Sustainable Product Design Standard

Commercial Cleaning Products
SEGC 114 (April 2008)

Specifications For

Design of Sustainable Commercial Cleaning Products

SEGC-114 (April 2008)

Specifications: Design of Environmentally Preferable and Sustainable Institutional and Industrial (I&I) Cleaning Products[1]

[1] This standard is issued under the fixed description SEGC-114; the number immediately following the description indicates the year of original adoption or, in the case of revision, the year the standard was last revised and approved. The date in parentheses indicates an editorial change since the standard was last revised or approved.

This standard specification is under the jurisdiction of the SEGC-114 Technical Advisory Committee (TAC). It is subject to revision at any time by the SEGC-114 TAC and must be reviewed every year and if not revised then it must be approved again or withdrawn.

The SEGC-114 TAC invites comments for revision of this standard. Comments should be addressed to the SEGC-114 TAC, c/o Roger McFadden, Chief Scientist, Corporate Express, One Environmental Way, Broomfield, CO 80021. All comments will receive careful consideration at a regular meeting of the SEGC-114 TAC.

Users of this standard are expressly advised that the validity of any data collected by the user as part of this standard is entirely their own responsibility. Arranging for third party certification is the sole responsibility of the user of this standard.

Current edition approved April 4, 2008. This standard was originally published in 2002 as SEGC-114–02. This edition replaces the last previous edition SEGC 114 – 07 (August 2007). This April 2008 edition update includes changes in the Neurotoxin section on Page 7.

The SEGC-114 TAC believes that a product's environmental preferability is a function of multiple attributes from a life cycle perspective. The TAC believes life cycle assessment (LCA) should be used to identify environmental benefits and areas for improvement in the supply chain for all environmental media.

The SEGC-114 TAC developed this standard to define a sustainable and environmentally preferable institutional and industrial cleaning product. It is not intended to replace or suggest that other standards are ineffective or unnecessary. It identifies a set of institutional and industrial cleaning product attributes and ways to verify those attributes. This standard is intended to be used to help design and develop cleaning products that will be better for human and environmental health.

Whenever the SEGC-114 certification mark (show below) appears on a package, the package shall contain a description of the basis for certification. The description shall be in a location, style, and font that are easily readable. The description of the basis for certification shall read:

"This product meets SEGC-114 environmental, health and safety product design standard based on its elimination of alkyl phenol ethoxylates and 2-butoxyethanol, reduced human and aquatic toxicity, reduced smog production potential and reduction of volatile organic compound content."

Standard Specifications: Design and Certification of Environmentally Preferable and Sustainable Institutional and Industrial (I&I) Cleaning Products

PURPOSE

The purpose of the SEGC-114 is to provide a market-based definition for sustainable I & I cleaning products, establish requirements for human and environmental health attributes based on the twelve principles of green chemistry* and encourage social equity throughout the cleaning product cradle to cradle** supply chain.

* Twelve principles of green chemistry were defined in a book authored by Paul Anastas and John Warner titled, ***Green Chemistry: Theory and Practice***

** Cradle-to-cradle is a sustainable design concept articulated by William McDonough and Michael Braungart in their book titled, ***Cradle to Cradle***.

GOALS

The goals of the SEGC-114 include:

1. To simplify the process of selecting sustainable cleaning products by establishing a clear, reliable and affordable process for manufacturers, buyers and users.
2. To promote and enhance market demand for sustainable and environmentally preferable cleaning products and improve the economic value of sustainable cleaning products throughout the supply chain.
3. To provide buyers and users of cleaning with products with a reliable way to select cleaning products that are better for human and environmental health when compared to conventional cleaning products.
4. To identify other standards and resources available to buyers and users of cleaning products to help guide them towards sustainable and environmentally preferable cleaning products.
5. To help educate stakeholders in the cleaning industry about sustainable cleaning products and practices.

BENEFITS

The SEGC-114 is designed to help raw material suppliers, cleaning product manufacturers, formulators and end-users to make, distribute and use products that are more sustainable. Here are a few benefits that can be achieved by making products that are more sustainable:

1. Improved protection of the local and global environment
2. Reduction of liability
3. Improved worker safety
4. Cost savings in both manufacturing plants and at end-user locations
5. Encourages innovation
6. Product differentiation
7. Maintain long term customer relationships

SCOPE

This standard is voluntary, based on life cycle assessment (LCA) principles, is inclusive and establishes benchmarks for continuous sustainable innovation and improvement. This standard provides a method for evaluating any I& I cleaning product including but not limited to general purpose cleaners, glass cleaners, carpet cleaners, odor eliminators, washroom cleaners, toilet bowl cleaners, floor cleaners, floor finishes, floor wax strippers, graffiti removers, carpet spotters, vehicle washes, hand cleaners, parts cleaners, heavy duty cleaners, sanitizers, disinfectants and other I & I cleaning products. This standard is relevant for any form of cleaning products including liquids, powders, solids, gels or semi-solids.

SEGC-114 establishes health, safety and environmental criteria for design of commercial institutional and industrial cleaning products. The following set of attributes has been developed to provide a way of evaluating and comparing specific environmental, health, safety and performance characteristics of cleaning products.

REFERENCES AND TOOLS

This standard was developed to meet the requirements of buyers and users of Institutional and Industrial (I&I) cleaning products. Consensus approaches and tools that were reviewed during the development stages of this standard. Here is a list of references and tools that were consulted during the standard building process. Rather than create new lists, test methods or consensus approaches this standard includes the best practices from each of them.

Sustainability References and Standards

Global Reporting Initiative (GRI) Social Indicators – www.globalreporting.org/GRIGuidelines/index.htm
Life Cycle Assessment (LCA) ISO General Principles Standard – www.iso.ch/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=23151
Federal Trade Commission Environmental Marketing Guides – www.ftc.gov/bcp/conline/pubs/buspubs/greenguides.htm
U.S. Green Building Council LEED Rating System LCA Credit – www.usgbc.org/
FSC Certified Wood Practices – www.certifiedwood.org
Green e-Power – www.resource-solutions.org/Green-epage.htm

Chemical Lists, Scientific and Technical Information

Stockholm Toxic Chemicals List – www.chem.unep.ch/publications.htm
Indiana Relative Chemical Hazard Score (IRCHS) -- http://www.scorecard.org/chemical-profiles/def/irch_integ.html
Indiana Pollution Prevention and Safe Materials Institute -- www.ecn.purdue.edu/CMTI/Pollution
OSHA List of Carcinogens -- www.osha-sic.gov/SLTC/carcinogens.html
OSHA List of Reproductive Toxins -- www.osha-sic.gov/SLTC/reproductivehazards.html
National Toxicology Program (NTP) Annual Report on Carcinogens http://ntp-server.niehs.nih.gov
International Agency for Research on Cancer (IARC) http://193.51.164.11/default.html
California Safe Drinking Water and Toxic Enforcement Act of 1986 -- www.oehha.org/prop65.html
EPA Integrated Risk Information System (IRIS) -- www.epa.gov/iriswebp/iris/index.html
California Air Resources Board -- www.arb.ca.gov
NIOSH Report 48 Organic Solvent Neurotoxicity at www.cdc.gov/niosh/87104_48.html
Oregon Department of Environmental Quality -- www.deq.state.or.us/wmc/hw/hw.htm
Washington State Department of Ecology -- www.ecy.wa.gov/biblio/wac173303.html
Zero Waste Alliance – CARS Database – www.zerowaste.org
Unified Green Cleaning Alliance – www.zerowaste.org/ugca.htm
Oregon Sustainability Supplier Council Report 2000

Certification Standards and Programs for EP Cleaning Products

Green Seal GS-37 – www.greenseal.org
Canada's Environmental Choice Program – www.environmentalchoice.com

State Processes For Purchasing Environmentally Preferable Cleaning Products RFPs
Commonwealth of Massachusetts – www.state.ma/us/osd/enviro/products/cleaning.htm
State of Vermont – www.bgs.state.vt.us/pca
State of Washington – www.ga.wa.gov/pca/contract/11399c.doc
State of Minnesota – www.moea.state.mn.us/lc/purchasing/cleaners.cfm

Local Processes For Purchasing Environmentally Preferable Cleaning Products RFPs
City of Santa Monica – www.ci.santa-monica.ca.us/environment/policy/purchasing/bidspecs.htm
San Francisco – www.sfrecycles.org/hazardous_waste/haz_waste_content/city_depts/hw_city_ep3_prod_eval_criteria.htm
City of Seattle – shirli.axelrod@ci.seattle.wa.us

Case Studies
U.S. GSA/EPA Cleaning Products Pilot Project -- www.epa.gov/opptintr/epp/pdfs/cleaner.pdf
U.S. National Parks Service -- www.epa.gov/opptintr/library/ppicdist.htm
Santa Clara County, California – www.westp2net.org/Janitorial/projectresults.htm

EVALUATION PROCESS

The following information clearly defines the sustainable environmentally preferable attributes and criteria to be used to design and/or evaluate cleaning products. For those wanting to gain certification, instructions for certifying the green cleaning claims, ratings and certifications are provided. Certifiers must evaluate each cleaning product's environmental, health and safety claims and certify in writing that the product being evaluated meets the requirements presented in this standard. The formulator shall provide the certifier a container label, secondary container label (if applicable), product literature sheets, material safety data sheet and full ingredients disclosure including chemical name, CAS Number (if applicable), material safety data sheet and percentage by weight of all ingredients including water. A product will be considered sustainable and environmentally preferable when it complies with the requirements as indicated in Part 1 and Part 2 of this standard. Part 3 of this standard is optional and can be used by organizations to determine the level of green proficiency.

