C-983(5) Cleaning compounds and detergents for dishwashing and laundry machines

Section 1: Evaluation process

Award
The award will be made to the financially responsible and technically responsive vendor whose response conforms to all terms, conditions and specifications of the Solicitation, and which is most advantageous to the State, with price and other factors considered.

Except at the invitation of the AMS, no activity or comments from responders regarding this Solicitation shall be discussed with any of the evaluation committee persons during the evaluation of the responses. A Responder who contacts an evaluation committee member may, as a result, have its response rejected.

Phases
The State shall conduct an evaluation of responses to this Solicitation. The evaluations will be conducted in four phases:

- Phase I – Review and select responsive, compliant responses
- Phase II – Evaluate responses
- Phase III – Select finalist(s)
- Phase IV – Sign contract

Non-selection of any response will mean that either another response was determined to be more advantageous to the State or that the State exercised its right to reject all responses. At its discretion, the State may perform an appropriate cost and pricing analysis of a vendor’s response, including an audit of the reasonableness of any response. During the evaluation process, all information concerning the responses submitted will remain private and will not be disclosed to anyone whose official duties do not require such knowledge. At any time during the evaluation, the State may request that a responder provide explicit written clarification to any part of its response.

Phase I – Review and select responsible, compliant responses
The purpose of this phase is to determine if each response complies with the mandatory terms, conditions, and specifications in the Solicitation. A pass/fail criteria will be used. A response must comply with all instructions listed in this Solicitation or the responses may be rejected. The State reserves the right to reject any and all responses, or to waive any informalities in the Solicitation. Any response found to be non-responsive may be eliminated from further evaluation.

Responses are private or nonpublic data until the completion of the evaluation process as defined by Minn. Stat. § 13.591. The completion of the evaluation process is defined as the State having completed negotiating the Contract with the selected vendor. If no award is made, the responses will not be made public until the law allows.
Phase II – Evaluate responses

Only those responses found to be responsive under Phase I will be considered in Phase II. The State may request clarification from one or more responders and/or visit the site. The responses to the request for clarification may be considered along with the original response for evaluation.

However, the State reserves the right to make an award without further clarification of the responses received. Therefore, it is important that each response be submitted in the most complete manner possible.

Responses will be rated as follows:

- Acceptance of Terms & Conditions 100 Points
- Section II: Vendor Requirements Pass/Fail
- Packaging Requirements Pass/Fail
- Section III: Specifications – Dishwasher (Attachment A) 100 Points
- Section III: Specifications – Laundry (Attachment B) 100 Points
- Training (Attachment C) 25 Points
- Service (Attachment C) 25 Points
- Optional: Sustainable Innovation (Attachment D) 25 Points
- Cost Component 625 Points
- TOTAL 1000 Points
- TG/ED/VO (if applicable) 60 Points

As indicated above, points will be awarded based on the level of acceptance of the State’s terms and conditions as specified in this Solicitation. Acceptance of all terms and conditions will result in the award of the maximum points available. Responders should note that the State reserves the right to pursue negotiations on any exception taken. In the event that negotiated terms cannot be reached, the State reserves the right to reject the proposal and move onto the responder with the next highest points. Responders should also note that the awarding of points does not automatically mean that the State has accepted the Responder’s proposed language.

If only one response is submitted to the solicitation, the State reserves the right to review the response submitted for compliance and to award without assigning points or to reject the offer and reissue the solicitation, whatever is in the State’s best interest.

Phase III – Select finalist(s)

Only those responses that are found to be responsive under Phases I and II will be considered in Phase III.

The State reserves the right to visit the site, and/or request Best & Final offers from the Responders and the opportunity to interview key personnel during Phase II and/or III. The State reserves the right to select the number of responders for the site visits, Best and Final offer, oral presentations, and/or enter into negotiations. The evaluation scores may be revised as a result of the site visit, responses to the oral presentations, Best and Final offer, and/or negotiations.

First consideration will be given to the Responder with the highest total points in the criteria listed in this Solicitation. In the event that contract negotiations are unsuccessful, the Responder with the next highest number of points will be selected for consideration. Except at the invitation of the evaluation chairperson and with the approval of the AMS, no activity or comments from Responders regarding this Solicitation shall be discussed with any of the evaluation committee persons during the evaluation of the responses. A Responder who contacts an evaluation committee member may, as a result, have its response rejected.

If only one response is submitted to the solicitation, the State reserves the right to review the response submitted for compliance and to award without assigning points or to reject the offer and reissue the solicitation, whatever is in the State’s best interest.
The final award decision will be made by the Commissioner of Administration or designate. The Commissioner may accept or reject the recommendation of the evaluation team.

**Phase IV – Sign contract with contact vendor**

**Special terms, conditions, and specifications**

**17. Usage report**

Usage reports must include the total dollars spent by state agencies and CPV members and must consist of:

- Name of purchasing entity
- Product name
- Sustainability certification: Green Seal GS-53 or GS-51, US EPA Safer Choice, or ULE 2776, if applicable
- Item/catalog number
- Quantity purchased
- Price per item
- Total cost

**Section II: Vendor requirements**

**1. Dishwashing**

The contract vendor must provide detergent and cleaning compound for dishwashing for one or more of the following groups per Section III: Specifications – Dishwashing:

- Group I. Machine Detergent.
- Group II. Manual Detergent.
- Group III. Rinse Additives.
- Group IV. Special Food Service Cleaners.
  - Scale/lime/iron removal
  - Freezer cleaner
  - De-stainer
  - Conveyor detergent lubricant

**2. Laundry**

The contract vendor must provide detergent and cleaning compound for laundry machines for one or more of the following groups per Section IV: Specifications – Laundry:

- Group I. Home Type Washers.
- Group II. Institutional Washers.

