INNOVATION & DESIGN
CREDIT COMPLIANCE

Please complete the following information to document credit compliance.

**ID Credit Title**
Green Building Education

**Narrative Statement of Credit Intent**
To promote further comprehension of and appreciation for green building practices in a variety of settings and applications.

**Narrative Statement describing Credit Requirements**
The project has included the following educational elements in their education program. The building will hold a regular guided tour highlighting the green features. A case study has been prepared to discuss green features, process, cost. And a web-based kiosk with live building data, directories and 2D/3D animation about the building’s green features was placed in the building lobby.

**Narrative Describing Project’s Approach to the credit**
It was a priority to provide educational information to a wide audience. We are able to promote and educate locally through the kiosk, tours and signage and reach a wider audience through our case study.

SUPPORTING DOCUMENTATION

The noted project drawings have been uploaded. The drawings provide specific information to support the ID proposal.

**Sheet Description Log**
Please include sheet name, sheet number and file name for each uploaded, referenced drawing (e.g. A-101, Site Plan, siteplan.pdf)

1537 Webstercasestudy.pdf

I have provided the appropriate supporting documentation in the document upload section of LEED Online. Please refer to the above sheets.
Project Name: ALAMEDA COUNTY WASTE MNGMT AUT
Credit: ID Credit 1.1: Innovation in Design

Points Documented: 1

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SAVE TEMPLATE TO LEED-ONLINE  PRINT TEMPLATE
1537 WEBSTER STREET
A Green Renovation in Downtown Oakland

Dedication Day Edition | March 26, 2007

View of our cool roof and solar electric panels in downtown Oakland.
WELCOME

In March 2007 the StopWaste.Org team moved into a building we renovated in downtown Oakland. We’re proud of the effort we put into transforming a rundown, run-of-the-mill structure into a beautiful, green and healthy workplace. And we’re delighted to share some stories about how this project gave us an opportunity to put our green building and Bay-Friendly Landscaping know-how to work.

Since 1976 StopWaste.Org has spearheaded source reduction and recycling programs in Alameda County. Although our focus is local, over the years we have earned a national reputation as a leader in developing innovative waste management and resource conservation programs.

What does green building and Bay-Friendly Landscaping have to do with our mission of rooting out waste? At their core, green building and Bay-Friendly Landscaping are all about reducing waste: wasted energy, wasted water, wasted natural resources, wasted building materials.

Construction and renovation activities consume vast quantities of wood, water, metals, fossil fuels and other resources. Much of that material is put to good use, but unfortunately far too much gets wasted. In California alone, close to nine million tons of construction and demolition debris winds up in landfills, accounting for 22 percent of the state’s waste stream. Plant debris accounts for almost 10 percent of what is thrown away annually in Alameda County.

Many years ago we realized that if we could help the County’s citizens, businesses and government agencies create greener buildings and Bay-Friendly Landscapes, we could make a huge dent in that waste stream. Since 1999, we have published a series of influential green building and Bay-Friendly Gardening and Landscaping guidelines, trained thousands of people in how to build green, and seeded dozens of programs and policies that are now blossoming throughout the region and state.

But until now, we never had the opportunity to tackle our own green building project. Here’s our story of the greening of 1537 Webster Street.
ABOUT 1537 WEBSTER STREET

Why Make a Move?

We decided to move for the same reason many organizations relocate: our 31-person staff had outgrown our leased offices in suburban San Leandro. Our management and Board determined that the time was right economically and organizationally to buy and renovate our own building.

After an extensive search, we purchased a dilapidated 14,000-square-foot, two-story building in downtown Oakland that was built in 1926. It's on the same block as the stunning YWCA of Oakland building designed by renowned architect Julia Morgan, and built circa 1915.

In contrast to the YWCA gem, the property we bought wasn't going to win any design awards. But it met our criteria for size as well as for access to public transit—it's just a short walk from either the 19th Street or 12th Street/City Center BART stations. And the building's configuration would allow us to create a large boardroom on the ground floor to accommodate as many as 75 people for public meetings, workshops, trainings and other events. For these and many other reasons, it was a good fit.

WHAT CAME EASILY?

It was easy to get excited about the project—great client with a great mission; renovation of an eyesore on the same block as Julia Morgan's YWCA; and pursuing green building with a great team.

—Stuart Rickard, Placeworks LLC
How Green Should We Go?

We had no doubt that we could transform 1537 Webster into an attractive and environmentally responsible building. But exactly how green would we go? Green building, after all, covers a spectrum of practices ranging from slight improvements over existing building codes to cutting-edge design and construction practices.

Across the country, building owners and building professionals are discovering that one of the most effective ways to evaluate the range of green building possibilities is to use the LEED Green Building Rating System (see sidebar). LEED provides a widely accepted method of benchmarking buildings based on their environmental performance.

We started out with a solid plan for achieving LEED Silver—that’s one step above the basic LEED Certified rating. Our initial concept was to show how green building principles could be applied to an ordinary building with a typical design and construction budget.

But as we moved through the design phase and into construction, it became clear that we had already surpassed the requirements for LEED Silver and were in LEED Gold range. At that point, with encouragement from our Board, support from staff and commitment from the project team, we decided to spend a little extra money—and a lot more effort—and aim for the top: LEED Platinum.

Changing course once construction is underway isn’t an approach we recommend. Truth be told, it created additional challenges for everyone. But in the end we believe it was worth it. We now have a beautiful, healthy building that is carbon neutral and uses minimal water. Equally important, we believe the building itself will serve as a teaching tool, and will inspire many others to go the extra green mile with their own buildings.

As of this writing, our LEED application is still in the works so we can’t yet claim Platinum status. But before long we hope to announce that we’re one of only a handful of Platinum buildings in California and the first LEED-NC v. 2.2 Platinum renovation project in the entire nation.

About LEED

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System provides a benchmark for the design, construction, and operation of high performance green buildings. Developed by the U.S. Green Building Council, LEED promotes a whole-building approach to sustainability by recognizing performance in six areas: sustainable site development, water savings, energy efficiency, materials selection, indoor environmental quality and innovation in design.

LEED functions as a roadmap for measuring and documenting performance for many types of buildings, primarily commercial buildings. For more information, visit www.usgbc.org.

WHAT MAKES YOU PROUD?

Achieving an estimated overall energy savings exceeding 40 percent compared to a similar, conventionally built building.

– Tyler Bradshaw, Rumsey Engineers
Building a LEED Platinum project, our first LEED project ever, is something everyone in our organization will be proud of for many years to come.

-Brad Gates, BBI Construction
It's What We Do

REDUCE, REUSE, RECYCLE

For more than 30 years we've been helping Alameda County residents and businesses stop making waste. Our renovation of 133 years-old Webster Street gave us the perfect opportunity to create a workplace that embodies our mission. Here are some of the waste reduction strategies we used:

- We brought back to life a home at the heart of downtown Oakland, preserving it for future generations.
- We reduced the amount of waste sent to the landfill by 95 percent, recycling and composting instead.
- We salvaged and reused existing building materials, reducing waste and saving money.
- We used recycled materials in the construction, including concrete made from recycled materials.
- We installed energy-efficient lighting and HVAC systems to reduce energy use.
- We designed the building to be LEED certified, ensuring it's sustainable and energy-efficient.
- We created a green roof to reduce stormwater runoff and improve the building's insulation.
- We educated our employees about sustainable practices and incorporated them into our daily operations.
- We partnered with local businesses to source materials and services that support sustainability.

We believe this building will set a benchmark by which other organizations will build their future green facilities.
FOSSIL FUELS & CLIMATE CHANGE

High Energy People in a Low Energy Building

Buildings account for a whopping 48 percent of all energy use in the United States, when you take into account not just the energy used to operate buildings but also the building's embodied energy—in other words, the energy that goes into producing and transporting the building materials.

Energy consumption, as we all know, drives a host of environmental, economic and social challenges, including global climate change, smog and acid rain. Fortunately we have effective solutions available to us right now: energy efficiency and renewable energy.

At 1537 Webster, we took a multipronged approach to reducing our energy impacts. Our first step was to make the building super-efficient. We expect to receive all 10 LEED credits for optimizing energy performance, a significant achievement. And our calculations show that our building will outperform Title 24-2005, California's stringent energy code, by an impressive 40 percent. We'll be monitoring our energy use over the next year to make sure we're on target.

In addition to energy efficiency, we're taking advantage of the space on our roof to produce clean, renewable electricity from the sun. And we're offsetting the carbon dioxide emissions associated with the rest of our energy use by purchasing green power certificates that support local renewable energy projects.

WHAT MAKES YOU PROUD?

That the HVAC system is less expensive yet much more efficient than a conventional system. Examples like this make it much easier to promote green building.

-Stuart Rickard, Placeworks LLC

WHAT WAS PARTICULARLY CHALLENGING?

Encouraging teamwork, effective communication and creative problem solving in an environment where the design team's, general contractor's, and subcontractors' roles are narrowly defined by contracts and protocols.

-Wendy Sommer, StopWaste.Org
Improving the Structure & Systems

- We redesigned the building and its systems to take advantage of both natural and mechanical ventilation. Our high efficiency heating, ventilation and air conditioning (HVAC) system notifies us when conditions outside are optimal for opening windows to provide natural ventilation. This lets us bring in fresh air without wasting heating and cooling energy. The HVAC system also incorporates carbon dioxide-based sensors in four locations within the building. When the number of people in the building increases, the sensors react to the higher CO2 levels and signal the HVAC system to supply additional fresh air.

- We installed a cool roof—it’s a custom-fabricated white, single-ply thermoplastic membrane designed to reflect the sun’s heat away from the building, which reduces our air conditioning use. The cool roof also keeps the surrounding outdoor air cooler, helping alleviate what’s known as the urban heat island effect.

- Seventy-five percent of our workspaces are daylit and 95 percent have views of the outdoors thanks to a new large skylight and big banks of new windows. The daylighting is a major achievement—we’re in a high density downtown location, after all, and the entire south side of our building doesn’t have any windows. What’s the benefit of daylighting? It makes the workplace much more appealing, and it means we don’t have to use the electric lights as much.

- The electric lighting features high efficiency fluorescent lights with photosensors that turn off lights when there is adequate daylight and bi-level switching to reduce light levels when full brightness is not needed. General lighting is provided with indirect fixtures that shield the lamps from view to eliminate glare and provide better lighting quality and comfort. Individual workstations have task lights, another energy-saving measure that illuminates work surfaces, allowing overall light levels to be reduced.

- All of our linear fluorescent lamps are low mercury and comply with the U.S. Environmental Protection Agency’s Toxicity Characteristic Leaching Procedure (TCLP). They also have extended life compared to standard linear fluorescent lamps.

Getting to Carbon Neutral

- On the roof, a 5.2-kilowatt photovoltaic system generates electricity whenever the sun is shining. The PV panels are silent, unobtrusive and best of all, don’t produce any carbon dioxide emissions. We sized the system to meet at least 10 percent of our electricity needs.

- To offset the carbon dioxide emissions resulting from our nonrenewable energy use, we buy renewable power certificates. This helps fund the installation of renewable energy generation, including photovoltaic panels on Alameda County buildings and wind turbines.

- Solar bricks in the front sidewalk and rear patio are recharged by the sun during the day and light up at night. This isn’t going to solve the energy crisis, but they help in locating the entry after sunset, and they’re a cool way to bring the possibilities of renewable energy to the attention of passersby.

The Journey Matters as Much as the Destination

- We deliberately chose to relocate close to a BART station, to make it easier for us and our visitors to use public transit.

- To complement transit options, we have a dedicated parking space in front of our building for a car-share vehicle.

- To encourage bicycle commuting, we offer secure bike parking inside the building. We also installed a shower as a convenience for those of us who want to bike to work or go for a run around nearby Lake Merritt at lunchtime.
WHICH CREATIVE SOLUTIONS STAND OUT?

Because we added some items late in construction, the team sometimes had to improvise: adding gutters to the photovoltaic panels to collect rainwater, converting a janitor’s closet into a shower and tiling it with salvaged tiles. And when the wrong bathroom partitions showed up, we painted them instead of discarding them and ordering new ones.

—Wendy Sommer, StopWaste.org

WE’RE STINGY WITH WATER

Stopping wasteful water use is one of the easiest steps we can all take to ensure there will be adequate water to meet everyone's needs. Here’s what we're doing at 1537 Webster:

- We cut our indoor water use by 40 percent compared to a conventional building by installing dual-flush toilets, waterless urinals and low-flow faucets. A dual-flush toilet uses 67 percent less water than a traditional single-flush toilet.

- Gutters attached to the rooftop photovoltaic panels direct rainwater into a tank mounted on the building's back wall, where it is stored until needed for landscaping irrigation. The tank feeds water into an efficient drip irrigation system that is controlled by a weather-based controller. This proven technology provides irrigation based on actual site conditions rather than just a preprogrammed schedule. Of course, our garden is also designed to be a real water miser.

- To allow rainwater to filter into the ground and recharge the groundwater, we used permeable paving materials in our garden, including pervious concrete for the walkway and landing, and paving stones set in sand rather than cement.
BAY-FRIENDLY LANDSCAPING

It Works at Every Scale

Call it what you will—rear courtyard, urban canyon, emergency access lane—our building’s 550-square-foot garden is small. But we believe that every landscape and garden in Alameda County can be designed in harmony with the natural conditions of the San Francisco Bay Watershed—even our diminutive, shade-cloaked courtyard.

Our Bay-Friendly Landscaping and Gardening Program staff put their green thumbs to work and developed a charming space that models all seven principles described in StopWaste.org’s Bay-Friendly Gardening Guide and Bay-Friendly Landscape Guidelines. We’ve only listed four principles here, but our small garden actually incorporates practices from all seven Bay-Friendly principles.

Landscape Locally

- In our garden, a dominant factor is an abundance of shade cast by neighboring high-rise buildings. Because the garden gets less than three hours of direct sunlight a day, we chose a palette of plants that will thrive in shade.
- Forty-five percent of the plants are local natives, 30 percent are other California natives, and the remainder are Mediterranean plants adapted to climates like ours, with its long dry summers and cool wet winters.

Landscape for Less to the Landfill

- We selected plants that, when they grow to maturity, will fit their space comfortably without requiring shearing or excessive pruning.
- We used a strategy called succession planting, which means that over time the larger perennials will fill in and out-compete the shorter-lived plants.
- When we pull weeds and prune, we cycle nutrients back into the soil by using the plant debris for compost and mulch.
- We chose outdoor furniture and hardscape materials that reduce waste and conserve resources, including glittering mulch that’s really tumbled bits of recycled glass, a raised garden bed and bench made from “urbanite” (concrete salvaged from on-site demolition), trellis fashioned from recycled and recyclable steel, and outdoor furniture built of recycled plastic and FSC-certified and salvaged wood.

Nurture the Soil

- To improve the existing soil, which is a sandy loam, we aerated it and amended it with compost and organic fertilizers. We don’t use synthetic pesticides, herbicides or fertilizers that can pollute stormwater runoff and destroy the beneficial soil life we want to foster.
- A two-inch layer of mulch made locally from arbor chips (ground tree limbs and branches) protects the topsoil from compaction and from drying out. The mulch also controls weeds, and it feeds the soil as it slowly decomposes.

Conserve Water

- We selected plants that are drought tolerant as well as adapted to our environment. Once they are established, the landscape will only need irrigation once every three to four weeks during the dry season. We anticipate that the garden will need no potable water once the plantings are established, since the rain catchment system will provide adequate irrigation.
- Irrigation water is delivered by a state-of-the-art, highly efficient drip irrigation system. The system is run by a smart controller that uses an on-site weather station to determine the need for irrigation.
- Rainwater is also kept on-site through the use of pervious concrete and concrete pavers set with sand grout. Both rainwater and irrigation water are retained in the soil by keeping it covered with mulch.

WHICH CREATIVE SOLUTIONS STAND OUT?

They all do! The pervious concrete, a planter made from urbanite, a screen of vines and small trees, a worm box for composting food scraps that doubles as a bench, roof water captured to irrigate the plants over the summer—they’re all great examples of necessity being the mother of invention.

—Teresa Eade, StopWaste.Org
A HEALTHIER WORKPLACE

Because People Work Here
Many modern building materials contain synthetic chemicals that evaporate—or offgas—over time. What’s the big deal? Well, we work here. And people like you visit us. To keep the air we all breathe cleaner, we did our best to keep pollutants out of the building.

- We chose paints, sealants, adhesives, carpets, composite wood products and insulation that emit zero or very low levels of formaldehyde and other volatile organic compounds. VOCs have been implicated in a range of building-related health problems, from headaches and eye irritation to more severe, longer lasting symptoms.