PART 1: Mandatory Product Attributes PASS/FAIL Evaluation

The nine (9) Pass/Fail Requirements (PFR) listed in this part of the standard are mandatory components of the Sustainable Environmentally Preferable Green Cleaning Products Scoring System. A product must comply (unless exempted) with all of the attributes and criteria listed in this part to be considered for approval as a green cleaning product as defined in this standard. Failure of a product to meet all of the requirements listed in Part 1 immediately disqualifies a product from being considered as a Sustainable Environmentally Preferable Green Cleaning Product. These requirements were developed after careful review of environmentally preferable purchasing programs and recommendations designed by the State of Washington, State of Oregon, Commonwealth of Massachusetts, State of Minnesota, State of New York, City of New York, City of San Francisco, City of Santa Monica and the City of Seattle. Third-Party Certifier will conduct a full evaluation of each product and certify in writing that it meets all mandatory requirements.

PART 2: Relative Ranking Score for Product Environmental, Health and Safety Attributes

The twenty-two (22) environmental, health and safety attributes listed in this part will be evaluated, scored and recorded by the Third-Party Certifier. Point scores are assigned to each attribute. The third-party certifier will certify a score value for each of these desirable attributes and total the score for the entire section. Zero is the lowest and best possible score. If a product accumulates a total score of more than 250 points from Part 2 then it is disqualified as a sustainable green cleaning product as defined by this standard. Sources for the attributes in Part 2 include attributes from environmentally preferable purchasing documents developed by the State of Washington, State of Oregon, Commonwealth of Massachusetts, State of Minnesota, City of Santa Monica and City of Seattle. Attributes were also selected from a comprehensive matrix provided by the United States Environmental Protection Agency. Third-Party Certifier will conduct a full evaluation of each product, assign a score point value for each attribute and certify that each product has an accumulative score of less than 250 points. ***The lower the value the more favorable the rating.***

PART 3: Indiana Relative Chemical Hazard Score (IRCHS)

This part of the certification process evaluates each product by using a reliable measurement method for establishing a hazard and environmental value for chemicals and chemical mixtures. The Indiana Relative Chemical Hazard Score (IRCHS) is derived by assigning a point value for each ingredient of the product based upon its percentage by weight in the formula. The weighted IRCHS for each ingredient is added together and becomes the product's IRCHS value. The product must have an accumulative IRCHS of 4.00 or less to meet this standard. Sources for information about this scoring system include http://www.scorecard.org/chemical-profiles/def/irch_integ.html and the Indiana Clean Manufacturing Technology & Safe Materials Institute. Third-Party Certifier will conduct a full evaluation of each product, assign an IRCHS for each product and certify it does not exceed the accumulative point total ceiling of 4.00. *The lower the value the more favorable the rating.*

Description of the Sustainable Environmentally Preferable Cleaning Product Attributes

PART 1: Mandatory Product Attributes– PASS/FAIL Evaluation

1. Carcinogens, Mutagens and Reproductive Toxins

It is believed that carcinogens, mutagens and reproductive toxins can be harmful to humans and are no longer necessary for the performance of current cleaning products. The product shall not contain any ingredients that are carcinogens, mutagens or reproductive toxins as defined below. (Note: Carcinogens, mutagens and reproductive toxins can exist naturally in the environment in trace amounts. The purpose of this standard is to prevent manufacturers from intentionally adding ingredients that are known to contain carcinogens, mutagens and reproductive toxins into their cleaning products.) Carcinogens and mutagens are defined as those chemicals listed as known, probable or possible human carcinogens or mutagens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), the U.S. Environmental Protection Agency, or the Occupational Health and Safety Administration (OSHA). Reproductive toxins are defined as those listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (California Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 1200, et seq.). Naturally occurring elements and chlorinated organics, which may be present as a result of chlorination of the water supply, are not considered ingredients if the concentrations are below the applicable maximum contaminant levels in the National Primary Drinking Water Standards found in 40 CFR Part 141.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS and technical information for each ingredient used in this product and verify the product in its concentrated form contains no ingredient or known contaminant that is identified as a known, probable, or possible human carcinogen, mutagen or reproductive toxin of any ingredient that is on the following lists:

- Annual Report on Carcinogens, National Toxicology Program (NTP)
  International Agency for Research on Cancer (IARC), Group 1, 2A or 2B

- OSHA regulated carcinogens and reproductive toxins.

- California Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop. 65), CCR Title 22, Division 2, Subdivision 1, Chapter 3, Section 12000 et seq.

Scoring Evaluation

The product shall be evaluated according to the above requirements. If the product passes this attribute, then the evaluation continues with the next requirement. If a product fails this attribute, then the evaluation stops and the product does not comply with this standard.

Lists and References

The following lists and references may assist the Third-Party Certifier.

- National Toxicology Program (NTP) Annual Report on Carcinogens (http://ntp-server.niehs.nih.gov)
- International Agency for Research on Cancer (IARC) (http://193.51.164.11/default.html)
- OSHA regulated carcinogens (www.osha-sic.gov/SLTC/carcinogens.html)
- OSHA regulated reproductive toxins (www.osha-sic.gov/SLTC/reproductivehazards.html)
- Green Seal (www.greenseal.org)
- California Safe Drinking Water and Toxic Enforcement Act of 1986 (www.oehha.org/prop65.html)
- Indiana Relative Chemical Hazard Score (IRCHS) http://www.scorecard.org/chemical-profiles/def/irch_integ.html
- IRCH: Indiana Pollution Prevention and Safe Materials Institute www.ecn.purdue.edu/CMTI/Pollution

2. Neurotoxins and Central Nervous System Depressants

The product in its concentrated form shall not contain any of the following ingredients:

Ingredient Name	CAS Number	Ingredient Name	CAS Number
Acetone	67-64-1	n-hexane	110-54-3
Methyl ethyl ketone	78-93-3	perchloroethylene	127-18-4
Trichloroethylene	79-01-6	xylene	1330-20-7
Toluene	108-88-3	naphtha	8030-30-6
Cyclohexanol	108-93-0	Stoddard solvent	8052-41-3

Verification Method

Third-Party Certifier shall review the product formulation, MSDS and technical information for each ingredient used in this product to verify that this product in its concentrated form does not contain any chemical listed above.

- Integrated Risk Information System (IRIS) EPA Neurotoxicity of chemicals evaluations and reports available at www.epa.gov/iriswebp/iris/index.html
- NIOSH Report 48, Organic Solvent Neurotoxicity available at www.cdc.gov/niosh/87104_48.html

Scoring Evaluation
The product shall be evaluated according to the above requirements. If the product passes this attribute, then the evaluation continues with the next requirement. If a product fails this attribute, then the evaluation stops and the product does not comply with this standard.

Lists and References
The following references may assist the Third-Party Certifier.
- Green Seal (www.greenseal.org)
- California Safe Drinking Water and Toxic Enforcement Act of 1986 (www.oehha.org/prop65.html)
- Indiana Relative Chemical Hazard Score (IRCHS) http://www.scorecard.org/chemical-profiles/def/irch_integ.html

3. Endocrine Disruptors or Modifiers

The product in its concentrated form shall not contain any alkyl phenol ethoxylates or any of the following ingredients:

Ingredient Name	CAS Number
Dibutyl phthalate	84-74-2
Bis(2-ethylhexyl) phthalate	117-81-7
4-nonylphenoxyethanol	104-35-8
p-octylphenol diethoxylate	2315-61-9
p-octylphenol diethoxylate	2315-62-0
p-octylphenol diethoxylate	2315-64-2
tetra methylbutyl)phenoxy)ethanol	2315-67-5
p-tert-octylphenoxy polyethoxyethanol	9002-93-1

Ingredient Name	CAS Number
Dodecylphenol ethoxylates	9014-92-0
Nonylphenol polyethylene oxide	9016-45-9
Octylphenoxypoly (ethoxyethanol)	9036-19-5
Nonoxynol-9	26027-38-3
Nonylphenol monoethoxylate	27986-36-3
C_9 Branched alkylphenol ethoxylate	68412-54-4
C_8 Branched alkylphenol ethoxylate	68987-90-6

Verification Method
Third-Party Certifier shall review the product formulation, MSDS and technical information for each ingredient used in this product and verify that this product in its concentrated form contains none of the chemicals listed above.

Scoring Evaluation
The product shall be evaluated according to the above requirements. If the product passes this attribute, then the evaluation continues with the next requirement. If a product fails this attribute, then the evaluation stops and the product does not comply with this standard.

Lists and References
The following references may assist the Third-Party Certifier.
- Green Seal (www.greenseal.org)
- Indiana Relative Chemical Hazard Score (IRCHS) http://www.scorecard.org/chemical-profiles/def/irch_integ.html
- IRCH: Indiana Pollution Prevention and Safe Materials Institute www.ecn.purdue.edu/CMTI/Pollution
- Washington State Toxic Coalition www.watoxics.org

4. Product Shall Contain No Ozone Depleting Compounds

It is widely accepted that certain chlorinated compounds can contribute to the depletion of the protective ozone layer above the earth. This product shall contain no ozone depleting chlorinated compounds as specified by the Montreal Protocol.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS and technical information for each ingredient used in this product and verify that this product in its concentrated form does not contain ozone-depleting chlorinated compounds, as specified by the Montreal Protocol. This includes but is not limited to chlorofluorocarbons or hydrochlorofluorocarbons and those listed as Class I or Class II chemicals in Title VI Clean Air Act Amendments of 1990, Pub. L. # 101-549.

Scoring Evaluation

The product shall be evaluated according to the above requirements. If the product passes this attribute, then the evaluation continues with the next requirement. If a product fails this attribute, then the evaluation stops and the product does not comply with this standard.

Lists and References

The following references may assist the Third-Party Certifier.