**3. Packaging**

Secondary packaging is prohibited except in instances where multiple units are packaged where at least one unit is ready-to-use, such as spray-dispenser bottles, and total packaging (e.g. primary plus secondary) is a reduction in packaging material use. Spray-dispenser bottles or ready-to-use package types are prohibited for concentrates.
4. **Training**

All interested responders must submit a response on Attachment C to indicate that training requirements are met.

   a. For dishwashing detergent and compound products, the contract vendor must provide the following training:
      
      i. Product application (mandatory)
      ii. Dishwashing machine operation (mandatory)
      iii. Proper loading of dishware (mandatory)
      iv. Pre-scraping procedures (mandatory)
      v. Machine clean-up procedures (mandatory)

   b. For laundry detergent and compound products, the contract vendor must provide the following training:
      
      i. Product application (mandatory)
      ii. Laundry machine operation (desired)
      iii. Proper loading of laundry (desired)
      iv. Machine clean-up procedures (desired)

   c. Contact information for training.

5. **Service**

All interested responders must submit a response on Attachment C to indicate that service requirements are met. The contract vendor must provide the following services:

   a. Analyze detergent wash solution to ensure proper concentration range is maintained (mandatory)
   b. Test wash and rinse water for proper temperatures (mandatory)
   c. Inspect steam and fill valves (desired)
   d. Inspect wash manifold arms and nozzles, rinse arms and jets, and adjust as needed (desired)
   e. Check drain valves and recommend repair (desired)
   f. Inspect pumps and motors, air vents, and switches (desired)
   g. Service detergent dispensing as needed (desired)

6. **Service report**

The contract vendor must provide a written service report to the ordering entity upon completion of each service call.

7. **Product specifications**

All interested responders must provide a response in Attachment A or Attachment B affirming that each proposed product meets technical specifications listed in Section III: Specifications – Dishwashing or Section IV: Specifications – Laundry. Responders must provide an MSDS/SDS for each product submitted.

The referenced technical specification is from Green Seal Standards GS-53 and GS-51.

The State reserves the right to verify your response to Attachment A or Attachment B before an award is made. The State reserves the right to request documentation supporting the specifications prior to award or at any time over the life of the contract. The solicitation response will be rejected if the State, in its sole discretion, receives information that indicates the responder is non-responsive or non-responsible.
8. Sustainability certification (desired)

Products that are certified by Green Seal for standard GS-53 or GS-51 meet specification requirements listed in Section III and Section IV, and are desired. Products that are certified by US EPA Safer Choice or UL EcoLogo Standard (ULE) for Liquid Laundry Detergent and Fabric Softeners 2776 are also desired.

Products that are not certified by Green Seal for standard GS-53 or GS-51, US EPA Safer Choice or ULE 2776 but meet specification requirements listed in Section III and Section IV must affirm that their product meets specification requirements listed in Section III and Section IV by responding to the applicable Attachment A or Attachment B.

The State reserves the right to award points towards products with GS-53 or GS-51, US EPA Safer Choice or ULE 2776 certification.

Section III: Specifications - dishwashing

1. Groupings and requirements.
   a. Group I. Machine Detergent. Detergents shall be available in solid, powdered, and liquid form for both large and small dishware washers and shall demonstrate that it performs equivalent to or better than a national market-leading products in its category, compared at the most dilute/least concentrated manufacturer-recommended dilution level for routine cleaning, using an objective, scientifically-validated method conducted under controlled and reproducible laboratory conditions. The product shall be tested on the following types of soils: colored, bleachable soil, dry starchy soil; and dry proteinaceous soil.
   b. Group II. Manual Detergent. Detergents shall be available in solid, powdered and liquid form, including pre-soak agents. Product shall demonstrate that it performs equivalent to or better than a national market-leading product in its category, compared at the most dilute/leasing concentrated manufacturer-recommended dilution level for routine cleaning, using an objective, scientifically-validated method conducted under controlled and reproducible laboratory conditions. The product shall be tested using soils B & D from ASTM D4009, or equivalent.
   c. Group III. Rinse Additives. Additives shall be available in solid and liquid form and shall achieve a visual rating of at least two (2) when evaluated scoring to the method in ASTM D3556, or Consumer Specialty Products Association (CSPA) DCC-05A.
   d. Group IV. Special Food Service Cleaners.
      i. Scale/lime/iron Removal Detergent
         1. Blend of mild acids and detergents
         2. Removes lime film, iron stains and scale
      ii. Freezer Cleaner
         1. USDA approved
         2. Will not freeze to -30 degrees F.
         3. Quick soil removal
         4. Quick drying
      iii. De-stainer
         1. Removes stains (e.g., coffee, tea and food) from plastic, china, metal surfaces
         2. Stable oxygen bleaching agent with metal protecting properties
      iv. Conveyor Detergent Lubricants
         1. Efficient at low foam levels
         2. Harmless to metals
         3. Soap based lubricating detergent
2. Dishwashing Group I, II, and III must meet the requirements listed below. The requirements listed below are desired (not mandatory) for Dishwashing Group IV. See Attachment A and B for further clarification on mandatory and desired requirements.

a. (Mandatory) Acute Mammalian Toxicity. The undiluted product shall not be toxic to humans. A product is considered toxic if any of the following criteria apply:
   - Oral lethal dose (LD$_{50}$) < 5,000 mg/kg
   - Inhalation lethal concentration (LC$_{50}$) < 20,000 ppmV at 1 hr
   - Dermal lethal dose (LD$_{50}$) < 2,000 mg/kg

