Women's Footwear
Key Performance Indicators

Version 03.02

THESIS
BY THE SUSTAINABILITY CONSORTIUM

About the Women's Footwear Key Performance Indicators

This THESIS Performance Assessment covers footwear for adult women. This includes, but is not limited to, shoes, boots, sneakers, tennis shoes, sandals, insoles, and inserts. It does not include socks, insoles, shoelaces, or shoe cleaning.
The information you collect for these KPIs should cover your global production and not be specific to any region or buyer (e.g., retailer).
Remember to download the assessment documents to help you in completing the KPIs. Make sure to review the detailed guidance and resources for each KPI. Your work is saved automatically but not shared until you are ready.

Introduction

The Sustainability Insight System, THESIS, from The Sustainability Consortium (TSC) is a comprehensive and holistic solution for understanding environmental and social performance in consumer goods supply chains. These key performance indicators (KPIs) can be used to assess action, transparency, and continuous improvement on the material sustainability issues for brands, manufacturers, and producers.

TSC created this KPI set using its science-based, multi-stakeholder, and full life-cycle development process. TSC members and partners, including manufacturers, retailers, suppliers, service providers, NGOs, civil society organizations, governmental agencies, and academics, contributed valuable perspectives and expertise.

TSC is a global organization dedicated to improving the sustainability of consumer products that also offers a portfolio of services to help drive effective implementation. For more information please visit www.sustainabilityconsortium.org

Contents

Key Performance Indicators

QUESTION	RESPONSE OPTION
1. Leather Impacts - Supply Chain What percentage of your leather supply, by mass, was traced to the slaughterhouse of origin, had certified or verifiable regularly conducted audits for animal welfare and tannery environmental impacts and social impacts?	**A.** Not applicable. We do not use leather in our products. **B.** We are unable to determine at this time. **C.** We are able to report the following for our leather supply: **C1.**_____% of our leather supply, by mass, that was traced to the slaughterhouse of origin. **C2.**_____% of our leather supply, by mass, that was covered by a current comprehensive animal welfare certification, or by verifiable, regularly conducted animal welfare audits. **C3.**_____% of our leather supply, by mass, was covered by verifiable, regularly conducted audits for tannery level environmental impacts. **C4.**_____% of our leather supply, by mass, was produced in tanneries that were audited in the last three years on worker health and safety issues
2. Synthetic material sourcing What percentage of your synthetic material supply was traced to the production facility of origin, covered by a verifiable comprehensive plan for managing facility environmental impacts, and covered by a verifiable comprehensive plan for facility social impacts?	**A.** Not applicable. Our products do not contain synthetic materials. **B.** We are unable to determine at this time. **C.** We are able to report the following for our synthetic material supply: **C1.**_____% of our synthetic material supply, by mass, was traced to the production facility of origin. **C2.**_____% of our synthetic material supply, by mass, was covered by a verifiable comprehensive plan for managing facility environmental impacts. **C3.**_____% of our synthetic material supply, by mass, was covered by a verifiable comprehensive plan for facility social impacts. **C4.**_____% of our synthetic material supply for which we are able to report in response options C1-3 is polyester.
3. Air quality - Supply chain What percentage of materials used in your final product, by mass purchased, was produced by suppliers that reported their total annual air emissions?	**A.** We are unable to determine at this time. **B.** The following percentage of materials, by mass purchased, was produced by suppliers that reported total air emissions: **B1.**_____%.
4. Greenhouse gas emissions - Supply chain What percentage of materials used in your final product, by mass purchased, was produced by suppliers that reported their annual Scope 1 and 2 greenhouse gas emissions?	**A.** We are unable to determine at this time. **B.** The following percentage of materials, by mass purchased, was produced by suppliers that reported Scope 1 and 2 greenhouse gas emissions: **B1.**_____%.
5. Water use - Supply chain What percentage of materials used in your final product, by mass, was produced by suppliers that reported their total annual water use?	**A.** We are unable to determine at this time. **B.** The following percentage of materials, by mass, was produced by suppliers that reported annual water use: **B1.**_____%.

6. Wastewater generation - Supply Chain What percentage of textile fabric used in your final product, by mass purchased, was provided by suppliers' whose processing facilities have undergone supplier audits and meets or exceeds standards for wastewater quality for the five following metrics: biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), temperature, and pH?	**A.** We are unable to determine at this time. **B.** We are able to report the following for the textile fabric used in our products: **B1.**_____% of our textile fabric was produced in facilities that met or exceeded the standard for COD. **B2.**_____% of our textile fabric was produced in facilities that met or exceeded the standard for BOD. **B3.**_____% of our textile fabric was produced in facilities that met or exceeded the standard for TSS. **B4.**_____% of our textile fabric was produced in facilities that met the standard for pH. **B5.**_____% of our textile fabric was produced in facilities that met the standard for temperature.
7. Worker Health and Safety - Supply Chain How did your organization manage worker health and safety risks in the operations that produced the material supply used in your final product?	**A.** We are unable to determine at this time. **B.** We are able to report the following for our supply: **B1.**_____% of the textile fabric supply used in our final product, by mass, was produced in operations that have performed a risk assessment to identify high-risk areas for health and safety. **B2.**_____% of the textile fabric supply used in our final product, by mass, was produced in operations that train workers on health and safety procedures. **B3.**_____% of the textile fabric supply used in our final product, by mass, was produced in operations that implement a verifiable worker health and safety plan. **B4.**_____% of the textile fabric supply used in our final product, by mass, was produced in operations that have a worker health and safety performance monitoring system in place. **B5.**_____% of the textile fabric supply used in our final product, by mass, was produced in operations that were audited in the last three years on worker health and safety issues.
8. Air quality - Footwear Manufacturing What percentage of this product, by mass, comes from company-owned and contract manufacturing facilities performing final cut, sew, and dyeing operations that tracked and reported their annual air emissions?	**A.** We are unable to determine at this time. **B.** The following percentage of this product, by mass, comes from facilities that tracked and reported their annual air emissions: **B1.**_____%.
9. Wastewater Generation - Footwear Manufacturing What percentage of textile fabric used in your final product, by mass produced or purchased, was from manufacturing facilities have undergone supplier audits and meets or exceeds standards for wastewater quality for the five following metrics: biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), temperature, and pH?	**A.** We are unable to determine at this time. **B.** We are able to report the following for the textile fabric used in our products: **B1.**_____% of our textile fabric was produced in facilities that met or exceeded the standard for COD. **B2.**_____% of our textile fabric was produced in facilities that met or exceeded the standard for BOD. **B3.**_____% of our textile fabric was produced in facilities that met or exceeded the standard for TSS. **B4.**_____% of our textile fabric was produced in facilities that met the standard for pH. **B5.**_____% of our textile fabric was produced in facilities that met the standard for temperature.
10. Worker health and safety - Manufacturing What was the injury and illness rate at company-owned or contract manufacturing facilities that produced your final product?	**A.** We are unable to determine at this time. **B.** Our injury and illness rate over was: **B1.**_____. **B2.**_____% of our product, by mass produced, is represented by the number reported above.

11. Labor Rights - Manufacturing How did your organization manage labor rights risks in the manufacturing operations that produced your final product?	**A.** We are unable to determine at this time. **B.** We are able to report the following: **B1.**_____% of our final product, by mass, was produced in operations that were covered by an internal policy that has quantitative time-bound goals related to child labor, discrimination, forced labor, and freedom of association and collective bargaining. **B2.**_____% of our final product, by mass, was produced in operations that were reviewed by a risk assessment that identifies high-risk areas for labor rights abuses. **B3.**_____% of our staff responsible for procurement activities have been trained on labor rights issues in the supply chain. **B4.**_____% of our staff responsible for procurement activities have been evaluated via performance metrics on labor rights improvements in the supply chain. **B5.**_____% of our final product, by mass, was produced in operations that were low-risk, that were high-risk but corrective actions were taken, or that were audited on child labor, discrimination, forced labor, and freedom of association and collective bargaining in the last three years.
12. Microfiber release – Manufacturing How does your company address microfiber release during manufacturing?	**A.** Not applicable, we only use plant-based fibers that biodegrade in water or do not use materials that produce any microfibers. **B.** We are unable to determine at this time. **C.** We are able to report the following: **C1.**_____% of our synthetic textile supply, by mass, comes from manufacturers who monitor microfiber release. **C2.**_____% of our synthetic textile supply, by mass, comes from manufacturers who utilize alternatives to wet processing. **C3.**_____% of our synthetic textile supply, by mass, comes from manufacturers who have implemented practices and technologies to minimize microfiber release.
13. Packaging raw material sourcing What percentage of the sales packaging used for your final products, by mass, was post-consumer recycled material and sustainably-sourced renewable virgin material?	**A.** Not applicable. We do not use sales packaging for our product. **B.** We are unable to determine at this time. **C.** The sales packaging used for our final products was: **C1.**_____% post-consumer recycled material. **C2.**_____% sustainably-sourced renewable virgin material.
14. Sustainable packaging design and production What percentage of the sales packaging for your final product was recyclable, was formally assessed for material and process efficiency and weight or volume optimization, had demonstrated quantified environmental impact reduction, and was labeled for recycling according to an established standard?	**A.** Not applicable. We do not use sales packaging for our product. **B.** We are unable to determine at this time. **C.** We are able to report the following for the sales packaging used for our final products: **C1.**_____% of our packaging, by mass, was recyclable. **C2.**_____ % of our packaging, by mass, has demonstrated progress on goals for material and process efficiency during packaging manufacturing. **C3.**_____ % of our packaging, by mass, has demonstrated progress on goals for weight or volume optimization during packaging design. **C4.**_____ % of our packaging, by mass, has a demonstrated quantified environmental impact reduction. **C5.**_____% of our packaging, by units sold in the US and Canada, was labeled with How2Recycle. **C6.**_____% of our packaging, by units sold in regions outside the US and Canada, was labeled with an established third-party recycling label.

15. Product Design

What percentage of your product, by unit volume, was designed to reduce manufacturing, use, and end-of-life impacts?

A. We are unable to determine at this time, or we do not address these impacts.

B. We are able to report the following about our products:

B1._____% of our products, by unit volume, underwent a lifecycle assessment.

B2._____% of our products, by unit volume, were designed to maximize material efficiency.

B3._____% of our products, by unit volume, were designed to reduce laundering impacts.

B4._____% of our products, by unit volume, were assessed for durability as part of the design process.

B5._____% of our products, by unit volume, were designed for resource reutilization.

Key Performance Indicators with Guidance

1. LEATHER IMPACTS - SUPPLY CHAIN

Question

What percentage of your leather supply, by mass, was traced to the slaughterhouse of origin, had certified or verifiable regularly conducted audits for animal welfare and tannery environmental impacts and social impacts?

Response Options

- **A.** Not applicable. We do not use leather in our products.
- **B.** We are unable to determine at this time.
- **C.** We are able to report the following for our leather supply:
  - **C1.**_____% of our leather supply, by mass, that was traced to the slaughterhouse of origin.
  - **C2.**_____% of our leather supply, by mass, that was covered by a current comprehensive animal welfare certification, or by verifiable, regularly conducted animal welfare audits.
  - **C3.**_____% of our leather supply, by mass, was covered by verifiable, regularly conducted audits for tannery level environmental impacts.
  - **C4.**_____% of our leather supply, by mass, was produced in tanneries that were audited in the last three years on worker health and safety issues

Guidance

Calculation & Scope

Calculate C1 as the mass of your leather supply that was traced to the slaughterhouse operation of origin, divided by the total mass of your leather supply, then multiply by 100.

Calculate C2 as the mass of leather materials that came from suppliers that either maintain a current comprehensive animal welfare certification or verifiable, regularly conducted animal welfare audits, divided by the total mass of our leather material supply, then multiply by 100.

Verifiable, regularly conducted audits should be performed by a second party or third party. Government regulations or parties in the supply chain can initiate these audits. Regulations, audits, and certifications that align with the animal welfare standards as described in Section 7 of the World Organisation for Animal Health (OIE) Terrestrial/Aquatic Animal Health Code and are well-enforced by the implementation of auditing systems can be included in your calculation.

Farm stage:

Minimization of pain, risk of injury, and transmission of diseases or parasites to animals; a physical environment in which the air or water quality, temperature, and humidity supports good animal health; a structural and social environment that allows animals to rest comfortably, provides opportunities for physical and cognitive activity, and allows for the opportunity to perform all beneficial natural, individual, and social behaviors.

Animals should have access to sufficient water and appropriate feed, so as to be free from hunger and thirst. The handling of animals should foster a positive relationship between humans and animals and should not cause injury, panic, lasting fear, or avoidable stress.

