraded during the restoration process.
- When gloss restoration chemicals are used, they are applied with mop-on or autoscrubber methods rather than by spray application.
- All newly purchased burnishing and buffing equipment have vacuums, guards, or other devices sufficient for capturing or collecting particulates generated during the use of the equipment.
- Restorative maintenance (i.e., scrubbing and recoating or stripping and refinishing) on floors is done on an as-needed basis to maintain the appearance and integrity of the floor finish rather than on a pre-determined schedule.
- When restorative maintenance is deemed necessary, complete stripping and refinishing will be used only where scrubbing and recoating will not restore the finish to an acceptable level of appearance.
- No dry strip methods are used in order to protect against unintentional use of dry stripping on asbestos-containing floor tiles.
- Floor restoration project work (scrub/recoat or strip/refinish) is scheduled to coincide with periods of minimal occupancy.
- Finish products are not used on concrete, terrazzo, marble, ceramic tile, quarry tile, or other stone floors except for reasons of health and safety (such as to enhance cleanability, inhibit dust accumulation, or enhance slip-resistance) or to prevent degradation of the surface. Exceptions to this may be made where finish has been used on these types of floors prior to 2008.

Disinfection

- Disinfectant cleaners are used only where necessary on surfaces where pathogens can collect and breed such as in restrooms or for cleanups of blood borne pathogens.
- Disinfection is performed using only EPA-registered disinfectant cleaners or EPA-registered disinfectant devices.
- All employees are trained in the proper use of disinfectant cleaners including proper dilution rates, proper dwell times, and when pre-cleaning is necessary.

Restroom Care

- Disinfectant cleaners are used for routine cleaning of restroom surfaces except where disinfectant-free cleaning processes are available that are equally effective at producing pathogen-free surfaces. An ATP meter is used to measure and compare the effectiveness of various cleaning processes with regard to removal of potentially pathogenic substances
- Microfiber rags used for restroom cleaning. Rags are color coded so that rags used for toilet/urinal rags are not used on other surfaces.
- If mineral accumulations are not being controlled through daily brushing and the use of green certified cleaners, custodians may request to use appropriate acid restroom or bowl cleaner. Supervisors may issue out such cleaners only for short term use on the specific problem. Supervisors will track the issuance and return of the product.
- If graffiti cannot be removed by green-certified cleaners or through the use of micro-abrasive material (such as Magic Eraser), custodians may request the use of appropriate cleaners. Petroleum-based solvents will only be used when water-based degreaser/solvents have proven ineffective. All issuances of chemicals that are not green certified will be for short-term use only and will be tracked by supervisors.
- In larger facilities where appropriate, no-touch cleaning machines are used for restroom cleaning to ensure more thorough cleaning and to minimize contact with chemicals for custodians.
- Mop water used for cleaning restroom floors is not used for mopping elsewhere in the building.
- Trash can liners are changed daily in restrooms.
- Drain traps in restrooms are filled on Fridays.

Trash Collection and Recycling

- Trash can liners (except in restrooms) are replaced only when they are soiled from wet trash, are broken, or as otherwise required.
- Custodians are provided with appropriate-sized liners for various sized trash cans.
- Collected trash is taken out before the end of the work shift to dumpsters outside the building.
- Trash cans are cleaned and disinfected as needed.

Vulnerable Populations

- Where cleaning operations have the potential to adversely affect identified members of a vulnerable population, changes in the scheduling, type of cleaning method used, or type of chemical used will be made.

Communications with buildings

- Building coordinators are used as communications liaisons between custodial service providers and the building and its occupants.
- Prior to the sustainable cleaning practices described in this document being fully implemented in a building, members of Facility Operations will meet with the building coordinator and other key building staff to discuss sustainable cleaning, share this document, and, if necessary, adapt cleaning schedules and methods to the health and safety needs of occupants.
- Building coordinators will be requested to identify building occupants with special needs or sensitivities (to dust, chemicals, noise levels, etc.) so that Custodial Services may be informed enough to adapt cleaning times, methods, and materials to mitigate potential problems.
- Cleaning plans detailing the cleaning frequencies for each individual building are made available to building coordinators.
- Building coordinators are given advanced notice of non-routine cleaning operations such as carpet cleaning.
- Regular meetings between Campus Facilities and building coordinators are scheduled each year.
- Material Safety Data Sheets for chemicals used by Custodial Operation are stored in the “MSDSonline” database which can be accessed on the MU Department of Environmental Health and Safety web site. MSDSs will also be provided in a timely manner upon request.