For purposes of demonstrating compliance with this requirement, existing acute toxicity data for each of the product’s components at 0.01% or more in the undiluted product may be used. These data are used to calculate a weighted average that assumes that the toxicity of the individual components is additive. The toxicity values are adjusted by the weight of the components in the product and summed using the following formula:

\[
T = \frac{1}{\sum w_i T_i}
\]

Where,
- \( TP \) = toxicity of the product
- \( w_i \) = the weight fraction of the component
- \( T_i \) = the toxicity value for each component (LD$_{50}$)
- \( n \) = number of components

Inhalation toxicity shall be determined from all components at 0.01% or more in the undiluted product, when the component has a vapor pressure greater than 1 mm Hg at 1 atm pressure and 20°C.

b. (Mandatory) Skin and Eye Corrosion. The undiluted product shall not cause skin corrosion or cause serious eye damage. For purposes of demonstrating compliance with this requirement, data may be evaluated for each of the product’s components at 0.01% or more in the undiluted product. If the components at 0.01% or more in the undiluted product are not shown to cause skin corrosion or serious eye damage at the concentrations used, then the product will not be considered to cause skin corrosion or serious eye damage, unless the product is required to be labeled as such. Further, a product is considered to cause skin corrosion or to cause serious eye damage if it has a pH less than or equal to 2 or greater than or equal to 11.5, unless data prove otherwise.

c. (Mandatory) Carcinogens and Reproductive Toxins. The undiluted product shall not contain any components that are carcinogens or reproductive toxins. The product shall not contain any components known to produce or release carcinogens.

d. (Mandatory) Mutagens and Neurotoxins/Systemic Toxins. The undiluted product shall not contain any components that have been identified as mutagens or neurotoxins/systemic toxins.

e. (Mandatory) Volatile Organic Compound (VOC) Content. The product as used shall contain no more than the current regulatory limits of the Air Resources Board for the State of California (CARB) for its product category. For product categories not regulated by CARB, the VOC level shall not exceed 1% by weight. Printing press cleaning products shall meet the South Coast Air Quality Management District requirements for solvent cleaning of ink application equipment found in Rule 1171- Solvent Cleaning Operations. Additionally, the following shall apply:

i. CARB VOC requirements for glass cleaners shall apply to optical lens cleaning products
ii. CARB VOC requirements for motor vehicle wax, polish, sealant, or glaze products shall apply to motor vehicle dressings products
iii. CARB VOC requirements for bug and tar removers shall apply to chewing gum remover products

The VOC content shall be determined either by summing the percent by weight contribution from all components of the product that have a vapor pressure of greater than 0.1 mm mercury at 1 atm.
pressure and 20º C or by the California Air Resources Board Method 310, modified to not allow the exemption for fragrances specified under Method 310.

f. **(Mandatory) Toxicity to Aquatic Life.** The product as used shall not be toxic to aquatic life. A product is considered not toxic to aquatic life if the lowest available and most representative acute LC50 data for fish, daphnia, or algae is greater than or equal to 100 mg/L. For purposes of demonstrating compliance with this requirement, data for each of the product’s components at 0.01% or more in the product as used may be used to calculate a weighted average (as in section 3.3).

The preferred sources of data come from the following appropriate protocols in the International Organization for Standardization (ISO) 7346-2 for fish, OECD Test Guidance (TG) 203 for fish, OECD TG 202 for daphnia, or OECD TG 201 for algae.

g. **(Mandatory) Aquatic Biodegradability.** Each of the individual organic compounds at 0.01% or more in the product as used shall exhibit ready biodegradability in accordance with the OECD definition, except for polymers. Biodegradability shall be measured according to any of the following methods: ISO 7827, 9439, 10707, 10708, 9408, 14593; OECD Methods 301A – F; or OECD 310. Specifically, within a 28-day test, the organic compound shall meet one of the following criteria within 10 days of the time when biodegradation first reaches 10%: i. Removal of DOC > 70%

ii. BOD > 60%

iii. % of BOD of ThOD > 60%

iv. % CO2 evolution of theoretical > 60%

Per OECD guidance the 10-day window requirement does not apply to structurally-related surfactant homologues.

For organic compounds at 0.01% or more in the product as used 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 DOC removal > 90%.

An exception shall be made for organic compounds that do not exhibit ready biodegradability, if the compound has low aquatic toxicity (acute LC50 ≥ 100 mg/L for algae, daphnia, or fish) and exhibits inherent biodegradability above 70% (measured as BOD, DOC, or COD) per ISO test methods 9887 or 9888 or OECD 302A-C.

Testing is not required for any ingredient for which sufficient information exists concerning its biodegradability, either in peer-reviewed literature or databases. In the absence of experimental data, Quantitative Structure-Activity Relationship data from EPA's BioWin (EpiSuite) models may be considered.

h. **(Mandatory) Chronic Aquatic Toxicity.** The product as used shall not contain any components at 0.01% or more that have chronic aquatic toxicity.

i. **(Mandatory) Eutrophication.** The product as used shall not contain phosphorus at more than 0.5% by weight.

j. **(Mandatory) Prohibited Components.** The undiluted product shall not contain the following components:

i. 2-butoxyethanol

ii. Alkylphenol ethoxylates

iii. Halogenated organic solvents

iv. Heavy metals, including: lead, hexavalent chromium, or selenium; either in the elemental form or compounds

v. Nitro-musks

vi. o-Phenylphenol

vii. Ozone depleting compounds
viii. Phthalates
ix. Polycyclic musks
x. Toxic Release Inventory Persistent, Bioaccumulative, and Toxic (TRI PBT) Chemicals
xi. Triclosan

k. (Mandatory) Combustibility. The undiluted product shall not be combustible. The product or 99% by volume of the product components at 0.01% or more in the undiluted product shall have a flashpoint above 150°F, as tested using either the Cleveland Open Cup Tester (ASTM D92-05a), the Abel Closed-Cup method (ISO 13736), or the Pensky-Martens Closed-Cup method (ISO 2719).