- Green Seal (www.greenseal.org)
- Indiana Relative Chemical Hazard Score (IRCHS) http://www.scorecard.org/chemical-profiles/def/irch_integ.html
- IRCH: Indiana Pollution Prevention and Safe Materials Institute www.ecn.purdue.edu/CMTI/Pollution
- EPA www.epa.gov

5. Product Shall Comply With CARB VOC Requirements

It is widely accepted that high levels of volatile organic compounds in a cleaning product contribute to poor indoor air quality, tropospheric ozone or photochemical smog. The product as used shall have a volatile organic compound (VOC) content determined by the California Air Resources Board (CARB) Method 310 on a weight basis shall not exceed 3% by weight for General Purpose Cleaners, Glass Cleaners, Odor Control Agents, Toilet Bowl Cleaners, Washroom Cleaners, Wax Removers and Floor Finishes as used shall not exceed 7% by weight.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS and technical information for this product and certify the product as used shall have a VOC content determined by the California Air Resources Board (CARB) Method 310 on a weight basis shall not exceed 3% by weight for General Purpose Cleaners, Glass Cleaners, Odor Control Agents, Toilet Bowl Cleaners, Washroom Cleaners, Wax Removers and Floor Finishes as used shall not exceed 7% by weight.

Scoring Evaluation

The product shall be evaluated according to the above requirements. If the product passes this attribute, then the evaluation continues with the next requirement. If a product fails this attribute, then the evaluation stops and the product does not comply with this standard.

Lists and References

The following references may assist the Third-Party Certifier.

- California Air Resources Board www.arb.ca.gov
- EPA www.epa.gov
- Green Seal (www.greenseal.org)
- Indiana Relative Chemical Hazard Score (IRCHS) http://www.scorecard.org/chemical-profiles/def/irch_integ.html

6. Product Shall Not Be Designated as a Hazardous Waste as Defined by State of Oregon and State of Washington Hazardous Waste Characteristics

The disposal of cleaning chemicals can generate significant environmental impacts, particularly for surface waters and aquatic life. Some cleaning products or ingredients used to manufacture them are considered hazardous waste once they become unusable. It is preferred that cleaning products be designed so that they are not hazardous wastes when they become unusable. To pass this mandatory criteria requirement a product when rendered unusable due to circumstances such as expired shelf life or as cleanup from a spill, shall not be designated as a hazardous waste as defined in Washington State, Oregon State and Federal Hazardous Waste Regulations.

Exemptions: Disinfectants, sanitizers, wax strippers and floor finishes are currently exempt for this attribute. The industry is not currently capable of offering these products without containing a hazardous waste. All other product categories must comply with this attribute.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS and technical information for each ingredient used in this product and verify that this product in its concentrated form when rendered unusable due to circumstances such as expired shelf life or as cleanup from a spill, shall not be designated as a hazardous waste as defined in Washington State, Oregon State and Federal Regulations. Disinfectants, sanitizers, wax strippers and floor finishes are exempted.

Scoring Evaluation

The product shall be evaluated according to the above requirements. If the product passes this attribute, then the evaluation continues with the next requirement. If a product fails this attribute, then the evaluation stops and the product does not comply with this standard. Disinfectants, sanitizers, wax strippers and floor finishes are exempted from compliance with this attribute.

Lists and References

The following references may assist the Third-Party Certifier.

- Oregon Department of Environmental Quality www.deq.state.or.us/wmc/hw/hw.htm
- Washington State Department of Ecology www.ecy.wa.gov/biblio/wac173303.html
- EPA www.epa.gov

7. Product Shall Contain No Persistent, Bioaccumulative and Toxic Chemicals

Some chemicals are persistent, bioaccumulative or toxic (PBT) and can be harmful to workers. It is believed the elimination of these chemicals will help protect workers by minimizing exposure to them. It is also believed that these chemicals are no longer required in most cleaning products. To pass this mandatory criteria requirement a product shall contain no ingredient that is required to be reported under EPA's Superfund Amendments and Reauthorization Act (SARA Title III, Section 313).

Verification Method

Third-Party Certifier shall review the product formulation, MSDS and technical information for each ingredient used in this product and verify that this product contains none of the persistent, bioaccumulative and toxic chemicals (PBT's) as listed by EPA including but not limited to dioxins & furans, toxaphene, Mirex, Mercury & compounds, Octachlorostyrene, alkyl-lead, DDT, Hexachlorobenzene, aldrin/dieldrin, benzo(a)pyrene and chordane. Endocrine modifiers are covered in Section 3 above. No ingredient shall be listed on EPA's Superfund Amendments and Re-authorization Act (SARA) Title III, Section 313 list of toxic release inventory chemicals.

Scoring Evaluation

The product shall be evaluated according to the above requirements. If the product passes this attribute, then the evaluation continues with the next requirement. If a product fails this attribute, then the evaluation stops and the product does not comply with this standard.

Lists and References

The following references may assist the Third-Party Certifier.

- Indiana Relative Chemical Hazard Score (IRCHS) http://www.scorecard.org/chemical-profiles/def/irch_integ.html
- IRCH: Indiana Pollution Prevention and Safe Materials Institute www.ecn.purdue.edu/CMTI/Pollution
- Green Seal (www.greenseal.org)

8. Product Shall Contain No Alkylphenol Ethoxylates (APEs)

Although most surfactants are relatively nontoxic, alkylphenol ethoxylates (APE's) and nonylphenol ethoxylates (NPE's) do not readily biodegrade. There are additional concerns about APE's ability to disrupt the endocrine system. They can mimic or block the activities of hormones causing decreased fertility in birds, shellfish and mammals. To pass this mandatory criteria requirement a product shall contain no alkylphenol or nonylphenol ethoxylates.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS and technical information for each ingredient used in this product and verify that this product in its concentrated form contains no alkyl phenol or nonyl phenol ethoxylates as listed below:

Ingredient Name	CAS Number
4-nonylphenoxyethanol	104-35-8
p-octylphenol diethoxylate	2315-61-9
p-octylphenol diethoxylate	2315-62-0
p-octylphenol diethoxylate	2315-64-2
2-(4-1,1,3,3-tetra methylbutyl)phenoxy)ethanol	2315-67-5
p-tert-octylphenoxy polyethoxyethanol	9002-93-1
Dodecylphenol ethoxylates	9014-92-0
Nonylphenol polyethylene oxide	9016-45-9
Octylphenoxypoly (ethoxyethanol)	9036-19-5
Nonoxynol-9	26027-38-3
Nonylphenol monoethoxylate	27986-36-3
C_9 Branched alkylphenol ethoxylate	68412-54-4
C_8 Branched alkylphenol ethoxylate	68987-90-6

Scoring Evaluation

The product shall be evaluated according to the above requirements. If the product passes this attribute, then the evaluation continues with the next requirement. If a product fails this attribute, then the evaluation stops and the product does not comply with this standard.

Lists and References

The following references may assist the Third-Party Certifier.

- Oregon Department of Environmental Quality www.deq.state.or.us
- Washington State Department of Ecology www.ecy.wa.gov/
- EPA www.epa.gov

9. Aquatic Biodegradability

Organic chemicals that are not readily biodegradable can harm ocean and waterway habitat that supports the local economy and quality of life for residents. To pass this mandatory criteria requirement Each of the organic ingredients *in the product as used* shall exhibit ready biodegradability in accordance with the OECD definition, except for the polymer, wax, and/or resin portion of a floor finish. Biodegradability shall be measured by one of the following methods: OECD TG 301A-F, ISO 9439 carbon dioxide (CO2) evolution test, ISO 10708 (two-phase closed-bottle test), ISO 10707 (closed bottle test), or ISO 7827 (dissolved organic carbon removal). Specifically, within a 28-day test, the ingredient shall meet one of the following criteria within 10 days of the time when biodegradation first reaches 10%:

- Removal of dissolved organic carbon (DOC) > 70%
- Biological oxygen demand (BOD) > 60%
- % of BOD of theoretical oxygen demand (ThOD) > 60%
- % CO2 evolution of theoretical > 60%

For organic ingredients that do not exhibit ready biodegradability in these tests, the manufacturer may demonstrate biodegradability in sewage treatment plants using the Coupled Units Test found in OECD 303A by demonstrating dissolved organic carbon (DOC) removal > 90%.

Testing is not required for any ingredient for which sufficient information exists concerning its biodegradability, either in peer-reviewed literature or databases or by proving that the ingredient was tested in accordance with standard test procedures.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS and technical information for each ingredient used in this product and confirm the product in its concentrated form is readily biodegradable as defined above. Testing is not required for any ingredient for which sufficient information exists concerning its biodegradability, either in peer reviewed literature or databases or based on tests conducted according to standard procedures.

Scoring Evaluation

The product shall be evaluated according to the above requirements. If the product passes this attribute, then the evaluation continues with the next requirement. If a product fails this attribute, then the evaluation stops and the product does not comply with this standard.

Lists and References

The following references may assist the Third-Party Certifier.

- Oregon Department of Environmental Quality www.deq.state.or.us/wmc/hw/hw.htm
- Washington State Department of Ecology www.ecy.wa.gov/biblio/wac173303.html
- EPA www.epa.gov

PART 2: Relative Ranking Score for Product EHS Attributes

Compliance with this standard requires mandatory compliance with all attributes listed in Part 1 with no exceptions. However, there are certain attributes of cleaning products that are desirable but not mandatory for compliance under this standard. Part 2 of this standard establishes attributes that are desirable and provides a means for evaluating these attributes and comparing them to other cleaning products in the same categories. In order for a product to be certified under this standard, the product must comply with Part 1 and have an accumulative point score of less than 250 points when using the following attributes, criterion and scoring values.

1. Phosphates and Eutrophication

Phosphates can be an environmental hazard when discharged into a closed body of water where they can cause excessive algae growth and lake eutrophication. It is desirable to minimize the use of phosphates found in cleaning products. The undiluted product shall contain no more than 0.5% by weight of phosphorous.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS and technical information for each ingredient used in this product and verify the amount of phosphates and phosphonates by weight in this product. The undiluted product shall not exceed the 0.5% by weight limit.

Scoring (Point Values)

Certify **zero points** if the product contains less than 0.5% by weight as phosphorous.
Certify **250 points** if the product contains more than 0.5% by weight as phosphorous.