- Our furnishings meet the State of California’s and the U.S. Environmental Protection Agency’s guidelines for indoor air emissions, as well as the State of California’s Green Specification for Office Furniture. Our workstations have been certified to the Indoor Advantage Gold level by Scientific Certification Systems, an independent certification organization.

- Our contractors took care to protect air quality throughout the construction process. And after they finished construction but before we moved in, they used a higher than normal level of filtration to purge the building and HVAC ducts of dust and other contaminants.

- Our windows open. That hardly sounds remarkable, but it’s actually a rarity in modern office buildings. But we like to take a breath of fresh air now and then, and our climate is mild, so there are plenty of days when we shouldn’t need air conditioning or heating. To make sure we’re not wasting energy, we hired a mechanical engineering firm that knows how to design the HVAC system to work most efficiently in conjunction with natural ventilation.

- Many janitorial services rely on noxious cleaning fluids and on disposable cloths that get tossed after one use. Those practices rub us the wrong way, so we found a green janitorial service that follows healthy, eco-friendly cleaning practices.
GREENER PRODUCTS ARE BETTER PRODUCTS

We’re partial to green furnishings and finishes because they’re designed to solve problems that we grapple with every day at work and at home: reducing waste, preventing pollution, staying healthy, saving money.

It’s an exciting time to be building green, because many of today’s green products don’t just do good for the environment—they also look great and are cost-competitive with conventional products. But choosing cost-effective green products isn’t new for us; we’ve actually had an environmentally friendly purchasing policy for years. Here are some of the green furnishings and finishes we chose for 1537 Webster.

- On the ground floor, the concrete slab is topped with a durable, permanently stained epoxy concrete, eliminating the need for carpet or more expensive flooring materials. Concrete is durable and easy to clean, making it suitable for high traffic areas. We also think it looks terrific.

- For the upstairs and boardroom flooring, we chose carpet tiles rather than sheet carpet so that individual tiles can be replaced when stained or worn rather than tearing up the whole carpet. As an added benefit, the tiles have 31 to 50 percent recycled content (including at least 9 percent post-consumer yarn) and the tile backing is 100 percent recycled and recyclable.

- Countertop materials include granite mis-cuts from local building material salvage companies. The kitchen counters are a blend of post-consumer recycled paper and water-based resin. Panels on the reception desk are made of resin from the button manufacturing industry.

- Bathroom tiles have 100 percent recycled content. The shower sports locally manufactured, 50 percent recycled ceramic tiles. Not only do they look great, we also got a great deal on them—they were left over from installations at a Whole Foods store and Palo Alto’s Stanford Theatre.

- We chose window shades that are free of polyvinyl chloride. PVC plastic is commonly used to make commercial window coverings and countless other building materials. We did our best to keep PVC out of the building because of concerns about environmental and health impacts related to PVC manufacturing.

- In the kitchens, the oak cabinet exteriors are certified by the Forest Stewardship Council (FSC) to have come from sustainably managed forestry operations. Cabinet interiors, as well as shelves in the conference room, are FSC-certified medium density fiberboard (MDF) with no added formaldehyde.

- Our workstations have a high recycled content, including 100 percent recycled polyester fabric; 25 percent post-consumer recycled steel components; and between 20 to 90 percent post-consumer and post-industrial content in most other components, including the hardboard, aluminum, glass and zinc.

- Exterior architectural details include decorative metal panels that were discarded by a sign fabricator. Our architect found them at a local salvage yard and had them customized to fit between the windows on the façade.

WHAT WAS PARTICULARLY CHALLENGING?
The traditional Bid-Build process doesn’t lend itself to deconstruction or using salvaged materials. Saving building elements for later reuse and incorporating found items was complicated.

—Thomas J. Towey, Komorous-Towey Architects

WHAT MAKES YOU PROUD?
Reincarnating an old building in vibrant shades of green!

—Linda Early, KEMA
PROJECT CREDITS

Development Manager: Placeworks LLC
Architect: Komorous-Towey Architects
General Contractor: BBI Construction
Landscape Architect: Four Dimensions

Engineering and Consulting:
Structural: OLMM Consulting Engineers
Mechanical and Plumbing Design: Rumsey Engineers, Inc.
Lighting: Integrated Design Associates, Inc. (IDeAs)
Geotechnical: Treadwell & Rollo
Acoustical: Charles Salter Associates, Inc.
Materials Testing and Construction Inspection Services: Consolidated Engineering Laboratories
LEED Documentation and Consulting: KEMA Green
LEED Commissioning (HVAC): Taylor Engineering

Subcontractors:
Photovoltaics/Solar Electricity:
  Sun Light and Power
Structural/Steel: Acosta Welding, Inc.
Concrete: Advanced Concrete Technologies
Demolition: AIA Projects, Inc.
Hazardous Waste Removal: RGA Environmental Inc.
HVAC/Flashings:
  American Mechanical Services, Inc.
Acoustical Ceiling Tile: Atlantic Interiors, Inc.
Sarov, Cement Paving, CIP Concrete:
  Berkeley Cement, Inc.
Plumbing:
  Berkeley Plumbing & Heating Co., Inc.
Carpet/Resilient Flooring: B.T. Mancini Co., Inc.
Finish Carpentry, Architectural Woodwork:
  Casework: Burnett & Sons
Window Shades: Burris Window Shades
Concrete Topping: Cell-Crete Corporation
Electrical: Del Monte Electric Company, Inc.
Drywall: Escobar & Williams Drywall
Plastering: Freas Plastering Company

Insulation: F. Rodgers Corporation
Toilet Accessories:
  Global Specialties Direct, Inc.
Drilling: Malcolm Drilling Company, Inc.
Painting: Nor-Cal Painting & Waterproofing, Inc.
Doors/Frame/Hardware: PCI Doors
Mapei Decorative Flooring:
  Pro Painting & Waterproofing
Roofing: Reinhardt Roofing
Elevator: Schindler Elevator Company
Signs: SignCo USA
Aluminum Storefronts/Doors/Windows/Skylights:
  Supreme Glass Company
Ceramic Tile:
  Tile West
Kitchen Countertops:
  EcoHome Improvement
Rain Catchment Design:
  Wonderwater
Work Stations:
  Keller Group
Security System and AV:
  Point 1
Data and Cabling:
  PCIS and Cayuga Information Systems
Car-share Services:
  City CarShare
Salvage Materials:
  Urban Ore, Oshawa Salvage, and C&K Salvage
Janitorial Services:
  Township Building Services, Inc.

Display and Graphics:
Celery Design Collaborative
Right Design Lab
Underground Advertising
Polaris, Inc.
Xtreme Media

Green Touchscreen: Quality Attributes
Photographer: Mark Luthringer, Wesley Sullens
Writer: Jennifer Roberts
About StopWaste.Org

StopWaste.Org is the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board operating as one public agency.

Our mission is to achieve the most environmentally sound solid waste management and resource conservation program for the people of Alameda County. Within this context, we are committed to achieving a 75 percent and beyond diversion goal and promoting sustainable consumption and disposal patterns.

We offer a wide range of programs in the areas of waste prevention, residential and commercial recycling, Bay-Friendly gardening and landscaping, green building, environmental education, environmentally preferable purchasing and market development.

Visit www.StopWaste.Org to learn more about what we do and how you can stop waste.

1537 Webster Street
Oakland, CA 94612
510-891-6500
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verify that the information provided below is accurate, to the best of my knowledge.

CREDIT COMPLIANCE

Please complete the following information to document credit compliance.

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<th>Environmental Purchasing Policy and Green Cleaning Program.</th>
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<td>To increase consideration of the least harmful alternatives for purchasing in order to minimize health risks, minimize the contribution to global climate change, improve air quality, protect water quality, and minimize the consumption of resources.</td>
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<td>The Alameda County Waste Management Authority implemented an environmentally preferable purchasing policy addressing: - Source reduction - Pollution prevention - Toxics reduction - Recycled content products - Waste reduction</td>
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<td>Narrative Describing Project's Approach to the credit</td>
<td>The EPP Policy denotes the project wide work in ensuring that the environmental purchasing policy and green cleaning program are enforced. All ACWMA facilities staff are trained to adhere to and abide by the EPP and green cleaning program. Routine training and informational sessions are facilitated by the Agency.</td>
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SUPPORTING DOCUMENTATION

The noted project drawings have been uploaded. The drawings provide specific information to support the ID proposal.

Sheet Description Log
Please include sheet name, sheet number and file name for each uploaded, referenced drawing (e.g. A-101, Site Plan, siteplan.pdf)

EPP Policy-Agency internal12-FINAL

☑️ I have provided the appropriate supporting documentation in the document upload section of LEED Online. Please refer to the above sheets.
Project Name: ALAMEDA COUNTY WASTE MNGMT AUT
Credit: ID Credit 1.2: Innovation in Design

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Wendy Sommer 2007-08-16 WSOMMER@STOPWASTE.ORG
First Name Last Name Date Username (Email Address) Password

SAVE TEMPLATE TO LEED-ONLINE PRINT TEMPLATE
ENVIRONMENTALLY PREFERABLE PURCHASING POLICY
ALAMEDA COUNTY WASTE MANAGEMENT AUTHORITY
AND SOURCE REDUCTION AND RECYCLING BOARD

1.0 STATEMENT OF POLICY

It is the policy of the Alameda County Waste Management Authority and Source Reduction and Recycling Board (Agency) to:

- institute practices that reduce waste by increasing product efficiency and effectiveness,
- purchase products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practicable, and
- purchase products that include recycled content, are durable and long-lasting, conserve energy and water, use agricultural fibers and residues, reduce greenhouse gas emissions, use unbleached or chlorine free manufacturing processes, and use wood from sustainably harvested forests.

2.0 PURPOSE

This Policy is adopted in order to:

- conserve natural resources,
- minimize environmental impacts such as pollution and use of water and energy,
- eliminate or reduce toxics that create hazards to workers and our community,
- support strong recycling markets,
- reduce materials that are landfilled,
- increase the use and availability of environmentally preferable products that protect the environment,
- identify environmentally preferable products and distribution systems,
- reward manufacturers and vendors that reduce environmental impacts in their production and distribution systems,
- create a model for successfully purchasing environmentally preferable products that encourages other purchasers in our community to adopt similar goals.

3.0 SPECIFICATIONS

3.1 Source Reduction

3.1.1 The Agency shall institute practices that reduce waste and result in the purchase of fewer products whenever practicable and cost-effective, but without reducing safety or workplace quality.
ENVIRONMENTALLY PREFERABLE PURCHASING POLICY

Examples include:
- electronic communication instead of printed,
- double-sided photocopying and printing,
- washable and reusable dishes and utensils,
- rechargeable batteries,
- streamlining and computerizing forms,
- "on-demand" printing of documents and reports as they are needed,
- leasing long-life products when service agreements support maintenance and repair rather than new purchases, such as carpets,
- sharing equipment and occasional use items,
- choosing durable products rather than disposable,
- buying in bulk, when storage and operations exist to support it,
- reusing products such as, but not limited to, file folders, storage boxes, office supplies, and furnishings.

3.1.2 The Agency shall purchase remanufactured products such as laser toner cartridges, furniture, and equipment whenever practicable, but without reducing safety, quality or effectiveness.

3.1.3 The Agency shall require all equipment bought after the adoption of this policy to be compatible with source reduction goals and practices as referred to in this section (3.1), when practicable.

3.1.4 All buyers shall evaluate short-term and long-term costs in comparing product alternatives, when feasible. This includes consideration of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives.

3.1.5 Products that are durable, long lasting, reusable or refillable are preferred whenever feasible.

3.1.6 The Agency requests vendors to eliminate packaging or use the minimum amount necessary for product protection, to the greatest extent practicable.

3.1.7 Packaging that is reusable, recyclable or compostable is preferred, when suitable uses and programs exist.

3.1.8 Vendors shall be encouraged to take back and reuse packaging materials.

3.1.9 Suppliers of electronic equipment, including but not limited to computers, monitors, printers, and copiers, shall be required to take back equipment for reuse or environmentally safe recycling when the Agency discards or replaces such equipment, whenever possible.

3.2 Recycled Content Products

3.2.1 All products for which the United States Environmental Protection Agency (U.S. EPA) has established minimum recycled content standard guidelines, such as those for printing paper, office paper, janitorial paper, construction, landscaping, miscellaneous, and non-paper
ENVIRONMENTALLY PREFERABLE PURCHASING POLICY

office products, shall contain the highest postconsumer content practicable, but no less than the minimum recycled content standards established by the U.S. EPA Guidelines.

3.2.2 Copiers and printers bought shall be compatible with the use of recycled content products.

3.2.3 All pre-printed recycled-content materials intended for distribution that are purchased or produced shall include a statement that the material is recycled-content.

3.3 Energy and Water Savings

3.3.1 Where applicable, energy-efficient equipment shall be purchased with the most up-to-date energy efficiency functions. This includes, but is not limited to, high efficiency space heating systems and high efficiency space cooling equipment.

3.3.2 When practicable, the Agency shall replace inefficient lighting with energy efficient equipment.

3.3.3 All products purchased by the Agency and for which the U. S. EPA Energy Star certification is available shall meet Energy Star certification, when practicable. When Energy Star labels are not available, energy efficient products shall be purchased that are in the upper 25% of energy efficiency as designated by the Federal Energy Management Program.

3.3.4 The Agency shall purchase water-saving products whenever practicable.

3.4 Green Building - Construction and Renovations

3.4.1 All building and renovation undertaken by the Agency shall follow Green Building practices for design, construction, and operation. The project shall meet a minimum LEED™-Silver rating as defined by the US Green Building Council’s LEED™ Green Building Rating System or an Agency approved equivalent.

3.5 Landscaping

3.5.1 Workers and contractors providing landscaping services for the Agency shall employ sustainable landscape management practices whenever possible, including, but not limited to, integrated pest management, grasscycling, drip irrigation, composting, and procurement and use of mulch and compost that give preference to those produced from regionally generated plant debris and/or food waste programs.

3.5.2 Plants should be selected to minimize waste by choosing species that are appropriate to the microclimate, species that can grow to their natural size in the space allotted them and perennials rather than annuals for color. Native and drought-tolerant plants that require no or minimal watering once established are preferred.

3.5.3 Hardscapes and landscape structures constructed of recycled content materials are encouraged.

3.6 Toxics and Pollution
ENVIRONMENTALLY PREFERABLE PURCHASING POLICY

3.6.1 To the extent practicable, no cleaning or disinfecting products (i.e. for janitorial use) shall contain ingredients that are carcinogens, mutagens, or teratogens. These include chemicals listed by the U.S. EPA or the National Institute for Occupational Safety and Health on the Toxics Release Inventory and those listed under Proposition 65 by the California Office of Environmental Health Hazard Assessment.

3.6.2 When maintaining buildings, the Agency shall use the lowest amount of VOCs (volatile organic compounds), highest recycled content, and low or no formaldehyde when purchasing materials such as paint, carpeting, adhesives, furniture and casework.

3.6.3 The Agency shall reduce or eliminate its use of products that contribute to the formation of dioxins and furans. This includes, but is not limited to:

- Purchasing paper, paper products, and janitorial paper products that are unbleached or that are processed without chlorine or chlorine derivatives, whenever possible.
- Prohibiting the purchase of products that use polyvinyl chloride (PVC) such as, but not limited to, office binders, furniture and flooring, whenever practicable.

3.7 Agricultural Bio-Based Products

3.7.1 Paper, paper products and construction products made from non-wood, plant-based contents such as agricultural crops and residues are encouraged whenever practicable.

4.0 PRIORITIES

4.1 The health and safety of workers and citizens is of utmost importance and takes precedence over all other policies.

4.2 The Agency has made significant investments in developing a successful recycling system and recognizes that recycled content products are essential to the continuing viability of that recycling system and for the foundation of an environmentally sound production system. Therefore, to the greatest extent practicable, recycled content shall be included in products that also meet other specifications, such as chlorine free.

4.3 Nothing contained in this policy shall be construed as requiring a purchaser or contractor to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

4.4 Nothing contained in this policy shall be construed as requiring the Agency, purchaser or contractor to take any action that conflicts with state or federal requirements.
5.0 IMPLEMENTATION

5.1 The Administrative Services Director or designee is responsible for implementing this policy, which may include the development of an advisory committee or Green Purchasing Team. The team’s responsibilities include, but are not limited to:

- evaluating opportunities for substituting environmentally preferable products,
- designing and implementing programs and processes for increasing the purchase of environmentally preferable products,
- educating staff about the Agency’s Environmentally Preferable Purchasing Policy,
- ensuring that purchasing documents, specifications, and contracting procedures allow for the purchase of environmentally preferable products,
- providing information to facilitate the evaluation and purchase of environmentally preferable products, including identifying appropriate products and sources and providing technical assistance,
- evaluating obstacles to purchasing such products in order to create solutions, and
- updating this policy when necessary.