Alternatively, the product shall not sustain a flame when tested using ASTM D 4206 Standard Test Method for Sustained Burning of Liquid Mixtures Using the Small Scale Open-Cup Apparatus.

l. (Mandatory) Fragrances. All fragrances used shall be produced and handled following the code of practice of the International Fragrance Association (IFRA).

m. (Mandatory) Concentrates and Dosing. Products shall be concentrated to at least the following:

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Concentration Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand and automatic dish cleaning products</td>
<td>1:200</td>
</tr>
<tr>
<td>Rinse agent products</td>
<td>1:400</td>
</tr>
</tbody>
</table>

n. (Desirable) Animal Testing. To avoid new animal testing, previous test results will be accepted as evidence of meeting a criterion. When existing data is not available, the preferred methods for new testing include methods that replace, reduce, or refine animal use, particularly those recommended by the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM) or the European Centre for the Validation of Alternative Methods (ECVAM), unless indicated otherwise. In addition, other non-animal (in-vitro) test results, modeling data, data from structural analogs, and other lines of evidence may be accepted, provided that the methods are peer-reviewed and applicable. Specific in vitro or modeling methods may be noted in the standard, but additional options may be accepted by the certification program.

Further, a mixture need not be tested if existing information demonstrates that each of the applicable components complies with the criterion.

o. (Desirable) Endocrine Disruptors. The undiluted product shall not contain any components that are on the EPA List of Chemicals for Tier 1 Screening that have been shown to disrupt hormones (e.g., have estrogen- or androgen-mediated effects), tested according to the EPA Series 890 - Endocrine Disruptor Screening Program Test Guidelines.

p. (Desirable) Asthmagens. The undiluted product shall not contain any components that have been identified as asthmagens.

q. (Desirable) Respiratory Sensitization. The undiluted product shall not contain any components that have been identified as respiratory sensitizers.

r. (Desirable) Skin Sensitization. The undiluted product shall not be a skin sensitizer. For purposes of demonstrating compliance with this requirement, data may be evaluated for each of the product’s components at 0.01% or more in the undiluted product. If the components at 0.01% or more in the undiluted product are not shown to be skin sensitizers at the concentrations used, then the product will not be considered to be a skin sensitizer.

s. (Desirable) Skin Absorption. The undiluted product shall not contain components present at 1% or more in the product that are listed on the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV) list carrying a skin notation or substances that are listed on the German Deutsche Forschungsgemeinschaft (DFG) maximum allowable concentrations (MAK) list with a skin absorption H notation. Further, the product shall not contain components at 0.01% or more in the undiluted product that sum to 1% in the formula that are listed on ACGIH or DFG with the same target organ.
t. **(Desirable) Inhalation Toxicity.** The product shall meet either chronic inhalation or chamber testing as specified below:

i. **Chronic Inhalation Toxicity.** The product as used shall not contain components at 0.01% or more with a vapor pressure above 1 mm mercury at 1 atm pressure and 20° C that are classified as producing significant toxic effects in mammals from repeated inhalation exposure at or below 1.0 mg/L as a vapor according to Organization for Economic Co-operation and Development (OECD) Harmonized Integrated Classification System for Human Health and Environmental Hazards of Chemical Substances and Mixtures. For the purposes of this standard, significant toxic effects in mammals from repeated inhalation exposure at or below 1.0 mg/L as a vapor shall be established by a No-Observed Adverse Effect Level (NOAEL), based on a test duration of 90 days at 6 hours per day; values from other exposure regimes shall be estimated (extrapolated) per the principles of Haber’s rule. In lieu of a NOAEL, the Lowest-Observed Adverse Effect Level (LOAEL) can be used with a ten-fold safety factor (i.e., LOAEL/10).

ii. **Chamber Testing.** A product as used shall be tested according to the method used for the GREENGUARD Children and Schools Certification for Cleaners and Cleaning Maintenance Products and Systems (also called the GREENGUARD Standard Method for Measuring and Evaluating Chemical Emissions from Cleaners and Cleaning Maintenance Systems Using Dynamic Environmental Chambers) and meet the inhalation toxicity criteria in the method (noted in the table referencing Green Seal Standard GS-37).

u. **(Desirable) Bioaccumulating Compounds.** The product as used shall not contain any components at 0.01% or more that bioaccumulate or that are known to form degradation products that bioaccumulate. A chemical is considered to bioaccumulate when it has a bioconcentration factor (BCF) ≥ 500 (or log Kow ≥4). The preferred source of data is from OECD TG 305 (for BCF). If the chemical meets the requirement for biodegradability (above), it may be considered to not bioaccumulate.

v. **(Desirable) Color Components.** Each color component shall meet one of the following:
   i. Be certified by the U.S. Food and Drug Administration (FDA) and permitted for ingestion
   ii. Be a natural color component
   iii. Not have any of the following heavy metals intentionally added: arsenic, cadmium, cobalt, hexavalent chromium, lead, manganese, mercury, nickel, and selenium

w. **(Desirable) Optical Brighteners.** The undiluted product shall not contain any components at 0.01% or more that are optical brighteners.