2. Petroleum Distillates

Petroleum distillates are not readily renewable resources. The use of petroleum distillates in cleaning products unnecessarily depletes the planet's resource of oil. There are plenty of adequate alternatives for petroleum distillates made from renewable vegetable and fruit resources. Therefore, it is desirable that cleaning products be manufactured without petroleum distillates when possible.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS and technical information for each ingredient used in this product and verify the amount of petroleum distillates by weight in this product. Points shall be awarded based upon the scoring point values listed below.

Scoring (Point Values)

Certify **zero points** if the product contains no petroleum distillates above trace amounts.
Certify **250 points** if the product contains petroleum distillates above trace amounts.

3. Flammability and Combustibility

Flammable and/or combustible cleaning products can create a fire hazard for occupants of a building. The product in its concentrated form shall not be flammable or have a flash point of 140^0F or lower, as tested using either the Cleveland Open Cup Tester (ASTM D92-97) or closed cup methods Tagliabue Closed Tester, Pensky-Martens Closed Tester, Setaflash Closed Tester, ISO 13736 or ISO 2719. A product need not be tested if all of the ingredients in this product have a flash point above 140^0 F.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS, technical information or conduct appropriate testing to determine the flash point of the product. The product shall have a flash point of 140^0F or higher.

Scoring (Point Values)

Certify **zero points** if the product has a flash point of 140^0F or higher as defined above.
Certify **250 points** if the product has a flash point of less than 140^0F as defined above.

4. Skin and Eye Irritation

Cleaning products that are corrosive can create a potential adverse exposure to workers and increase the risk of on-the-job injuries. The product as used shall not be corrosive to skin or eyes.

Verification Method

The product as used and tested using the Human Skin Construct systems (Liebsch et al. 2000; Fentem et al. 1998) shall be non-corrosive to the skin. The product as used shall be non-corrosive to the eye as tested using the bovine opacity and permeability test (BCOP) (Sina et al. 1995) after a 10-minute exposure. Results of other peer-reviewed or standard *in vitro* or *in vivo* test methods such as Corrositex, demonstrating that the product as used is not corrosive will also be accepted.

A. Eye Irritation

The product in its as used form shall not be corrosive to the eyes. The product as used shall have an eye irritation score stated as Category IV as defined in OPPTS 870.1000 Health Effects Test Guidelines, published in EPA 712-C-98-189, August 1998 Edition. This means it is described as "mild", "reddening" or "non-irritating".

B. Skin Irritation

The product in its as used form shall not be corrosive to the skin. The product as used shall have a skin irritation score stated as Category IV as defined in OPPTS 870.1000 Health Effects Test Guidelines, published in EPA 712-C-98-189, August 1998 Edition. This means it is described as "mild", "reddening" or "non-irritating".

Scoring (Point Values)

Certify **zero points** if the product as used is non-corrosive to eyes and skin and also has an eye and skin irritation score as Category IV as defined above.
Certify **250 points** if the product as used is corrosive to eyes or skin and/or has an eye or skin irritation score as Category I, II or III as defined above.

5. Skin Absorption

Each individual ingredient that comprises 1.0% or more of the product by weight shall have a low potential to absorb through skin. Skin absorption shall be determined by test methods specified by OPPTS 870.7600 for Dermal Penetration studies, as published in EPA 712-C-98-350, August 1999 Edition. FDA approved in vitro tests, or toxicological modeling can also be used to establish skin absorption score. The following list of chemicals is known to have a high potential for skin absorption:

Ingredient Name	CAS Number
Acetone	67-64-1
1,1,1 trichloroethylene	71-55-6
Methyl ethyl ketone	78-93-3
Naphthalene	91-20-3

Ingredient Name	CAS Number
Xylene	1330-20-7
Ethylene Glycol	107-21-1
Toluene	108-88-3
2-butoxyethanol	111-76-2
Tetrachloroethylene	127-18-4

Verification Method

Third-Party Certifier shall review the product formulation, MSDS, technical information and review the list above to determine if the product contains any ingredients considered to have a high potential for skin absorption. Product shall be given 250 points if it contains any of the chemicals listed above.

Scoring (Point Values)

Certify **zero points** if the product has a low potential to absorb through skin as defined above.
Certify **250 points** if the product has a high potential to absorb through skin as defined above.

6. Skin Sensitization

Each individual ingredient that comprises 1.0% or more of the product by weight shall not be a skin sensitizer or contain skin sensitizers as tested by the OECD Guidelines for Testing Chemicals, Section 406 or other standard test methods, such as those described in Buehler (1994) or Magnusson and Kligman (1969).

Verification Method

Third-Party Certifier shall review the product formulation, MSDS, technical information or conduct appropriate research to determine if the product is a skin sensitizer. If the undiluted product or any of its ingredients is a skin sensitizer then the product shall be given 250 points by the certifier.

Scoring (Point Values)

Certify **zero points** if the product is NOT a skin sensitizer as defined above.
Certify **250 points** if the product is a skin sensitizer as defined above.

7. Aquatic Toxicity

The product as used shall not be toxic to aquatic life. It is desirable to protect valued aquatic wildlife, which help support the local economy and quality of life for residents. It is desirable that cleaning products shall be nontoxic to aquatic life. A compound is considered not toxic to aquatic life if it meets one or more of the following criteria: Acute LC50 for algae, daphnia or fish >100 mg/L.
For purposes of demonstrating compliance with this requirement, aquatic toxicity testing is not required if sufficient aquatic toxicity data exist for each of the product's ingredients to demonstrate that the product mixture complies. Aquatic toxicity tests shall follow the appropriate protocols in ISO 7346.2 or OECD test guidance 203 for fish and in OECD test guidance 201 and 202 for algae and daphnia, respectively. **Note:** Disinfectant and sanitizer products with an EPA registration number shall be exempt from the above requirement.

Verification Method

Third-Party Certifier shall review all ingredients and verify the appropriate aquatic data to certify the product is nontoxic to aquatic life based upon the requirements listed in Section 7. **Note:** Disinfectants, sanitizers, floor finishes and wax strippers shall be exempt from the above requirement.

Scoring (Point Values)

Certify **zero points** if the product is nontoxic to aquatic life as defined above.
Certify **250 points** if the product is toxic to aquatic life as defined above.

8. Fragrances

It is desired that the product not contain any fragrance that is non-functional and unnecessary. Any ingredient added to a product as a fragrance must follow the Code of Practice of the International Fragrance Association. Fragrances added to give a psychological impression to product users or building occupants shall be considered as non-functional. It is accepted that some ingredients have a distinctive fragrance. When fragrances are part of a functional ingredient then the fragrance is acceptable under this standard. Fragrances added to cleaning products must be listed on MSDS.

Verification Method
Third-Party Certifier shall review the product formulation, MSDS, technical information or conduct appropriate testing to determine if the product is formulated with a fragrance.

Scoring (Point Values)
Certify **zero points** if the product contains NO added fragrance.
Certify **25 points** if the product contains a non-functional fragrance.
Certify **250 points** if the product contains a non-functional fragrance and is not listed on the MSDS.

9. Animal Testing

This standard discourages animal testing and will accept the results of past peer-reviewed or standard non-animal tests demonstrating compliance with a criterion. A mixture or blend need not be tested if existing information demonstrates that each of the ingredients complies with a criterion. Non-animal *in vitro* test results are acceptable provided the test methods are referenced in peer-reviewed literature and the manufacturer provides reasons for selecting the particular test method.

Verification Method
Review the documentation from the manufacturer of the ingredients and product.

Scoring (Point Values)
Certify **zero points** if the product was not tested on animals.
Certify **250 points** if the product was tested on animals.

10. Concentrates

The product shall be provided in a concentrated form. It is believed that concentrated products use less packaging materials, reduce fuel consumption and lessen pollution emissions during the transportation of the product. The product in its concentrated form shall dilute with cold tap water at a ratio of one part product with at least eight parts of water.

Exemptions: Graffiti Removers, Floor Finishes, Carpet Spotters and Dust Mop Treatments are currently exempt for this attribute. The industry is not currently capable of offering these products in a concentrated form. All other product categories must comply with this attribute.

Verification Method
Third-Party Certifier shall review the product container label and determine if the product meets the definition of concentrated as defined above.

Scoring (Point Values)
Certify **zero points** if the product is packaged in a concentrated form.
Certify **250 points** if the product is NOT packaged in a concentrated form except as exempted.

11. Packaging

The primary package shall be recyclable. An exception may be made for lightweight flexible packaging (e.g., pouches or bags) that represents a significant reduction in material use. Disposal of packaging is one of the significant life-cycle stages of industrial and institutional cleaners. Non-recyclable containers and materials contribute to wasting non-renewable resources and unnecessarily filling up landfills. Cleaning product containers and shipping cartons should be refillable and recyclable when possible. Manufacturers should provide for return and reuse of the containers when possible.

Verification Method

Third-Party Certifier shall review the product packaging materials and determine if the product package complies with this packaging requirement above. Products packaged in non-recyclable primary packaging are considered non-recyclable unless the manufacturer can demonstrate they have an active program to accept return of containers and have an active process for refill and redistribution of the containers. A container that is considered readily refillable is one that has been designed to be refillable and where a process is readily available and is actively used to collect and refill and redistribute the container. Portion pouches designed of lightweight flexible packaging significantly reduces material use and comply with this attribute.

Scoring (Point Values)

Certify **zero points** if the product container is readily recyclable and refillable.
Certify **25 points** if the product container is readily recyclable but not readily refillable.
Certify **250 points** if the product container is not recyclable and not readily reusable.

12. Material Safety Data Sheet (MSDS) Format

The 16-section ANSI Z400.1 MSDS format asks the manufacturer of a cleaning product to provide more information than is required by the Federal OSHA Regulations. It is believed that this additional information can better help companies assess the health, safety and environmental impact of using a specific cleaning product. It is desirable that the MSDS comply with all federal regulations and be prepared by using the ANSI Z400.1 MSDS Format.