5.2 Successful bidders shall certify in writing that the environmental attributes claimed in competitive bids are accurate. In compliance with State law, vendors shall be required to specify the minimum or actual percentage of recovered and postconsumer material in their products, even when such percentages are zero.

5.3 Purchasers shall include businesses certified by the Bay Area Green Business Program in requests for services, where applicable.

6.0 PROGRAM EVALUATION AND MEASUREMENT

6.1 The Administrative Services Director and/or Green Purchasing Team shall provide a narrative report periodically to the management team on the success of this policy’s implementation.

7.0 EFFECTIVE DATES

7.1 This policy shall take effect on September 1, 2003.

7.2 The first report shall be issued within one year following the effective date of this policy.
DEFINITIONS

1. "Agricultural Bio-Based Products" means commercial or industrial products (other than food or feed) that utilize agricultural crops or residues but does not include products made from forestry materials.

2. "Bay Area Green Business Program" is a partnership of governments and businesses that certifies the environmental performance of government agencies and businesses.

3. "Buyer" means anyone authorized to purchase on behalf of this Agency or its subdivisions.

4. "Chlorine free" means products processed without chlorine or chlorine derivatives.

5. "Contractor" means any person, group of persons, business, consultant, designing architect, association, partnership, corporation, supplier, vendor or other entity that has a contract with the Agency or serves in a subcontracting capacity with an entity having a contract with Agency for the provision of goods or services.

6. "Dioxins and furans" are a group of chemical compounds that are classified as persistent, bioaccumulative, and toxic by the U.S. Environmental Protection Agency.


8. "Energy Efficient Product" means a product that is in the upper 25% of energy efficiency for all similar products, or that is at least 10% more efficient than the minimum level that meets Federal standards.


10. "LEED™ Rating System" means the self-assessing system developed by the U.S. Green Building Council designed for rating new and existing commercial, institutional, and high-rise residential buildings.

11. "Postconsumer Material" means a finished material which would normally be disposed of as a solid waste, having reached its intended end-use and completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.

12. "Practical" and "Practicable" mean whenever possible and compatible with local, state and federal law, without reducing safety, quality, or effectiveness and where the product or service is available at a reasonable cost.

13. "Preconsumer Material" means material or by-products generated after manufacture of a product is completed but before the product reaches the end-use consumer. Preconsumer material does not include mill and manufacturing trim, scrap, or broke which is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.
ENVIRONMENTALLY PREFERABLE PURCHASING POLICY

14. “Proposition 65” means a list of chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

15. “Recovered Material” means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, and includes preconsumer and postconsumer material but does not include excess resources of the manufacturing process.

16. “Recycled Content” means the percentage of recovered material, including preconsumer and postconsumer materials, in a product.

17. “Recycled Content Standard” means the minimum level of recovered material and/or postconsumer material necessary for products to qualify as “recycled products.”

18. “Recycled Product” means a product that meets Agency’s recycled content purchasing objectives for postconsumer and recovered material.

19. “Remanufactured Product” means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.

20. “Reused Product” means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting or minor repairs.

21. “Source Reduction” refers to products that result in a net reduction in the generation of waste compared to their previous or alternate version and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

22. The “Toxics Release Inventory” (TRI) is a publicly available U. S. EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities.

23. “U.S. EPA Guidelines” means the Comprehensive Procurement Guidelines established by the U.S. Environmental Protection Agency for federal agency purchases as of May 2002 and any subsequent versions adopted.

24. “Water-Saving Products” are those that are in the upper 25% of water conservation for all similar products, or at least 10% more water-conserving than the minimum level that meets the Federal standards.
1537 Webster EPPP and Green Cleaning policy

StopWaste.Org had previously intended to submit two separate ID credits—one for green cleaning and one for the EPPP. Since we had enough innovation credits written up, the team decided at the last minute to not include the green cleaning as a separate ID credit, but rather roll it into the EPPP point due to the fact that the EPPP does form an umbrella policy that includes the green cleaning policy (and we knew that green cleaning was mentioned in the EPPP document).

Since the review team has asked for more information about the green cleaning aspects of our policy, we are happy to provide the policy that has been drafted for the building and which is currently in place at 1537 Webster.

Please find attached a copy of our green cleaning policy as well as a letter of compliance and more information regarding training from the janitorial services company with whom we contract, Township Building Services, Inc.

All cleaning products are GreenSeal-37 certified. The Butchers products are GS-40 certified as flooring products retain a different GreenSeal certification number. Micro-fiber and vacuum specs on the Green Seal web-site. The vacuums used are certified “green” by the Carpet and Rug Institute.
StopWaste.Org's Environmentally Preferable Janitorial Policy

At the StopWaste.Org Agency building at 1537 Webster Street in Oakland, California, cleaning services is the responsibility of the Administrative Services Director or designee via a building cleaning and maintenance contract. StopWaste.Org (Agency) is committed to the use of environmentally preferred cleaning products, as outlined in the procedures below, for the life of the building.

1. Purpose
Many standard cleaning products contain hazardous chemicals that endanger health if absorbed through the skin or inhaled. Cleaners also negatively affect the environment by contaminating groundwater, lakes and oceans. The purpose of the green janitorial program is to reduce these environmental and health impacts of cleaning products and chemicals in the Agency's building. It is the Agency's priority to implement the use of only healthy, tested products.

2. Compliance Requirement
It is the Agency's policy that the contracted provider of janitorial and maintenance services shall train all maintenance employees working at the Agency's building on the importance and proper use of green cleaning supplies. The contracted provider shall submit and implement a Green Janitorial Program Training and Implementation Plan with not less than annual trainings consisting of the following issues:

- New and existing products will be presented, as well as tips and recommendations for use of chemical concentrates and appropriate dilution systems, how to mix, use and store cleaning products;
- Encouragement of all employees to understand importance of and embrace Green Janitorial Program;
- Continuous education about products and janitorial services in order to keep employees informed and up-to-date;
- Identification of any janitorial problems or complications that arise including product performance problems or language barriers;
- Proper training in hazards, use, maintenance and disposal of cleaning chemical, dispensing equipment and packaging;
- Presentation of changes to facility that require new or different cleaning approaches;
- and
- Discussion of and feedback on janitorial program scope.

Representatives from the product suppliers or manufacturers may assist in or provide presentations in the Green Janitorial Program. The Agency may request documentation from the service provider about training records certifying each person's training dates that works in the Agency building.

3. Performance Standard
To achieve the purpose outlined above, all cleaning products used in the Agency's building will meet the Green Seal GS-37, GS-40 or GS-41 environmental performance standards, as applicable. For cleaning product categories not listed in Green Seal standards, products shall meet the Environmental Choice. Only if none of these standards are applicable for a certain product type, will product alternatives (and accompanying MSDS sheets) be reviewed with the Administrative Services Director or designee, after submitted by the janitorial services company. In this case, products must comply with the California Code of Regulations maximum allowable volatile organic compound (VOC) levels.
Additionally, indoor pest problems such as insects and rodents shall be handled with the least toxic methodology and products shall be pre-approved by the Administrative Services Director or Designee.

- **Product List**
  The following categories of cleaning products and supplies shall use only environmentally preferable products:
  - General purpose cleaners, floor cleaners, bathroom cleaners, glass cleaners, and carpet cleaners;
  - Floor finishes and floor strippers;
  - Cleaner/degreasers;
  - Hand soaps
  - Toilet tissue and facial tissue;
  - Paper towels and napkins;
  - Seat covers
  - Trash bags;

The following are links to lists of cleaning products currently approved for use on the Agency’s building: [www.greenseal.org/findaproduct/index.cfm#cleaners](http://www.greenseal.org/findaproduct/index.cfm#cleaners) and [www.greenseal.org/findaproduct/index.cfm#floorcare](http://www.greenseal.org/findaproduct/index.cfm#floorcare).

It is a goal of the Agency to minimize the number and type of different cleaning products used at it's building.

Per Green Seal GS-37 requirements, the Agency prohibits the use of any products or chemicals whose undiluted product is toxic to humans, contains any ingredients that are carcinogens or that are known to cause reproductive toxicity, is corrosive to the skin or eyes, is a skin sensitiser, is combustible, contains substances that contribute significantly to the production of photochemical smog, tropospheric ozone or poor indoor-air quality, is toxic to aquatic life, is not sufficiently biodegradable, whose primary package is not recyclable, is not a concentrate (for exceptions, see Green Seal GS-37).

- **Powered Cleaning Equipment**
  Powered janitorial equipment shall maximize the reduction of building contaminants with minimum environmental impact. The contractor shall develop a plan for the phase-out of equipment that does not, at a minimum, meet the following specifications:
  Vacuum cleaners must meet the Carpet and Rug Institute (CRI) Green Label Program requirements. Carpet extraction equipment must meet the Carpet and Rug Institute Bronze Seal of Approval.

- **Purchasing**
  The Agency’s Administrative Services Director or designee approves the contracted janitorial service company’s product list, in order to maintain quality and ensure that new and existing products meet the required green cleaning standards.

  The contracted janitorial service company who may wish to apply for approval for a new cleaning product should submit a formal request to the Administrative Services Director or designee.

4. **Documentation of Policies and Cleaning Specifications** (see attached “Green Janitorial Program Practices”).
Green Janitorial Program Practices
StopWaste.Org’s Agency Building (1537 Webster St. in Oakland)

The following is a list of practices that must be adhered to when carrying out janitorial tasks at the Agency building. These practices are intended to encourage proper use of chemicals and equipment to ensure a safe and healthy facility.

- **Proper Mixing of Chemicals:** Use portion control dilution equipment to ensure effective and safe handling and dilution of concentrated cleaning products.
- **Proper Storage of Cleaning Products:** Cleaning products shall only be stored in the designated janitorial/maintenance closets.
- **Intensive cleaning:** More frequent and intensive cleaning should be directed towards building entryway, bathrooms, and kitchen, while fewer resources can be devoted to less frequently used areas.
- **Disinfectant use:** Use disinfectants only where required, such as in areas or on surfaces where pathogens collect and breed, such as in restrooms or on door handles, and bathroom faucets.
- **Proper disposal methods:** Dispose of all cleaning wastes carefully and in accordance with training information on this topic.
- **Floor maintenance plan and log:**
  This written log details the
  1. Number of coats of floor finish applied along with relevant maintenance/restoration practices and dates of these activities.
  2. Carpet cleaning and carpet tile replacement and dates
  3. Tile Flooring
     - Cleaning using general cleaner
     - Resealing grout/tile and dates
  4. Linoleum floor treatment:
     - Cleaning, use primarily spot cleaning and electrostatic mops without water when possible.
     - Waxing: Obtain wax product recommendations from linoleum manufacturer. Wax infrequently and only when necessary.

- **Drying:** Make sure to properly dry and erect signage if necessary in order to reduce slips and falls
- **Waterless Urinals:** Do not dump mop buckets or water down the urinals. Check cartridge every 3 months.
- **Paper products:** Use only recycled content janitorial paper products that meet or exceed the minimum post consumer recycled content levels recommended in the U.S. EPA’s Comprehensive Procurement Guidelines and as specified in the Agency’s Environmentally Preferable Purchasing Policy. Paper towels should have at least a 40% post consumer recycled content and toilet tissues shall have at least 20% post consumer recycled content. Paper products shall be unbleached or processed chlorine-free.
- **Trashcan liners:** Use trashcan liners that contain at least the recycled content levels required by the State of California. The selected manufacturer must be compliant with State law.
- **Other maintenance products:** Use products that meet the goals and specifications as laid out in the Agency’s Environmentally Preferable Purchasing Policy.
October 17, 2007

Mrs. Meri Soll
Program Manager
StopWaste.Org
1537 Webster St,
Oakland, CA 94612

Re: Green Cleaning Program for Stopwaste.org.

The following information is an overview of the “green” cleaning program we implemented March 2007 and currently employ at STOPWASTE.ORG located at 1537 Webster Street, Oakland, California. For further information such as records of supply invoices, documentation of employee training and equipment maintenance records please contact Travis Gill at Township Building Services, Inc.

All of the cleaning products used at 1537 Webster are G-37 compliant and are dispensed on site using the 3M Twist & Fill dispensing system.

- Twist 'n Fill #1 Glass Cleaner
- Twist 'n Fill #3 Neutral Cleaner
- Twist 'n Fill #8 General Purpose Cleaner

The following cleaning equipment is used on a daily basis to clean the hard surfaces of 1537 Webster Street:

- Pro Team Super Coach Back Pack Vacuum.
- NSS HEPA Vacuum (Model # Paser 115 UE)
- CleanSystem Micro Fiber Mops and dust cloths.
The following hard floor products (stripper and wax) are used on an as needed or quarterly basis.

- Butchers G-Force Floor Stripper
- Butchers G-Force Floor Finish

The following products are used on an as needed basis:

- Carpet Spotter: Butcher's G-Force Fountainhead Dual Task
- Graffiti Remover: Johnson Wax Professional Alpha-HP Multi-Surface Cleaner
- Restroom Deep Cleaning: Johnson Wax Professional Heavy Duty Washroom Cleaner

Our employees are trained on Green Cleaning Procedures and Equipment Care on a quarterly basis. The equipment is on a PM program and serviced on a quarterly or as needed basis. Our company uses 3M cleaning chemicals across all platforms of our operation eliminating the potential for contamination and reduces the possibility of non-certified chemicals entering the property through our distribution channels. Inspections of the janitorial closets are done on a weekly basis to further insure only approved products are being used for cleaning the property.

Should there be a need for further clarification of our policies, procedures or the products used in cleaning your facility please do not hesitate to contact me.

Regards,

Travis Gill
Executive Vice President
Township Building Services, Inc
Copyright, 2001, Minnesota Mining and Manufacturing Company. All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that:
1) The information is copied in full with no changes unless prior agreement is obtained from 3M, and
2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

DIVISION: COMMERCIAL CARE DIVISION
TRADE NAME:
3M Brand GENERAL PURPOSE CLEANER CONCENTRATE (Product No. 8, Twist 'n Fill (tm) System)

ID NUMBER/U.P.C.:
70-0705-4322-1 00-48011-19211-1 70-0705-4323-9 00-48011-19212-8
70-0707-1418-6 00-48011-23006-6 70-0707-1419-4 00-48011-23007-3
70-0708-3998-3 00-48011-19211-1 70-0708-4008-0 00-48011-19212-8
70-0710-0967-7 00-48011-23908-3 70-0710-0968-5 00-48011-23891-8

ISSUED: April 10, 2001
SUPERSEDES: September 21, 2000
DOCUMENT: 06-2098-9

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IN CASE OF EMERGENCY: THE NUMBERS AT THE TOP OF THIS PAGE PROVIDE 24 HOUR RESPONSE FROM ANY PHONE FOR ALL EMERGENCIES WITH THIS PRODUCT.

This product contains the following toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR Part 372:
2-ETHYL-HEXYLOXYETHANOL

2. PHYSICAL DATA

BOILING POINT:.............. ca. 200 F
VAPOR PRESSURE:......... N/D
VAPOR DENSITY:............. 2.1 Air=1
                      (Isopropyl alcohol)
EVAPORATION RATE:........... ca. 1 Water=1
SOLUBILITY IN WATER:...... complete
SPECIFIC GRAVITY:......... ca. 1.0 Water=1
D PERCENT VOLATILE:....... ca. 75 %

Abbreviations: N/D - Not Determined  N/A - Not Applicable  CA - Approximately
2. PHYSICAL DATA  (continued)

pH:......................... ca. 8
VISCOITY:..................... < 100 centipoise
MELTING POINT:............. N/D

APPEARANCE AND ODOR:
   Liquid, red color; citrus fragrance

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:.................. ca. 102 F
FLAMMABLE LIMITS - LEL:..... N/D
FLAMMABLE LIMITS - UEL:..... N/D
AUTOIGNITION TEMPERATURE:... N/D

EXTINGUISHING MEDIA:
   Water, Carbon dioxide, Dry powder, Foam

SPECIAL FIRE FIGHTING PROCEDURES:
   Wear full protective clothing, including helmet, self-contained,
   positive pressure or pressure demand breathing apparatus, bunker coat
   and pants, bands around arms, waist and legs, face mask, and
   protective covering for exposed areas of the head.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
   See Hazardous Decomposition section for products of combustion.
   Closed containers exposed to heat from fire may build pressure and
   explode.

NFPA HAZARD CODES:  HEALTH: 2  FIRE: 2  REACTIVITY: 0
   UNUSUAL REACTION HAZARD: none

OSHA FIRE HAZARD CLASS: Class II Combustible Liquid

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:
   Strong Oxidizing Agents.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

Abbreviations: N/D - Not Determined  N/A - Not Applicable  CA - Approximately
4. REACTIVITY DATA  (continued)

HAZARDOUS DECOMPOSITION PRODUCTS:
Carbon Monoxide and Carbon Dioxide, Oxides of Nitrogen, Irritant Vapors or Gases.