Genetic selection should take into account the health and welfare of animals.

Transportation stage:

Animals should not be transported if they are not fit to travel. For those animals fit to travel, the number of journeys and the length of time should be minimized. Loading and unloading procedures should minimize animal stress, prevent injury, and use facilities that promote calm and safe animal movement. Protection from extreme temperatures and other extreme weather conditions is provided. Adequate feed and water is available when required.

Slaughter stage:

Animals should be treated humanely before and during all slaughter procedures, including pre-slaughter stunning for non-ritual slaughter. The pre-slaughter stunning must render the animal insensible to pain until death occurs. The minimization of fear, stress, and pain is included in humane treatment.

TSC provides a list of animal welfare certifications, standards, and programs to assist users in choosing a program that aligns with their needs. See Background Information for more details.

Calculate C3 as the mass of your leather supply that came from tannery operations that either maintain a current comprehensive environmental impact certification or verifiable, regularly conducted environmental impact audit, divided by the total mass of your leather supply, then multiply by 100.

The certification or audits should address all material environmental impacts including, but not limited to, chemical use, energy consumption, water usage, air and noise emissions, and waste and effluent management. Material audited by The Leather Working Group may be included in the calculation of C3.

Calculate C4 as the mass of your leather supply that came from tannery operations that regularly and verifiably conducted audits for worker health and safety, divided by the total mass of your leather supply, then multiply by 100.

The audits should address all worker health and safety concerns, including, but not limited to, equipment training, chemical exposure, noise exposure, dust exposure, and accident record keeping.

To be included in C2, C3 and C4, verifiable, regularly conducted audits should be performed by a second party or third party. Government regulations or parties in the supply chain can initiate these audits.

Perform this calculation using data from a 12-month period that ended within 12 months of the date you respond to this question.

Hotspots Addressed

2. *Social impacts - Material manufacturing*

2. SYNTHETIC MATERIAL SOURCING

Question

What percentage of your synthetic material supply was traced to the production facility of origin, covered by a verifiable comprehensive plan for managing facility environmental impacts, and covered by a verifiable comprehensive plan for facility social impacts?

Response Options

- **A.** Not applicable. Our products do not contain synthetic materials.
- **B.** We are unable to determine at this time.
- **C.** We are able to report the following for our synthetic material supply:
  - **C1.**_____% of our synthetic material supply, by mass, was traced to the production facility of origin.
  - **C2.**_____% of our synthetic material supply, by mass, was covered by a verifiable comprehensive plan for managing facility environmental impacts.
  - **C3.**_____% of our synthetic material supply, by mass, was covered by a verifiable comprehensive plan for facility social impacts.
  - **C4.**_____% of our synthetic material supply for which we are able to report in response options C1-3 is polyester.

Guidance

Calculation & Scope

This KPI covers synthetic (e.g., polyester, nylon) and semisynthetic (e.g., rayon, viscose, lyocell) materials.

Calculate C1 as the mass of your synthetic material supply that was traced to the production facility of origin, divided by the total mass of your synthetic material supply, then multiply by 100. The production facility is where the chemical processes (e.g. synthesis, regeneration) to produce the fiber or material are carried out.

Calculate C2 as the mass of your synthetic material supply that was covered by a verifiable comprehensive plan for managing facility environmental impacts, divided by the total mass of your synthetic material supply, then multiply by 100.

Calculate C3 as the mass of your synthetic material supply that was covered by a verifiable comprehensive plan for facility social impacts, divided by the total mass of your synthetic material supply, then multiply by 100.

Calculate C4 as the mass of your polyester material supply that was assessed and met criteria for C1, C2, and C3, divided by the total mass of your polyester material supply, then multiply by 100.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

Hotspots Addressed

3. *Production impacts - Synthetic materials*

3. AIR QUALITY - SUPPLY CHAIN

Question

What percentage of materials used in your final product, by mass purchased, was produced by suppliers that reported their total annual air emissions?

Response Options

- **A.** We are unable to determine at this time.
- **B.** The following percentage of materials, by mass purchased, was produced by suppliers that reported total air emissions:
  B1._____%.

Guidance

Calculation & Scope

This question addresses all company-owned or contract manufacturing facilities that performed final cut, sew, and dyeing operations.

Calculate B1 as the mass of products that were produced in cut, sew, and dyeing facilities that tracked and reported annual air emissions, divided by the total mass of products produced by all cut, sew, and dyeing facilities, then multiply by 100. If the cut, sew, and dyeing steps are performed in different facilities, then each must report their air emissions to be counted towards the final percentage.

Perform this calculation using data from a 12-month period that ended within 12 months of the completion date of this question.

Include all company-owned or contract manufacturing facilities that performed final cut, sew, and dyeing operations. In order for a facility to count towards the final percentage, it must track all air emissions required by locally applicable regulations as well as those where there is scientific evidence of serious effects to human health or the environment. These emissions are considered air pollution and may include, but are not limited to, particulate matter, ozone, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead. Testing of emissions must occur according to a rigorous and internationally accepted testing methodology.

Facilities should track all air emissions required by locally applicable regulations as well as those where there is scientific evidence of serious effects to human health or the environment. Testing of emissions must occur according to a rigorous and internationally accepted testing methodology.

Certifications, Standards & Tools

SAC Higg Index: The Sustainable Apparel Coalition has developed indicator-based assessment tools called the Higg Index, which evaluates the sustainable practices associated with production of apparel and footwear. https://apparelcoalition.org/the-higg-index/

Safer Choice (EPA): In order to identify scientific evidence of probable serious effects to human health and the environment, organizations should reference relevant criteria in the U.S. EPA Safer Choice Program. https://www.epa.gov/saferchoice

Definitions

Particulate matter: Small particles or liquid droplets, typically considered 10 micrometers or less in diameter, which can have negative health consequences when inhaled by humans.

Hotspots Addressed

1. *Environmental impacts - Material manufacturing*

4. GREENHOUSE GAS EMISSIONS - SUPPLY CHAIN

Question	Response Options
What percentage of materials used in your final product, by mass purchased, was produced by suppliers that reported their annual Scope 1 and 2 greenhouse gas emissions?	**A.** We are unable to determine at this time. **B.** The following percentage of materials, by mass purchased, was produced by suppliers that reported Scope 1 and 2 greenhouse gas emissions: **B1.**_____%.

Guidance

Calculation & Scope

Scope 1 and 2 emissions are defined by the Greenhouse Gas Protocol Corporate Standard (2015).

Calculate B1 as the mass purchased from material suppliers that reported emissions, divided by total mass purchased from all material suppliers, then multiply by 100.

Reporting can occur through public disclosure or private disclosure from the supplier to your organization directly or through another party.

Perform this calculation using data from a 12-month period that ended within 12 months of the date you respond to this question.

If suppliers completed the CDP Climate Change 2020 Questionnaire, refer to C6.1 and C6.3 to determine if they report emissions.

Suppliers who have entered and communicated information required by the Higg Index Facility Environmental Module 3.0 (Higg FEM) "Energy Use & GHG - Level 1" for their facilities may be used to answer this KPI.

Certifications, Standards & Tools

Energy Efficiency Assessment and Greenhouse Gas Emission Reduction Tool for the Textile Industry (EAGER Textile): This tool was developed by the Lawrence Berkeley National Laboratory to aid in evaluating the impacts of introducing energy efficiency measures into a textile facility. According to the China Energy Group, "the EAGER tool will calculate the typical energy savings (electricity, fuel, final, and primary energy), CO2 emissions reduction, cost, and simple payback period...[the tool] is designed to work for textile facilities that have one or more of the following processes: spinning, weaving/knitting, dyeing, printing, finishing, and man-made fiber production." https://china.lbl.gov/eager-textile

Greenhouse Gas Protocol: Calculation Tools: This site provides a list of sector toolsets developed by GHG Protocol, third-party databases, and other tools based on the GHG Protocol standards that can be used to calculate greenhouse gas inventories for use in emissions calculations. https://ghgprotocol.org/calculation-tools

SAC Higg Index: The Sustainable Apparel Coalition has developed indicator-based assessment tools called the Higg Index, which evaluates the sustainable practices associated with production of apparel and footwear. https://apparelcoalition.org/the-higg-index/

Background Information	**CDP Climate Change Questionnaire:** The CDP Climate Change Questionnaire provides questions that assess a company's greenhouse gas emissions, goals, and management. The report provided by CDP provides the overview of the results from companies responding to the request. https://www.cdp.net/en/guidance/guidance-for-companies **Greenhouse Gas (GHG) Protocol Corporate Standard:** The Greenhouse Gas (GHG) Protocol provides guidance and is a useful resource published by the World Resources Institute with the World Business Council for Sustainable Development as a guide for monitoring and accounting for greenhouse gas emissions. https://ghgprotocol.org/corporate-standard **GRI G4 Sustainability Reporting Guidelines:** The GRI G4 Sustainability Reporting Guidelines provide a standard set of metrics for companies to report on material environmental, social, and economic impacts, actions, and outcomes. https://www.globalreporting.org/standards/
Definitions	**Greenhouse gas:** Gases that contribute to the greenhouse effect by absorbing infrared radiation in the atmosphere, e.g., carbon dioxide, methane, nitrous oxide, ozone, and chlorofluorocarbons.
Hotspots Addressed	***6.*** *Energy consumption - Footwear manufacturing*

5. WATER USE - SUPPLY CHAIN

Question	Response Options
What percentage of materials used in your final product, by mass, was produced by suppliers that reported their total annual water use?	**A.** We are unable to determine at this time. **B.** The following percentage of materials, by mass, was produced by suppliers that reported annual water use: **B1.**_____%.

Guidance

Calculation & Scope

Calculate B1 as the mass purchased from material suppliers that reported their annual water use, divided by the total mass purchased from all material suppliers, then multiply by 100.

Perform this calculation using purchasing data from a 12-month period that ended within 12 months of the date you respond to this question.

Water use is defined as the total amount of withdrawals from municipal and private water providers, surface water, groundwater, or wells. Supplier water use reporting can occur through public disclosure or private disclosure from the supplier to your organization directly or through another party.

If suppliers completed the CDP Water Security 2020 Questionnaire, refer to W1.2b, W1.2h, and W5.1a to determine if they report water use.

Suppliers who have entered and communicated the information required by the Higg Facility Environmental Module 3.0 (Higg FEM) "Water Use - Level 1" may be included in percentage.

Certifications, Standards & Tools

THESIS Help Center Video: Water use - Supply chain KPI: Short video tutorial on the Water use - Supply chain KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/528558948

Background Information

CDP Water Information Request: The CDP Water Information Request provides questions that assess a company's water use, goals, and management. The report provided by CDP provides the overview of the results from companies responding to the request. CDP can be contacted to respond to the Water Information Request.
https://www.cdp.net/en/guidance/guidance-for-companies

GRI G4 Sustainability Reporting Guidelines: The GRI G4 Sustainability Reporting Guidelines provide a standard set of metrics for companies to report on material environmental, social, and economic impacts, actions, and outcomes.
https://www.globalreporting.org/standards/

Definitions

Water use: Water use is defined as total withdrawals from municipal and private water providers, surface water, groundwater, or wells.

Hotspots Addressed

1. *Environmental impacts - Material manufacturing*

6. WASTEWATER GENERATION - SUPPLY CHAIN

Question

What percentage of textile fabric used in your final product, by mass purchased, was provided by suppliers' whose processing facilities have undergone supplier audits and meets or exceeds standards for wastewater quality for the five following metrics: biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), temperature, and pH?

Response Options

A. We are unable to determine at this time.

B. We are able to report the following for the textile fabric used in our products:

B1._____% of our textile fabric was produced in facilities that met or exceeded the standard for COD.

B2._____% of our textile fabric was produced in facilities that met or exceeded the standard for BOD.

B3._____% of our textile fabric was produced in facilities that met or exceeded the standard for TSS.

B4._____% of our textile fabric was produced in facilities that met the standard for pH.

B5._____% of our textile fabric was produced in facilities that met the standard for temperature.

Guidance

Calculation & Scope

Calculate B1 as the mass of textile fabric from wet processing facilities that have undergone supplier audits and met or exceeded the standard for COD, divided by the total textile fabric from all wet processing facilities, then multiply by 100.

Calculate B2 as the mass of textile fabric from wet processing facilities that have undergone supplier audits and met or exceeded the standard for BOD, divided by the total textile fabric from all wet processing facilities, then multiply by 100.