Verification Method

Third-Party Certifier shall review the material safety data sheet for the product and determine if it complies with federal regulations and is designed in the ANSI Z400.1 MSDS Format. Products that do not have ANSI formatted MSDSs shall be rejected.

Scoring (Point Values)

Certify **zero points** if the MSDS for the product is formatted according to ANSI Z400.1
Certify **50 points** if the MSDS for the product is not formatted according to ANSI Z400.1

13. Prohibit 2-butoxyethanol (Ethylene Glycol Monobutyl Ether) CAS 111-76-2

The product undiluted shall contain no 2-butoxyethanol CAS 111-76-2. It is interesting to note that 2-butoxyethanol is more toxic by all routes than any of the other solvents commonly identified in cleaners.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS, technical information or conduct appropriate testing to determine if the product contains 2-butoxyethanol. Products containing 2-butoxyethanol shall be rejected.

Scoring (Point Values)

Certify **zero points** if the product contains no 2-butoxyethanol
Certify **250 points** if the product contains 2-butoxyethanol

14. Product Acute Oral and Inhalation Toxicity

It is desirable that the undiluted cleaning products not be toxic to humans. A product is considered toxic if any of the following criteria apply. If the product has an oral lethal dose $LD_{50} \leq 2{,}000$ mg/kg. Or if the product has an Inhalation Lethal Concentration LC_{50} value ≤ 20 mg/L. While such lethal dose values do not always translate neatly from animals to human systems, they provide a readily accessible means of comparing the acute toxicity of various products. By selecting products with higher lethal dose and concentration levels, a company can help safeguard the health of workers coming in daily contact with these chemicals. Dispensing-system concentrates shall be tested as used.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS, technical information or conduct appropriate testing to determine if the product is toxic. To demonstrate compliance with this attribute, a mixture need not be tested if existing toxicological information demonstrates that each of the ingredients in the product complies. It is assumed that the toxicity of the individual ingredients is additive and that there are no synergistic effects. Inhalation toxicity will not be required for any ingredient with a vapor pressure of 1mmHg or less. The toxicity testing procedures shall follow the protocols put forth by the OECD Guidelines for Testing Chemicals. These protocol include: Acute Oral Toxicity Test (TG401) and Acute Inhalation Test (TG403).

Scoring (Point Values)

Certify **zero points** if the product is not toxic as defined above.
Certify **250 points** if the product is toxic as defined above.

15. Product Performance and Efficacy

Product performance is an essential part of sustainable environmentally preferable green cleaning products. If a product does not properly perform then purchasers will lose confidence in the product and the product becomes obsolete. Furthermore, the environmental benefits of the product will likely be reduced if a worker stops using the product because it does not perform.

Verification Method

Third-Party Certifier shall certify that the product as used when diluted in cold tap water shall effectively remove common soils from surfaces without damaging the surface or leaving an unwanted residue as measured by a standard test method. If the product does not meet the performance requirements then it shall be assigned 250 points by the certifier and disqualified as a green cleaning product as defined by this standard.

General Purpose Cleaners – The product shall effectively remove unwanted soil using the ASTM D4488-95, A5 Test.
Washroom Cleaners – The product shall effectively remove unwanted soil using the ASTM D5343 Test.
Glass Cleaners – The product shall attain a minimum rating of three in each of the following categories of the CSMA DCC 09 test: streaking, smearing and unwanted soil removal.

Floor Finishes and Strippers – Products shall meet the requirements of the following performance tests:

Removability: The floor finish and compatible stripper shall achieve a removal ease rating of "good" as measured by ASTM D 1792-82, Standard Test Method for Long-Term Removability Properties of Floor Polishes. In the case of a floor finish and stripper proposed for certification together, they should be tested together, with the candidate stripper replacing the ASTM standard-defined stripper. In the case of a floor finish alone proposed for certification, it should be tested with an EPA DfE recognized, SEGC-114 or Green Seal certified stripper, with the SEGC-114 or Green Seal-certified stripper replacing the ASTM standard defined stripper. In the case of a stripper alone proposed for certification, it should be tested with a SEGC-114 or Green Seal-certified finish, with the candidate stripper replacing the ASTM standard-defined stripper.

Soil Resistance: The floor finish shall perform as well as a nationally recognized product of its type in its category as measured by ASTM D 3206-92, Standard Test Method for Soil Resistance of Floor Polishes.

Detergent Resistance: The floor finish shall demonstrate minimal deterioration by achieving a detergent resistance rating of "very good", as measured by ASTM D3207-92, Standard Test Method for Detergent Resistance of Floor Polish Films. The floor finish shall be tested using a EPA DfE recognized, SEGC-114 or GS-37 certified floor cleaner at the recommended dilution rate for routine floor maintenance as listed on packaging, or the ASTM cleaning solution specified in ASTM D 3207-9.
Products shall be tested as used, and if diluted, products shall be diluted with water from the cold tap at no more than 50 ºF.

All other cleaning product types shall be tested and compared to conventional cleaning products in the same categories. Documentation shall be provided to demonstrate the relevant comparisons including dilution ratio, water temperature, contact time and soil removal. (Optional: Manufacturer can provide a minimum of three signed letters from organizations that have used the product being submitted for certification and found it to perform in their applications according to label directions.)

Scoring (Point Values)
Certify **zero points** if the product meets the appropriate performance test defined above.
Certify **250 points** if the product does not meet the appropriate performance test defined above.

16. HMIS Ratings

Hazard assessment is an important requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS) and the process of assigning Hazardous Materials Identification System or HMIS® ratings help meet that requirement. This numerical rating provides a user with a quick overview of the impact of this product in the areas of Health, Fire, Physical Hazard and Personal Protection. (HMIS® Rating System was designed and is copyrighted by the National Paint and Coatings Association). It is desirable that MSDS for cleaning products have HMIS ratings listed on the MSDS and that the HMIS rating be as low as possible.

Verification Method
Third-Party Certifier shall review the product formulation, MSDS, technical information and determine the HMIS Rating for the product. Points shall be awarded based upon the scoring point values listed below.

Scoring (Point Values)
Certify **zero points** if the product when diluted to its highest concentration, as listed on the product label, has an HMIS® Rating of 1 or less in the Health, Fire or Physical Hazard sections.
Certify **25 points** if the product when diluted to its highest concentration, as listed on the product label, has an HMIS® Rating of 2 in any one of the Health, Fire or Physical Hazard sections.
Certify **125 points** if the product when diluted to its highest concentration, as listed on the product label, has an HMIS® Rating of 3 or higher in any one of the Health, Fire or Physical Hazard sections.

17. Color Coded & Numbering System For Labels

It is desirable that appropriate use directions and information are provided to assist workers in the proper dilution, use, and disposal of the cleaning product. It is desirable that the product color and labeling for this product be color-coded and use a numbering system to assist non-English speaking or illiterate workers in identifying this product.

Verification Method
Third-Party Certifier shall review the product container and container labeling and certify the product label contains instructions on how to properly dilute, use and dispose of the cleaning product and the label is color coded and clearly identified with a number. Points shall be awarded based upon the scoring point values listed below.

Scoring (Point Values)
Certify **zero points** if the product label contains instructions on how to properly dilute, use and dispose of the cleaning product and the label is color-coded and clearly identified with a number.
Certify **25 points** if the product label contains instructions on how to properly dilute, use and dispose of the cleaning product, but the label and/or product is not color coded and clearly identified with a number.
Certify **50 points** if the product label does not contain instructions on how to properly dilute, use and dispose of the cleaning product and if the label is not color-coded and clearly identified with a number.

18. pH of the Cleaning Product When Diluted

The pH of a cleaning product may be important to its performance. However, it can also pose potential exposure to workers and create environmental hazards or costs. It is desirable that the pH of the as used product be greater than 4.0 and less than 11.5.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS, technical information or conduct appropriate testing to determine the pH of the use-diluted product as diluted according to the highest concentration listed on the product label. Points shall be awarded based upon the scoring point values listed below.

Scoring (Point Values)

Certify **zero points** if the pH of the use-dilution product as diluted according to the highest concentration listed on the product label, is greater than 4.0 and less than 11.5
Certify **50 points** if the pH of the use-dilution product as diluted according to the highest concentration listed on the product label, is less than 4.0 or more than 11.5

19. Aerosol Packaging and Dispensing

It is desirable that cleaning products not be supplied for dispensing from aerosol containers. It is believed that the container cannot be totally emptied of product and propellant. Recycling such partially filled aerosol cans is extremely expensive and requires special handling by trained hazardous waste technicians. The product shall be furnished in a non-pressurized non-aerosol container or package.

Verification Method

Third-Party Certifier shall review the product packaging and certify that the product is packaged in a non-aerosol container. Points shall be awarded based upon the scoring point values listed below.

Scoring (Point Values)

Certify **zero points** if the product is packaged in a non-aerosol container.
Certify **50 points** if the product is packaged in aerosol containers that are not pressurized.
Certify **250 points** if the product is packaged in a pressurized aerosol container.

20. Dyes (Colorants)

It is accepted that there is a potential health and environmental hazard associated with some of these additives. These ingredients are usually formulated into cleaning products at very low levels and do not require disclosure on the material safety data sheets. The product shall contain no more than 0.1% of any coloring agent that are either non-functional ingredients or SARA 313 listed hazardous materials. A colorant added to groups of products to aid in product identification shall be considered functional ingredients. It is desirable that if a product contains a colorant, that the colorant be a FD&C colorant.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS, technical information or conduct appropriate testing to determine if the product is formulated with a dye or colorant. Points shall be awarded based upon the scoring point values listed below.

Scoring (Point Values)

Certify **zero points** if the product is formulated with a FD&C colorant or less than 0.1% of any colorant.
Certify **50 points** if the product is formulated with more than 0.1% of any colorant or contains a non-functional or non-FD&C colorant.

21. Chemical Management System Containers

It is desirable that the product be designed for use in a chemical management system (CMS). It is recognized that dilution control devices maintain dilution accuracy, reduce waste, limit exposure to worker and reduce total costs. It is desirable that the CMS and products be provided in a locked cabinet or system inaccessible to children and untrained occupants or workers in a building.