5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:
Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Ventilate area. Extinguish all ignition sources. Contain spill. Evacuate unprotected personnel from hazard area. Cover with absorbent material. Collect using non-sparking tools. Clean up residue with water. Place in an approved metal container. Seal the container.

RECOMMENDED DISPOSAL:

ENVIRONMENTAL DATA:
A Product Environmental Data Sheet (PED) is available.

The use of this product is expected to have no significant environmental impact. All components will eventually degrade in the environment.

REGULATORY INFORMATION:
Volatile Organic Compounds: ca. 15 %.
VOC Less H2O & Exempt Solvents: ca. 15 %.

Since regulations vary, consult applicable regulations or authorities before disposal. In the event of an uncontrolled release of this material, the user should determine if the release qualifies as a reportable quantity. U.S. EPA Hazardous Waste Number = D001 (Ignitable)

TSCA: All components used in the manufacture of this material are in compliance with the US TSCA inventory.

EPCRA HAZARD CLASS:
FIRE HAZARD: Yes  PRESSURE: No  REACTIVITY: No  ACUTE: Yes  CHRONIC: Yes

Abbreviations: N/D - Not Determined  N/A - Not Applicable  CA - Approximately
6. SUGGESTED FIRST AID

EYE CONTACT:
Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT:
Immediately wash skin with soap and large amounts of water. Remove contaminated clothing. If signs/symptoms occur, call a physician. Wash contaminated clothing before reuse and dispose of contaminated shoes.

INHALATION:
If signs/symptoms occur, remove person to fresh air. If signs/symptoms continue, call a physician.

IF SWALLOWED:
Do not induce vomiting. Drink two glasses of water. Call a physician.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:
NOTE: When used as directed and diluted and dispensed with a TWIST'n FILL (tm) Chemical Dispenser, eye contact with the concentrate is not expected to occur. Avoid eye contact. The following should be worn alone or in combination, as appropriate, to prevent eye contact: Wear vented goggles. Wear full-face shield.

SKIN PROTECTION:
NOTE: When used as directed and diluted and dispensed with a TWIST'n FILL (tm) Chemical Dispenser, skin contact with the concentrate is not expected to occur. Avoid skin contact. Wear appropriate gloves when handling this material. A pair of gloves made from the following material(s) are recommended: butyl rubber. Use one or more of the following personal protection items as necessary to prevent skin contact: apron, coveralls.

RECOMMENDED VENTILATION:
NOTE: When used as directed and diluted and dispensed with a TWIST'n FILL (tm) Chemical Dispenser, special ventilation is not required. Use with appropriate local exhaust ventilation. Provide appropriate local exhaust ventilation at transfer points. Use in a well-ventilated area. If exhaust ventilation is not adequate, use appropriate respiratory protection.

RESPIRATORY PROTECTION:
NOTE: When used as directed and diluted and dispensed with a TWIST'n FILL (tm) Chemical Dispenser, respiratory protection is not required. Avoid breathing of vapors, mists or spray. Avoid breathing of

Abbreviations: N/D - Not Determined  N/A - Not Applicable  CA - Approximately
7. PRECAUTIONARY INFORMATION (continued)

Airborne material. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: half-mask organic vapor respirator, full-face organic vapor respirator.

PREVENTION OF ACCIDENTAL INGESTION:
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Do not ingest.

RECOMMENDED STORAGE:
Store away from heat. Keep container closed when not in use. Keep out of the reach of children.

FIRE AND EXPLOSION AVOIDANCE:
Keep container tightly closed. Keep away from heat, sparks, open flame, and other sources of ignition. Prevent all sources of ignition.

OTHER PRECAUTIONARY INFORMATION:
Not intended for consumer sale or use. This product is not intended to be used without prior dilution as specified on the product label.

MIS HAZARD RATINGS: HEALTH: 2 FLAMMABILITY: 2 REACTIVITY: 0
PERSONAL PROTECTION: X (See precautions, section 7.)

EXPOSURE LIMITS

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<td>ISOPROPYL ALCOHOL</td>
<td>400</td>
<td>PPM</td>
<td>TWA</td>
<td>OSHA</td>
<td></td>
</tr>
<tr>
<td>ISOPROPYL ALCOHOL</td>
<td>500</td>
<td>PPM</td>
<td>STEL</td>
<td>OSHA</td>
<td></td>
</tr>
<tr>
<td>2-ETHYL-HEXOXYETHANOL</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td></td>
</tr>
</tbody>
</table>

* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:
- ACGIH: American Conference of Governmental Industrial Hygienists
- OSHA: Occupational Safety and Health Administration
- NONE: None Established

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately
8. HEALTH HAZARD DATA

EYE CONTACT:
Severe Eye Irritation: signs/symptoms can include redness, swelling, pain, tearing, cloudy appearance of the cornea, impaired vision and possible permanently impaired vision.

SKIN CONTACT:
Severe Skin Irritation: signs/symptoms can include redness, swelling, itching, dryness, cracking, blistering, and pain.

INHALATION:
Prolonged or repeated exposure may cause:

Central Nervous System Depression: signs/symptoms can include headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

IF SWALLOWED:
Ingestion is not a likely route of exposure to this product.

Ingestion may cause:

Gastrointestinal Effects: signs/symptoms generally will include abdominal pain.

OTHER HEALTH HAZARD INFORMATION:
A Product Toxicity Summary Sheet is available.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: medical conditions, if any, known to be aggravated by exposure to this product are indicated in the appropriate portions of the Health Hazard Data section of this data sheet.

CARCINOGENS: components of this product, if any, known to cause, or suspected of causing, cancer as determined by OSHA, IARC, or NTP are described in the Health Hazard Data section of this data sheet in accord with the OSHA Hazard Communications Standard, 29 CFR 1910.1200

SECTION CHANGE DATES

<table>
<thead>
<tr>
<th>HEADING</th>
<th>SECTION CHANGED SINCE September 21, 2000 ISSUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVIRONMENTAL INFO.</td>
<td>SECTION CHANGED SINCE September 21, 2000 ISSUE</td>
</tr>
</tbody>
</table>

Abbreviations: N/D - Not Determined  N/A - Not Applicable  CA - Approximately
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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) HEAVY DUTY GLASS CLEANER Ready-to-Use (Twist 'n Fill(TM) Product No. 20)
MANUFACTURER: 3M
DIVISION: Commercial Care Division
ADDRESS: 3M Center
St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 06/28/2005
Supercedes Date: Initial Issue
Document Group: 19-7439-3

Product Use:
Specific Use: Non-streaking, heavy-duty cleaner for windows, glass, mirrors as well as stainless steel, chrome, aluminum, ceramic and plastic.

SECTION 2: INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>% by Wt</th>
</tr>
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<tbody>
<tr>
<td>WATER</td>
<td>7732-18-5</td>
<td>&gt; 95</td>
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<td>1-PROPOXY-2-PROpanol</td>
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<td>1 - 5</td>
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<td>ALKYL ETHOXY CARBOXYLIC ACID</td>
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</tr>
<tr>
<td>ETHANOLAMINE</td>
<td>141-43-5</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>ALCOHOLS, C10-16, ETHOXYLATED</td>
<td>68002-97-1</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Liquid
Odor, Color, Grade: Clear, blue to blue violet liquid with floral fragrance
General Physical Form: Liquid
Immediate health, physical, and environmental hazards: May cause target organ effects.

3.2 POTENTIAL HEALTH EFFECTS
Eye Contact:
Mild Eye Irritation: Signs/symptoms may include redness, pain, and tearing.

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, and itching.

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May be absorbed following inhalation and cause target organ effects.

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:
Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Prolonged or repeated exposure may cause:
Liver Effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Skin Contact: Wash affected area with soap and water. If signs/symptoms develop, get medical attention.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Flammable Limits - LEL</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
5.2 EXTINGUISHING MEDIA
Material will not burn.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Not applicable. Non-flammable: ordinary combustible material.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Observe precautions from other sections. Call 3M-HELPs line (1-800-364-3577) for more information on handling and managing the spill. Ventilate the area with fresh air. Contain spill. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible. Clean up residue with water. Place in a closed container approved for transportation by appropriate authorities. Cover, but do not seal for 48 hours. Dispose of collected material as soon as possible.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING
Keep out of the reach of children. Avoid breathing of vapors, mists or spray. Avoid prolonged or repeated skin contact. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Avoid contact with oxidizing agents.

NOTE: The above precautionary information presumes that this ready-to-use product has been diluted and dispensed from a TWIST 'n FILL(TM) Chemical Dispenser.

7.2 STORAGE
Keep container in well-ventilated area. Store away from oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Use in a well-ventilated area.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection
Avoid eye contact with vapors, mists, or spray.
The following eye protection(s) are recommended: Safety Glasses with side shields.
8.2.2 Skin Protection
Avoid prolonged or repeated skin contact. Gloves not normally required.

If prolonged or repeated skin contact is expected, select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.
Gloves made from the following material(s) are recommended: Butyl Rubber, Neoprene, Nitrile Rubber.

8.2.3 Respiratory Protection
Avoid breathing of vapors, mists or spray. Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

8.2.4 Prevention of Swallowing
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Authority</th>
<th>Type</th>
<th>Limit</th>
<th>Additional Information</th>
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<tbody>
<tr>
<td>ETHANOLAMINE</td>
<td>ACGIH</td>
<td>TWA</td>
<td>3 ppm</td>
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<tr>
<td>ETHANOLAMINE</td>
<td>ACGIH</td>
<td>STEL</td>
<td>6 ppm</td>
<td></td>
</tr>
<tr>
<td>ETHANOLAMINE</td>
<td>OSHA</td>
<td>TWA</td>
<td>3 ppm</td>
<td>Table Z-1A</td>
</tr>
<tr>
<td>ETHANOLAMINE</td>
<td>OSHA</td>
<td>STEL</td>
<td>6 ppm</td>
<td>Table Z-1A</td>
</tr>
</tbody>
</table>

SOURCE OF EXPOSURE LIMIT DATA:
ACGIH: American Conference of Governmental Industrial Hygienists
CMRG: Chemical Manufacturer Recommended Guideline
OSHA: Occupational Safety and Health Administration
AIHIA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form: Liquid
Odor, Color, Grade: Clear, blue to blue violet liquid with floral fragrance
General Physical Form: Liquid
Flash Point: Not Applicable
Flammable Limits - LEL: Not Applicable
Flammable Limits - UEL: Not Applicable
Boiling point: 212 °F

Specific Gravity: Approximately 1 [Ref Std: WATER=1]
pH: Approximately 10

Solubility in Water: Complete
Volatile Organic Compounds: 1 - 5 % [Test Method: calculated per CARB title 2]
Percent volatile: > 90 %
VOC Less H2O & Exempt Solvents: 258 - 1290 g/l [Test Method: calculated per CARB title 2]
Viscosity: < 50 centipoise
SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: Strong oxidizing agents

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<table>
<thead>
<tr>
<th>Substance</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldehydes</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Carbon monoxide</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>During Combustion</td>
</tr>
</tbody>
</table>

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

A 3M Product Environmental Data Sheet (PED) is available.

CHEMICAL FATE INFORMATION

A 3M Product Environmental Data Sheet (PED) is available.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Discharge spent solutions and small quantities (less than 5 gal.(19 L)) to a wastewater treatment system. As a disposal alternative, incinerate in an industrial or commercial facility in the presence of a combustible material.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

LN-DCCX-157B-0

Please contact the emergency numbers listed on the first page of the MSDS for Transportation Information for this


SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS
311/312 Hazard Categories:
Fire Hazard - No  Pressure Hazard - No  Reactivity Hazard - No  Immediate Hazard - Yes  Delayed Hazard - Yes

STATE REGULATIONS

CHEMICAL INVENTORIES
The components of this product are in compliance with the chemical notification requirements of TSCA.

INTERNATIONAL REGULATIONS

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification
Health: 1  Flammability: 0  Reactivity: 0  Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification
Health: 1  Flammability: 0  Reactivity: 0  Protection: X - See PPE section.

Hazardous Material Identification System (HMIS®) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint and Coatings Association (NPCA).

No revision information is available.

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M (TM) NEUTRAL CLEANER CONCENTRATE (Product No. 3, Twist 'n Fill (tm) System)
MANUFACTURER: 3M
DIVISION: Commercial Care Division
ADDRESS: 3M Center
St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 04/25/2003
Supercedes Date: 10/02/2001
Document Group: 06-2097-1

Product Use:
Specific Use: NEUTRAL CLEANER CONCENTRATE

SECTION 2: INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>% by Wt</th>
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</thead>
<tbody>
<tr>
<td>WATER</td>
<td>7732-18-5</td>
<td>40 - 70</td>
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<td>HYDROXYALKYL AMINE OXIDES</td>
<td>68478-65-9</td>
<td>10 - 30</td>
</tr>
<tr>
<td>ISOPROPYL ALCOHOL</td>
<td>67-63-0</td>
<td>5 - 10</td>
</tr>
<tr>
<td>2-(2-ETHYLHEXYLOXY)ETHANOL</td>
<td>1559-35-9</td>
<td>3 - 7</td>
</tr>
<tr>
<td>FRAGRANCE</td>
<td>Trade Secret</td>
<td>0.1 - 1</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW
Specific Physical Form: Liquid
Odor, Color, Grade: Bright, clear green-yellow liquid with citrus fragrance
General Physical Form: Liquid
Immediate health, physical, and environmental hazards: Combustible liquid and vapor. May cause severe eye irritation. May cause target organ effects.

3.2 POTENTIAL HEALTH EFFECTS
Eye Contact:
Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

**Skin Contact:**
Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

**Inhalation:**
Single exposure, above recommended guidelines, may cause:
- Upper Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May be absorbed following inhalation and cause target organ effects.

**Ingestion:**
Gastrointestinal Effects: Signs/symptoms may include stomach upset, nausea, vomiting and diarrhea.

**Target Organ Effects:**
Single exposure, above recommended guidelines, may cause:
- Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

### 3.3 POTENTIAL ENVIRONMENTAL EFFECTS
A 3M Product Environmental Data Sheet (PED) is available. A conservative assessment indicates this product presents a low environmental risk. Components released to the environment through use and disposal are expected to have insignificant environmental impacts.

### SECTION 4: FIRST AID MEASURES

#### 4.1 FIRST AID PROCEDURES
The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

**Eye Contact:** Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

**Skin Contact:** Immediately flush skin with large amounts of water. If signs/symptoms develop, get medical attention.

**Inhalation:** If signs/symptoms develop, remove person to fresh air. If signs/symptoms persist, get medical attention.

**If Swallowed:** Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

### SECTION 5: FIRE FIGHTING MEASURES

#### 5.1 FLAMMABLE PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoignition temperature</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>102 °F (Test Method: Closed Cup)</td>
</tr>
<tr>
<td>Flammable Limits - LEL</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flammable Limits - UEL</td>
<td>No Data Available</td>
</tr>
<tr>
<td>OSHA Flammability Classification</td>
<td>Class II Combustible Liquid</td>
</tr>
</tbody>
</table>

#### 5.2 EXTINGUISHING MEDIA
Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

#### 5.3 PROTECTION OF FIRE FIGHTERS
Special Fire Fighting Procedures: Wear full protective clothing, including helmet, self-contained, positive pressure or pressure
demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head. Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

Unusual Fire and Explosion Hazards: Combustible liquid and vapor.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Observe precautions from other sections. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. Ventilate the area with fresh air. Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with water. Collect the resulting residue containing solution. Place in a metal container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING
Avoid eye contact with vapors, mists, or spray. Avoid skin contact. Avoid breathing of vapors, mists or spray. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Avoid contact with oxidizing agents. Keep out of the reach of children.

7.2 STORAGE
Store away from acids. Store away from oxidizing agents. Store away from heat. Store out of direct sunlight. Keep container in well-ventilated area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
NOTE: When used as directed and diluted and dispensed with a TWIST 'n FILL(TM) Chemical Dispenser, special ventilation is not required. Use in a well-ventilated area.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)
8.2.1 Eye/Face Protection
NOTE: When used as directed and diluted and dispensed with a TWIST 'n FILL(TM) Chemical Dispenser, eye contact with the concentrate is not expected to occur. Avoid eye contact with vapors, mists, or spray. The following eye protection(s) are recommended: Full Face Shield, Indirect Vented Goggles.

8.2.2 Skin Protection
NOTE: When used as directed and diluted and dispensed with a TWIST 'n FILL(TM) Chemical Dispenser, skin contact with the concentrate is not expected to occur. Avoid skin contact. Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials. Gloves made from the following material(s) are recommended: Butyl Rubber, Neoprene.