x. **(Desirable) Products Containing Enzymes.** Products that contain enzymes shall meet the following:
   i. **Enzyme Form.** Enzymes in the product shall be in liquid form or an encapsulated solid (or other dust-free solid) with a minimum diameter of 0.15 mm. Smaller diameters may be permitted for solid products if they are demonstrated to result in airborne enzyme concentrations equivalent to or less than encapsulated solids with a 0.15mm diameter.
   ii. **Enzyme Source.** The source from which enzymes were derived shall be identified to a species level and disclosed to the certification program.
   iii. **Enzyme Source Microorganisms.** For enzymes derived from microorganisms, documentation shall be provided that the source microorganism is absent from the finished product. Test methodology and results shall be documented in sufficient detail and provided to the certification program. If the product does not conform to this provision, then all microorganisms shall meet the requirements of the “Products Containing Microorganisms” criterion below.
   iv. **Sensitization and Asthma.** Enzymes are exempted from the requirements for Asthmagens and Respiratory Sensitization herein.
   v. **Spray Packaging.** Enzyme products in spray packaging, or designed for use in spray packaging shall demonstrate airborne enzyme exposure for users below 1 ng/m³ when sampling is conducted
according to the protocol described in the international Association for Soaps, Detergents and Maintenance Products (AISE) document “Exposure measurements of enzymes of risk assessment of spray products.”

vi. Labeling Requirements. Products containing enzymes shall include the following on the product label:

1. A declaration that the “product contains enzymes”, in addition to the listing in the ingredient line.
2. A statement that immune-compromised individuals or those with asthma should avoid exposure to products containing enzymes from both direct use and incidental contact during or shortly after application to these products and instruction, when necessary or appropriate, for follow-up treatment.

vii. Industrial Hygiene. Documentation shall be provided to the certification organization that demonstrates that the manufacturer has implemented an industrial hygiene plan intended to minimize concentrations of and exposure to airborne enzymes (e.g., engineering controls, work practices, and personal protective equipment) and monitor the air concentrations of the enzyme/s and worker illness/sensitization due to the enzyme/s. An example of best practices that may be applicable for this plan is available at AISE.

y. (Desirable) Products Containing Microorganisms. Products that contain microorganisms shall meet the following:

i. Genetically Modified Microorganisms in Microbial Products. The presence of GMM as components in finished products is prohibited.

ii. Microorganism Biosafety. All microorganisms shall be classified as WHO Risk Group 1 or equivalent biosafety designation. For strains that do not appear on any international biosafety designation lists, alternative means may be acceptable; consultation with the certifying organization may be required.

iii. Microorganism Strain Identification. Microorganism strains shall be identified through a taxonomic review (e.g., genetic or phenotypic analysis) that is provided by a full-service culture collection listed with the World Federation of Culture Collections, whether or not the strain is part of the collection.

iv. Absence of Contaminants. Pathogenic microorganisms shall not be present in the microbial strain, finished product, or at the end of the product’s intended shelf life. Testing for the presence of pathogenic microorganisms shall be conducted according to the Joint Food and Agriculture Organization of the United Nations/WHO Expert Committee on Food Additives (JECFA) Combined Compendium of Food Additive Specifications standard microbiological analytical methods or comparable method and a Certificate of Analysis shall be provided to the certification program.

v. Effective Prevention Measures and Treatment. All microorganisms shall be demonstrated to be susceptible to the following prevention and treatment measures:

• Antimicrobial agents, as demonstrated by testing the microbial strain against an acceptable substance (i.e., an EPA general disinfectant, Center for Disease Control low-level disinfectant, or a registered antimicrobial agent by Health Canada) in accordance with the EPA/Office of Pesticide Programs Standard Operating Procedure (SOP) or the AOAC International Use Dilution Method for Testing Disinfectants, SOP Number: MB-05-04
• Each of the five major antibiotic classes (aminoglycoside, macrolide, beta-lactam, tetracycline and fluoroquinolones), as demonstrated by testing the microbial strain in accordance with Beckman Dickinson BBL antimicrobial susceptibility disc method.

vi. Microbial Count. A microorganism used to serve the primary cleaning function in the undiluted product shall have a plate count that is greater than or equal to 1x107 CFU per milliliter for liquid products and 1x109 CFU per gram for solid products. A total plate count shall be conducted in accordance with the methods for microbiological analyses listed in the JECFA Combined Compendium of Food Additive Specifications or comparable method. An exception shall be made for microorganisms used to serve a secondary function in the undiluted product.
vii. Spray Packaging. Products containing microorganisms in spray packaging, or designed for use in spray packaging shall demonstrate airborne enzyme exposure for users below 1 ng/m^3 when sampling is conducted according to the protocol described in the international AISE document “Exposure measurements of enzymes of risk assessment of spray products.” Products containing microorganisms in aerosol packaging shall not be in particle form.

viii. Labeling Requirements. Products containing microorganisms shall include the following on the label:

- A declaration that the product contains microorganisms
- A statement that the product should not be used in patient areas of hospitals and that immune-compromised individuals should avoid exposure to products containing microorganisms from both direct use and incidental contact during or shortly after application to these products, especially when the treated areas are still wet
- Contact with open cuts or sores should be avoided
- Users should wash their hands after using the product
- Instructions that microorganisms may not be effective in the presence of antimicrobial agents such as chlorine bleach
- Instructions that the product shall not be used on food-contact surfaces
- Instructions that products containing microorganisms should not be sprayed directly into the air.

z. (Desirable) Antimicrobial Agents. Except for antimicrobial pesticide products, the use of antimicrobial agents for the purposes other than preservation or stabilization of the product is prohibited. Documentation or test results shall be provided to the certification program demonstrating the dosage necessary to preserve the product.