Calculate B3 as the mass of textile fabric from wet processing facilities that have undergone supplier audits and met or exceeded the standard for TSS, divided by the total textile fabric from all wet processing facilities, then multiply by 100.

Calculate B4 as the mass of textile fabric from wet processing facilities that have undergone supplier audits and met the standard for pH, divided by the total textile fabric from all wet processing facilities, then multiply by 100.

Calculate B5 as the mass of textile fabric from wet processing facilities that have undergone supplier audits and met the standard for temperature, divided by the total textile fabric from all wet processing facilities, then multiply by 100.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

Audits should include verification that discharged wastewater is meeting the standards set forth by the American Apparel & Footwear Association Global Textile Effluent Guidelines for 95% of the sampling period:

- Measurements for BOD and TSS should be below or equal to 30 ppm.

- Measurements for COD should be below or equal to 100 ppm.

- Measurements for temperature should be below or equal to 37 degrees Celsius.

- Measurements for pH should be between 6.0 - 9.0.

Testing should follow a rigorous and internationally accepted methodology and frequency. Local or corporate standards may be stricter. The water quality metrics ideally approach ambient conditions.

Suppliers who have entered and communicated information required by the Higg Index Facility Environmental Module 3.0 (Higg FEM) "Wastewater - Level 2, Question 7" may be used in responding to B1-B5 if the chosen wastewater standard meets or exceeds the values listed above, or if the values of the parameters listed in the detection table meet or exceed the values listed above. The information reported to the FEM is at the facility level; if your products are produced in multiple facilities you may aggregate the data to represent the entirety of final product produced.

Certifications, Standards & Tools

American Apparel & Footwear Association (AAFA) - Restricted Substance List: The AAFA provides guidelines for restricted chemicals and substances.
https://www.aafaglobal.org/AAFA/Solutions_Pages/Restricted_Substance_List

AWS International Water Stewardship Standard: The International Water Stewardship Standard is a globally-applicable framework that helps water users understand their water use and impacts. Developed by the Alliance for Water Stewardship, the standard addresses 1) sustainable water balance, 2) good water quality, 3) healthy important water-related areas, and 4) good water governance.
https://a4ws.org/the-aws-standard-2-0/

BHive: The BHive enables the creation and management of chemical inventories, identifies chemical products that meet sustainability credentials. The BHive enhances supply chain transparency as factories, brands, and retailers can view and compare the safety of chemical products.
https://www.thebhive.net/

Detox to Zero by OEKO-TEX: This analysis and assessment tool creates transparency and provides textile and leather producers the ability to control the use of hazardous substances. The tool focuses on continuous improvement and gradual reduction of harmful substances in production processes.
https://www.oeko-tex.com/en/our-standards/detox-to-zero-by-oeko-tex

SAC Higg Index: The Sustainable Apparel Coalition has developed indicator-based assessment tools called the Higg Index, which evaluates the sustainable practices associated with production of apparel and footwear.
https://apparelcoalition.org/the-higg-index/

Sustainable Textile Solutions (STS): Sustainable Textile Solutions programs support brands, retailers, and industry partners in their efforts to achieve compliance to environmental, health, and safety standards.
https://sustexsolutions.com/

THESIS Help Center Video: Wastewater generation - Supply Chain KPI: Short video tutorial on the Wastewater generation - Supply Chain KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/448595442

Background Information

Roadmap to Zero by ZDHC (Zero Discharge of Hazardous Chemicals): This plan is intended to reduce and eliminate the discharge of hazardous chemicals.
https://www.roadmaptozero.com/

Textile Effluent Treatment Technology: The Journal of Cotton Science has produced a document addressing the treatment of textile effluent and specific wastewater management methods.
http://www.cotton.org/journal/2007-11/3/upload/jcs11-141.pdf

U.S. Environmental Protection Agency - Effluent Limitation Guidelines: This source provides current wastewater discharge guidelines and provides resources for reducing environmental impacts from wastewater discharge.
https://www.epa.gov/eg

Definitions	**Biological oxygen demand (BOD):** An indicator for the amount of oxygen required/consumed for the microbiological decomposition (oxidation) of organic material in water bodies. **Chemical oxygen demand (COD):** An indicator for the amount of oxygen required to oxidize an organic compound to carbon dioxide, ammonia, and water. The measurement is a proxy for the amount of organic compounds in water. Measuring COD in wastewater provides an estimated level of organic pollutants. The standard for measurement can be referenced in ISO 6060. **pH:** A measure of a substance's acidity or basicity. The measurement is based upon the molar concentration of hydrogen (H) ions in an aqueous solution of the substance. Pure water is at a neutral pH of 7. For wastewater quality testing, measuring pH allows for benchmarking pH levels to ambient conditions existing naturally in the surrounding environment. **Total suspended solids (TSS):** A water quality measurement that reflects the amount of particulates in a sample. The dry weight of residue in a filter is used to calculate units in milligrams per liter (mg/L). **Water use:** Water use is defined as total withdrawals from municipal and private water providers, surface water, groundwater, or wells.
Hotspots Addressed	***1.*** *Environmental impacts - Material manufacturing*

7. WORKER HEALTH AND SAFETY - SUPPLY CHAIN

Question

How did your organization manage worker health and safety risks in the operations that produced the material supply used in your final product?

Response Options

A. We are unable to determine at this time.

B. We are able to report the following for our supply:

B1._____% of the textile fabric supply used in our final product, by mass, was produced in operations that have performed a risk assessment to identify high-risk areas for health and safety.

B2._____% of the textile fabric supply used in our final product, by mass, was produced in operations that train workers on health and safety procedures.

B3._____% of the textile fabric supply used in our final product, by mass, was produced in operations that implement a verifiable worker health and safety plan.

B4._____% of the textile fabric supply used in our final product, by mass, was produced in operations that have a worker health and safety performance monitoring system in place.

B5._____% of the textile fabric supply used in our final product, by mass, was produced in operations that were audited in the last three years on worker health and safety issues.

Guidance

Calculation & Scope

To be included in B1-B5, risk assessments, training programs, safety plans, performance monitoring systems, and audits must be verifiable and address health and safety issues such as worker injury and worker exposure to harmful elements. The assessments and audits must be conducted by second or third parties. The risk assessment must be conducted once per year while the audit must have been conducted at least once every three years, both using a standard based on internationally-recognized principles such as International Labour Organization Occupational Safety and Health Conventions (e.g., No. 155). The standards and websites listed in Background Information below may be helpful for conducting your risk assessment(s) and for understanding appropriate corrective actions, which can inform your responses. See the Certifications, Standards & Tools for examples of initiatives that meet these requirements.

Calculate B1 as the mass of the textile fabric supply used in your final product that came from operations that have performed a risk assessment to identify high risk areas for health and safety, divided by the total mass of the textile fabric supply used in our final product, then multiply by 100.

To determine if an operation is high risk for health and safety, you may utilize a country risk analysis tool. The tool should measure the strength of a country's ability to govern and enforce laws, regulations, and internationally recognized principles. The country risk assessment may be a first party systematic review assessment, or external risk analyses tools may be utilized. It must be conducted at least once per year. The country risk assessment can be complemented with risks associated with specific activities, regions, and suppliers.

Calculate B2 as the mass of the textile fabric supply used in your final product that came from operations that train workers on health and safety procedures, divided by the total mass of the textile fabric supply used in your final product, then multiply by 100. To be included in B2, the training on health and safety procedures must be available in the language of the employee, including migratory and seasonal workers, and must be renewed as appropriate to maintain competency and implementation of good practices for workers on health and safety procedures and to prevent training exhaustion. Additional worker training may be required to perform job duties. On-site audits, where necessary, should be conducted by second or third parties and must be conducted at least once every three years using a standard based on internationally-recognized principles.

Calculate B3 as the mass of the textile fabric supply used in your final product that came from operations that implement a verifiable worker health and safety plan, divided by the total mass of the textile fabric supply used in your final product, then multiply by 100. To be included in B3, a worker health and safety plan must be verifiable and must be available in the language of the employee, including migratory and seasonal workers, and be prominently displayed in the workplace where employees normally report. The plan should include best practices specific to ergonomics; repetitive motions; chemical and particulate exposure; appropriate use of personal

protective equipment (PPE); and proper use of tools, machinery. On-site audits, where necessary, should be conducted by second or third parties and must be conducted at least once every three years using a standard based on internationally-recognized principles.

Calculate B4 as the mass of the textile fabric supply used in your final product, that came from operations that have a worker health and safety performance monitoring system in place, divided by the total mass of the textile fabric supply used in your final product, then multiply by 100. To be included in B4, a worker health and safety performance monitoring system should include metrics on issues including, but not limited to, incidence of worker injuries and prevalence of diseases. On-site audits, where necessary, should be conducted by second or third parties and must be conducted at least once every three years using a standard based on internationally-recognized principles.

Calculate B5 as the mass of the textile fabric supply used in your final product, that came from operations that were audited in the last three years on worker health and safety issues, divided by the total mass of the textile fabric supply used in your final product, then multiply by 100. Audits should be conducted by second or third parties at least once every three years, or more often depending on the requirements of the standard organization. See the Certifications, Standards & Tools for more information. Government regulations or parties in the supply chain may initiate these audits.

To be included in B5, the audits must be verifiable and address preventive measures, freely provided personal protective equipment, identification of worker health and safety hazards and effects on the exposed people, statistics and reasons behind injuries, design of work area, processes, installations, machinery/work equipment, operating processes and work organization, as outlined by internationally-recognized labor principles. Examples include, but are not limited to, principles outlined by the United Nations Global Compact, the International Labour Organization Standards on Occupational Health and Safety.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question. Audits must have been conducted in the 36 months prior to the end of the 12-month period.

Certifications, Standards & Tools

Amfori Country Risk Classification: This list classifies countries' risk of social injustice in an effort to assist companies in determining high and low risk for their sourcing and operations.
http://duediligence.amfori.org/CountryRiskClassification

SA8000® Standard: Social Accountability International (SAI) is a global non-governmental organization that aims to advance human rights at work via the SA8000® Standard. SA 8000 measures social performance in eight areas that are relevant for workplaces in factories and organizations worldwide.
https://sa-intl.org/programs/sa8000/

THESIS Help Center Video: Worker health and safety - Supply chain KPI: Short video tutorial on the Worker health and safety - Supply chain KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/536528345

Background Information

United Nations Global Compact Human Rights and Business Dilemmas Forum: United Nations Global Compact Human Rights and Business Dilemmas Forum present an introduction to, analysis of, and business recommendations for minimizing social sustainability risks in the supply chain.
https://www.unglobalcompact.org/library/9

Definitions

First party systematic risk assessment: A first party systematic risk assessment is conducted by the organization itself for management review and other internal purposes and may form the basis for an organization's declaration of conformity.

Risk assessment: A systematic process to evaluate potential risks within an operation, system, or supply chain. It can include an on-site audit by a second party or third party or a country risk classification analysis that judges the site risk due to prevailing conditions, controls, or other mitigating factors.

Second-party audit: An audit conducted by a party having an interest in the organization, such as customers, or by another entity on their behalf.

Third-party audit: An audit conducted by external, independent auditing organizations, such as those providing certification of conformity to a standard.

Worker exposure to harmful elements: Contact with potentially harmful chemical, physical, or biological elements that occurs as a result of one's job-related activities. Examples include chronic interaction with chemicals, dusts, radiation, environmental elements, allergens, noise, and vibrations.

Worker health and safety: Worker health and safety consists of worker injury and worker exposure to harmful elements. Please see the corresponding terms.

Worker injury: Physical damage to an individual due to a single act that causes immediate damage or repetitive acts that cause damage over time. Examples of causes of injury include repetitive motions, non-ergonomic motions, damage from use of tools and machinery, falls, and burns.

Hotspots Addressed

5. *Chemical use - Manufacturing*

8. *Worker health and safety - Footwear manufacturing*

8. AIR QUALITY - FOOTWEAR MANUFACTURING

Question

What percentage of this product, by mass, comes from company-owned and contract manufacturing facilities performing final cut, sew, and dyeing operations that tracked and reported their annual air emissions?

Response Options

A. We are unable to determine at this time.

B. The following percentage of this product, by mass, comes from facilities that tracked and reported their annual air emissions:

B1._____%.