8.2.3 Respiratory Protection
NOTE: When used as directed and diluted and dispensed with a TWIST 'n FILL(TM) Chemical Dispenser, respiratory protection is not required. Avoid breathing of vapors, mists or spray. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with organic vapor cartridges. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

8.2.4 Prevention of Swallowing
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Authority</th>
<th>Type</th>
<th>Limit</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISOPROPYL ALCOHOL</td>
<td>ACGIH</td>
<td>TWA</td>
<td>400 ppm</td>
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<tr>
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<td>TWA</td>
<td>400 ppm</td>
<td>Table Z-1A</td>
</tr>
<tr>
<td>ISOPROPYL ALCOHOL</td>
<td>OSHA</td>
<td>STEL</td>
<td>500 ppm</td>
<td>Table Z-1A</td>
</tr>
</tbody>
</table>

SOURCE OF EXPOSURE LIMIT DATA:
ACGIH: American Conference of Governmental Industrial Hygienists
CMRG: Chemical Manufacturer Recommended Guideline
OSHA: Occupational Safety and Health Administration
AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form: Liquid
Odor, Color, Grade: Bright, clear green-yellow liquid with citrus fragrance
General Physical Form: Liquid
Autoignition temperature: No Data Available
Flash Point: 102 °F [Test Method: Closed Cup]
Flammable Limits - LEL: No Data Available
Flammable Limits - UEL: No Data Available
Boiling point: > 200 °F
Density: No Data Available
Vapor Density: No Data Available
Vapor Pressure: No Data Available
Specific Gravity: 1 [Ref Std: WATER=1]
pH: 6 - 7
Melting point: Not Applicable
Solubility in Water: Complete
Evaporation rate: Approximately 1 [Ref Std: WATER=1]
Volatile Organic Compounds: 15 - 40 % [Test Method: calculated per CARB title 2]
Percent volatile: 55 - 100 %
VOC Less H2O & Exempt Solvents: 200 - 1300 g/l [Test Method: calculated per CARB title 2]
Viscosity: < 100 centipoise

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: Strong oxidizing agents; Heat; Sparks and/or flames

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products
SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION
Not determined.

CHEMICAL FATE INFORMATION
Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Incinerate in a permitted hazardous waste incinerator. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>ID Number</th>
<th>UPC</th>
<th>ID Number</th>
<th>UPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>70-0708-3991-8</td>
<td>00-48011-20200-1</td>
<td>70-0709-8999-4</td>
<td>00-48011-23902-1</td>
</tr>
</tbody>
</table>

Please contact the emergency numbers listed on the first page of the MSDS for Transportation Information for this material.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS
311/312 Hazard Categories:
Fire Hazard - Yes  Pressure Hazard - No  Reactivity Hazard - No  Immediate Hazard - Yes  Delayed Hazard - No

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(2-ETHYLYHEXYLOXY)ETHANOL (GLYCOL ETHERS)</td>
<td>1559-35-9</td>
<td>3 - 7</td>
</tr>
</tbody>
</table>

This material contains a chemical which requires export notification under TSCA Section 12[b]:

Page 5 of 6
CHEMICAL INVENTORIES
The components of this product are in compliance with the chemical notification requirements of TSCA.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification
Health: 2 Flammability: 2 Reactivity: 0 Special Hazards: None
National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification
Health: 2 Flammability: 2 Reactivity: 0 Protection: X - See PPE section.
Hazardous Material Identification System (HMIS(r)) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS(r) ratings are to be used with a fully implemented HMIS(r) program. HMIS(r) is a registered mark of the National Paint and Coatings Association (NPCA).

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.

3M MSDSs are available at www.3M.com
1. PRODUCT AND COMPANY IDENTIFICATION

Product name: G-Force Fountainhead Dual Task
MSDS #: F-00680001
Product code: 3515069
Recommended use: Cleaning product.

Manufacturer, importer, supplier:
US Headquarters
The Butcher Company
8310 16th St.
Sturtevant, Wisconsin 53177-0902
Phone: 1-800-225-9475
MSDS Internet Address:
www.thebutchercompany.com

Emergency telephone number: 1-800-228-5635 (Prosar); 1-651-917-6133 (Intl Prosar); 01-800-710-3400 (México)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
- CAUTION
- CONCENTRATE
- MAY CAUSE EYE AND SKIN IRRITATION

Principle routes of exposure: Skin contact. Eye contact. Ingestion.
Eye contact: Moderately irritating to the eyes.
Skin contact: Moderately irritating to the skin.
Inhalation: May be irritating to nose, throat, and respiratory tract.
Ingestion: May be irritating to mouth, throat and stomach.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

<table>
<thead>
<tr>
<th>Ingredient(s)</th>
<th>CAS #</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol ethoxylates</td>
<td>34398-01-1</td>
<td>5 - 10%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye contact: Flush immediately with plenty of water. If irritation persists, get medical attention.
Skin contact: Flush immediately with plenty of water. If irritation persists, get medical attention.
Inhalation: If breathing is affected, remove to fresh air.
Ingestion: Immediately drink one cupful of water or milk. Never give anything by mouth to an unconscious person. Get medical attention.

Aggravated Medical Conditions: Persons with pre-existing skin disorders may be more susceptible to irritating effects

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Dry chemical, water spray, foam, carbon dioxide.

Extinguishing media which must not be used for safety reasons:
None.
Special protective equipment for firefighters:
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Specific hazards: None known.
Unusual hazards: None known.
Specific methods: No special methods required

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions: Use personal protective equipment
Environmental precautions and clean-up methods: Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Use a water rinse for final clean-up.

**7. HANDLING AND STORAGE**

Handling: Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. FOR COMMERCIAL AND INDUSTRIAL USE ONLY.
Storage: Protect from freezing. Keep tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

Engineering measures to reduce exposure: No special ventilation requirements. General room ventilation is adequate.

**Personal Protective Equipment**
- Eye protection: No special requirements under normal use conditions
- Hand protection: No special requirements under normal use conditions
- Skin and body protection: No special requirements under normal use conditions
- Respiratory protection: No special requirements under normal use conditions
- Hygiene measures: Handle in accordance with good industrial hygiene and safety practice

**HMIS**
- Health: 2
- Fire Hazard: 0
- Reactivity: 0

**Personal protective equipment**
- None

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical State: Liquid
Color: Colourless
pH: 9.1
Specific gravity: 1.018
Bulk density: No information available
Evaporation Rate: No information available
Solubility: Soluble
Solubility in other solvents: No information available
Partition coefficient (n-octanol/water): No information available

**Appearance:** Liquid
**Odor:** Fresh
**Dilution pH:** No information available
**Density:** 8.50
**Vapor density:** No information available
**Viscosity:** No information available
**VOC:** 0.0

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling point/Range</td>
<td>Not determined</td>
</tr>
<tr>
<td>Melting point/Range</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt;260 (°F) &gt;93.3 (°C)</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Stability: The product is stable
Polymerization: Hazardous polymerization does not occur
Materials to avoid: None known.
Conditions to avoid: Do not freeze.
Hazardous decomposition products: None reasonably foreseeable.

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Ingredient(s)</th>
<th>LD50 Oral - Rat</th>
<th>LD50 Dermal - Rabbit</th>
<th>LC50 Inhalation - Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol ethoxylates</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Acute toxicity: Oral LD50 estimated to be greater than 5000 mg/kg. Dermal LD50 estimated to be > 2000 mg/kg.
Chronic toxicity: None known

Specific effects:
- Carcinogenic effects: None known
- Mutagenic effects: None known
- Reproductive toxicity: None known
- Target organ effects: None known

12. ECOLOGICAL INFORMATION

Environmental Information: No data available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Dispose of according to all federal, state and local applicable regulations

14. TRANSPORT INFORMATION

DOT/TDG: Please refer to the Bill of Lading/receiving documents for up to date shipping information

15. REGULATORY INFORMATION

International Inventories
All components of this product are listed on the following inventories: U.S.A. (TSCA), Canada (DSL/NDSL).

U.S. Regulations
California Proposition 65: This product is not subject to the reporting requirements under California's Proposition 65

STATE RIGHT TO KNOW

<table>
<thead>
<tr>
<th>Ingredient(s)</th>
<th>CAS #</th>
<th>MARTK:</th>
<th>NJRTK:</th>
<th>PARTK:</th>
<th>RIRTK:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sodium xylene sulfonate</td>
<td>1300-72-7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alcohol ethoxylates</td>
<td>34398-01-1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Disodium 2-hydroxyethyliminodi(acetate)</td>
<td>135-37-5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
CERCLA/ SARA
None

CAA HAP/CAA ODS/CWA Priority Pollutants: None

SARA 311/312 Hazard Categories

Canada

WHMIS hazard class: D2B Toxic materials.

16. OTHER INFORMATION

Reason for revision: Not applicable
Prepared by: NAPRAC
Additional advice: None

Notice to Reader: This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as to the accuracy of the information contained within. Actual conditions of use and handling are beyond seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.
Pacer 112 UE / 115 UE
12” and 15” Single-Motor Upright Vacuums

Incorporating the latest innovations, the Pacer 112 UE and 115 UE are single-motor upright vacuums designed for reliability.

- Lightweight, ergonomic design reduces operator fatigue.
  - Variable handle adjustment for different height users.
  - Closed handle allows a relaxed grip.
  - Large carrying handle makes transport easy.

- Powerful 1.5 HP motor and Chevron style brush for thorough cleaning.

- Thorough three-step filtration: two-ply bag, motor filter, and exhaust filter.

- Reliable mechanical clutch disconnects brush when jammed.

- Detachable suction tube makes clearing clogs simple.

- Molded rubber bumper protects fixtures and furniture.

- No expensive electronic controls to repair or replace.

- Durable polypropylene body and base stands up to commercial use.

- Simple cord wrap release for quick access.

- Optional HEPA filter available as well as cloth and fleece filter bags.
### Pacer 112 / 115 UE Specifications

<table>
<thead>
<tr>
<th>Brush</th>
<th>Chevron style brush</th>
<th>Cord</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor -Type</td>
<td>2-stage, 9 amps @ 120V (1150 watts)</td>
<td>40 ft. (12 m) 18-3 SJT safety yellow</td>
<td>Height 48.75 in. (125 cm)</td>
</tr>
<tr>
<td>-Air Flow</td>
<td>Maximum 102 CFM (48 l/sec.)</td>
<td>Construction Composite Polypropylene body and base</td>
<td>Width: 112 UE 12.5 in. (31.7 cm)</td>
</tr>
<tr>
<td>-Waterlift</td>
<td>84 in.</td>
<td>Sound Level 67 dBa</td>
<td>115 UE 15.5 in. (39.3 cm)</td>
</tr>
<tr>
<td>Filtration</td>
<td>3 Stage—Top-filled, two-ply poly-lined filter bag, motor filter, and exhaust filter. HEPA optional.</td>
<td>Bag Capacity 5.1 quarts dry (4.8 liters)</td>
<td>-Weights: 112 UE 17.4 lbs. (7.9 kg)</td>
</tr>
<tr>
<td>Switches &amp; Controls</td>
<td>Rocker on/off switch and bag full indicator light</td>
<td>Cleaning Path 112 UE 12 in. (30 cm)</td>
<td>115 UE 18 lbs. (8.2 kg)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-Shipping Wt: 112 UE 23 lbs. (10.4 kg)</td>
</tr>
</tbody>
</table>

**Productivity** — Floor coverage for the Pacer 112 UE is 3,430 sq. ft. per hour (319 m²), and floor coverage for the 115 UE is 4,275 sq. ft. per hour (398 m²).

### 3-Stage Filtration

1. Enclosed handle allows for a relaxed grip during operation.
2. Built-in extension hose and wand make above-the-floor cleaning a snap.
3. Convenient carrying handle makes transport easy.
4. Brush adjustment dial on the base allows for instant carpet pile adjustments.
5. Chevron style brush is built for tough commercial use, and is easily removed for replacement.
6. Shock absorbing wheels keep the vacuum quiet on rough surfaces.
7. The handle is adjustable for different height operators.
8. Cord strain relief prevents damage to the power cord.

---

**NSS Enterprises, Inc.**
3115 Frenchmens Road
Toledo, Ohio 43607-2958 USA
419/531-2121 or 800/677-1683
Fax 419/531-3761
www.nss.com
mailus@nss.com
Specifications and machine appearance subject to change without notice.

**DISTRIBUTED BY**

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MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: G-Force Floor Finish
Product code: 4119172
MSDS #: MS0400004
Recommended use: Floor care.

Manufacturer, importer, supplier:
US Headquarters: Canadian Headquarters
The Butcher Company: JohnsonDiversey - Canada, Inc.
8310 16th St.: 2401 Bristol Circle
Sturtevant, Wisconsin 53177-0902: Oakville, Ontario L6H 6P1
Phone: 1-800-225-9475: Phone: 1-800-668-3131
MSDS Internet Address: www.thebutchercompany.com

Emergency telephone number: 1-800-228-5635 (Prosar); 1-651-917-6133 (Int'l Prosar); 01-800-710-3400 (México)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
• CAUTION
• MAY BE MILDLY IRRITATING TO EYES
• MAY BE MILDLY IRRITATING TO SKIN

Skin contact: May be mildly irritating to skin.
Eye contact: May be mildly irritating to eyes.
Inhalation: None known.
Ingestion: None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene glycol methyl ether</td>
<td>34590-94-8</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Diethylene glycol ethyl ether</td>
<td>111-90-0</td>
<td>1 - 5%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye contact: Flush immediately with plenty of water. Get medical attention if irritation occurs.
Skin contact: Flush immediately with plenty of water. Get medical attention if irritation occurs.
Inhalation: No specific first aid measures are required.
Ingestion: No specific first aid measures are required.
Aggravated Medical Conditions: Persons with pre-existing skin disorders may be more susceptible to irritating effects

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Use dry chemical, CO2, water spray or "alcohol" foam.

Extinguishing media which must not be used for safety reasons:
No information available
Special protective equipment for firefighters:
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Specific hazards: Not applicable
Unusual hazards: None known
Specific methods: No special methods required

| NFPA | Health: 1 | Flammability: 0 | Instability: 0 |

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment
Environmental precautions and clean-up methods: Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Use a water rinse for final clean-up.

7. HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. FOR COMMERCIAL AND INDUSTRIAL USE ONLY
Storage: Protect from freezing. Keep tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:
No special ventilation requirements. General room ventilation is adequate.

Personal Protective Equipment
Eye protection: No special requirements under normal use conditions
Hand protection: No special requirements under normal use conditions
Skin and body protection: No special requirements under normal use conditions
Respiratory protection: No special requirements under normal use conditions
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene glycol methyl ether</td>
<td>150 ppm (STEL)</td>
<td>600 mg/m³ 100 ppm</td>
<td>900 mg/m³ (STEL)</td>
</tr>
<tr>
<td>34590-94-8</td>
<td>100 ppm (TWA)</td>
<td>Can be absorbed through the skin.</td>
<td>600 mg/m³ (TWA)</td>
</tr>
</tbody>
</table>

HMIS
Health 1 Fire Hazard 0 Reactivity 0

Personal protective equipment
None Required

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Color: Off-white
pH: 7.78
Specific gravity: 8.57 lb/gal
Bulk density: No information available
Evaporation rate: No information available
Solubility: Dispersible
Solubility in other solvents: No information available
Partition coefficient (n-octanol/water): No information available

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>Liquid</td>
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<tr>
<td>Odor:</td>
<td>Slight Ammoniacal</td>
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<tr>
<td>Dilution pH:</td>
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<tr>
<td>Density:</td>
<td>1.03 g/ml</td>
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<tr>
<td>Vapor density:</td>
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</tr>
<tr>
<td>Viscosity:</td>
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</tr>
<tr>
<td>VOC:</td>
<td>3.04 % by wt.</td>
</tr>
<tr>
<td>Boiling point/range:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Melting point/range:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flash point:</td>
<td>&gt;200 °F&gt;93.3 °C</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Autoignition temperature:</td>
<td>No information available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Stability: The product is stable
Polymerization: Hazardous polymerisation does not occur
Hazardous decomposition products: None reasonably foreseeable

11. TOXICOLOGICAL INFORMATION

Component Information:

HAZARDOUS COMPONENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene glycol methyl ether</td>
<td>5.4 ml/kg (rat)</td>
<td>10 ml/kg (rabbit)</td>
<td>Not available</td>
</tr>
<tr>
<td>Diethylene glycol ethyl ether</td>
<td>5.5 ml/kg (rat)</td>
<td>4.2 ml/kg (rabbit)</td>
<td>5.24 g/m³ (rat)</td>
</tr>
</tbody>
</table>

Acute toxicity: Oral, LD50 estimated to be greater than 5000 mg/kg, Dermal, LD50 estimated to be > 2000 mg/kg.