Verification Method

Third-Party Certifier shall evaluate the product container and packaging and certify that the product has been designed for use with a chemical management system and the cabinetry has a lock out feature to protect against unwanted access. Points shall be awarded based upon the scoring point values listed below.

Scoring (Point Values)

Certify **zero points** if the product container is designed for use with a chemical management system and the cabinetry has a lock out feature to protect against unwanted access.
Certify **25 points** if the product container is designed for use with a chemical management system but does not have a lock out feature.
Certify **50 points** if the product container is not designed for use with a chemical management system or if the cabinetry does not have a lock out feature.

22. Rapidly Renewable Resource Based Products

It is desirable to reward products that can be made to support sustainability. For example, products that include crop or plant derived ingredients instead of petroleum-based ingredients are desirable.

Verification Method

Third-Party Certifier shall review the product formulation, MSDS, technical information or conduct appropriate testing to determine if the product is formulated with 40% or more of the product (less water) being derived from crop or plant matter or other rapidly renewable resources. Points shall be awarded based upon the scoring point values listed below.

Scoring (Point Values)

Certify **zero points** if the product is formulated with 40% or more of the product (less water) being derived from crop or plant matter or other rapidly renewable resource.
Certify **100 points** if the product is formulated with less than 40% of the product (less water) being derived from crop or plant matter or other rapidly renewable resource.

23. Training

Training is an important component of maintaining a sustainable cleaning program. The product manufacturer, its distributor, or a third party shall provide training or training materials to assist the users of the product to properly use the product. The training and materials shall include step-by-step instructions for the proper dilution, use, handling and disposal of the product. Training shall include proper ventilation information and information about personal protection equipment. Manufacturers shall have product-labeling systems to assist non-English speaking or illiterate workers to be able to understand the label information.

Scoring (Point Values)

Certify **zero points** if training and materials comply with this attribute as defined above.
Certify **250 points** if the training and/or materials do not comply with this attribute as defined above.

24. Labeling Requirements

The manufacturer's container label shall clearly and prominently direct the user to dilute with cold tap water and shall state the recommended level of dilution. The manufacturer shall also include detailed instructions for proper use and disposal and for the use of personal protective equipment.

Scoring (Point Values)

Certify **zero points** if labeling complies with this attribute as defined above.
Certify **250 points** if the labeling does not comply with this attribute as defined above.

25. Slip Resistance (Floor Finishes Only)

Floor finish products shall have a static coefficient of friction (SCOF) of no less than 0.5 as measured by either ASTM D2047-99 or UL Method 410.

Scoring (Point Values)

Certify **zero points** if the product has a SCOF of no less than 0.5
Certify **250 points** if the product has a SCOF of less than 0.5

PART 3: Indiana Relative Chemical Hazard Score (IRCHS)

Formerly Known As – Pollution Prevention Program Measurement Method (3P2M)

Part 3 has been developed to encourage innovation and continuous improvement. It is desirable that cleaning products be as safe as possible to human and environmental health. Therefore, Part 3 of this standard includes a numerical assessment of the cleaning product chemical mixture. The Indiana Relative Chemical Hazard Score (IRCHS) was selected because it balances equally the human health and environmental health effects of a product. An organization that wants to evaluate their product against a higher standard can have their product third-party certified against Part 3. A cleaning product shall be evaluated using the IRCHS and a cumulative score shall be indicated by taking each ingredient used to make the cleaning product and calculating the IRCHS for each chemical or ingredient, weighting them by the amount by weight used in the cleaning product and adding the scores together. This IRCHS rating is a comparative value to contrast the relative chemical hazard for the cleaning product with other environmentally preferable or conventional cleaning products. Colored medals are assigned to each cleaning product depending upon their IRCHS rating. The criterion is explained below. Products complying with Part 1 and 2 of this standard automatically qualify for a bronze medal. The silver or gold medals can only be assigned after the product has complied with Part 1 and 2 and then is evaluated according to Part 3 of this standard.

1. Determining the Product IRCHS

This part of the scoring system evaluates each ingredient used in the manufacture of the cleaning product, locates the IRCH Score for each ingredient and weights the scores by the percentage that is present in the formulation and assigns an IRCH Score for the cleaning product. For example: A cleaning product that contains 80% water, 15% isopropyl alcohol, 2% citric acid and 3% triethanolamine will have an IRCH Score of 2.47 (.80x 0 + .15x14.2 + .02x3.4 + .03x9.3 = 2.47). The lower the score in this section, the more favorable the evaluation.

Verification Method

Third-Party Certifier shall review the product formulation and determine the Indiana Relative Chemical Score for the product as calculated above.

Scoring (Point Values)

If the accumulative Indiana Relative Chemical Hazard Score is equal to or less than 4.00 then it qualifies to be assigned a Silver or Gold medal as described in this standard.

PART 4: Certifying and Assigning a Medal

Once the product is certified to be a green cleaning product based on this standard, a product is then assigned a green cleaning medal as determined by the Decision Tree below.

Verification Method

Third-Party Certifier shall apply the results of their certification process and use the Green Cleaning Decision Tree to determine the appropriate Green Cleaning Medal Assignment for the product.

Scoring (Point Values)

Gold Medal Assignment – A gold medal is assigned to a product when the product is certified to meet Part 1 and 2 of this standard and has an IRCHS Value of no more than 1.25.

Silver Medal Assignment – A silver medal is assigned to a product when the product is certified to meet Part 1 and 2 of this standard and has an IRCHS Value of no less than 1.26 and no more than 3.00.

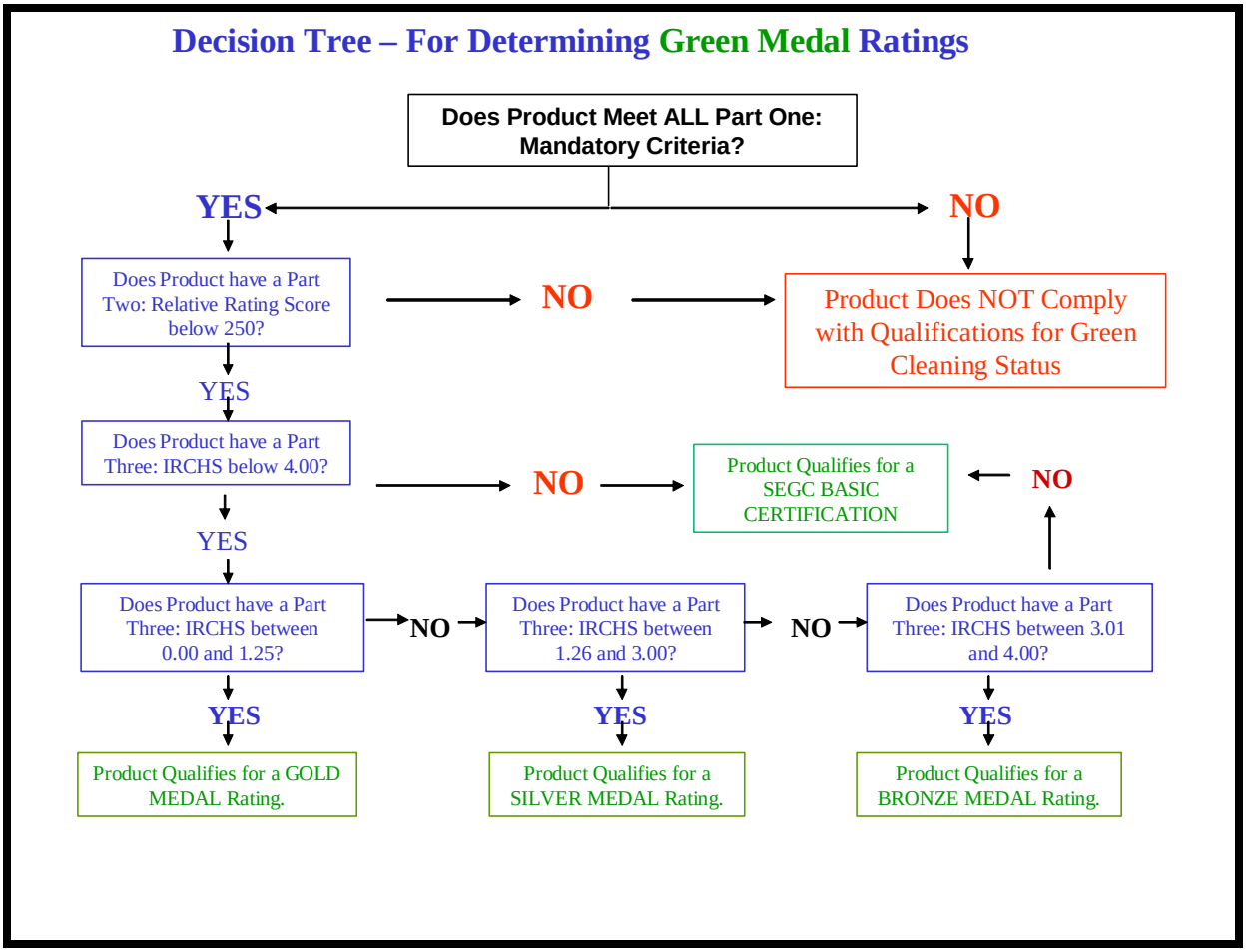
Bronze Medal Assignment – A bronze medal is assigned to a product when the product is third party certified in compliance with Part 1 and 2 of this standard and has an IRCHS Value of no less than 3.01 and no more than 4.00.

Basic Certification Assignment – A product is assigned a SEGC-114 Basic Certification when the product is third party certified in compliance with Part 1 and 2 of this standard but has an IRCHS Value of more than 4.00.