Training

- All custodians undergo pre-employment physical testing to ensure that they are able to meet the physical requirements of custodial work.
- Prior to starting in a work area, all new custodial employees receive 24 hours of new employee training. New employees are trained in proper chemical use, proper cleaning procedures, and in the use and maintenance of custodial equipment. As part of the initial training, new employees are also trained to recognize and take precautions to avoid potential safety and health hazards through the use of proper work methods and, when needed, the use of personal protective equipment. Special emphasis is placed on avoidance of ergonomic injuries by using proper equipment and proper work methods.
- Upon starting in a work area, the custodial supervisor of the area reviews the cleaning plan for the area with the new employee and informs the employee of any potential safety concerns in the area, any special cleaning needs, and any vulnerable populations in the building for whom special procedures must be adhered to.
- Custodians receive continuing and refresher training throughout the year. All supervisors facilitate monthly safety meetings for their employees (at least two meetings per month for at least 1 hour per month). In addition to the training requirements noted below, other training is held to address or review various topics.

New Employee Training for Custodians

| | | |
|-------------------------------|------------|---------------------|
| Basic Custodial Certification | 14.5 hours | Initial |
| Lockout/Tagout | 30 minutes | Initial |
| Ladder Safety | 30 minutes | Initial |
| Ergonomics | 30 minutes | Initial |
| Bloodborne Pathogens | 1 hour | Initial & Annual |
| Rider Scrubber | 1.5 hours | Initial & As Needed |
| Walk behind Scrubber | 1 hour | Initial & As Needed |
| KaiVac-HO | 1.5 hours | Initial & As Needed |
| KaiVac-Intro | 30 minutes | Initial & As Needed |
| Smaller Scrubber training | 30 minutes | Initial & As Needed |
| Basic Computer Skills | 2 hours | Initial & As Needed |

Other Training for Custodians

| | | |
|--|-----------------|-------------------------|
| Animal Ancillary Worker Awareness | 1 hour | Initial |
| Asbestos Awareness | 2 hours | Initial & Annual |
| Chemical Materials for Ancillary Workers | 1.5 hours | Initial & every 3 years |
| Cleaning Chemical training | 1 hour | Initial & Annual |
| Radiation Safety | 1 hour | Initial & every 3 years |
| How to Prevent Sexual Harassment | 2 hours | Initial & every 5 years |
| Diversity training | 1 hour | Every 5 years Team |
| Safety Meetings | 12 hours a year | 2 meetings per month |

Detailed Chemical Guidelines regarding Green Cleaning

Note: Except in the case of our special work teams, “restricted” means custodial team supervisors will do paperwork to temporarily issue and track the product. Team supervisors will be responsible for getting the product back in less than a week. In all cases, restricted products will only be used where the preferred product is ineffective when used properly.

General and Restroom Cleaning Products

Dispensing system

- **Hillyard Arsenal Jr. System** (a wall mount unit in most areas; a mobile unit where a wall mount is not practical)
 - Tamper-resistant; spill-proof; meter tips in container; backflow protection.
 - Current product

All purpose neutral cleaner (for use in spray bottles or in automatic scrubbers)

- **Hillyard Arsenal Top Clean**
 - Green Seal certified and part of Arsenal dispensing system
 - Current product
- **Hillyard Super Shine All** (alternate neutral cleaner useful on certain floor types or where an alternating neutral cleaner other than water is desired to prevent film build up)
 - Green Seal certified and part of Arsenal dispensing system
 - Current product

Neutral, no-rinse disinfectant cleaner (for routine use in restroom cleaning and for use elsewhere only if disinfection is required)

- **Hillyard Arsenal Jr. Vindicator+** (for spray spray bottle application)
 - EPA registered disinfectant and part of Arsenal dispensing system
 - Current product
- **Hillyard Re-Juv-Nal C3** (for use with Hillyard C3 restroom cleaning machines)
 - EPA registered disinfectant in spill-proof, tamper-resistant, self-metering containers
 - Current disinfectant cleaner in the Hillyard C3
- **Hillyard Re-Juv-Nal in gallon jug** (for use with Kaivac restroom cleaning machines)
 - EPA registered disinfectant
 - Replaces Kaibosh as disinfectant cleaner used in Kaivacs

Peroxide-based cleaner with solvents (for periodic use in restroom cleaning and general use elsewhere where deeper cleaning or color-safe peroxide bleaching/brightening is desired.)