Chronic toxicity: None known

Specific effects
- Carcinogenic effects: None known
- Mutagenic effects: None known
- Reproductive toxicity: None known
- Target organ effects: None known

12. ECOLOGICAL INFORMATION

Environmental Information: When used for its intended purpose this product should not cause adverse effects in the environment

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Dispose of according to all federal, state and local applicable regulations

14. TRANSPORT INFORMATION

DOT/TDG: Please refer to the Bill of Lading/receiving documents for up to date shipping information

15. REGULATORY INFORMATION

International Inventories
All components of this product are listed on the following inventories: U.S.A. (TSCA), Canada (DSL/NDSL).

U.S. Regulations
California Proposition 65: This product is not subject to the reporting requirements under California's Proposition 65

STATE RIGHT TO KNOW

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>MARTK:</th>
<th>NJRTK:</th>
<th>PARTK:</th>
<th>RIRTK:</th>
<th>ILRTK:</th>
<th>CTRTK:</th>
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<tbody>
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<td>7732-18-5</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tributoxylethyl phosphate</td>
<td>78-51-3</td>
<td>Listed</td>
<td>Listed</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dipropylene glycol methyl ether</td>
<td>34590-94-8</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
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<tr>
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<td>111-90-0</td>
<td>Listed</td>
<td>Listed</td>
<td>-</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>Diethylene glycol dibenzoate</td>
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<td>-</td>
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<td>-</td>
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<tr>
<td>Styrene acrylic polymer</td>
<td>TS*</td>
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</tbody>
</table>

CERCLA / SARA

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Weight %</th>
<th>CERCLA/SARA RQ (lbs)</th>
<th>Section 302 TPQ (lbs)</th>
<th>Section 313</th>
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</thead>
<tbody>
<tr>
<td>Tributoxylethyl phosphate</td>
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<td>Listed.</td>
<td>Listed.</td>
<td>Listed.</td>
</tr>
<tr>
<td>78-51-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diethylene glycol ethyl ether</td>
<td>1 - 5%</td>
<td></td>
<td></td>
<td>Listed.</td>
</tr>
<tr>
<td>111-90-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CAA HAP/CAA ODS/CWA Priority Pollutants: None
Canada
WHMIS hazard class: Non-controlled.

16. OTHER INFORMATION

Reason for revision: Not applicable
Prepared by: NAPRAC
Additional advice: None

Notice to Reader: This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as to the accuracy of the information contained within. Actual conditions of use and handling are beyond seller’s control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.
MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product name:</th>
<th>G-Force Stripper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code:</td>
<td>368766, 3687581</td>
</tr>
<tr>
<td>MSDS #:</td>
<td>F-02417001</td>
</tr>
<tr>
<td>Recommended use:</td>
<td>Floor stripper.</td>
</tr>
<tr>
<td>Manufacturer, importer, supplier:</td>
<td></td>
</tr>
<tr>
<td>US Headquarters</td>
<td>Canadian Headquarters</td>
</tr>
<tr>
<td>The Butcher Company</td>
<td>JohnDiversey - Canada, Inc.</td>
</tr>
<tr>
<td>8310 16th St.</td>
<td>2401 Bristol Circle</td>
</tr>
<tr>
<td>Sturtevant, Wisconsin</td>
<td>Oakville, Ontario L6H 6P1</td>
</tr>
<tr>
<td>53177-0902</td>
<td>Phone: 1-800-225-9475</td>
</tr>
<tr>
<td>Phone: 1-800-228-5635</td>
<td>Phone: 1-800-668-3131</td>
</tr>
<tr>
<td><a href="http://www.thebutchercompany.com">www.thebutchercompany.com</a></td>
<td></td>
</tr>
</tbody>
</table>

Emergency telephone number: 1-800-228-5635 (Prosar); 1-651-917-6133 (Int'l Prosar); 01-800-710-3400 (México)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

- DANGER
- CORROSIVE
- CONCENTRATE
- CAUSES EYE AND SKIN BURNS
- HARMFUL OR FATAL IF SWALLOWED

Skin contact: Corrosive. May cause permanent damage.
Eye contact: Corrosive. Causes permanent eye damage, including blindness.
Inhalation: May cause irritation and corrosive effects to nose, throat and respiratory tract.
Ingestion: Corrosive. Causes burns to mouth, throat and stomach.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>HAZARDOUS COMPONENTS</th>
<th>CAS #</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoethanolamine</td>
<td>141-43-5</td>
<td>10 - 25%</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>25 - 40%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye contact: Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention immediately.
Skin contact: Flush immediately with plenty of water for at least 15 minutes. Get medical attention immediately.
Inhalation: If breathing is affected, remove to fresh air. Get medical attention immediately.
Ingestion: Do not induce vomiting. Immediately drink one cupful of water or milk. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Aggravated Medical Conditions: Individuals with chronic respiratory disorders such as asthma, chronic bronchitis, emphysema, etc., may be more susceptible to irritating effects.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: The product is not flammable. Extinguish fire using agent suitable for surrounding fire.
Extinguishing media which must not be used for safety reasons:
No information available

Special protective equipment for firefighters:
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Specific hazards: Not applicable
Unusual hazards: Corrosive material (See sections 8 and 10).
Specific methods: No special methods required

**NFPA**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions: Put on appropriate personal protective equipment (see Section 8.).

Environmental precautions and clean-up methods: Use appropriate containment to avoid environmental contamination. Soak up with inert absorbent material. Shovel into suitable container for disposal.

**7. HANDLING AND STORAGE**

Handling: Avoid contact with skin, eyes and clothing. Do not taste or swallow. Avoid breathing vapors or mists. Use only with adequate ventilation. Remove and wash contaminated clothing and footwear before reuse. Wash thoroughly after handling. Product residue may remain on/in empty containers. All precautions for handling the product must be used in handling the empty container and residue. FOR COMMERCIAL AND INDUSTRIAL USE ONLY.

Storage: Keep tightly closed in a dry, cool and well-ventilated place. Protect from freezing. Keep out of the reach of children.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

Engineering measures to reduce exposure:
Good general ventilation should be sufficient to control airborne levels. Respiratory protection is not required if good ventilation is maintained.

**Personal Protective Equipment**

- Eye protection: Chemical splash goggles.
- Hand protection: Chemical resistant gloves. Includes neoprene gloves.
- Skin and body protection: If major exposure is possible, wear suitable protective clothing and footwear.
- Respiratory protection: In case of insufficient ventilation wear suitable respiratory equipment. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
- Hygiene measures: Keep away from food, drink and animal feeding stuffs. Handle in accordance with good industrial hygiene and safety practice.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoethanolamine 141-43-5</td>
<td>6 ppm (STEL)</td>
<td>6 mg/m³</td>
<td>8 mg/m³ (TWA)</td>
</tr>
<tr>
<td></td>
<td>3 ppm (TWA)</td>
<td>3 ppm (TWA)</td>
<td>15 mg/m³ (STEL)</td>
</tr>
</tbody>
</table>

**HMIS**

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire Hazard</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Personal protective equipment**

![Image of protective equipment]

**9. PHYSICAL AND CHEMICAL PROPERTIES**

- Physical State: Liquid
- Color: Blue - Green
- pH: 11.5

**Appearance**: Aqueous solution
**Odor**: Solvent
**Dilution pH**: No information available
Specific gravity: 1.0  
Density: 8.28
Bulk density: No information available  
Vapor density: No information available
Evaporation rate: No information available  
Viscosity: No information available
Solubility: Soluble  
VOC: 19.62
Solubility in other solvents: No information available
Partition coefficient (n-octanol/water): No information available

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling point/range:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Melting point/range:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flash point:</td>
<td>&gt;200 (°F) - 99.3 (°C)</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Autoignition temperature:</td>
<td>No information available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability: The product is stable
Polymerization: Hazardous polymerisation does not occur
Materials to avoid: Strong oxidising agents. Strong exothermic reaction with acids.
Hazardous decomposition products: None reasonably foreseeable

11. TOXICOLOGICAL INFORMATION

Component Information:

HAZARDOUS COMPONENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoethanolamine</td>
<td>1720 mg/kg (rat)</td>
<td>1 mL/kg (rabbit)</td>
<td>Not available</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>1230 mg/kg (rat)</td>
<td>2000 mg/kg (rabbit)</td>
<td>500 mg/m³ (rat)</td>
</tr>
</tbody>
</table>

Acute toxicity: Corrosive.
Chronic toxicity: None known

Specific effects
- Carcinogenic effects: None known
- Mutagenic effects: None known
- Reproductive toxicity: None known
- Target organ effects: None known

12. ECOLOGICAL INFORMATION

Environmental information: When used for its intended purpose, this product should not cause adverse effects in the environment.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Dispose of according to all federal, state and local applicable regulations.

14. TRANSPORT INFORMATION

DOT/TDG: Please refer to the Bill of Lading/receiving documents for up to date shipping information
15. REGULATORY INFORMATION

**International Inventories**
All components of this product are listed on the following inventories: U.S.A. (TSCA), Canada (DSL/NDSL).

**U.S. Regulations**
California Proposition 65: This product is not subject to the reporting requirements under California's Proposition 65

### STATE RIGHT TO KNOW

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>MARTK:</th>
<th>NJRTK:</th>
<th>PARTK:</th>
<th>RIRTK:</th>
<th>ILRTK:</th>
<th>CTRTK:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoethanolamine</td>
<td>141-43-5</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
<td>Listed</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tall oil fatty acid</td>
<td>61700-12-3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hexylhydroxyethanol</td>
<td>112-25-4</td>
<td>-</td>
<td>Listed</td>
<td>Listed</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>Listed</td>
<td>-</td>
<td>Listed</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Surfactant</td>
<td>173536-74-8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1-butoxypropanol</td>
<td>5131-66-8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### CERCLA / SARA

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Weight %</th>
<th>CERCLA/SARA RQ (lbs)</th>
<th>Section 302 TPQ (lbs)</th>
<th>Section 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexylhydroxyethanol</td>
<td>10 - 25%</td>
<td>Listed</td>
<td></td>
<td>Listed</td>
</tr>
<tr>
<td>112-25-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Canada

WHMIS hazard class: E  Corrosive material

16. OTHER INFORMATION

**Reason for revision:** Not applicable

**Prepared by:** NAPRAC

**Additional advice:** None

_Note to Reader: This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as to the accuracy of the information contained within. Actual conditions of use and handling are beyond seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations._
<table>
<thead>
<tr>
<th>ID Credit Title</th>
<th>Environmentally Friendly Office Furniture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrative Statement of Credit Intent</td>
<td>The intent of this ID credit is to minimize the indoor air pollutants from office furniture.</td>
</tr>
<tr>
<td>Narrative Statement describing Credit Requirements</td>
<td>Per LEED-CI CIR ruling dated 9/20/2006, the requirement is as follows: Calculated indoor air concentrations that are less than or equal to those established in Table 1* of the LEED-CI reference guide for furniture systems and seating determined by a procedure based on BIFMA M7.1-2005 and X7.1-2005 testing protocol conducted in an independent third-party air quality testing laboratory. The project has chosen to use Allsteel's Concensys Systems Furniture for all new systems furniture in the building. Concensys has been Indoor Air Quality Certified by Indoor Advantage which uses the BIFMA M7.1-2005 testing procedure and X7.1-2005 protocol. This independent third-party's certification's standards are as strict as the standards listed in the LEED-CI reference manual for systems furniture. All other furniture was moved from our previous office building and is over one year old making it LEED compliant. The AllSteel Relate Seating, Model Number: RL-UHW was selected for the board chairs in our building. This furniture meets the requirements set by LEED. See the uploaded Environmental Data Sheet for emissions data. The board chairs are the only new seating in the building and all other task and guest seating is over one year old and was brought from our previous facility during our move. All existing reused furniture was neither refurbished nor refinished within one year prior to occupancy.</td>
</tr>
</tbody>
</table>
SUPPORTING DOCUMENTATION

The noted project drawings have been uploaded. The drawings provide specific information to support the ID proposal.

Sheet Description Log
Please include sheet name, sheet number and file name for each uploaded, referenced drawing (e.g. A-101, Site Plan, siteplan.pdf)

- AllSteel Green Furniture Certificate.jpg
- 1537 Webster - Green Furniture.doc
- Report from Indoor Advantage.pdf
- Low Emitting Furniture letter.pdf

I have provided the appropriate supporting documentation in the document upload section of LEED Online. Please refer to the above sheets.

Project Name: ALAMEDA COUNTY WASTE MNGMT AUT
Credit: ID Credit 1.3: Innovation in Design
Points Documented: 1

READY TO SAVE THIS TEMPLATE TO LEED-ONLINE? Please enter your first name, last name and today’s date below, followed by your LEED-Online Username and Password associated with the Project listed above to confirm submission of this template.

Wendy Sommer 2007-11-01 WSOMMER@STOPWASTE.ORG
First Name Last Name Date Username (Email Address) Password

SAVE TEMPLATE TO LEED-ONLINE: PRINT TEMPLATE
1537 Webster - Stopwaste.org building

ID Credit 1.3 – Green Furniture

The use of AllSteel Furniture’s Concensys furniture product satisfies LEED requirements for LEED-CI EQ Credit 4.5 based on the following CIR ruling dated September 20, 2006. Therefore, it will qualify for ID Credit 1.3, Green Furniture, under LEED-NC 2.2. The appropriate certificate validating compliance had been uploaded to the LEED template.

Credit Rulings Home

INDOOR ENVIRONMENTAL QUALITY: Low-Emitting Materials, Systems
Furniture and Seating()

9/20/2006 - Credit Interpretation Request
This credit specifies two compliance paths.
> Option A - “Greenguard Indoor Air Quality Certified”
> Option B requires “Calculated indoor air concentrations that are less than or equal to those established in Table 1 for furniture systems and seating determined by a procedure based on the U.S. Environmental Protection Agency’s Environmental Technology Verification (ETV) Large Chamber Test Protocol for Measuring Emissions of VOCs and Aldehydes (September 1999) testing protocol conducted in an independent air quality testing laboratory.”

The submittal requirement for Option B includes “providing details of the U.S. EPA ETV procedure, and the emission factors from the large-chamber testing of the systems furniture, showing the calculations used in determining the emission limits, complete with the air exchange rate, demonstrating that emissions limits have not exceeded those shown in Table 1. Test results and supporting calculations must be dated and signed by an officer of the independent laboratory where the testing was conducted. Test result must represent the manufacturing practices employed for the product used on the project and must have been completed before the start of manufacturing but no earlier than 24 months prior to the last manufacturing date.”

The US EPA ETV protocol is over 6 years old, has not been maintained, requires complex site specific detail to determine compliance, has not been thoroughly validated and refers to the Business and Institutional Furniture Manufacturer’s Association International (BIFMA) for sample acquisition, packaging and shipping procedures. Recognizing the limitations of the US EPA ETV protocol, BIFMA worked with Dr. Jensen Zhang of Syracuse University, an independent scientist in the field of chamber testing, who included extensive peer review while developing a method for testing system furniture and seating. This work builds upon the US EPA ETV protocol and resulted in a test method (BIFMA M7.1-2005) and standard (BIFMA X7.1-2005) detailing the procedure from product selection through chamber testing, including analytical analysis and representative worst-case modeling of office furniture.

BIFMA’s primary contribution to this work includes extensive research into office configurations and sizes for both the open plan office and private office situations. BIFMA M7.1-2005 also incorporates ASHRAE 62.1-2004 which varies occupant ventilation rates based on office footprint and occupant density. Both BIFMA M7.1-2005 and X7.1-2005 passed membership ballot, have been issued as BIFMA standards and are currently undergoing ANSI canvass. The BIFMA standards provide additional detail to improve
consistency, use models based on analysis of current buildings and are open to multiple qualified laboratories.

We propose to use furniture from a manufacturer who works with an outside testing facility to review product construction materials and production processes, establish representative product groupings and test worst-case configurations based on the methodology outlined in BIFMA M7.1-2005 and X7.1-2005. The testing facility would provide documentation stating that the products meet the LEED CI EQ 4.5 credit limits. Will the use of systems furniture and seating tested to BIFMA method M7.1-2005 which meets the requirements of BIFMA Standard X7.1-2005, as verified by an independent laboratory, be acceptable as a compliance path for LEED-CI EQ Credit 4.5.

9/20/2006 - Ruling

Yes, the use of systems furniture and seating tested to BIFMA method M7.1-2005, which meets the requirements of BIFMA Standard X7.1-2005, as verified by an independent laboratory, will be acceptable as a compliance path for LEED-CI EQ Credit 4.5. Please see the specifics of this new compliance path as noted below.