Decision Tree for Assigning Green Cleaning Medal

The decision tree below can be used to determine and assign the appropriate Green Cleaning Medal to a SEGC-114 Certified Product. The assignment of a medal does not indicate that the Gold outperforms Silver or Silver outperforms Bronze. It simply means that a product with a Gold Medal has a better Safety Hazard and Environmental Hazard rating than Silver, Bronze or Basic Certification.

Chart 1: Green Medal Decision Tree



Glossary of Terms and Abbreviations Related to This Sustainable Environmentally Preferable Green Cleaning Standard

Aerobic – Requiring oxygen or taking place in the presence of oxygen. In aerobic biodegradation, bacteria use oxygen to break organic chemicals down into smaller molecules while producing carbon dioxide and water.

Alcohol ethoxylate – A type of nonionic surfactant in widespread use. Considered a good candidate for replacing alkylphenol ethoxylates (APEs) in many applications.

Alkylphenol ethoxylates (APE) – A class of nonionic surfactants produced by reacting an alkylphenol with ethylene oxide. Examples include nonylphenol ethoxylates and octylphenol ethoxylates. APEs are widely used in industrial detergents, pesticide formulations and some consumer products.

Anaerobic – Not requiring oxygen or taking place in the absence of oxygen. In anaerobic biodegradation, bacteria break surfactants down into smaller molecules while producing methane as a byproduct.

Anionic – Forming negatively charged ions in solution. Anionic surfactants include alkylbenzene sulfonates and alcohol sulfates.

Baseline – A set of critical observations of data used for comparison or a control.

Benchmarking – A series of quantitative measurements of performance.

Bioaccumulants -- Substances that increase in concentration in living organisms as they take in contaminated air, water or food because the substances are very slowly metabolized or excreted.

Bioaccumulation – Sometimes defined as bioconcentration, but often refers more specifically to a buildup in body contaminants as a result of intake of food or sediments. Bioaccumulation is responsible for the increasingly high body burdens of contaminants in animals as they approach the top of the food chain, such as birds and mammals.

Bioconcentration – The buildup of a chemical in the body of an organism (usually fish) to levels higher than in the medium in which that organism lives (usually water). Measured by the bioconcentration factor (BCF) which is the ratio of the concentration in the animal to that in the medium.

Biodegradable – Capable of being reduced to water and carbon dioxide by the action of microorganisms.

Biodegradability, inherent – The ability of a compound to be broken down by naturally occurring bacteria, but only after a period of acclimation, resulting in a delay in breakdown.

Biodegradability, readily – The ability of a compound to be broken down immediately upon exposure to bacterial derived from the environment, as measured by a readily biodegradability test.

Biodegradation – Biodegradation is the process whereby organic chemicals are broken down into progressively simpler molecules, largely by the action of various bacteria.

Biodegradation, primary – The first step in the breakdown of a surfactant, wherein the compound loses its surfactant properties, but has not completely broken down into the simplest components.

Biodegradation, ultimate – The complete breakdown of a substance into the simplest components, usually carbon dioxide, water, and minerals. Sometimes this is called mineralization.

Biological Nutrient – A biodegradable material posing no immediate or eventual hazard to living systems that can be used for human purposes and can safely return to the environment to feed environmental processes.

Carcinogen – A chemical listed as a known, probable, or possible human carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), the U.S. Environmental Protection Agency, or the Occupational Health and Safety Administration.

CAS – Chemical Abstract Service number assigned to specific chemicals, for example: 2-butoxyethanol {CAS 111-76-2}

Chemical Management Concentrates – Products designed for use with dispensing equipment for quick mixing of concentrate and water and accurate dispensing of a ready to use product.

Cleaner/Disinfectant – A product that has received EPA registration based upon claims to effectively clean surfaces while at the same time killing bacteria, viruses, or other microorganisms.

Cleaning Products – Cleaning products as defined in this document refer to products that are used for the routine cleaning of the indoor built environment. They include but are not limited to: glass cleaners, general-purpose cleaners, floor cleaners, laundry detergents, dishwashing detergents, deodorizers, hand soaps, and wax strippers.

Concentrate – A product that is intended to be diluted with water.

Concentrated Form – The product as it is packaged and sold for use.

Continuous Improvement – Continuous improvement is a process used in total quality management. It is when a company through its routine course of business, continuously improves its products and processes.

Corrosive – A substance that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.

Cradle to Cradle Design – A process encouraging and implementing improved environmental product design including use of technical nutrients and/or biological nutrients. Sustainable materials derived from cradle to cradle design are reused by industrial and natural systems and protect public health and environment and future generations. Cradle to Cradle design results in products whose materials are perpetually circulated in closed loops with few environmental and health burdens over all stages. Cradle to cradle design is defined in a book authored by William McDonough and Michael Braungart titled, Cradle to Cradle.

Delayed effects are those that occur in days or even longer between exposure and onset of adverse effects. Asbestosis from asbestos and liver damage from carbon tetrachloride are examples of delayed effects.

Disinfectant -- A product that has received EPA registration based upon claims to kill bacteria, viruses, or other microorganisms. For purposes of this standard, the word disinfectant includes “sanitizer”, “disinfectant” and “sterilant”

Dispensing System Concentrate -- Products that are designed to be used in dispensing systems that cannot be practically accessed by users.

Dose-Response Relationship is a fundamental and pervasive concept in toxicology. Dose is the major determinant of toxicity. An understanding of this relationship is essential for an understanding of toxic materials.

Eco-efficiency – the delivery of competitively priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life cycle, to a level at least in line with the Earth’s carrying capacity.

Emulsification – The process of making two immiscible liquids into a heterogeneous mixture.

Endocrine disruptor – A substance that interferes with the normal functioning of the endocrine system. It can do this by acting like a hormone itself, by counteracting the effects of natural hormones, by altering the creation and destruction of natural hormones, or by interfering with hormone receptors.

Endocrine system – A major body regulating system in humans and other vertebrates responsible for growth, sexual development, and reproduction. The endocrine system consists of a variety of organs called endocrine glands that secrete hormones into the bloodstream. The human endocrine glands include the testicles, ovaries, pancreas, adrenal glands, thyroid, parathyroid and thymus, as well as others.
Environmental Preferability – A product or service's environmental preferability is a function of multiple attributes from a life cycle perspective (EPA Guiding Principles). This standard uses this definition when using the terminology "environmentally preferable".

Environmentally Preferable Purchasing – Interpreted to mean the selection of "products or services that have a lesser or reduced effect on human and environmental health when compared with competing products or services that serve the same purpose." The comparison may also include the consideration of raw materials acquisition, transportation costs, packaging and distribution, production manufacturing, reuse operation, and maintenance disposal of the product or service.

Ethoxylate – A compound such as an alcohol ethoxylate that results from a reaction with ethylene oxide. Also refers to the reaction process itself.

Eutrophication – The slow aging process during which a lake, bay or estuary evolves into a marsh or bog and eventually disappears. During the later stages of eutrophication the water body is choked by abundant plant life due to higher levels of nutritive compounds such as nitrogen and phosphorus. Disposal of high levels of phosphates into waterways promote eutrophication.

Exposure - is a measure of the contact between a toxicant and a living organism.

Flash Point – Means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested by an approved flash point test.

Floor Finish – Any product designed to polish, protect, or enhance floor surfaces by leaving a protective wax, polymer, or resin coating that is designed to be periodically removed or stripped and reapplied.

Floor Finish Remover – A product designed to remove floor finish through breakdown of the finish polymers, or by dissolving or emulsifying the finish, polish, or wax.

General Purpose Cleaners – Cleaning products used for routine cleaning of hard surfaces including floors. It does not include any EPA registered sterilizers, disinfectants or sanitizers.

Glass and Surface Cleaners – Cleaning products used to clean windows, glass, mirrors, Plexiglas and similar surfaces. It does not include any EPA registered sterilizers, disinfectants or sanitizers.

Guide – a series of options or instructions that do not recommend a specific course of action.

Hazard – the potential health or physical effect attributable to a specific chemical, mixture or physical agent.

Hazardous Waste – By-products of society that can pose a substantial or potential hazard to human or environmental health when improperly managed. Possesses at least one of four characteristics including corrosivity, reactivity, ignitability or toxicity, or appears on special EPA hazard chemical lists.

Hydrophilic – Literally meaning is "water loving." The term refers to water solubility. Surfactants such as nonylphenol ethoxylate have molecules with both a water soluble and water insoluble end.

Hydrophobic – Literally meaning is "water fearing." The term indicates insolubility in water.

Immediate effects are those that occur within minutes of the exposure. Chemical burns from hydrochloric acid or Sulfuric Acid or asphyxiation from cyanide are examples of immediate effects.

Ingredient – Any constituent of a product that is intentionally added or known to be a contaminant that comprises at least 0.01% by weight of the product.

In vitro – Literally meaning is "in glass". The term indicates an experiment that is done on animal cells in the laboratory rather than on the whole, living organism.

In vivo – Literally meaning is "in life". The term refers to tests done on live animals.

Irreversible effects are those that produce permanent alterations in function, structure, or capacity. Brain lesions from toluene and cirrhosis of the liver from alcohol are examples of irreversible effects.

Lethal Concentration 50% (LC_{50}) in water– This is the concentration of a chemical in water that results in the death of 50% of the test organisms during an exposure lasting 96 hours. It is usually measured in units of milligrams/liter or parts per million.

Lethal Concentration 50% (LC_{50}) in air– This is the concentration of a chemical in the air that results in the death of 50% of the test organisms during a predetermined exposure time.

Lethal Dose 50% (LD_{50}) – The most commonly used measure of acute toxicity of a substance. Refers to the amount of a substance required to kill half (50%) of a test animal population (usually rodents) from a single dose. Units are milligrams of substance per kilogram of body weight of the animal.

Life Cycle – the stages of a product, process or activity, which encompass raw materials extraction and acquisition, processing, materials manufacture, product fabrication, packaging and distribution, product use/reuse, maintenance, recycling and final dispositon.