- **Hillyard Arsenal Jr. Suprox** (for use in spray bottles)
 - Green Seal certified and part of Arsenal dispensing system
 - Current product

- **Hillyard Suprox C3** (for use with C3 restroom cleaning machines)
 - Green Seal certified in spill-proof, tamper-resistant, self-metering containers
 - Current peroxide-based cleaner use in the Hillyard C3
- **Hillyard Suprox** in gallon jug (for use in Kaivac restroom cleaning machines)
 - Green Seal certified
 - Replaces KaiO as peroxide-based cleaner used in Kaivacs

Heavy duty Restroom cleaner (for removal of mineral deposit or soap scum build up on restroom fixtures, bowls, sinks, and shower walls.)

- **Hillyard Arsenal Jr. Green Select Bathroom Cleaner** (for use in spray bottles)
 - Green Seal certified and part of Arsenal dispensing system
 - Replaces Hillyard Restroom Cleaner #5 and vinegar
- **Hillyard Green Select Bathroom Cleaner for C3**
 - Green Seal certified in spill-proof, tamper-resistant, self-metering containers
 - Current heavy duty cleaner in the Hillyard C3
- **Hillyard Green Select Bathroom Cleaner** in gallon jugs (for Kaivac machines)
 - Green Seal certified
 - Replaces KaiBloey as acid-based cleaner used in Kaivacs

Glass Cleaner (for use on glass and other surfaces where streaking is not desired such as stainless steel, plastics, etc.)

- **Hillyard Arsenal Jr. Green Select Glass Cleaner**
 - Green Seal certified and part of Arsenal dispensing system
 - Replaces Hillyard Windo Clean

Heavy duty cleaner and degreasing cleaner (for quick removal of greasy soils and some graffiti; also can for use on greasy floors as in meat lab)

- **Hillyard Arsenal Jr. Green Select Degreaser Cleaner**
 - Green Seal certified and part of Arsenal and C3 systems
 - Replaces Hillyard Assurance HD Spray and Wipe Cleaner

Toilet bowl cleaner

- **Hillyard Mild Bowl and Porcelain Cleaner**
 - Restricted use only for excessive accumulation of mineral deposits in bowls.
 - Not Green Seal certified but has mild non-toxic, non-caustic phosphoric acid-based formula
 - Current product, but not currently restricted.

Floor Project and Carpet Care Products

Floor Care products: Stripper

- **Hillyard Green Select Stripper**
 - Green Seal certified
 - Replaces Hillyard Power-Strip

Floor Care products: Finish/Sealer

- **Hillyard One Plus Zinc Free Finish**
 - Green Seal Certified
 - Replaces Pro-Brite from Essential Industries
- **Hillyard Seal 341**
 - Used only as an exception after review by the Manager of Custodial Operations.
 - Used, after Managerial approval, where use of Hillyard One Plus by itself has proven ineffective in maintaining a durable and workable floor finish.
 - Used, after Managerial approval, on some large concrete floors as base coat under Hillyard One Plus in order to extend stripping cycle
 - Not Green Seal certified but often provides a more durable finish on hard surface porous floors which results in less frequent need for restorative stripping.

Floor Care products: Restorer

- **Hillyard Restorer**
 - Green Seal standards are not established for this type product.
 - Zinc free product in Arsenal dispensing system for maintaining finish gloss and extending durability of floor finish.

Other Floor and Carpet Care products

- **Hillyard Defoamer II**
 - Green Seal standards are not established for this type product.
 - A non-corrosive, phosphate free formulation containing no caustics or acids designed to eliminate foam in carpet cleaning equipment, automatic floor scrubbers, restroom cleaning machines, and other wet pick-up equipment.
- **Hillyard Arsenal Neutralizer**
 - Green Seal standards are not established for this type product.
 - Phosphate free chemical in Arsenal spill-proof, tamper proof container for use in neutralizing and removing alkaline residues left behind by from stripper, ice melt, or carpet detergents.

Carpet Care products

- **Hillyard Arsenal Carpet Pre-Spray and Extraction**
 - Green Seal Certified and available in Arsenal dispensing system.
- **Hillyard Take Down**
 - Restricted use only.
 - Uses safe, natural bacteria and enzymes to eliminate stubborn odors.
- **Hillyard Suprox**
 - Green Seal Certified and available in Arsenal dispensing system.
 - Mixes at higher dilution on low flow setting on Arsenal dispensing system for use as a spray cleaner or carpet spotter.
- **Other carpet spotting agents and enzyme cleaners**
 - Restricted use only for spots where the Arsenal Pre-Spray and Extraction cleaner is ineffective.
 - Most of these chemicals are used only by members of SWAT (the special work assignment team) or the Floor Crew.