Under “Requirements” Option C shall be added as follows:
Calculated indoor air concentrations that are less than or equal to those established in Table 1 for furniture systems and seating determined by a procedure based on BIFMA M7.1-2005 and X7.1-2005 testing protocol conducted in an independent third party air quality testing laboratory.

Under “Submittals” a paragraph shall be added as follows:
For systems furniture and seating tested using a procedure based on the BIFMA protocols, provide documentation from an independent laboratory where the testing was conducted demonstrating that emissions limits have not exceeded those shown in Table 1.* Documentation of specific products or product groupings with restrictions (if applicable) must be identified, dated and signed by an officer of the independent product testing laboratory and/or an independent third party certifier. Test results must represent the manufacturing processes and materials employed for the product at the time of project submittal. Tests must have been completed before the start of the manufacturing but no earlier than 2 years prior to the last manufacturing date.

*See Table 1 in the LEED-CI v2.0 Rating System as it relates to both Options B and C.
Certificate of Achievement

Scientific Certification Systems (SCS) does hereby certify that an independent evaluation has been conducted on behalf of:

Allsteel
Muscatine, IA

For the following product(s):
Concensys™ Systems Furniture

IndoorAdvantage™
Indoor Air Quality Certified

This product meets all the necessary qualifications to be certified for the following claim:

Signed

03/29/2006 - 03/31/2007
Certification Period

SCS IAC-01358
Registration Number
Innovation in Design:

Low-Emitting Furniture

Intent

Reduce the quantity of indoor air contaminants that are odorous, potentially irritation and/or harmful to the comfort and wellbeing of installers and occupants.

Requirements

All systems furniture and seating introduced into the project space that has been manufactured, refurbished or refinished within one year prior to occupancy must meet one of the requirements below.

- Option A: Greenguard Indoor Air Quality Certified
  Or
- Option B: Calculated indoor air concentrations that are less than or equal to those established in LEED Table

Systems furniture is defined as either a panel-based workstation comprised of modular interconnecting panels, hang-on components and drawer/filing components or a free-standing grouping of furniture items and their components that have been designed to work in concert.

Seating is defined as task and guest chairs used with systems furniture.

***Salvaged and used furniture that is more than one year old at time of occupancy is excluded from credit requirements.

Submittals

- Provide letter signed by architect, interior designer or responsible party, declaring that all systems furniture and seating covered by this credit
- A listing that states the manufacturer and product line, item description, period of manufacturer, form of compliance.
- If Greenguard Air Quality certified, provide a copy of the product certification, complete with the start and end dates of certification. The period covered must have begun before and extend through the actual manufacturing dates of the product used for the project.

Design Approach

Specify low-VOC materials in construction documents. Ensure limits are clearly stated in each section where furniture assemblies are addressed.
NARRATIVE REPORT

Berkeley Analytical Associates, LLC
815 Harbour Way South, Suite 6
Richmond, CA 94804
510-236-2325
Fax: 510-236-2335

Sample Tracking Numbers: 221-023-01AA and 221-028-01A

Report Date: May 10, 2006
Client: Scott Lesnet, HNI Corporation
Report Prepared By: A.T. Hodgson

Report Approved By: R.S. Tannous, Laboratory Director (Signature on File)

RE: Concensys® Workstation

OBJECTIVE

The objective was to assess the emissions of volatile organic compounds (VOCs) from an open plan, tile and frame workstation based on measurements conducted with the major components and component materials in mid-scale and small-scale chambers. The results then are evaluated relative to the requirements of the Scientific Certification Systems, Inc. Indoor Advantage™ and Indoor Advantage Gold™ labels for furniture.

EMISSION DATA

A Concensys® workstation configuration was evaluated for its emissions of VOCs based on laboratory tests of its three main components consisting of the panel assembly, a work surface, and the painted metal used to construct the storage units. A full-size panel assembly was tested in a mid-scale chamber over a period of seven days with air samples collected at 72 and 168 hours following BIFMA M7.1-2005, Standard Test Method for Determining VOC Emissions from Office Furniture Systems, Components and Seating. The test results are presented in Reports 221-023-01AA_060328_BIFMA-F and 221-023-01AA_060328_01350-F. A work surface consisting of a composite wood core, high-pressure laminate on top and bottom surfaces and a hard plastic banding fully bonded to the edges, was tested in a small-scale chamber following ASTM D 5116-97, Standard Guide for Small-scale Environmental chamber Determinations of Organic Emissions from Indoor Materials/Products and California Department of Health Services CA/DHIS/EEHLB/R-174, Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, July 15, 2004. The work surface test was conducted over a period of seven days with air samples collected at 72 and 168 hours. The test results for the work surface are presented in Report 221-028-01A_050506. A painted metal panel and a painted metal panel assembly consisting of two painted metal plates bonded with cured thermoset adhesive also were tested in small-scale chambers using the same methods. The painted metal panel and painted metal panel assembly were tested over a period of three days with air samples collected at 24 and 72 hours. The test results for these materials are presented in Report NARR1172, 03/17/05.

ANALYSIS

The prediction of VOC emissions and air concentrations from an office workstation system based on the results of mid- and small-scale tests of individual components and component materials is a multi-step process. The tests yield emission factors for each chemical, which may be stated in terms of mass of VOC emitted per unit area of the material per hour, e.g., µg/m²-h, or mass emitted per individual material
unit per hour, e.g., μg/unit-h. The piece of furniture is then measured to determine the areas of the individual components. Some components are counted. The emission factors are then multiplied by the areas or numbers of their respective components. This yields a per-furniture unit emission rate, i.e., mass of VOC emitted per hour (μg/h), for each chemical from each component. Next, the emission rates are summed by chemical to get the whole furniture unit emission rate for each chemical. These whole-furniture emission rates are used in a steady-state mass balance model to estimate the impact on VOC concentrations of installing the furniture in a specified room or workstation space with defined ventilation characteristics.

The Indoor Advantage and Indoor Advantage Gold labels for furniture both utilize the parameters for predicting workstation air concentrations defined in BIFMA M7.1-2005, Standard Test Method for Determining VOC Emissions from Office Furniture Systems, Components and Seating. The workstation space and ventilation parameters are reproduced in Table 1. The required standard workstation surface areas are reproduced in Table 2.

Indoor Advantage utilizes the guideline criteria for VOC emissions defined in BIFMA X7.1-2005, Standard for Formaldehyde and TVOC Emissions of Low-emitting Office Furniture Systems and Seating. These criteria are the same as the requirements of the U.S. Green Building Council, 2004, LEED® for Commercial Interiors, v.2, EQ Credit 4.5. The time point of interest is 168 hours. The criteria are reproduced in Table 3.

Indoor Advantage Gold utilizes the guideline criteria for chemicals of concern in California Architectural Specification 01350 as described in California Department of Health Services CA/DHSH/ELB/R-174, Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, July 15, 2004. The guideline concentrations are one-half the noncancer chronic Reference Exposure Levels (CRELs) established by the California Office of Environmental Health Hazard Assessment. The exceptions are formaldehyde and acetaldehyde, which have different criteria of 16.5 and 9 μg/m³, respectively. The time point of interest is 336 hours (14 days). BIFMA M7.1-2005 specifies a seven-day chamber test with samples collected at 72 and 168 hours. Results at 336 hours are projected by applying a power law to the data collected at 72 and 168 hours.

Neither the painted panel nor the painted panel assembly emitted any measurable VOCs or aldehydes at the 24 and 72-hour sample collection periods. Thus, storage units composed primarily of these materials are likely to be negligible or very small sources of VOC emissions.

The fully encapsulated and bonded work surface did not emit any VOCs or aldehydes above quantifiable limits at the 72- and 168-hour sample collection periods in the mid-scale chamber as shown in Table 4. Thus, this work surface also is a negligible source of VOC emissions.

Since the panel was the only emitting source, the emissions of VOCs for this Consensys workstation configuration are predicted to be determined by the emissions of VOCs from the panels alone. The emission factors (area-specific emission rates) of the BIFMA target VOCs from the panel at 72 and 168 hours are presented in Table 5. The emission factors of TVOC, formaldehyde and total aldehydes decreased over this sampling interval. No 4-phenylcyclohexene was detected. Concentrations of the target VOCs in workstation air were estimated using the parameters in Tables 1 and 2. The predicted concentrations at 168 hours are compared to the BIFMA limits in Table 6. All of the predicted concentrations were below their corresponding limits.

The emission factors of chemicals of concern in California and abundant chemicals not categorized as air toxicants at 72 and 168 hours are presented in Table 7. Emission factors at 336 hours were projected by applying a power-law function to the 72- and 168-hour data for each chemical. The panel was a source of formaldehyde, acetic acid, 2-propenoic acid, and 2-propenoic acid, 2-methyl-2-hydroxyethyl ester (ethylene glycol methacrylate). TVOC is reported for information purposes only.

Again, since the panel was the only emitting source, the emissions of VOCs for this Consensys workstation configuration are predicted to be determined by the emissions of VOCs from the panels alone. The predicted workstation air concentrations at 336 hours for the measured chemicals are shown in Table 8. Only formaldehyde is a chemical of concern. The predicted concentration of formaldehyde at 336 hours of 16.1 μg/m³ is slightly below the 16.5 μg/m³ guideline concentration.
CONCLUSIONS

The emissions of VOCs and aldehydes from this Concensys open plan, workstation configuration were modeled using the component and component material approach. Of the three major workstation components (panels, work surface, and metal storage), only the panels are predicted to be a source of VOCs and aldehydes. In this configuration, the work surface was made with high-pressure laminate on both top and bottom surfaces and with a hard plastic banding fully bonded to the edges. This was shown to be an effective barrier for the emissions of formaldehyde and other VOCs from the composite wood core.

The modeled workstation concentrations at 168 hours of total VOCs, formaldehyde, total aldehydes, and 4-CH are in compliance with the requirements of Indoor Advantage for furniture (Scientific Certification Systems, Inc.). Formaldehyde was the only chemical of concern emitted by the panels. The modeled workstation concentrations of formaldehyde at 336 hours (14 days) are in compliance with the requirements of Indoor Advantage Gold for furniture.
Table 1. Space and ventilation parameters used for predicting workstation air concentrations (BIFMA, M7.1-2005)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor area per workstation</td>
<td>$A_{WS}$</td>
<td>m²</td>
<td>5.94</td>
</tr>
<tr>
<td>Ceiling height</td>
<td>$H_{WS}$</td>
<td>m</td>
<td>2.74</td>
</tr>
<tr>
<td>Workstation volume</td>
<td>$V_{WS}$</td>
<td>m³</td>
<td>16.3</td>
</tr>
<tr>
<td>Outdoor air flow rate</td>
<td>$O_{WS}$</td>
<td>m³/h</td>
<td>15.0</td>
</tr>
<tr>
<td>Time point of interest</td>
<td>--</td>
<td>hours</td>
<td>168</td>
</tr>
</tbody>
</table>

Table 2. Required standard workstation surface areas (BIFMA, M7.1-2005)

<table>
<thead>
<tr>
<th>Workstation System Type</th>
<th>Panel Area* ($m^2$)</th>
<th>Work Surface Area* ($m^2$)</th>
<th>Storage Total External Area ($m^2$)</th>
<th>Total Workstation Area ($m^2$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Plan</td>
<td>11.08</td>
<td>6.103</td>
<td>4.569</td>
<td>21.76</td>
</tr>
</tbody>
</table>

*Value is the combined area of both primary surfaces

Table 3. Limits of indoor air concentrations due to emissions from systems furniture and seating (BIFMA, X7.1-2005). 1 mg/m³ = 1,000 µg/m³

<table>
<thead>
<tr>
<th>Chemical/Chemical Group</th>
<th>Workstation Systems (all configuration types)</th>
<th>Seating</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVOC</td>
<td>≤0.5 mg/m³ (500 µg/m³)</td>
<td>≤0.25 mg/m³ (250 µg/m³)</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>≤50 parts per billion</td>
<td>≤25 parts per billion</td>
</tr>
<tr>
<td>Total Aldehydes</td>
<td>≤100 parts per billion</td>
<td>≤50 parts per billion</td>
</tr>
<tr>
<td>4-Phenylcyclohexene (4-PCH)</td>
<td>≤0.00065 mg/m³ (6.5 µg/m³)</td>
<td>≤0.00325 mg/m³ (3.25 µg/m³)</td>
</tr>
</tbody>
</table>
Table 4. Small-scale chamber test of work surface; measured 72- and 168-hour emission factors (area-specific emission rates) for BIFMA target compounds

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Units</th>
<th>Emission Factor 72 hours</th>
<th>Emission Factor 168 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVOC</td>
<td>µg/m²-h</td>
<td>LQ*</td>
<td>LQ</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>ppb/m²-h</td>
<td>LQ</td>
<td>LQ</td>
</tr>
<tr>
<td>Total Aldehydes</td>
<td>ppb/m²-h</td>
<td>LQ</td>
<td>LQ</td>
</tr>
<tr>
<td>4-PCH</td>
<td>µg/m²-h</td>
<td>Nd**</td>
<td>Nd</td>
</tr>
</tbody>
</table>

*LQ = Below quantitation limit
**Nd = Not detected

Table 5. Mid-scale chamber test of Concensys panel; measured 72- and 168-hour VOC emission factors (area-specific emission rates) for BIFMA target compounds

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Units</th>
<th>Emission Factor 72 hours</th>
<th>Emission Factor 168 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVOC</td>
<td>µg/m²-h</td>
<td>385</td>
<td>306</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>ppb/m²-h</td>
<td>34.5</td>
<td>23.9</td>
</tr>
<tr>
<td>Total Aldehydes</td>
<td>ppb/m²-h</td>
<td>35.7</td>
<td>25.0</td>
</tr>
<tr>
<td>4-PCH</td>
<td>µg/m²-h</td>
<td>Nd*</td>
<td>Nd</td>
</tr>
</tbody>
</table>

*Nd = Not detected

Table 6. Predicted workstation air concentrations at 72 and 168 and 336 hours for BIFMA target compounds. Concentrations at 168 hours are compared to BIFMA concentration limits

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Units</th>
<th>Predicted Conc. 72 hours</th>
<th>Predicted Conc. 168 hours</th>
<th>Conc. Limit 168 hours</th>
<th>Conc. Criteria Met: Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVOC</td>
<td>µg/m³</td>
<td>284</td>
<td>226</td>
<td>500</td>
<td>Pass</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>ppb</td>
<td>25.5</td>
<td>17.7</td>
<td>50</td>
<td>Pass</td>
</tr>
<tr>
<td>Total Aldehydes</td>
<td>ppb</td>
<td>26.4</td>
<td>18.4</td>
<td>100</td>
<td>Pass</td>
</tr>
<tr>
<td>4-PCH</td>
<td>µg/m³</td>
<td>--</td>
<td>--</td>
<td>6.5</td>
<td>Pass</td>
</tr>
</tbody>
</table>
Table 7. Mid-scale chamber test of Concensys panel; measured 72- and 168-hour VOC emission factors (area-specific emission rates) and predicted 336-hour emission factors for chemicals of concern in California and abundant compounds. Only VOCs detected above quantitation limits are reported. Individual VOCs with CRELs are listed first, followed by compounds on other lists of toxicants (i.e., TAC & P-65), followed by unlisted abundant compounds.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS</th>
<th>Toxic Category</th>
<th>Measured Emission Factor</th>
<th>Predicted Emis. Fact.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>72 hours</td>
<td>168 hours</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>50-00-1</td>
<td>CREL</td>
<td>42.4</td>
<td>29.4</td>
</tr>
<tr>
<td>Acetic acid*</td>
<td>64-17-7</td>
<td>--</td>
<td>12.9</td>
<td>12.8</td>
</tr>
<tr>
<td>2-Propenoic acid*</td>
<td>79-10-7</td>
<td>--</td>
<td>25.0</td>
<td>16.3</td>
</tr>
<tr>
<td>2-Propenoic acid, 2-methyl-,2-hydroxyethyl ester*</td>
<td>868-77-9</td>
<td>--</td>
<td>197</td>
<td>184</td>
</tr>
<tr>
<td>TVOC*</td>
<td></td>
<td></td>
<td>385</td>
<td>306</td>
</tr>
</tbody>
</table>

*Quantified by total-ion-current method using toluene as surrogate standard
Table 8. Predicted workstation air concentrations at 336 hours for chemicals of concern in California and abundant compounds. Concentrations at 336 hours are compared to guideline criteria.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Toxic Category</th>
<th>Guideline Conc. $\mu g/m^3$</th>
<th>Predicted Conc. At 336 h $\mu g/m^3$</th>
<th>Conc. Guideline Met?</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>CREL</td>
<td>16.5</td>
<td>16.1</td>
<td>Pass</td>
<td></td>
</tr>
<tr>
<td>Acetic acid*</td>
<td>--</td>
<td>9.4</td>
<td></td>
<td>Na**</td>
<td></td>
</tr>
<tr>
<td>2-Propenoic acid*</td>
<td>--</td>
<td>8.5</td>
<td></td>
<td>Na</td>
<td></td>
</tr>
<tr>
<td>2-Propenoic acid, 2-methyl-,2-hydroxyethyl ester*</td>
<td>--</td>
<td>128</td>
<td></td>
<td>Na</td>
<td></td>
</tr>
<tr>
<td>TVOC*</td>
<td></td>
<td>187</td>
<td></td>
<td>Na</td>
<td></td>
</tr>
</tbody>
</table>

*Quantified by total-ion-current method using toluene as surrogate standard  
**Na = Not applicable

END OF REPORT
IDc1.3 Environmentally Friendly Office Furniture Narrative

The AllSteel Relate Seating, Model Number: RL-UHW was selected for the board chairs in our building. This furniture meets the requirements set by LEED. See the uploaded Environmental Data Sheet for emissions data.