Guidance

Calculation & Scope

Calculate B1 as the mass of products that were produced in final cut, sew, and dyeing facilities that tracked and reported annual air emissions, divided by the total mass of products produced by all final cut, sew, and dyeing facilities, then multiply by 100. Include all company-owned or contract manufacturing facilities that performed final cut, sew, and dyeing operations. If the final cut, sew, and dyeing steps are performed in different facilities, then each must report their air emissions in order to be included in your calculation. Facilities included in this calculation must track all air emissions required by locally applicable regulations, as well as those emissions for which there is scientific evidence of serious effects to human health or the environment. Air emissions may include, but are not limited to, nitrogen and sulphur oxides from boilers, hydrocarbons from drying ovens, carbon monoxide from sizing, aniline vapors, and ammonia from printing/dyeing, and VOCs and ozone from textile finishing, and may be emitted as dust, oil mists, acid vapors, odors, and boiler exhausts. Testing of emissions must occur according to a rigorous and internationally accepted testing methodology.

Perform this calculation using data from a 12-month period that ended within 12 months of the date you respond to this question.

Information entered into the Higg Index Facility Environment Module 3.0 (Higg FEM) "Air Emissions - Level 1, Questions 1-3" may be used in responding to B1. The information reported to the FEM is at the facility level; if your products are produced in multiple facilities you may aggregate the data to represent the entirety of final product produced.

Hotspots Addressed

4. *Air Quality - Manufacturing*

9. WASTEWATER GENERATION - FOOTWEAR MANUFACTURING

Question

What percentage of textile fabric used in your final product, by mass produced or purchased, was from manufacturing facilities have undergone supplier audits and meets or exceeds standards for wastewater quality for the five following metrics: biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), temperature, and pH?

Response Options

A. We are unable to determine at this time.

B. We are able to report the following for the textile fabric used in our products:

B1._____% of our textile fabric was produced in facilities that met or exceeded the standard for COD.

B2._____% of our textile fabric was produced in facilities that met or exceeded the standard for BOD.

B3._____% of our textile fabric was produced in facilities that met or exceeded the standard for TSS.

B4._____% of our textile fabric was produced in facilities that met the standard for pH.

B5._____% of our textile fabric was produced in facilities that met the standard for temperature.

Guidance

Calculation & Scope

Calculate B1 as the mass of textile fabric from manufacturing facilities that have undergone supplier audits and met or exceeded the standard for COD, divided by the total textile fabric from all manufacturing facilities, then multiply by 100.

Calculate B2 as the mass of textile fabric from manufacturing facilities that have undergone supplier audits and met or exceeded the standard for BOD, divided by the total textile fabric from all manufacturing facilities, then multiply by 100.

Calculate B3 as the mass of textile fabric from manufacturing facilities that have undergone supplier audits and met or exceeded the standard for TSS, divided by the total textile fabric from all manufacturing facilities, then multiply by 100.

Calculate B4 as the mass of textile fabric from manufacturing facilities that have undergone supplier audits and met the standard for pH, divided by the total textile fabric from all manufacturing facilities, then multiply by 100.

Calculate B5 as the mass of textile fabric from manufacturing facilities that have undergone supplier audits and met the standard for temperature, divided by the total textile fabric from all manufacturing facilities, then multiply by 100.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

Audits should include verification that discharged wastewater is meeting the standards set forth by the American Apparel & Footwear Association Global Textile Effluent Guidelines for 95% of the sampling period:

- Measurements for BOD and TSS should be below or equal to 30 ppm.

- Measurements for COD should be below or equal to 100 ppm.

- Measurements for temperature should be below or equal to 37 degrees Celsius.

- Measurements for pH should be between 6.0 - 9.0.

Testing should follow a rigorous and internationally accepted methodology and frequency. Local or corporate standards may be stricter. The water quality metrics ideally approach ambient conditions.

Information entered into the Higg Index Facility Environmental Module 3.0 (Higg FEM) "Wastewater - Level 2, Question 7" may be used in responding to B1-B5 if the chosen wastewater standard meets or exceeds the values listed above, or if the values of the parameters listed in the detection table meet or exceed the values listed above. The information reported to the FEM is at the facility level; if your products are produced in multiple facilities you may aggregate the data to represent the entirety of final product produced.

Certifications, Standards & Tools

American Apparel & Footwear Association (AAFA) - Restricted Substance List: The AAFA provides guidelines for restricted chemicals and substances.
https://www.aafaglobal.org/AAFA/Solutions_Pages/Restricted_Substance_List

AWS International Water Stewardship Standard: The International Water Stewardship Standard is a globally-applicable framework that helps water users understand their water use and impacts. Developed by the Alliance for Water Stewardship, the standard addresses 1) sustainable water balance, 2) good water quality, 3) healthy important water-related areas, and 4) good water governance.
https://a4ws.org/the-aws-standard-2-0/

BHive: The BHive enables the creation and management of chemical inventories, identifies chemical products that meet sustainability credentials. The BHive enhances supply chain transparency as factories, brands, and retailers can view and compare the safety of chemical products.
https://www.thebhive.net/

Detox to Zero by OEKO-TEX: This analysis and assessment tool creates transparency and provides textile and leather producers the ability to control the use of hazardous substances. The tool focuses on continuous improvement and gradual reduction of harmful substances in production processes.
https://www.oeko-tex.com/en/our-standards/detox-to-zero-by-oeko-tex

SAC Higg Index: The Sustainable Apparel Coalition has developed indicator-based assessment tools called the Higg Index, which evaluates the sustainable practices associated with production of apparel and footwear.
https://apparelcoalition.org/the-higg-index/

Sustainable Textile Solutions (STS): Sustainable Textile Solutions programs support brands, retailers, and industry partners in their efforts to achieve compliance to environmental, health, and safety standards.
https://sustexsolutions.com/

Background Information

Roadmap to Zero by ZDHC (Zero Discharge of Hazardous Chemicals): This plan is intended to reduce and eliminate the discharge of hazardous chemicals.
https://www.roadmaptozero.com/

Textile Effluent Treatment Technology: The Journal of Cotton Science has produced a document addressing the treatment of textile effluent and specific wastewater management methods.
http://www.cotton.org/journal/2007-11/3/upload/jcs11-141.pdf

U.S. Environmental Protection Agency - Effluent Limitation Guidelines: This source provides current wastewater discharge guidelines and provides resources for reducing environmental impacts from wastewater discharge.
https://www.epa.gov/eg

Definitions	**Biological oxygen demand (BOD):** An indicator for the amount of oxygen required/consumed for the microbiological decomposition (oxidation) of organic material in water bodies. **Chemical oxygen demand (COD):** An indicator for the amount of oxygen required to oxidize an organic compound to carbon dioxide, ammonia, and water. The measurement is a proxy for the amount of organic compounds in water. Measuring COD in wastewater provides an estimated level of organic pollutants. The standard for measurement can be referenced in ISO 6060. **pH:** A measure of a substance's acidity or basicity. The measurement is based upon the molar concentration of hydrogen (H) ions in an aqueous solution of the substance. Pure water is at a neutral pH of 7. For wastewater quality testing, measuring pH allows for benchmarking pH levels to ambient conditions existing naturally in the surrounding environment. **Total suspended solids (TSS):** A water quality measurement that reflects the amount of particulates in a sample. The dry weight of residue in a filter is used to calculate units in milligrams per liter (mg/L). **Water use:** Water use is defined as total withdrawals from municipal and private water providers, surface water, groundwater, or wells.
Hotspots Addressed	***9.*** *Wastewater generation - Footwear manufacturing*

10. WORKER HEALTH AND SAFETY - MANUFACTURING

Question	Response Options
What was the injury and illness rate at company-owned or contract manufacturing facilities that produced your final product?	**A.** We are unable to determine at this time. **B.** Our injury and illness rate over was: **B1.**_____. **B2.**_____% of our product, by mass produced, is represented by the number reported above.

Guidance

Calculation & Scope

This question aligns with the United States Occupational Safety and Health Administration (OSHA) Injury and Illness rate. This rate can be normalized for global applicability.

Calculate B1 according to OSHA's injury and illness rate by multiplying the number of recordable injuries and illnesses by 200,000. Divide this number by the total employee hours worked to produce your final product. If multiple facilities manufacture the final product, the injury and illness rate will need to be adjusted using a weighted average based on each facility's percentage of total production. Include all employees at a facility that participate in the production of the final product. This includes both full-time and contracted employees.

Calculate B2 as the mass of your final product for which you were able to obtain data, divided by the total mass of your final product, then multiply by 100.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

THESIS General Guidance document provides guidance to calculate the weighted average. See Background Information for access to this document.

The Incidence Rate Calculator and Comparison Tool is an online calculator that will compute your injury and illness rate. The OSHA Forms for Recording Work-Related Injuries and Illnesses provides forms and information for computing your facility injury and illness rate.

Certifications, Standards & Tools

Incidence Rate Calculator and Comparison Tool: This tool calculates the injury and illness incidence rate for employers.
https://data.bls.gov/iirc/

OSHA Forms for Recording Work-Related Injuries and Illnesses: This webpage contains information on how to record workplace injuries and illnesses and provides the worksheets needed to correctly do so.
https://www.osha.gov/recordkeeping/forms

THESIS Help Center Video: Worker Health and Safety - Manufacturing KPI: Short video tutorial on the Worker Health and Safety - Manufacturing KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/520108472

Background Information

How to Compute a Firm's Incidence Rate for Safety Management: This website from the U.S. Bureau of Labor Statistics provides in-depth guidance on computing injury and illness numbers.
https://www.bls.gov/iif/osheval.htm

SA8000® Standard: Social Accountability International (SAI) is a global non-governmental organization that aims to advance human rights at work via the SA8000® Standard. SA 8000 measures social performance in eight areas that are relevant for workplaces in factories and organizations worldwide.
https://sa-intl.org/programs/sa8000/

Definitions

Company-owned or contract manufacturing facilities: Facilities responsible for manufacturing and assembly of final products, whether these facilities are internal or external to the respondent’s organization.

	Worker exposure to harmful elements: Contact with potentially harmful chemical, physical, or biological elements that occurs as a result of one's job-related activities. Examples include chronic interaction with chemicals, dusts, radiation, environmental elements, allergens, noise, and vibrations. **Worker health and safety:** Worker health and safety consists of worker injury and worker exposure to harmful elements. Please see the corresponding terms. **Worker injury:** Physical damage to an individual due to a single act that causes immediate damage or repetitive acts that cause damage over time. Examples of causes of injury include repetitive motions, non-ergonomic motions, damage from use of tools and machinery, falls, and burns.
Hotspots Addressed	***8.*** *Worker health and safety - Footwear manufacturing*

11. LABOR RIGHTS - MANUFACTURING

Question

How did your organization manage labor rights risks in the manufacturing operations that produced your final product?

Response Options

A. We are unable to determine at this time.

B. We are able to report the following:

B1._____% of our final product, by mass, was produced in operations that were covered by an internal policy that has quantitative time-bound goals related to child labor, discrimination, forced labor, and freedom of association and collective bargaining.

B2._____% of our final product, by mass, was produced in operations that were reviewed by a risk assessment that identifies high-risk areas for labor rights abuses.

B3._____% of our staff responsible for procurement activities have been trained on labor rights issues in the supply chain.

B4._____% of our staff responsible for procurement activities have been evaluated via performance metrics on labor rights improvements in the supply chain.

B5._____% of our final product, by mass, was produced in operations that were low-risk, that were high-risk but corrective actions were taken, or that were audited on child labor, discrimination, forced labor, and freedom of association and collective bargaining in the last three years.

Guidance

Calculation & Scope

Calculate B1 as the mass of your final product that is covered by an internal policy that has quantitative time-bound goals related to child labor, discrimination, forced labor, and freedom of association and collective bargaining, divided by the total mass of your final product, then multiply by 100. Where freedom of association and collective bargaining are restricted by law, employers can use other forms of non-union employee representation and relations to respect this aspect of workers' rights.

Calculate B2 as the mass of your final product that has been reviewed by a risk assessment which identifies high-risk areas for labor rights abuses, divided by the total mass of your final product, then multiply by 100.

To be included in B2, a risk assessment must have been conducted by second or third parties and must have been conducted at least once every three years using a standard based on internationally-recognized principles. The risk assessments and standard must be verifiable and must address labor rights abuses such as discrimination on grounds of gender, age, ethnicity or disability, physical violence, sexual harassment and abuse, child labor, forced labor, and freedom of association and collective bargaining or any other range of behaviors and practices as outlined by internationally-recognized labor standards. The standards and websites listed in Background Information below may be helpful for conducting your risk assessment(s) and for understanding appropriate corrective actions which can inform your responses.

In addition, to determine if an operation is in a high-risk area for labor rights abuses, you may utilize a country risk analysis tool. The tool should measure the strength of a country's ability to govern and enforce laws, regulations, and internationally-recognized principles. The country risk assessment may be a first party systematic risk assessment, or external risk analyses tools may be utilized. The AMFORI Countries' Risk Classification tool listed below may be used to inform your response. The country risk assessment can be complemented with risks associated with specific activities, regions, and suppliers.