Special Cleaning Products

Chrome cleaners / metal polishes

- **Hillyard EP Stainless Steel Polish**
 - Restricted use only where problems exist in maintaining or restoring the luster of stainless steel or other metal surfaces with green certified chemicals such as green certified glass cleaner.
 - Green Seal standards are not established for this type of product but it has the following environmentally preferable traits:
 - Water-based chemistry—non-flammable
 - No-buff formula dries to a non-oily film
 - Biodegradable (SCS certified)
 - 98% VOC free
 - Packaged in can made of 50% recycled steel
- **Hillyard Brass and More Wipes**
 - Restricted use only where problems exist in maintaining or restoring the luster of brass or other metal surface with green chemicals, and where the Hillyard EP Stainless Steel Polish is ineffective.
 - Not Green Seal certified, but has a low-ammonia polishing formula with no harsh abrasives

Graffiti Remover

- **Hillyard Arsenal Jr. Green Select Degreaser Cleaner**
 - Green Seal certified and part of Arsenal systems
 - Replaces Hillyard Assurance HD Spray and Wipe Cleaner
- **Magic Eraser** (or other brands of melamine-foam-based cleaning pads)
 - This material works through micro-abrasive action rather than chemical action to remove certain graffiti.
- **Hillyard Graffiti Remover**
 - Restricted use only where the Green Select Degreaser or Magic Eraser have proven ineffective.

Odor Counteractants

- **Hillyard Take Down**
 - Restricted use only
 - Uses safe, natural bacteria and enzymes to eliminate stubborn odors

Maintenance chemicals: Chemicals listed in this section are not used for cleaning so they don't quite come under the parameters of our "Green Cleaning" program but will be found in custodial closets.

- **WD40**
 - Used only for routine lubrication of the Kaivac spray gun.

Other chemicals: Members of our special teams (SWAT, the Floor Crew, and garage cleaning team) may use various other special cleaning chemicals for various non-routine tasks such as mold remediation, carpet spot removal, oil spills, etc.

Addendum on Vinegar: Uses and Misuses

Mixing directions

- **For use in spray bottle as an acid cleaner:** 1 part vinegar to 3 parts water. In a quart bottle, that would mean adding 8 ounces (1 cup) of vinegar to 24 ounces (3 cups) of water.
- **For use in mop bucket as a neutralizer:** ½ cup per gallon

Proper use of vinegar

- **When mixed in a spray bottle in the strength noted above,** vinegar can be used for removal of mineral deposits or soap film on glass, water fountains, restroom fixtures, and most other surfaces. In such cases it would be used instead of other acid cleaners such as Green Select Bathroom Cleaner.
 - As with other acid cleaners, a set time may be required for most efficient use and the surface should be rinsed afterwards to prevent deterioration by the acid.
- **When mixed in a mop bucket in the strength noted above,** vinegar can be used for removal of soap or ice melt film. It can also be used as a rinse aid when stripping. In such cases it would be used instead of Arsenal Neutralizer. Mixing the vinegar stronger than recommended in a mop bucket can slowly deteriorate certain floor surfaces so do not mix stronger than recommended.

Misuse of vinegar

- **Vinegar should not be used as an all-purpose cleaner.** Vinegar does not breakdown or efficiently remove most oily or greasy soils which are the vast majority of all soils we find. Vinegar can tend to spread oily soils around and make the surface look cleaner. Greasy soils can serve as nutrient sources for microbes.
- **Vinegar should not be used as a disinfectant cleaner.** Vinegar when full strength (i.e., a 5% acetic acid solution) does have disinfectant qualities. However, vinegar also has an odor problem when used full strength as a cleaner. In addition to the odor problem, there are no guidelines to indicate how long a set time should be used with vinegar and there are no guidelines to indicate what types of germs get killed by vinegar.
- **Custodians should be aware of potential damaging effects of vinegar and other acid cleaners.** Vinegar, like other acid cleaners strong enough to dissolve minerals, has the potential to damage surfaces made of minerals or metals. The damage is usually gradual so, by the time you notice it, permanent damage has been done. Never use vinegar, not even a weak neutralizing solution, on a marble floor or other highly polished natural stone floor. When used in the stronger spray bottle solution, vinegar should be rinsed.

Vinegar to clean chalkboards?

On slate and on porcelain-coated steel chalkboards where wet cleaning methods are used, vinegar in the spray bottle solution noted above (or in the weaker solution strength as described for mop buckets) can be used if extremely deep cleaning is desired. When used in this manner, the chalkboard should be cleaned a second time with a water rinse solution to guard against damage to the board.