Section IV: Specifications - laundry

1. Groupings.

a. Group I. Home type washers.

b. Group II. Institutional washers.

2. All laundry detergents and compounds must meet the following requirements for Laundry Group I and Group II. See Attachment C for further clarification on mandatory and desired requirements.

a. (Mandatory) Acute Mammalian Toxicity. The undiluted product shall not be toxic to humans. A product is considered toxic if any of the following criteria apply:

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<tbody>
<tr>
<td>Oral lethal dose (LD_{50})</td>
<td>&lt; 5,000 mg/kg</td>
</tr>
<tr>
<td>Inhalation lethal concentration (LC_{50})</td>
<td>&lt; 20,000 ppmV at 1 hour</td>
</tr>
<tr>
<td>Dermal lethal dose (LD_{50})</td>
<td>&lt; 2,000 mg/kg</td>
</tr>
</tbody>
</table>

For purposes of demonstrating compliance with this requirement, existing acute toxicity data for each of the product’s components at 0.01% or more in the undiluted product may be used. These data are used to calculate a weighted average that assumes that the toxicity of the individual components is additive. The toxicity values are adjusted by the weight of the components in the product and summed using the following formula:

\[
T = \frac{1}{\left( \sum_{i=1}^{n} \frac{w_i}{T_i} \right)^{1/n}}
\]

Where,

- \( T \) = toxicity of the product
- \( w_i \) = the weight fraction of the component
- \( T_i \) = the toxicity value for each component (LD_{50})
- \( n \) = number of components

Inhalation toxicity shall be determined from all components at 0.01% or more in the undiluted product, when the component has a vapor pressure greater than 1 mm Hg at 1 atm pressure and 20°C.
b. (Mandatory) Skin and Eye Corrosion. The undiluted product shall not cause skin corrosion or cause serious eye damage. For purposes of demonstrating compliance with this requirement, data may be evaluated for each of the product’s components at 0.01% or more in the undiluted product. If the components at 0.01% or more in the undiluted product are not shown to cause skin corrosion or serious eye damage at the concentrations used, then the product will not be considered to cause skin corrosion or serious eye damage, unless the product is required to be labeled as such. Further, a product is considered to cause skin corrosion or to cause serious eye damage if it has a pH less than or equal to 2 or greater than or equal to 11.5, unless data prove otherwise.

c. (Mandatory) Carcinogens and Reproductive Toxins. The undiluted product shall not contain any components that are carcinogens or reproductive toxins. The product shall not contain any components known to produce or release carcinogens.

d. (Mandatory) Mutagens and Neurotoxins/Systemic Toxins. The undiluted product shall not contain any components that have been identified as mutagens or neurotoxins/systemic toxins.

e. (Mandatory) Volatile Organic Compound (VOC) Content. The product as used shall contain no more than the current regulatory limits of the Air Resources Board for the State of California (CARB) for VOCs in its product category. For product categories not regulated by CARB, the following limitations on VOC level (by weight) shall not be exceeded:

- Laundry detergents (as part of a multi-component system): 4%
- Laundry detergents (as a complete detergent): 12%
- Bleaching products, not sold as laundry detergents: 8%
- Softening products: 4%
- Sour products: 4%
- Other products: 1%

The VOC content shall be determined either by summing the percent by weight contribution from all components of the product that have a vapor pressure of greater than 0.1 mm mercury at 1 atm pressure and 20º C or by the CARB Method 310, modified to not allow the exemption for fragrances specified under Method 310.

f. (Mandatory) Toxicity to Aquatic Life. The product as used shall not be toxic to aquatic life. A product is considered not toxic to aquatic life if the lowest available and most representative acute LC50 data for fish, daphnia, or algae is greater than or equal to 100 mg/L. For purposes of demonstrating compliance with this requirement, data for each of the product’s components at 0.01% or more in the product as used may be used to calculate a weighted average (as in section 3.3).

The preferred sources of data come from the following appropriate protocols: International Organization for Standardization (ISO) 7346-2 for fish, Organisation for Economic Co-operation and Development (OECD) Test Guidance (TG) 203 for fish, OECD TG 202 for daphnia, and OECD TG 201 for algae.

g. (Mandatory) Aquatic Biodegradability. Each of the individual organic compounds at 0.01% or more in the product as used shall exhibit ready biodegradability in accordance with the OECD definition, except for polymers. Biodegradability shall be measured according to any of the following methods: ISO 7827, 9439, 10707, 10708, 9408, 14593; OECD Methods 301A – F; or OECD 310. Specifically, within a 28-day test, the organic compound 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%
- Biochemical Oxygen Demand (BOD) > 60%
- % of BOD of Theoretical Oxygen Demand (ThOD) > 60%
- % CO2 evolution of theoretical > 60%
Per OECD guidance the 10-day window requirement does not apply to structurally-related surfactant homologues. For organic compounds at 0.01% or more in the product as used 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 DOC removal > 90%.

An exception shall be made for organic compounds that do not exhibit ready biodegradability, if the compound has low aquatic toxicity (acute LC50 ≥ 100 mg/L for algae, daphnia, or fish) and exhibits inherent ultimate biodegradability with biodegradation rates above 70% (measured as BOD, DOC, or COD), per ISO test methods 9887 or 9888 or OECD 302A-C.