Calculate B3 as the number of staff responsible for procurement activities that have been trained on labor rights issues in the supply chain, divided by the total number of staff responsible for procurement activities, then multiply by 100. Include both full-time and contracted employees. The training must be verifiable. Staff training should cover child labor, discrimination, forced labor, and freedom of association and collective bargaining, as outlined by internationally-recognized labor principles. Staff training should be renewed as appropriate to maintain competency and implementation of good practices for labor rights issues and to prevent training exhaustion. Additional staff training may be required to perform job duties.

Calculate B4 as the number staff responsible for procurement activities that have been evaluated via performance metrics on labor rights improvements in the supply chain, divided by the total staff responsible for procurement activities, then multiply by 100. Evaluation on labor rights should include, child labor, discrimination, forced labor, and freedom of association and collective bargaining, as outlined by internationally-recognized labor principles. Examples of improvements include decreased incidence of child labor, forced labor, or discrimination, or an Increased worker participation in collective bargaining.

Calculate B5 as the mass of your final product that was produced in operations that were low risk, that were high risk but corrective actions were taken, or that were audited on child labor, discrimination, forced labor, and freedom of association and collective bargaining in the last three years, divided by the total mass of your final product, then multiply by 100. To be included in B5, audits must be verifiable and address child labor, discrimination, forced labor, and freedom of association and collective bargaining, as outlined by internationally-recognized labor principles. Examples include, but are not limited to, principles outlined by the United Nations Global Compact, the International Labour Organization Declaration on Fundamental Principles and Rights at Work. Where freedom of association & collective bargaining is restricted by law, employers can use other forms of non-union employee representation and relations to respect this aspect of workers' rights. Audits should be conducted by second or third parties at least once every three years, or more often depending on the requirements of the standard organization See the Certifications, Standards & Tools for more information. Government regulations or parties in the supply chain may initiate these audits.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question. Audits must have been conducted in the 36 months prior to the end of the 12-month period.

Certifications, Standards & Tools

THESIS Help Center Video: Labor Rights - Manufacturing KPI: Short video tutorial on the Labor Rights - Manufacturing KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/520093618

Hotspots Addressed

7. *Labor rights - Footwear manufacturing*

10. *Labor rights - Textile production*

12. MICROFIBER RELEASE – MANUFACTURING

Question

How does your company address microfiber release during manufacturing?

Response Options

- **A.** Not applicable, we only use plant-based fibers that biodegrade in water or do not use materials that produce any microfibers.
- **B.** We are unable to determine at this time.
- **C.** We are able to report the following:
  - **C1.**_____% of our synthetic textile supply, by mass, comes from manufacturers who monitor microfiber release.
  - **C2.**_____% of our synthetic textile supply, by mass, comes from manufacturers who utilize alternatives to wet processing.
  - **C3.**_____% of our synthetic textile supply, by mass, comes from manufacturers who have implemented practices and technologies to minimize microfiber release.

Guidance

Calculation & Scope

Answer A if your company only works with plant-derived materials (e.g., cotton, linen) which have been proven to biodegrade in water or your companies does not use materials that produce any microfibers.

Calculate C1 as the mass of your synthetic textile supply that was sourced from manufacturers, either contracted or company owned, who monitored microfiber release during wet processing, divided by your total mass of synthetic textile supply, then multiply by 100. Monitoring may include, but is not limited to, wastewater and lint analysis.

Calculate C2 as the mass of your synthetic textile supply that was sourced from manufacturers, either contracted or company owned, who utilized alternatives to wet processing, divided by your total mass of synthetic textile supply, then multiply by 100.

Alternatives should replace at least one full stage of wet processing to qualify. Examples include, but are not limited to, inkjet printing and plasma technologies, which replace the dyeing stage of wet processing.

Calculate C3 as the mass of your synthetic textile supply that was sourced from manufacturers, either contracted or company owned, who have implemented practices and technologies to minimize microfiber release, divided by your total mass of synthetic textile supply, then multiply by 100.

Practices and technologies that minimize microfiber release include, but are not limited to lowering the melting temperature of yarn to improve tensile strength, and adding coatings to yarn to reduce fiber loss.

Definitions

Microfiber release: Small synthetic fibers less than 10 micrometers in diameter that are released into the environment via wastewater during textile manufacturing that cause a variety of impacts to humans and wildlife, in addition to persisting in rivers, streams, and oceans.

Hotspots Addressed

3. *Production impacts - Synthetic materials*

13. PACKAGING RAW MATERIAL SOURCING

Question

What percentage of the sales packaging used for your final products, by mass, was post-consumer recycled material and sustainably-sourced renewable virgin material?

Response Options

- **A.** Not applicable. We do not use sales packaging for our product.
- **B.** We are unable to determine at this time.
- **C.** The sales packaging used for our final products was:
  C1._____% post-consumer recycled material.
  C2._____% sustainably-sourced renewable virgin material.

Guidance

Calculation & Scope

The scope of this question is the product category's sales packaging, which is defined as packaging that leaves a store with the consumer. Include the transportation-related packaging for product that is shipped directly to an end consumer.

Calculate C1 as the mass of post-consumer recycled material in the sales packaging of your final products, divided by the total mass of sales packaging used for your final products, then multiply by 100. This excludes pre-consumer recycled materials.

Calculate C2 as the mass of sustainably-sourced renewable virgin material in the sales packaging of your final products, divided by the total mass of sales packaging used for your final products, then multiply by 100. To be included in C2, the material must be third-party verified (e.g. for paper-based packaging FSC, SFI, PEFC would be examples of certifications for verification).

If data on packaging materials specific to these final products is not available, you may use more aggregated internal data to calculate C1 and C2 (e.g., company-level data for sales packaging of similar products).

The sum of C1 and C2 cannot be greater than 100%.

Please refer to THESIS KPI set for Packaging for more detailed packaging indicators.

Certifications, Standards & Tools

ISO 14021:2016: ISO 14021:2016 (Environmental labels and declarations -- Self-declared environmental claims (Type II environmental labelling)) provides measurement standards for determining how recyclable a particular product is.
https://www.iso.org/standard/66652.html

THESIS Help Center Video: Packaging Raw Material Sourcing KPI: Short video tutorial on the Packaging Raw Material Sourcing KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/531017161

Background Information

Circulytics – Measuring circularity: The Ellen Macarthur Foundation's Circulytics assesses a company's overall circularity. The tool is designed to support a company's evolution to a circular economy by informing strategy development and decision making, and identifying opportunities to align with circular economy principles including: designing out waste, keeping materials and products in use, and generating environmental benefits.
https://www.ellenmacarthurfoundation.org/resources/apply/circulytics-measuring-circularity

FTC Green Guide's Recyclability Definition: In the United States, the Federal Trade Commission defines when a product or packaging can be claimed recyclable. Please refer these guidelines when determining recyclability.
https://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-issues-revised-green-guides/greenguides.pdf

Global Protocol on Packaging Sustainability 2.0: The Global Protocol for Packaging Sustainability (GPPS 2.0) is a common set of indicators and metrics for business regarding sustainable packaging. The Consumer Goods Forum condensed the "Sustainable Packaging Indicators and Metrics Framework", developed by GreenBlue's Sustainable Packaging Coalition, into GPPS 2.0.
https://www.theconsumergoodsforum.com/wp-content/uploads/2017/11/CGF-Global-Protocol-on-Packaging.pdf

How2Recycle Certification: The How2Recycle Label provides guidance to consumers on how to recycle packaging for consumable goods. The label is intended to be used on all types of packaging and to provide instruction regarding how and where various raw materials can be recycled.
http://www.how2recycle.info/

Definitions

Post-consumer recycled material: "Material generated by households or by commercial, industrial, and institutional facilities in their role as end-users of the product that can no longer be used for its intended purpose. This includes returns of materials from the distribution chain." (ISO 14021:2016 - Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling))

Pre-consumer recycled material: "Material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it." (ISO 14021:2016 - Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling))

Renewable material: "Material that is composed of biomass from a living source and that can be continually replenished. To be defined as renewable, virgin materials shall come from sources which are replenished at a rate equal to or greater than the rate of depletion." (FTC Green Guides:2012)

Sales packaging: "Packaging that leaves a store with the consumer". (Global Protocol on Packaging Sustainability 2.0:2011)

Sustainably-sourced material: Material for which it can be demonstrated through second- or third-party verification that the virgin raw material has been harvested or produced legally and in a way that minimizes damage to the environment, workers, and communities. Materials such as paper can be included in this definition if the source of the packaging content comes from sustainably-managed forests with no deforestation.

Hotspots Addressed

11. *Packaging disposal - Resource impacts*

14. SUSTAINABLE PACKAGING DESIGN AND PRODUCTION

Question

What percentage of the sales packaging for your final product was recyclable, was formally assessed for material and process efficiency and weight or volume optimization, had demonstrated quantified environmental impact reduction, and was labeled for recycling according to an established standard?

Response Options

- **A.** Not applicable. We do not use sales packaging for our product.
- **B.** We are unable to determine at this time.
- **C.** We are able to report the following for the sales packaging used for our final products:
  - **C1.**_____% of our packaging, by mass, was recyclable.
  - **C2.**_____ % of our packaging, by mass, has demonstrated progress on goals for material and process efficiency during packaging manufacturing.
  - **C3.**_____ % of our packaging, by mass, has demonstrated progress on goals for weight or volume optimization during packaging design.
  - **C4.**_____ % of our packaging, by mass, has a demonstrated quantified environmental impact reduction.
  - **C5.**_____% of our packaging, by units sold in the US and Canada, was labeled with How2Recycle.
  - **C6.**_____% of our packaging, by units sold in regions outside the US and Canada, was labeled with an established third-party recycling label.

Guidance

Calculation & Scope

Calculate C1 as the mass of sales packaging used for your final products that was recyclable, divided by the total mass of sales packaging used for your final products, then multiply by 100.

Calculate C2 as the mass of sales packaging used for your final products that has demonstrated progress on goals for material and process efficiency during packaging manufacturing, divided by the total mass of sales packaging used for your final products, then multiply by 100.

Calculate C3 as the mass of sales packaging used for your final products that has demonstrated progress on goals for weight or volume optimization during packaging design, divided by the total mass of sales packaging used for your final products, then multiply by 100.

Goals must be quantitative and time-bound and progress must be reported publicly. Public reporting may include voluntary corporate reporting, sustainability reporting programs, or reporting as part of regulatory compliance.

Calculate C4 as the mass of sales packaging used for your final products that has demonstrated quantified environmental impact reductions, divided by the total mass sales packaging used for your final products, then multiply by 100. Include sales packaging with demonstrated impact reductions since the inception of the product or since purchase of the brand, if post-inception.

Methods for demonstrating quantified environmental impact reduction include, but are not limited to, life cycle impact assessment, or assessment against ISO Standard 18602:2013 (Packaging and the environment -- Optimization of the packaging system), or EN 13428:2004 (Packaging: Requirements specific to manufacturing and composition - Prevention by source reduction).

Calculate C5 as the number of units sold in the US and Canada that had sales packaging labeled with How2Recycle divided by the total number of units sold in the US and Canada that had sales packaging, then multiply by 100.

Calculate C6 as the number of units sold in regions outside the US and Canada that had sales packaging labeled according to an established third-party standard divided by the total number of units sold in regions outside the US and Canada that had sales packaging, then multiply by 100. Third party standards include those listed in the Certifications, Standards & Tools section of this KPI. Only include regions outside the US and Canada that are covered by the referenced third-party standards in your calculations.

Perform these calculations using data from a 12-month period that ended within 12 months of the date you respond to this question.