Life-Cycle Assessment (LCA) – Review of the full life of a product and its impact on the environment. A LCA review on cleaning products would include: mining the raw material; refining and creating a finished product; transporting the product from the manufacturing point through the distribution channel to the end use point; storage of the product; use of the product; resources used during its life; and its final disposal.

Life-Cycle Cost (LCC) – Review of the full life cycle and total cost of the product. A LCC review would include: the purchase price of the product; the cost of using the product; and the cost of disposing of it.

Lipophilic – Literally means "fat loving". The term refers to substances soluble in fats or oils and not generally soluble in water. Lipophilic pollutants can accumulate in the body fat of animals exposed to them and build up to very high levels. They can also be transferred to young in the mothers' milk.

Low VOCs – This refers to the Federal volatile organic compound regulations.

Lowest observed effect concentration (LOEC) – The smallest observed concentration of a substance in water that produces a toxic response in an animal. The LOEC is used as a measure of the chronic or long-term toxicity of a substance, usually to water dwelling animals.

Material Safety Data Sheet (MSDS) – a written or printed material concerning a hazardous chemical that contains the information set forth in the OSHA Hazard Communication Standard.

Metabolite – A product of the breakdown of a chemical. For example, nonylphenol is a metabolite of nonylphenol ethoxylate.

Metric – A standard of measurement.

Mutagen -- A chemical that meets the criteria for Category 1: Chemicals known to induce heritable mutations or to be regarded as if they induce heritable mutations in the germ cells of humans, under the Harmonized System for the Classification Of Chemicals Which Cause Mutations in Germ Cells (UN, 2003).

No observed effect concentration (NOEC) – The highest concentration of a substance in water that produces no toxic response in an animal.

Nonionic – A type of surfactant with no net electrical charge. Nonionic surfactants include the alkylphenol ethoxylates and the alcohol ethoxylates, among others.

Nonylphenol – An important alkylphenol with nine carbon atoms attached to the phenol unit. A breakdown product of nonylphenol ethoxylate surfactants that has been found to have estrogenic activity in fish, mammals and birds.

Nonylphenol ethoxylate (NPE) – A nonionic surfactant of the alkylphenol ethoxylate type in which the alkyl unit has nine carbon atoms. Nonylphenol ethoxylates are the most widely used of the APE surfactants.

Octylphenol – An important alkylphenol with eight carbon atoms attached to the phenol unit. A breakdown product of octylphenol ethoxylate surfactants that has been found to have estrogenic activity in fish, mammals and birds.

Octylphenol ethoxylate (OPE) – A type of nonionic surfactant of the alkylphenol ethoxylate type in which the alkyl unit has eight carbon atoms. Less widely used than nonylphenol ethoxylates but a more potent estrogen.

Optical brighteners -- Additives designed to enhance the appearance of colors and whiteness in materials by absorbing ultraviolet radiation and emitting blue radiation. Also known as fluorescent whitening agents.

Ozone Depletion – Destruction of the stratospheric ozone layer, which shield the earth from UV radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which breakdown when they reach the stratosphere and then catalytically destroy ozone molecules.

Ozone-Depleting Compounds – An ozone-depleting compound is any compound with an ozone-depletion potential greater than 0.01 where CFC 11 equals 1.

Persistence -- The length of time a compound stays in the environment. Minimal time for breakdown is criteria for environmentally preferred products.

Persistent, Bioaccumulative and Toxic Chemicals (PBT) – Persistence is the length of time a compound stays in the environment. Minimal time for breakdown is criteria for environmentally preferred products. Bioaccumulants are substances that increase in concentration in living organisms as they take in contaminated air, water or food because the substances are very slowly metabolized or excreted.

Phosphates – Certain chemical compounds containing phosphorus. These are commonly used in various forms as alkalinity builders, cleaning boosters in detergent formulations or water softeners.

Phosphorus – An essential chemical food element that can contribute to the eutrophication of lakes and other bodies of water. Increased phosphorus levels result from discharge of materials containing phosphorus into surface waters.

Pollutant – any substance that directly or indirectly creates an adverse human health or environmental effect when introduced into any environmental media.

Pollution Prevention – the act of reducing or eliminating the use, release, or generation of a pollutant or potential pollutant through source reduction, recycling, reuse, reclamation or modification of operating practices.

Population Distribution -- Means that some members of a population will be highly sensitive; Some members of a population will be very resistant; And most members of a population will be neither sensitive nor resistant.

Post-Consumer Products – Products that have been collected from the original user that have not been used (excess material), yet still holds their original performance characteristics.

Precautionary Principle – Move away from downstream control strategies and instead, emphasize upstream prevention. Prevent environmental harm, avoid hazardous discharges with cleaner production strategies.

Primary Conversion Process – This is a process that refines or converts a raw fossil fuel or biomass into a material used by traditional manufacturing processes. This is sometimes referred to as an intermediate.

Primary Packaging – The packaging that is the material physically containing and comes in direct contact with the product, not including the lid or cap of a container.

Primary Routes of Entry – Inhalation, Eye contact (ocular), Skin contact (dermal) and Ingestion

Product as used– This is the most concentrated form of the product that the manufacturer recommends for a product's intended use. For example, if a manufacturer recommends a concentrated floor-stripping product be diluted 1:20 with water, the product shall meet the environmental and performance requirements at a dilution of 1:20.

Re-blended – Commercial or Architectural Products (specifically Coatings in this report) that are made using post-consumer products.

Recyclable Package – A package that can be diverted from the waste stream through available processes or programs, and can be collected, processed and returned to use in the form of raw materials or products.

Recycling – Recycling is a series of activities that includes collecting materials that would otherwise be considered waste, sorting and processing recyclables into raw materials such as fibers and manufacturing raw materials into new products.

Reproductive Toxin -- A chemical listed as a reproductive toxin by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (California Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 1200, et seq.).

Reuse – Use a product more than once, either for the same purpose or for a different purpose. Reusing, when possible, is preferable to recycling because the item does not need to be reprocessed before it can be used again.

Reusable – Reusable means the potential of a product for reuse as defined above, and where facilities readily exist to make such reuse economically feasible.

Slip Resistance -- Floor finish products shall have a static coefficient of friction [SCOF] of at least 0.5 as measured by either ASTM D2047-99 or UL Method 410.

Standard – a degree or level of requirement, excellence or attainment.

Supply Chain – The comprehensive set of links from raw materials to customer, including extraction, transportation, fuels, manufacturing, use and disposal. It is the network of wholesalers, retailers, distributors, transporters, storage facilities and suppliers that participate in the sale, delivery and production of a particular product.

Surfactant – Chemical compound that have both oil and water-soluble structures and can bring both water soluble and insoluble components together in a single liquid phase. Surfactants function in cleaning products to dissolve and remove oils and greases and to make water penetrate more readily.

Sustainable Cleaning – Sustainable cleaning is an integrated system of cleaning that uses sustainable practices and products having site-specific applications that will, over the long term:

- Enhances environmental quality and the natural resource base upon which the cleaning economy depends
- Takes a holistic, life cycle and cradle to grave approach to cleaning activities and products
- Protects humans before, during and after cleaning
- Make protection of human and environmental health the primary focus of cleaning
- Makes efficient use of nonrenewable resources and local building resources and integrates, where appropriate, natural biological cycles and controls.
- Helps sustain the economic vitality of cleaning operations
- Enhances the quality of life for professional cleaners and the societal community as a whole
- Extracts and removes unwanted substances out of the building and dispose of them properly
- Reduces, diminishes or eliminates chemical, particle and moisture residues
- Protects humans from exposure to contaminants, hazardous cleaning chemicals and residues
- Encourages proper disposal of cleaning products and the soils removed by them.
- Reduces or eliminates cleaning products that container hazardous ingredients
- Reduces and controls the number of cleaning products used for cleaning a building
- Encourages use of equipment and techniques that promote sustainability
- Promotes the use of sustainable environmentally preferable green cleaning products

Sustainable Green Cleaning Product – In order to be considered a sustainable product, a sustainable cleaning product must provide environmental, economic and social benefits while protecting and enhancing the needs of future generations, public health, welfare and environment over their full commercial cycle, from raw materials extraction to final disposition. A sustainable cleaning product must also provide the equivalent in performance and quality to other cleaning products. A sustainable cleaning product can be petrochemical-based or bio-based but must demonstrate throughout the supply chain, multiple attributes that protect public health and environment and foster healthy and prosperous conditions for human and ecological systems. Claims made on all sustainable attributes must be certified pursuant to this standard with public documentation that can be peer reviewed.

Sustainability – Using resources in a way and at a rate that allows people to meet their needs and future generations to also meet theirs. It also means meeting environmental, economic and community needs.

Teratogen – An agent that causes physical abnormalities in a developing embryo or fetus.

Teratogenesis -- The nonhereditary birth defects in a developing fetus by exogenous factors such as physical or chemical agents acting in the womb to interfere with normal embryonic development.

Toxicity – The inherent ability of a chemical, biological, or physical agent to cause adverse effects in living organisms.

Toxicity, acute – The ability of a substance to cause adverse health effects (usually death) from a single exposure. The usual measure of acute toxicity is the amount of the substance required to kill half of the laboratory rats or mice exposed to it. (See Lethal Dose 50).

Toxicity, chronic – The ability of a substance to cause adverse health effects from non-lethal exposures over a period of time. One measure of chronic toxicity for aquatic organisms is the LC_{50} in water.

Undiluted Product – The most concentrated form of the product produced by the manufacturer for transport outside its facility.

Volatile Organic Compounds (VOC) – Any organic compound that participates in atmospheric photochemical reactions except those designated by EPA as having negligible photochemical reactivity. VOC's are found both in products themselves, as well as propellants that are added to disperse or apply products. High levels of VOCs in the air may mean poor indoor air quality.

Washroom Cleaners – Cleaning products used to remove unwanted soils from hard surfaces in a washroom such as walls, floors, fixtures, washbasins, counters, mirrors, bathtubs and tiles. It does not include any EPA registered sterilizers, disinfectants or sanitizers.