Testing is not required for any ingredient for which sufficient information exists concerning its biodegradability, either in peer-reviewed literature or databases. In the absence of experimental data, Quantitative Structure-Activity Relationship data from EPA's BioWin (EpiSuite) models may be considered.

h. (Mandatory) Chronic Aquatic Toxicity. The product as used shall not contain any components at 0.01% or more that have chronic aquatic toxicity.

i. (Mandatory) Eutrophication. The product as used shall not contain phosphorus at more than 0.5% by weight.

j. (Mandatory) Prohibited Components. The undiluted product shall not contain the following components:
   - 2-butoxyethanol
   - Alkylphenol ethoxylates
   - Halogenated organic solvents
   - Heavy metals, including: lead, hexavalent chromium, or selenium; either in the elemental form or compounds
   - Nitro-musks
   - o-Phenylphenol
   - Ozone-depleting compounds
   - Phthalates
   - Polycyclic musks
   - Toxic Release Inventory Persistent, Bioaccumulative, and Toxic Chemicals
   - Triclosan

k. (Mandatory) Combustibility. The undiluted product shall not be combustible. The product or 99% by volume of the product components at 0.01% or more in the undiluted product shall have a flashpoint above 150°F (65.5°C), as tested using either the Cleveland Open Cup Tester (ASTM D92-05a), the Abel Closed-Cup method (ISO 13736), or the Pensky-Martens Closed-Cup method (ISO 2719). Alternatively, the product shall not sustain a flame when tested using ASTM D 4206 Standard Test Method for Sustained Burning of Liquid Mixtures Using the Small Scale Open-Cup Apparatus.

l. (Mandatory) Fragrances. All fragrances used shall be produced and handled following the code of practice of the International Fragrance Association (IFRA).

m. (Mandatory) Concentration and Compaction. The product may be sold ready-to-use, except for the following that shall be concentrated or compacted in order for the normal/medium load dose per kg of dry, soiled, laundry of the undiluted product to be at the following levels:
n. (Desirable) Animal Testing. To avoid new animal testing, previous test results will be accepted as evidence of meeting a criterion. When existing data are not available, the preferred methods for new testing include methods that replace, reduce, or refine animal use, particularly those recommended by the Interagency Coordinating Committee on the Validation of Alternative Methods or the European Centre for the Validation of Alternative Methods, unless indicated otherwise. In addition, other non-animal (in-vitro) test results, modeling data, data from structural analogs, and other lines of evidence may be accepted, provided that the methods are peer-reviewed and applicable. Specific in vitro or modeling methods may be noted in the standard, but additional options may be accepted by the certification program.

Further, a mixture need not be tested if existing information demonstrates that each of the applicable components complies with the criterion.

o. (Desirable) Endocrine Disruptors. The undiluted product shall not contain any components that are on the U.S. Environmental Protection Agency (EPA) List of Chemicals for Tier 1 Screening that have been shown to disrupt hormones (e.g., have estrogen- or androgen-mediated effects), tested according to the EPA Series 890 - Endocrine Disruptor Screening Program Test Guidelines.

p. (Desirable) Asthmagens. The undiluted product shall not contain any components at 0.01% or more that have been identified as asthmagens.

q. (Desirable) Respiratory Sensitization. The undiluted product shall not contain any components that have been identified as respiratory sensitizers.

r. (Desirable) Skin Sensitization. The undiluted product shall not be a skin sensitizer. For purposes of demonstrating compliance with this requirement, data may be evaluated for each of the product’s components at 0.01% or more in the undiluted product. If the components at 0.01% or more in the undiluted product are not shown to be skin sensitizers at the concentrations used, then the product will not be considered to be a skin sensitizer.

s. (Desirable) Skin Absorption. The undiluted product shall not contain components present at 1% or more in the product that are listed on the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value list carrying a skin notation or substances that are listed on the German Deutsche Forschungsgemeinschaft (DFG) maximum allowable concentrations list with a skin absorption H notation. Further, the product shall not contain components at 0.01% or more in the undiluted product that sum to 1% in the formula that are listed on ACGIH or DFG with the same target organ.

t. (Desirable) Bioaccumulating Compounds. The product as used shall not contain any components at 0.01% or more that bioaccumulate or that are known to form degradation products that bioaccumulate. A chemical is considered to bioaccumulate when it has a bioconcentration factor (BCF) ≥ 500 (or log Kow ≥4). The preferred source of data is from OECD TG 305 (for BCF). If the chemical meets the requirement for biodegradability, 3.14 herein, it may be considered to not bioaccumulate.

u. (Desirable) Color Components. Each color component shall meet one of the following:

- Be certified by the U.S. Food and Drug Administration (FDA) and permitted for ingestion
- Be a natural color component
- Not have any of the following heavy metals intentionally added: arsenic, cadmium, cobalt, hexavalent chromium, lead, manganese, mercury, nickel, and selenium
v. (Desirable) Optical Brighteners. The product as used shall not contain any components at 0.01% or more that are optical brighteners.

w. (Desirable) Products Containing Enzymes. Products that contain enzymes shall meet the following: i. Enzyme Form. Enzymes in the product shall be in liquid form or an encapsulated solid (or other dust-free solid) with a minimum diameter of 0.15 mm. Smaller diameters may be permitted for solid products if they are demonstrated to result in airborne enzyme concentrations equivalent to or less than encapsulated solids with a 0.15mm diameter.

ii. Enzyme Source. The source from which enzymes were derived shall be identified to a species level and disclosed to the certification program.

iii. Enzyme Source Microorganisms. For enzymes derived from microorganisms, documentation shall be provided that the source microorganism is absent from the finished product. Test methodology and results shall be documented in sufficient detail and provided to the certification program. If the product does not conform to this provision, then all microorganisms shall meet the requirements of the “Products Containing Microorganisms” criterion below.