Certifications, Standards & Tools

Australasian Recycling Label (ARL): Used in Australia and New Zealand, the ARL details how best to label packaging for recycling to assist consumers in recycling correctly.
https://recyclingnearyou.com.au/arl/

Ecoembes Recycling Symbols: Used in Spain, the Ecoembes recycling symbols provide information to consumers for the recycling of packaging up to six different colors: blue for paper and cardboard, yellow for plastics and cans, green for glass, orange for organic materials, red for hazardous waste, and grey for everything else.
https://www.ecoembes.com/en/home

EN 13428: Prevention by packaging source reduction: European standard 13428:2004 outlines a method for evaluating if packaging material weight and/or volume have been sufficiently minimized while also taking into consideration other packaging performance parameters. The standard also includes recommended methodology for identifying heavy metals and dangerous substances in packaging formats.
http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/packaging/index_en.htm

EPA Energy Benefits Calculator: You can use the EPA Energy Benefits Calculator to help quantify environmental impact reductions for packaging design choices.
https://www.epa.gov/lmop/landfill-gas-energy-benefits-calculator

European Certification of Plastics Recycling (EUCertPlast): The EuCertPlast Certification is a European wide certification program for companies that recycle post-consumer plastic waste.
https://www.eucertplast.eu/

How2Recycle Certification: The How2Recycle Label provides guidance to consumers on how to recycle packaging for consumable goods. The label is intended to be used on all types of packaging and to provide instruction regarding how and where various raw materials can be recycled.
http://www.how2recycle.info/

ISO 18602:2013: ISO 18602 provides criteria for optimization of packaging systems. It outlines a procedure for reduction of packaging material weight or volume while taking into consideration packaging function. It also provides assessment methodology for substances hazardous to the environment and heavy metals.
https://www.iso.org/standard/55870.html

Japanese Recycling Symbols: Used in Japan, Japanese recycling symbols tell in a glance to consumers what is recyclable and what is not recyclable, and assist consumers in recycling correctly.
https://www.jcpra.or.jp/Portals/0/resource/eng/JCPRAdocuments202012.pdf

Le Guide du TRI (Citeo Sorting Guide): sed in France, the Citeo Sorting Guide provides information to companies about which product components should be recycled and which should be disposed.
https://bo.citeo.com/sites/default/files/2019-07/20190617_Guide_Info-tri_Citeo_EN.pdf

On-Pack Recycling Label: Used in the UK, the On-Pack Recycling Label details how best to label packaging for recycling to assist consumers in recycling correctly.
http://www.oprl.org.uk/

The Association of Postconsumer Plastic Recyclers (APR): The APR is an international national trade association representing the plastics recycling industry.
https://plasticsrecycling.org/about

The Triman: Used in France, the Triman is a recycling symbol in e-commerce that sells and ships to France.
https://www.msl.io/uploads/downloads/Triman-Users-handbook-english-V21.pdf

Woolworths Recycling Labels: Used in South Africa, the Woolworths Recycling Labels detail how best to label packaging for recycling to assist consumers in recycling correctly.
https://www.woolworths.co.za/content/howto/good-business-journey/how-to-read-our-recycling-labels/_/A-cmp201960

Background Information

Circulytics – Measuring circularity: The Ellen Macarthur Foundation's Circulytics assesses a company's overall circularity. The tool is designed to support a company's evolution to a circular economy by informing strategy development and decision making, and identifying opportunities to align with circular economy principles including: designing out waste, keeping materials and products in use, and generating environmental benefits.
https://www.ellenmacarthurfoundation.org/resources/apply/circulytics-measuring-circularity

Global Protocol on Packaging Sustainability 2.0: The Global Protocol for Packaging Sustainability (GPPS 2.0) is a common set of indicators and metrics for business regarding sustainable packaging. The Consumer Goods Forum condensed the "Sustainable Packaging Indicators and Metrics Framework", developed by GreenBlue's Sustainable Packaging Coalition, into GPPS 2.0.
https://www.theconsumergoodsforum.com/wp-content/uploads/2017/11/CGF-Global-Protocol-on-Packaging.pdf

Recycle Now: Recycle Now is the national recycling effort in England. The website contains examples of recycling labels that may be used on packaging and how to interpret them.
http://www.recyclenow.com/recycle/packaging-symbols-explained

Walmart Sustainable Packaging Playbook: Walmart provides an overview of sustainable packaging best practices for suppliers interested in improving and innovating packaging.
https://www.walmartsustainabilityhub.com/climate/project-gigaton/packaging

Definitions

Goals: Goals should be specific, measurable, achievable, relevant, and time-bound.

Material and process efficiency: Material efficiency is the ratio between the material input and the benefits derived. Resource conservation (source reduction) of material inputs and/or improving the functionality of the packaging can positively impact material efficiency. Process efficiency is the ratio between the time spent on production steps to the output. Opportunities to improve material and process efficiency include process improvement, product redesign, and technology changes to packaging equipment. It should be noted that continual source reduction has benefits, but there are trade-offs that must be assessed.

Sales packaging: "Packaging that leaves a store with the consumer". (Global Protocol on Packaging Sustainability 2.0:2011)

Third-party audit: An audit conducted by external, independent auditing organizations, such as those providing certification of conformity to a standard.

Weight or volume optimization: "Process for the achievement of a minimum adequate weight or volume (source reduction) for meeting the necessary requirements of primary or secondary or transport packaging, when performance and user/consumer acceptability remain unchanged or adequate, thereby reducing the impact on the environment." (ISO 18601:2013 - Packaging and the environment--General requirements for the use of ISO standards in the field of packaging and the environment)

Hotspots Addressed

***11.** Packaging disposal - Resource impacts*

15. PRODUCT DESIGN

Question

What percentage of your product, by unit volume, was designed to reduce manufacturing, use, and end-of-life impacts?

Response Options

- **A.** We are unable to determine at this time, or we do not address these impacts.
- **B.** We are able to report the following about our products:
  - **B1.**_____% of our products, by unit volume, underwent a lifecycle assessment.
  - **B2.**_____% of our products, by unit volume, were designed to maximize material efficiency.
  - **B3.**_____% of our products, by unit volume, were designed to reduce laundering impacts.
  - **B4.**_____% of our products, by unit volume, were assessed for durability as part of the design process.
  - **B5.**_____% of our products, by unit volume, were designed for resource reutilization.

Guidance

Calculation & Scope

Calculate B1 as the unit volume of your products that underwent a life cycle assessment, divided by the total unit volume of your product, then multiply by 100.

A life cycle assessment should be conducted against ISO 14040:2006 (Life Cycle Assessment - Principles and Guidelines.)

Calculate B2 as the unit volume of your products that were designed to maximize material efficiency, divided by the total unit volume of your product, then multiply by 100.

Material efficiency may include, but is not limited to, design to reduce total amount of materials needed to cut and sew a product, design to reduce material waste during cut and sew process.

Addressing material efficiency during the design stage may include, but is not limited to employing zero waste patternmaking to reduce material waste during the cut and sew process, and using whole garment knitting techniques to reduce the amount of yarn wasted during the knitting process.

Calculate B3 as the unit volume of your products designed to reduce laundering impacts, divided by the total unit volume of your product, then multiply by 100.

Laundering impacts may include, but are not limited to, energy use during laundering and microfiber release during laundering.

Addressing laundering impacts at the design stage may include, but is not limited to choosing fabrics made from natural fibers that biodegrade, or adding care instructions to a garment's label that specify practices known to reduce energy use like cold water wash.

Calculate B4 as the unit volume of your products that underwent a durability assessment as part of the design process, divided by the total unit volume of your product, then multiply by 100.

Both physical and emotional durability should be considered in this assessment.

Attributes to consider while assessing physical durability may include, but are not limited to stability/longevity of materials used, and strength/quality of cut and sew techniques.

Attributes to consider while assessing emotional durability include a product's flexibility or changeability to adapt to changing tastes over time.

Calculate B5 as the unit volume of your products that were designed to maximize resource utilization, divided by the total unit volume of your product, then multiply by 100.

Resource utilization maximization may include, but is not limited to, materials that are able to be reused or recycled.

Addressing resource utilization maximization during the design stage may include, but is not limited to choosing single fiber fabrics that can be recycled, and using simple construction methods that can be disassembled after use.

Perform this calculation using data from a 12-month period that ended within 12 months of the date you respond to this question.

Certifications, Standards & Tools

THESIS Help Center Video: Product Design KPI: Short video tutorial on the Product Design KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/520107448

Background Information

B Corp Certification: B Corp offers certification at a company level and focuses on social and environmental performance, public transparency, and legal accountability.
https://bcorporation.net/

BlueSign: Bluesign is a third party verification and consultant service. Verification is performed for social and environmental impacts, and consulting services are available for multiple supply chain, manufacturing, and production stages.
https://www.bluesign.com/en/business/services

Cradle to Cradle Certified (TM) - Material Health: The Cradle to Cradle Products Innovation Institute, a non-profit organization, administers the Cradle to Cradle Certified™ Product Standard, and provide guidance on chemical hazard assessments and their use for material assessments. The Cradle to Cradle™ Material Health Assessment Methodology examines product chemical composition break down and data collection rules and guidelines, guidance and criteria for chemical profiling methods, assessment of metabolism considerations, and guidance for the evaluation of material assessments.
http://www.c2ccertified.org/get-certified/product-certification

Cradle to Cradle Product Certification™: Cradle to Cradle Product Certification™ provides a standard of performance for manufacturers regarding product sustainability and material safety. Individual product assessments are performed by independent and trained third parties and certifications are made by the Cradle to Cradle Products Innovation Institute.
http://www.c2ccertified.org/product_certification

ISO 14040:2006: ISO 14040:2006 is the International Organization for Standardization's "Principles and Framework" document for conducting life cycle assessments.
https://www.iso.org/standard/37456.html

ISO 14044:2006: ISO 14044:2006 is the International Organization for Standardization's "Requirements and Guidelines" standard for conducting life cycle assessments.
https://www.iso.org/standard/38498.html

ISO/TC 207/SC 5: ISO/TC 207/SC 5 is the International Standardization Organization's life cycle assessment standard.
https://www.iso.org/committee/54854.html

Hotspots Addressed

***3.** Production impacts - Synthetic materials*

***12.** Product Disposal - Landfilling*

Category Sustainability Profile

Hotspots

Hotspots are activities in a product's life cycle that have a documented environmental or social impact. TSC evaluates the quality and quantity of the scientific sources of evidence for each hotspot according to a defined decision tree before they are included in the CSP. Items marked with an asterisk (*) are *additional issues* that have not achieved the same level of evidence as a hotspot. For more information on the methodology TSC uses to identify hotspots visit: http://www.sustainabilityconsortium.org/toolkit-methodology

RAW MATERIAL PROCESSING

1. Environmental impacts - Material manufacturing Activities associated with the production of the footwear materials may impact climate change, human health, ecosystem quality and biodiversity, and can lead to deforestation and resource depletion. Activities may include cotton fiber production, energy production for material manufacturing, resin conversion for polyester and nylon production, water use for manufacturing, and the release of chemical effluents from plastic and rubber material processing. For detailed information on environmental hotspots please refer to the corresponding THESIS Assessment. **Related Improvement Opportunities** ***17.*** *Collaborate with supply chain partners on sustainable initiatives* **KPIs** ***3.*** *Air quality - Supply chain* ***5.*** *Water use - Supply chain* ***6.*** *Wastewater generation - Supply Chain*	**References** ▪ Albers, Canepa, & Miller, 2008 ▪ Aratrakorn, Thunhikorn, & Donald, 2006 ▪ Arcenas, Holst, Ono, & Valdin, 2010 ▪ Arimoro, 2009 ▪ Asia & Akporhonor, 2007 ▪ Borchardt, Wendt, Pereira, & Sellitto, 2011 ▪ European Commission, 2007a ▪ Hok & Blom, 2009 ▪ Ingre-Khans, 2010 ▪ Munoz, 2013 ▪ Swarna Smitha, Raghavendra, Shruthi, & Girish, 2012 ▪ The Sustainability Consortium (Cotton Polyester Blend Textiles), 2016 ▪ The Sustainability Consortium (Cotton Textiles), 2016 ▪ The Sustainability Consortium (Nylon Textiles), 2016 ▪ The Sustainability Consortium (Polyester Textiles), 2016 ▪ The Sustainability Consortium (Rayon Textiles), 2016 ▪ World Agroforestry Centre, 2010 ▪ Zietlow, 2011
2. Social impacts - Material manufacturing Activities associated with the production of footwear materials may create negative social impacts involving access to material and immaterial resources, equal opportunity, child labor, forced labor, fair income, and worker health and safety. These activities may include cotton fiber production, energy production for material manufacturing, resin conversion for polyester and nylon production, and release of chemical effluents from plastic and rubber production. For detailed information on social hotspots please refer to the corresponding THESIS Assessment. **Related Improvement Opportunities** ***1.*** *Engage with producers and communities on health and safety issues* ***2.*** *Engage with producers and communities on social justice issues* **KPIs** ***1.*** *Leather Impacts - Supply Chain*	**References** ▪ Albers, Canepa, & Miller, 2008 ▪ The Sustainability Consortium (Cotton Polyester Blend Textiles), 2016 ▪ The Sustainability Consortium (Cotton Textiles), 2016 ▪ The Sustainability Consortium (Nylon Textiles), 2016 ▪ The Sustainability Consortium (Polyester Textiles), 2016 ▪ The Sustainability Consortium (Rayon Textiles), 2016

INTERMEDIATE PRODUCTION

3. Production impacts - Synthetic materials

Production of synthetic (polyester, nylon, etc.) and semisynthetic (rayon, viscose, etc.) materials for use in textile manufacturing may lead to impacts from energy consumption, wastewater generation, resource use, worker exposure to chemicals and other hazards, as well as risk of labor rights issues.