The board chairs are the only new seating in the building and all other task and guest seating is over one year old and was brought from our previous facility during our move.

All existing reused furniture was neither refurbished nor refinished within one year prior to occupancy.
October 18, 2007

U.S. Green Building Council
LEED Review Committee

Re: 1537 Webster Street, Oakland - LEED NC 2.2 project # 10002744

Dear Review Committee,

The AllSteel Relate Seating, Model Number: RL-UHW was selected for the board chairs in our building. This furniture meets the requirements set by LEED. See the uploaded Environmental Data Sheet for emissions data.

The board chairs are the only new seating in the building and all other task and guest seating is over one year old and was brought from our previous facility during our move.

Thank you,

Wendy Sommer
Senior Program Manager
LEED-NC 2.2 Submittal Template
ID Credit 1.4: Innovation in Design
design  construction

(Responsible Individual)

1. Wendy Sommer

(Company Name)

from Alameda County Waste Management Authority

verify that the information provided below is accurate, to the best of my knowledge.

CREDIT COMPLIANCE

Please complete the following information to document credit compliance.

ID Credit Title

Exemplary Performance Water Use Reduction

Narrative Statement of Credit Intent

Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

Narrative Statement describing Credit Requirements

The project employed strategies that in aggregate use over 40% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements. The calculations were based on estimated occupant usage and include on the following fixtures: water closets, urinals, lavatory faucets, showers and kitchen sinks.

Narrative Describing Project's Approach to the credit

This project installed waterless urinals, dual flush water closets, low-flow lavatory faucets, showers and kitchen sinks. Please see documentation for LEED Credit WE 3.1 for documentation.

SUPPORTING DOCUMENTATION

The noted project drawings have been uploaded. The drawings provide specific information to support the ID proposal.

Sheet Description Log

Please include sheet name, sheet number and file name for each uploaded, referenced drawing (e.g. A-101, Site Plan, siteplan.pdf)

WE Credit 3_Water Use Reduction Template.pdf

I have provided the appropriate supporting documentation in the document upload section of LEED Online. Please refer to the above sheets.
Project Name: ALAMEDA COUNTY WASTE MNGMT AUT
Credit: ID Credit 1.4: Innovation in Design
Points Documented: 1

READY TO SAVE THIS TEMPLATE TO LEED-ONLINE? Please enter your first name, last name and today's date below, followed by your LEED-Online Username and Password associated with the Project listed above to confirm submission of this template.

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Date</th>
<th>Username (Email Address)</th>
<th>Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wendy</td>
<td>Sommer</td>
<td>2007-08-20</td>
<td><a href="mailto:WSOMMER@STOPWASTE.ORG">WSOMMER@STOPWASTE.ORG</a></td>
<td></td>
</tr>
</tbody>
</table>
(Responsible Individual) Wendy Sommer from Alameda County Waste Management Authority verify that the information provided below is accurate, to the best of my knowledge.

GENERAL INFORMATION

Please enter the following general project information:

☐ Use Default Male / Female Occupancy Breakdown (50% / 50%).
ENTER THE TOTAL OCCUPANCY FOR EACH OCCUPANCY TYPE IN TABLE 1.01 BELOW

Special Male/Female Occupancy Breakdown
☐ ENTER THE MALE AND FEMALE OCCUPANCY FOR EACH OCCUPANCY TYPE IN TABLE 1.02 BELOW. PROVIDE A NARRATIVE DESCRIPTION AT THE END OF THIS FORM TO EXPLAIN THE UNIQUE MALE/ FEMALE OCCUPANCY BREAKDOWN.

Table 1.01 - Occupancy Breakdown (Default Male / Female Occupancy)
Enter the values as whole numbers without any commas

<table>
<thead>
<tr>
<th>Occupancy Type</th>
<th>Full Time Equivalent (FTE):</th>
<th>Student/Visitor:</th>
<th>Retail Customer:</th>
<th>Residential:</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1.02 - Occupancy Breakdown (Special Male / Female Occupancy Breakdown)
Enter the values as whole numbers without any commas

<table>
<thead>
<tr>
<th>Occupancy Type</th>
<th>Full Time Equivalent (FTE):</th>
<th>Student/Visitor:</th>
<th>Retail Customer:</th>
<th>Residential:</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>31</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>21</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Percent of male restrooms with urinals: 50%
Annual Days of Operation (1-365): 250
WATER SAVINGS CALCULATION

1 - Baseline Case

Tables 1.1 and 1.2 reflect the default baseline flush and flow fixtures for the project.

To edit the baseline, deselect the "Included in Project?" checkbox for any baseline fixtures that don't apply to your project. The default flush and flow rates, and daily uses per person match those in the reference guide, and should not be altered unless justification for these changes is provided in the narrative at the end of this form. Provide daily use per person input for "other" occupants (if applicable), and justify these values in the required narrative.

<table>
<thead>
<tr>
<th>Fixture Reference</th>
<th>Baseline Fixture Type</th>
<th>Gender</th>
<th>Flush Rate (GPF)</th>
<th>FTE</th>
<th>Student/Visitor</th>
<th>Retail Visitor</th>
<th>Residential</th>
<th>Included in Project?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Conventional Water Closet</td>
<td>Female</td>
<td>1.6</td>
<td>3.0</td>
<td>0.5</td>
<td></td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>2</td>
<td>Conventional Water Closet</td>
<td>Male</td>
<td>1.6</td>
<td>2.0</td>
<td>0.3</td>
<td></td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>3</td>
<td>Conventional Urinal</td>
<td>Male</td>
<td>1.0</td>
<td>1.0</td>
<td>0.2</td>
<td></td>
<td>0.0</td>
<td>□</td>
</tr>
</tbody>
</table>

Annual Baseline Flush Fixture Water Usage: 38,290 gallons/year
### Table 1.2 - Flow Fixture Data - Baseline Case

<table>
<thead>
<tr>
<th>Fixture Reference</th>
<th>Baseline Fixture Type</th>
<th>Flow Rate (GPM)</th>
<th>Duration (seconds)</th>
<th>FTE</th>
<th>Student / Visitor</th>
<th>Retail Customer</th>
<th>Residential</th>
<th>Included in Project?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Conventional Lavatory</td>
<td>2.5</td>
<td>15</td>
<td>3.0</td>
<td>0.5</td>
<td></td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>B</td>
<td>Conventional Shower</td>
<td>2.5</td>
<td>300</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>C</td>
<td>Kitchen Sink</td>
<td>2.5</td>
<td>15</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>D</td>
<td>Janitor Sink</td>
<td>2.5</td>
<td>15</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>□</td>
</tr>
</tbody>
</table>

**TOTAL ANNUAL BASELINE WATER USAGE:** 68,930 gallons/year

**Annual Baseline Flow Fixture Water Usage:** 30,640 gallons/year
2 - Design Case

Document the Design Case flush and flow fixtures in Tables 2.1 and 2.2 respectively. The daily uses per person, and duration of use for each fixture type should equal those listed for the comparable fixture type in the Baseline case. If the design case fixture type is not listed in the dropdown list, simply type in the appropriate fixture type.

Provide the fixture manufacturer and model number , and the flush or flow rate for each fixture type.

**Multiple corresponding fixture types:** If the project has multiple design case fixtures that correspond to a single Baseline comparison system fixture type, enter the "Percent of Occupants" field to reflect the percentage of each fixture (e.g. for a project with 25% non-water urinals and 75% low-flow urinals corresponding to Fixture Reference # 3 - "Conventional Urinals" in the Baseline design, enter the "Percent of Occupants" as 25% for non-water urinals. Then, in a blank line, select Fixture Reference #3, and enter the "Percent of Occupants" as 75% for low-flow urinals).

**Dual-Flush Water Closets:** If the project has dual-flush water closets, utilize the "Percent of Occupants" field to enter 33% for "Dual-Flush Water Closets, Full-Flush" (for solid waste use). Then, in a blank line, select Fixture Reference #1, and enter the "Percent of Occupants" as 67% for "Dual-Flush Water Closets, Low-Flush" (for liquid waste). Note: This clarification is not applicable for males when urinals are used.

**Automatic Controls:** If the flow fixtures include automatic faucet controls, you may adjust the Duration in Table 2.2 to reflect the impact of the automated controls. Justification for these input values, along with the identification of the faucet control manufacturer and model number must be provided in the required narrative.

### Table 2.1 - Flush Fixture Data - Design Case

<table>
<thead>
<tr>
<th>Fixture Reference</th>
<th>Design Case Fixture Type</th>
<th>Gender</th>
<th>Fixture Manufacturer</th>
<th>Fixture Model</th>
<th>Flush Rate (GPF)</th>
<th>Percent of Occupants</th>
<th>FTE</th>
<th>Student / Visitor</th>
<th>Retail</th>
<th>Customer</th>
<th>Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dual-Flush Water Closet, Low-Flus</td>
<td>Female</td>
<td>Caravelle</td>
<td>270 ADA Elongated</td>
<td>0.8</td>
<td>67 %</td>
<td>3.0</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Dual-Flush Water Closet, Low-Flus</td>
<td>Male</td>
<td>Caravelle</td>
<td>270 ADA Elongated</td>
<td>0.8</td>
<td>67 %</td>
<td>2.0</td>
<td>0.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Dual-Flush Water Closet, Full-Flus</td>
<td>Female</td>
<td>Caravelle</td>
<td>270 ADA Elongated</td>
<td>1.6</td>
<td>33 %</td>
<td>3.0</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Dual-Flush Water Closet, Full-Flus</td>
<td>Male</td>
<td>Caravelle</td>
<td>270 ADA Elongated</td>
<td>1.6</td>
<td>33 %</td>
<td>2.0</td>
<td>0.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Non-Water Urinal</td>
<td>Male</td>
<td>Sloan</td>
<td>WES-1000</td>
<td>0.0</td>
<td>100 %</td>
<td>1.0</td>
<td>0.2</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Annual Design Case Flush Fixture Water Usage:** 23,567 gallons/ year
### Table 2.2 - Flow Fixture Data - Design Case

<table>
<thead>
<tr>
<th>Fixture Reference</th>
<th>Design Case Type</th>
<th>Fixture Manufacturer</th>
<th>Fixture Model</th>
<th>Flow Rate (GPF)</th>
<th>Percent of Occupants</th>
<th>Duration (seconds)</th>
<th>Daily Uses Per Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Ultra Low-Flow Lavatory</td>
<td>Sloan</td>
<td>EAF-275</td>
<td>0.5</td>
<td>100 %</td>
<td>15</td>
<td>3.0 0.5</td>
</tr>
<tr>
<td>C</td>
<td>Low-Flow Kitchen Sink</td>
<td>Delta</td>
<td>231644 with flow restrictor</td>
<td>1.5</td>
<td>100 %</td>
<td>15</td>
<td>1.0</td>
</tr>
<tr>
<td>D</td>
<td>Janitor Sink</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.1</td>
</tr>
<tr>
<td>B</td>
<td>Low-Flow Shower</td>
<td>Bricor</td>
<td>B150CH-HH</td>
<td>1.5</td>
<td>100 %</td>
<td>300</td>
<td>0.1</td>
</tr>
</tbody>
</table>

**Annual Design Case Flow Fixture Water Usage:** 12,328 gallons/year

**Annual Design Case Flush and Flow Fixture Water Usage:** 35,895 gallons/year

**Non-Potable Source Water**

Enter the annual amount of on-site collected / treated water used for flush or flow fixtures. (Click "CLEAR" to clear a row of data. Enter the Annual Quantity as a whole number without commas.)

<table>
<thead>
<tr>
<th>Water Source</th>
<th>Annual Quantity (gal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grey Water Re-Use</td>
<td></td>
</tr>
<tr>
<td>Rainwater Re-Use</td>
<td></td>
</tr>
</tbody>
</table>

**Total on-site nonpotable water:**
WATER USE SUMMARY

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline Case - Annual Water Consumption (gal):</td>
<td>68,930</td>
</tr>
<tr>
<td>Design Case - Annual Water Consumption (gal):</td>
<td>35,895</td>
</tr>
<tr>
<td>Total Annual Non-Potable Water Consumption (gal):</td>
<td></td>
</tr>
<tr>
<td>Total Water Savings:</td>
<td>47.9%</td>
</tr>
</tbody>
</table>

For credit compliance, a water savings of at least 20% earns 1 LEED point, and a water savings of at least 30% earns 2 LEED points.

NARRATIVE (Required)

Please provide any additional comments or notes regarding special circumstances or considerations regarding the project's credit approach. Describe the water savings features of this project, and include specific data regarding any water saving fixtures and/or reclaimed water usage (greywater re-use / rainwater reuse).

Water use reduction was a main goal throughout design for this project. This project used low flow fixtures in all possible locations.

The specific male / female breakdown reflects the number of male and female staff working in our building. We have 10 male and 21 female employees as reflected in the WE Credit 3 template calculations. Stopwaste.org has consistently had approximately twice as many female employees as male employees throughout its history; therefore, our breakdown represents both the consistent historical ratio of male to female employees as well as the current ratio of male to female employees. For the transient visitors we assumed the default 50/50 ratio.

NARRATIVE (Optional)

Please provide any additional comments or notes regarding special circumstances or considerations regarding the project's credit approach.

This project used low flow fixtures and aerators on faucets wherever possible throughout the project.

The specific male / female breakdown reflects the number of male and female staff working in our building. We have 10 male and 21 female employees as reflected in the WE Credit 3 template calculations. Stopwaste.org has consistently had approximately twice as many female employees as male employees throughout its history; therefore, our breakdown represents both the consistent historical ratio of male to female employees as well as the current ratio of male to female employees. For the transient visitors we assumed the default 50/50 ratio.

The project is seeking point(s) for this credit using an alternate compliance approach. The compliance approach, including references to any applicable Credit Interpretation Rulings is fully documented in the narrative above. (Indicate the number of points documented in the Alternate Compliance Points Documented field below).

Alternative Compliance Points Documented
Project Name: ALAMEDA COUNTY WASTE MNGMT AUT
Credit: WE Credit 3: Water Use Reduction

READY TO SAVE THIS TEMPLATE TO LEED-ONLINE? Please enter your first name, last name and today's date below, followed by your LEED-Online Username and Password associated with the Project listed above to confirm submission of this template.

Wendy Sommer 2007-10-22 WSOMMER@STOPWASTE.ORG
First Name Last Name Date Username (Email Address) Password

SAVE TEMPLATE TO LEED-ONLINE PRINT TEMPLATE
verify that the information provided below is accurate, to the best of my knowledge.

CREDIT COMPLIANCE

Please complete the following information to document credit compliance.

Name of LEED Accredited Professional (AP)  
Elizabeth Durney

Company Name of LEED AP  
KEMA Green, Inc.

Brief Description of LEED AP’s project role(s)  
LEED Consultant - providing design assistance, construction green building assistance and documentation services

A copy of the LEED AP Certificate has been uploaded.

Project Name: ALAMEDA COUNTY WASTE MNGMT AUT
Credit: ID Credit 2: LEED Accredited Professional  
Points Documented: 1

READY TO SAVE THIS TEMPLATE TO LEED-ONLINE? Please enter your first name, last name and today’s date below, followed by your LEED-Online Username and Password associated with the Project listed above to confirm submission of this template.

Elizabeth Durney  
First Name  Last Name  Date  Username (Email Address)  Password
2007-03-01  Elizabeth.durney@kema.com

SAVE TEMPLATE TO LEED-ONLINE  PRINT TEMPLATE
LEED

LEED ® V2 Accredited Professional

To be awarded the title of Green Building Rating System, Resources and Process Required Leadership in Energy and Environmental Design (LEED®) V2 Green Building design and construction industry and the has successfully demonstrated knowledge of the

Elizabeth Durney

hereby certifies that

The U.S. Green Building Council