iv. Sensitization and Asthma. Enzymes are exempted from the requirements for Asthmagens and Respiratory Sensitization herein.

v. Spray Packaging. Enzyme products in spray packaging, or designed for use in spray packaging shall demonstrate airborne enzyme exposure for users below 1 ng/m3 when sampling is conducted according to the protocol described in the international Association for Soaps, Detergents and Maintenance Products (AISE) document “Exposure measurements of enzymes of risk assessment of spray products.”

vi. Labeling Requirements. Products containing enzymes shall include the following on the product label:

- A declaration that the “product contains enzymes”, in addition to the listing in the ingredient line
- A statement that immune-compromised individuals or those with asthma should avoid exposure to products containing enzymes from both direct use and incidental contact during or shortly after application to these products and instruction, when necessary or appropriate, for follow-up treatment

vii. Industrial Hygiene. Documentation shall be provided to the certification organization that demonstrates that the manufacturer has implemented an industrial hygiene plan intended to minimize concentrations of and exposure to airborne enzymes (e.g., engineering controls, work practices, and personal protective equipment) and monitor the air concentrations of the enzyme/s and worker illness/sensitization due to the enzyme/s. An example of best practices that may be applicable for this plan is available at AISE.

x. (Desirable) Products Containing Microorganisms. Products that contain microorganisms shall meet the following:

i. Genetically Modified Microorganisms in Microbial Products. The presence of GMM as components in finished products is prohibited.

ii. Microorganism Biosafety. All microorganisms shall be classified as WHO Risk Group 1 or equivalent biosafety designation. For strains that do not appear on any international biosafety designation lists, alternative means may be acceptable; consultation with the certifying organization may be required.

iii. Microorganism Strain Identification. Microorganism strains shall be identified through a taxonomic review (e.g., genetic or phenotypic analysis) that is provided by a full-service culture collection listed with the World Federation of Culture Collections, whether or not the strain is part of the collection.
iv. Absence of Contaminants. Pathogenic microorganisms shall not be present in the microbial strain, finished product, or at the end of the product’s intended shelf life. Testing for the presence of pathogenic microorganisms shall be conducted according to the Joint Food and Agriculture Organization of the United Nations /WHO Expert Committee on Food Additives (JECFA) Combined Compendium of Food Additive Specifications standard microbiological analytical methods or comparable method and a Certificate of Analysis shall be provided to the certification program.

v. Effective Prevention Measures and Treatment. All microorganisms shall be demonstrated to be susceptible to the following prevention and treatment measures:

- Antimicrobial agents, as demonstrated by testing the microbial strain against an acceptable substance (i.e., an EPA general disinfectant, Center for Disease Control low-level disinfectant, or a registered antimicrobial agent by Health Canada) in accordance with the EPA/Office of Pesticide Programs Standard Operating Procedure (SOP) or the AOAC International Use Dilution Method for Testing Disinfectants, SOP Number: MB-05-04
- Each of the five major antibiotic classes (aminoglycoside, macrolide, beta-lactam, tetracycline and fluoroquinolones), as demonstrated by testing the microbial strain in accordance with Beckman Dickinson BBL antimicrobial susceptibility disc method.

vi. Microbial Count. A microorganism used to serve the primary cleaning function in the undiluted product shall have a plate count that is greater than or equal to 1x10^7 CFU per milliliter for liquid products and 1x10^9 CFU per gram for solid products. A total plate count shall be conducted in accordance with the methods for microbiological analyses listed in the JECFA Combined Compendium of Food Additive Specifications or comparable method. An exception shall be made for microorganisms used to serve a secondary function in the undiluted product.

vii. Spray Packaging. Products containing microorganisms in spray packaging, or designed for use in spray packaging shall demonstrate airborne enzyme exposure for users below 1 ng/m3 when sampling is conducted according to the protocol described in the international AISE document “Exposure measurements of enzymes of risk assessment of spray products.” Products containing microorganisms in aerosol packaging shall not be in particle form.

viii. Labeling Requirements. Products containing microorganisms shall include the following on the label:

- A declaration that the product contains microorganisms
- A statement that the product should not be used in patient areas of hospitals and that immune-compromised individuals should avoid exposure to products containing microorganisms from both direct use and incidental contact during or shortly after application to these products, especially when the treated areas are still wet
- Contact with open cuts or sores should be avoided
- Users should wash their hands after using the product
- Instructions that microorganisms may not be effective in the presence of antimicrobial agents such as chlorine bleach
- Instructions that the product shall not be used on food-contact surfaces
- Instructions that products containing microorganisms should not be sprayed directly into the air.

y. (Desirable) Antimicrobial Agents. Except for antimicrobial pesticide products, the use of antimicrobial agents for the purposes other than preservation or stabilization of the product is prohibited. Documentation or test results shall be provided to the certification program demonstrating the dosage necessary to preserve the product.
z. (Desirable) Disposable Wipes. Products that are sold in a ready-to-use format may contain disposable wipes/towelettes/sheets or other disposable, single-use materials if they are made from 100% renewable materials and meet the state-of-the-art amount of recovered material content. An exception shall be made for reusable wipes/towelettes/sheets that are intended for multiple uses (e.g., three or more uses).

Section V: Sustainable innovation in cleaning dishes and laundry (optional)

1. The State is interested in inviting innovative approaches to clean dishes or laundry with a lesser impact on the environment. Responders are invited to propose products that clean laundry or dishes but do not fit within the above categories. When proposing a sustainable innovation, please include the following in your response on Attachment D:

- Product name
- Description (include a link to a website or attach product info sheet)
- Summary of what makes the product more sustainable and/or innovative
- Any relevant certifications or test results that support environmental claims