Related Improvement Opportunities

3. *Apply a wastewater pretreatment after PET fiber production*
22. *Use life cycle assessments to understand human health and environmental impacts of product life cycles*
23. *Implement an environmental management system*

KPIs

2. *Synthetic material sourcing*
12. *Microfiber release – Manufacturing*
15. *Product Design*

References

- Bartolome, Imran, Cho, Al-Masry, & Kim, 2012
- Bassi, Tan, & Mbi, 2012
- Lithner, 2011
- European Commission, 2003a
- European Commission, 2007c
- Hayes, 2011
- Ho & Choi, 2012
- International Labour Organization, 2013
- International Labour Organization, 2015
- International Labour Organization, 2018
- International Labour Organization, 1993
- KEMA, 2012
- Natural Resources Defense Council, 2011
- Neelis, Worrell, & Masanet, 2008
- Shen, Nieuwlaar, Worrell, & Patel, 2011
- Thiriez & Gutowski, 2006
- Weissman, Ananthanarayanan, Gupta, & Sriram, 2010

MANUFACTURING AND ASSEMBLY

4. Air Quality - Manufacturing

Volatile organic compounds are released into the air from the use of solvent-based adhesives during footwear manufacturing.

Related Improvement Opportunities

7. *Use best available techniques in the selection and use of chemicals*
9. *Provide proper training for footwear manufacturer workers*
19. *Use air emission reduction techniques*

KPIs

8. *Air quality - Footwear Manufacturing*

References

- Albers, Canepa, & Miller, 2008
- Zietlow, 2011

5. Chemical use - Manufacturing

Adhesives, solvents, and other harmful chemicals used in production can lead to adverse health effects for workers and residual contamination of products, which can have health hazards for consumers. These chemicals can also be released into wastewater and ecosystems, and can leach into landfills upon product disposal.

Related Improvement Opportunities

6. *Avoid use of solvent-based adhesives*
7. *Use best available techniques in the selection and use of chemicals*
9. *Provide proper training for footwear manufacturer workers*

KPIs

7. *Worker Health and Safety - Supply Chain*

References

- Borchardt, Wendt, Pereira, & Sellitto, 2011
- Gangopadhyay, Ara, Dev, Ghosal, & Das, 2011
- Heuser, Andrade, Silva, and Erdtmann, 2005
- Ingre-Khans, 2010
- Staikos, Heath, Haworth, & Rahimifard, 2006
- Todd, Puangthongthub, Mottus, Mihlan, & Wing, 2008
- Vermeulen et al., 2004
- Zietlow, 2011

6. Energy consumption - Footwear manufacturing* Energy used for footwear production leads to non-renewable resource depletion and climate change from greenhouse gas emissions. **Related Improvement Opportunities** ***8.*** *Implement industrial energy management programs and tools* ***11.*** *Use real-time online monitoring systems in textile production* **KPIs** ***4.*** *Greenhouse gas emissions - Supply chain*	**References** ▪ Albers, Canepa, & Miller, 2008 ▪ Arcenas, Holst, Ono, & Valdin, 2010 ▪ Borchardt, Wendt, Pereira, & Sellitto, 2011
7. Labor rights - Footwear manufacturing* Workers are may face several labor rights issues. These issues include long working hours, child and forced labor, and dangerous working conditions. Women, migrants, and other marginalized populations are at an increased risk of facing these issues. **Related Improvement Opportunities** ***4.*** *Implement labor management and equality monitoring programs* ***10.*** *Child labor and forced labor social compliance program* ***17.*** *Collaborate with supply chain partners on sustainable initiatives* **KPIs** ***11.*** *Labor Rights - Manufacturing*	**References** ▪ Bureau of International Labor Affairs, 2011 ▪ Tiwari, 2005 ▪ United States Department of Labor, 2014 ▪ Verite, 2004
8. Worker health and safety - Footwear manufacturing Workers may come into contact with volatile organic compounds during footwear manufacturing, primarily during the application of adhesives. These chemicals may be inhaled in the workplace and can lead to birth defects, nervous system damage, cancer, and respiratory illness, depending upon the level of exposure and length of time exposed. **Related Improvement Opportunities** ***6.*** *Avoid use of solvent-based adhesives* ***9.*** *Provide proper training for footwear manufacturer workers* ***18.*** *Develop procurement programs to prevent use of hazardous or potentially hazardous substances in footwear production* **KPIs** ***7.*** *Worker Health and Safety - Supply Chain* ***10.*** *Worker health and safety - Manufacturing*	**References** ▪ Albers, Canepa, & Miller, 2008 ▪ Heuser, Andrade, Silva, and Erdtmann, 2005 ▪ Jacques, Agogino, & Guimaraes, 2010 ▪ Staikos, Heath, Haworth, & Rahimifard, 2006 ▪ Zietlow, 2011
9. Wastewater generation - Footwear manufacturing* Wastewater from manufacturing processes produces a significant volume of contaminated or untreated effluent containing dissolved solids, ammonias, nitrates, and phosphates. When released into the environment, the effluent can cause ecosystem damage, algal blooms, declines in biodiversity and human toxicity from eutrophication and chemical contamination. **Related Improvement Opportunities** ***7.*** *Use best available techniques in the selection and use of chemicals* ***12.*** *Waterless dyeing technologies* **KPIs** ***9.*** *Wastewater Generation - Footwear Manufacturing*	**References** ▪ Albers, Canepa, & Miller, 2008 ▪ Zietlow, 2011

10. Labor rights - Textile production

Workers may face several labor rights issues in contracted and sub-contracted operations. These include unfair pay, discrimination, challenges to join unions and collectively bargain, long working hours, child and forced labor, and dangerous working conditions. Women, migrants, and other marginalized populations are at an increased risk of facing these challenges.

Related Improvement Opportunities

5. *Implement labor management and equality monitoring programs*
13. *Accident and disease compensation protocol*

KPIs

11. *Labor Rights - Manufacturing*

References

- The Sustainability Consortium (Cotton Polyester Blend Textiles), 2016
- The Sustainability Consortium (Cotton Textiles), 2016
- The Sustainability Consortium (Nylon Textiles), 2016
- The Sustainability Consortium (Polyester Textiles), 2016
- The Sustainability Consortium (Rayon Textiles), 2016

PACKAGING

11. Packaging disposal - Resource impacts

Low recovery of packaging material results in resource related impacts from creation of packaging from virgin materials, including depletion of non-renewable resources and environmental and social impacts in raw material extraction.

Related Improvement Opportunities

14. *Optimized packaging product systems*
15. *Implement consumer education programs*
16. *Utilize recycled and renewable content*

KPIs

13. *Packaging raw material sourcing*
14. *Sustainable packaging design and production*

References

- PUMA, 2010

END-OF-LIFE AND DISPOSAL

12. Product Disposal - Landfilling

Chemical presence, such as dyes, thalates, and plasticizers, in textile production can leach out of landfills upon product disposal leading to ecotoxicity in surrounding ecosystems. Combustion of fossil fuels for transportation to landfills leads to greenhouse gas emissions.

Related Improvement Opportunities

20. *Resource recovery - Recycling of product back into the supply chain*
21. *Implement business models for product reuse*

KPIs

15. *Product Design*

References

- Birtwistle, G., & Moore, C
- Brigden, Labunska, House, Santillo, & Johnston, 2012
- Singh, U. K., Kumar, M., Chauhan, R., Jha, P. K., Ramanathan, A., & Subramanian, V.
- Waste and Resources Action Program, 2008

Improvement Opportunities

Improvement opportunities are practices that address one or more environmental or social hotspots and are actionable by brand manufacturers or their suppliers. TSC evaluates the quality of the evidence supporting each improvement opportunity according to a defined decision tree before including it in the CSP. For more information on the methodology TSC uses to identify hotspots visit: http://www.sustainabilityconsortium.org/toolkit-methodology

RAW MATERIAL PROCESSING

1.	**Engage with producers and communities on health and safety issues** Manufacturers should engage with producers and communities where their materials are grown or manufactured to address impacts related to the health and safety of workers and people in the community. For detailed information on social improvement opportunities related to each major material, please refer to the corresponding THESIS Assessment. **Related Hotspots** ***2.*** *Social impacts - Material manufacturing*	**References** ▪ The Sustainability Consortium (Cotton Textiles), 2016 ▪ The Sustainability Consortium (Nylon Textiles), 2016 ▪ The Sustainability Consortium (Polyester Textiles), 2016
2.	**Engage with producers and communities on social justice issues** Manufacturers should engage with producers and communities where their materials are grown or manufactured to address impacts related to the social justice for workers and people in the community. For detailed information on social improvement opportunities related to each major material, please refer to the corresponding THESIS Assessment. **Related Hotspots** ***2.*** *Social impacts - Material manufacturing*	**References** ▪ The Sustainability Consortium (Cotton Textiles), 2016 ▪ The Sustainability Consortium (Nylon Textiles), 2016 ▪ The Sustainability Consortium (Polyester Textiles), 2016
3.	**Apply a wastewater pretreatment after PET fiber production** Before sending wastewater from PET production to a wastewater treatment plant, apply a wastewater pretreatment such as stripping or recycling. **Related Hotspots** ***3.*** *Production impacts - Synthetic materials*	**References** ▪ European Commission, 2007c

AGRICULTURE AND LIVESTOCK

4.	**Implement labor management and equality monitoring programs** Employers should implement labor management and equality monitoring to prevent discrimination in their labor and hiring policies and procedures. Companies should prevent discrimination based on race, color, gender, age, religion, social class, political tendencies, nationality, sexual orientation, or civil status, or as stated by an internationally recognized principle. **Related Hotspots** ***7.*** *Labor rights - Footwear manufacturing*	**References** ▪ SAN & SAI, 2010

5. Implement labor management and equality monitoring programs Employers should implement labor management and equality monitoring to prevent discrimination in their labor and hiring policies and procedures along the lines of race, color, gender, age, religion, social class, political tendencies, nationality, sexual orientation, or civil status. **Related Hotspots** ***10.*** *Labor rights - Textile production*	**References** ▪ The Sustainability Consortium (Cotton Polyester Blend Textiles), 2016 ▪ The Sustainability Consortium (Cotton Textiles), 2016 ▪ The Sustainability Consortium (Nylon Textiles), 2016 ▪ The Sustainability Consortium (Polyester Textiles), 2016 ▪ The Sustainability Consortium (Rayon Textiles), 2016

MANUFACTURING AND ASSEMBLY

6. Avoid use of solvent-based adhesives Use alternatives to solvent-based adhesives to limit the emissions of volatile organic compounds (VOCs). Options include direct injection molding systems, plasma treatment, UV treatment, polypeptide adhesives, solvent-free pressure systems, or water-based adhesives. **Related Hotspots** ***5.*** *Chemical use - Manufacturing* ***8.*** *Worker health and safety - Footwear manufacturing*	**References** ▪ Albers, Canepa, & Miller, 2008 ▪ Heuser, Andrade, Silva, and Erdtmann, 2005 ▪ Zietlow, 2011
7. Use best available techniques in the selection and use of chemicals Manufacturers should avoid toxic substances in the production process and assembly of footwear. Use monitoring tools and industry guidelines to aid in selecting adhesives and other chemicals based on ecotoxicological assessment and classification. Manufacturers can also use processes to minimize the amount of required chemicals where appropriate. **Related Hotspots** ***4.*** *Air Quality - Manufacturing* ***5.*** *Chemical use - Manufacturing* ***9.*** *Wastewater generation - Footwear manufacturing*	**References** ▪ Borchardt, Wendt, Pereira, & Sellitto, 2011 ▪ Hok & Blom, 2009 ▪ Zietlow, 2011
8. Implement industrial energy management programs and tools Implementing energy-management programs and setting goals can optimize energy use. Examples of programs include forming energy teams, assigning management responsibilities to an energy director, performing preventative maintenance on equipment, replacing inefficient equipment, tracking greenhouse gas emissions, and tracking energy use at the facility level. Goals can include energy efficiency benchmarks and energy reduction targets. **Related Hotspots** ***6.*** *Energy consumption - Footwear manufacturing*	**References** ▪ Borchardt, Wendt, Pereira, & Sellitto, 2011
9. Provide proper training for footwear manufacturer workers Workers should be trained in the safe handling of chemicals, proper use of machinery, sanitary waste separation, proper use of personal protective equipment, and energy saving practices. **Related Hotspots** ***4.*** *Air Quality - Manufacturing* ***5.*** *Chemical use - Manufacturing* ***8.*** *Worker health and safety - Footwear manufacturing*	**References** ▪ Albers, Canepa, & Miller, 2008 ▪ Heuser, Andrade, Silva, and Erdtmann, 2005 ▪ Zietlow, 2011

10. Child labor and forced labor social compliance program Develop a social compliance program that includes policies and practices based on widely-recognized standards with a goal of allowing for maximum adherence to codes of conduct. Social compliance programs should have specific action steps that guide the organization from initial risk awareness to full compliance with policies. **Related Hotspots** ***7.*** *Labor rights - Footwear manufacturing*	**References** ▪ United States Department of Labor, 2013 ▪ United States Department of Labor, 2012a
11. Use real-time online monitoring systems in textile production Online monitoring of production processes for closed-loop controls potentially reduces energy use, water consumption, chemical use, and wastewater. **Related Hotspots** ***6.*** *Energy consumption - Footwear manufacturing*	**References** ▪ The Sustainability Consortium (Cotton Polyester Blend Textiles), 2016 ▪ The Sustainability Consortium (Cotton Textiles), 2016 ▪ The Sustainability Consortium (Nylon Textiles), 2016 ▪ The Sustainability Consortium (Polyester Textiles), 2016 ▪ The Sustainability Consortium (Rayon Textiles), 2016
12. Waterless dyeing technologies Technologies developed that use carbon dioxide as solvent to dye footwear materials have the potential to reduce water use, energy use, and water contamination in the dyeing process. **Related Hotspots** ***9.*** *Wastewater generation - Footwear manufacturing*	**References** ▪ The Sustainability Consortium (Cotton Polyester Blend Textiles), 2016 ▪ The Sustainability Consortium (Cotton Textiles), 2016 ▪ The Sustainability Consortium (Nylon Textiles), 2016 ▪ The Sustainability Consortium (Polyester Textiles), 2016 ▪ The Sustainability Consortium (Rayon Textiles), 2016
13. Accident and disease compensation protocol Companies should develop a protocol that assesses the appropriate compensation for workers and their families who are affected by occupational injuries and exposures. **Related Hotspots** ***10.*** *Labor rights - Textile production*	**References** ▪ The Sustainability Consortium (Cotton Polyester Blend Textiles), 2016 ▪ The Sustainability Consortium (Cotton Textiles), 2016 ▪ The Sustainability Consortium (Nylon Textiles), 2016 ▪ The Sustainability Consortium (Polyester Textiles), 2016 ▪ The Sustainability Consortium (Rayon Textiles), 2016

PACKAGING

14. Optimized packaging product systems

Optimized packaging systems reduce environmental and social impacts associated with packaging production while appropriately protecting products. Innovative approaches to packaging design for shoes can include using biodegradable bags, non-woven propylene bags, dry pulp boxes, and other recyclable materials for packaging.

Related Hotspots

11. *Packaging disposal - Resource impacts*

References

- Albers, Canepa, & Miller, 2008
- PUMA, 2010

15. Implement consumer education programs

Conduct consumer educational programs to encourage waste re-use and recycling. Examples of programs include use of recycling instruction labels.

Related Hotspots

11. *Packaging disposal - Resource impacts*

References

- Keep America Beautiful, 2012
- Sheavly & Register, 2007
- Sustainable Packaging Coalition, 2009
- The Consumer Goods Forum, 2011

END-OF-LIFE AND DISPOSAL

16. Utilize recycled and renewable content

Utilizing recycled content, measured as percentage pre-consumer and post-consumer recycled content per packaging unit, can reduce impacts associated with virgin material sourcing, lower overall packaging costs, and improve an organization's environmental and social impact. Renewable content, defined as material derived from living sources that are replenished at a rate equal to or greater than depletion rate, can be used to reduce impacts from virgin material sourcing, lower overall packaging costs, and improve an organization's environmental and social impact.

Related Hotspots

11. *Packaging disposal - Resource impacts*

References

- Lopes, Dias, Arroja, Capela, & Pereira, 2003
- Monte, Fuente, Blanco, & Negro, 2009

IMPROVEMENT OPPORTUNITIES FOR MULTIPLE LIFE CYCLE STAGES

17. Collaborate with supply chain partners on sustainable initiatives

Brand manufacturers can improve their performance as well as that of others in the supply chain by developing strong relationships with suppliers at multiple tiers upstream and with consumers downstream with the same environmental and social goals in mind. Engagement can include implementing recycled content in product design, consumer education, labor management programs, worker safety trainings, and packaging reductions. For detailed information on specific improvement opportunities please refer to the corresponding THESIS Assessment.

Related Hotspots

1. *Environmental impacts - Material manufacturing*
7. *Labor rights - Footwear manufacturing*

References

- Albers, Canepa, & Miller, 2008

18.	**Develop procurement programs to prevent use of hazardous or potentially hazardous substances in footwear production** Manufacturers can avoid including toxic substances in shoes by forming policies and guidelines for their suppliers outlining processes for reporting chemicals used in the production of footwear and alternative options for materials and chemicals that will reduce environmental and social impacts. **Related Hotspots** ***8.*** *Worker health and safety - Footwear manufacturing*	**References** ▪ Hok & Blom, 2009
19.	**Use air emission reduction techniques** Air emission reduction techniques can be used to reduce volatile organic compounds, particulates, and toxic substances emitted to the air during footwear material and final product manufacturing. Techniques may include installation of modern exhaust filtration units, scrubbers, and heat exchangers. **Related Hotspots** ***4.*** *Air Quality - Manufacturing*	**References** ▪ European Commission, 2003a ▪ Zietlow, 2011
20.	**Resource recovery - Recycling of product back into the supply chain** Implement programs for collecting and chemically or mechanically recycling used fiber back into the supply chain at the end-of-life stage. **Related Hotspots** ***12.*** *Product Disposal - Landfilling*	**References** ▪ Hayes, 2011 ▪ Ho & Choi, 2012 ▪ Kalliala & Nousiainen, 1999 ▪ Van der Velden, Patel, & Vogtlander, 2013
21.	**Implement business models for product reuse** Product design and stewardship programs can extend useful life and reclaim reusable or recyclable material. **Related Hotspots** ***12.*** *Product Disposal - Landfilling*	**References** ▪ Armstrong & Lang, 2013 ▪ Cartwright et al., 2011 ▪ Waste and Resources Action Programme, 2012d ▪ Waste and Resources Action Programme, 2013a
22.	**Use life cycle assessments to understand human health and environmental impacts of product life cycles** Product life cycle assessments (LCAs) provide a resource for improved decision-making based on an assessment of many environmental and human health impacts associated with a product life cycle. **Related Hotspots** ***3.*** *Production impacts - Synthetic materials*	**References** ▪ The Sustainability Consortium (Cotton Polyester Blend Textiles), 2016 ▪ The Sustainability Consortium (Cotton Textiles), 2016 ▪ The Sustainability Consortium (Nylon Textiles), 2016 ▪ The Sustainability Consortium (Polyester Textiles), 2016 ▪ The Sustainability Consortium (Rayon Textiles), 2016
23.	**Implement an environmental management system** Implement an environmental management system that follows an established standard, such as ISO 14000, to provide procedures for detecting and improving environmental and efficiency issues. **Related Hotspots** ***3.*** *Production impacts - Synthetic materials*	**References** ▪ European Commission, 2003a ▪ Ho & Choi, 2012

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Release Notes

*** 03.02.10, May 2021 ***
- In-text references and broken resource links (URLs) included in the KPI guidance were updated to the most recent available versions. Where no alternative resource was available, the item was substituted with a comparable resource or was removed.
The KPI Equality of Treatment for Homeworkers - Manufacturing has been deleted as part of the 2021 revision cycle due to this KPI meeting criteria for problematic scoring, answerability, or year over year tracking.
Sustainable Packaging Design and Production:
- Question: The question text was updated to reflect the changes below.
- Response Options: A response option for the percentage sales packaging labeled with How2Recycle in the US and Canada has been added.
- Response Options: A response option for the percentage of the sales packaging that was labeled for recycling according to an established standard outside the US and Canada has been added.
- Response Options: The existing response options for recyclability, demonstrated progress on goals for material and process efficiency and weight or volume optimization, and impact reduction were retained.
- Calculation & Scope: Text added to support the added response options above.
- Certifications, Standards & Tools: References to support the new response options above have been added.
- Definitions: “Third-party audit” was added.
Synthetic material sourcing:
- Response Options: Quantitative response option added to track percentage of supply that is polyester.
NEW KPI - “Microfiber release – Manufacturing”
Wastewater Generation - Footwear Manufacturing:
- Certifications, Standards & Tools: References updated to support recent initiatives.
Wastewater generation - Supply chain:
- Certifications, Standards & Tools: References updated to support recent initiatives.
3.01, May 2020
-In-text references and broken resource links (URLs) included in the KPI guidance were updated to the most recent available versions.

-Product design KPI: some linked items were not properly displaying in the guidance; these errors have been corrected and the linked items restored. In addition, the following certifications, standards, tools, and/or definitions will be added: Cradle to Cradle Certification, Bluesign standard, B Corp certification, ISO 14044:2006, ISO 14040:2006, and ISO /TC 207/SC 5.

-Equality of treatment for homeworkers - Manufacturing KPI: Due to an error in the TSC database, some linked items were not properly displaying in the guidance. These errors have been corrected and the linked items restored.

-Alignment with Higg FEM was made explicit by including specific language in guidance for the following KPIs:
  -Greenhouse Gas Emissions Intensity - Supply Chain
  -Wastewater Generation - Supply Chain
  -Water Use - Supply Chain
  -Wastewater Generation - Footwear Manufacturing

3.00, June 2019
-Category name changed from Synthetic Materials - Footwear. The following KPIs were added to make the category more material inclusive:
  -Leather Impacts
  -Synthetic Material Sourcing
-The following KPIs were updated as part of sector revisions:
-Air Quality - Manufacturing guidance was updated to be more specific.
-Equality of Treatment for Homeworkers - Manufacturing KPI response option A was updated with language to verify that homeworkers are not used.
-Product Design KPI was updated with new question, guidance, and response options in order to assess every stage of product's life cycle.
-Cross-sector social KPIs were updated with new questions and response options. KPIs affected:
  -Worker Health and Safety - Supply Chain
  -Labor Rights - Manufacturing
*02.02, June 2018
- Broken links referenced in the KPI guidance were corrected.
- KPI guidance language referencing CDP’s Information Requests for Climate Change and Water were updated to reflect the 2018 versions.

02.02, June 2017
Language referring to the "last twelve months" was removed from the question and/or response options text to avoid any confusion with the related statement in the "Calculation and Scope" of the Guidance. The following KPIs were affected:
Greenhouse gas emissions - Supply chain

Greenhouse gas emissions intensity – Manufacturing
Worker health and safety – Manufacturing

Recycled Content
- Response Options: Added another response option to track the % products where the supplier is able to report the amount of recycled content.

Wastewater Generation
-Response Options: Different response options were revised for tracking wastewater quality metrics with each metric being defined in a separate response option and equally weighted.

Packaging Raw Material Sourcing KPI:
- Title: Changed from "Packaging Raw Material Sourcing and End-of-life"
- Response Options: A response option for recyclable content was moved to the Sustainable Packaging Design and Production KPI to improve the scorability and answerability of both KPIs. The remaining response options are defined to be mutually exclusive where the sum of the two percentages entered cannot be greater than 100%.
- Definitions: "Pre-consumer recycled material", "Post-consumer recycled material ", "Sustainably-sourced material ", and "Renewable material" were added or updated to improve interpretation.
Sustainable Packaging Design and Production:
- Question: The question text was updated to reflect the changes below.
- Response Options: A response option for the percentage of recyclable content was moved from the Packaging Raw Material Sourcing KPI to improve the scorability and answerability of both KPIs.
- Response Options: A qualitative response option was removed which stated: "We have established goals to address all of these factors and publicly report our progress towards those goals."
- Response Options: The above response option was replaced with two percentage response options for reporting "demonstrated progress on goals" for material and process efficiency as well as weight or volume optimization. The information required to respond to the KPI has not changed.
- Response Options: The existing response option for “quantifiable impact reduction” was retained.
- Definitions: "Material and process efficiency" and "weight or volume optimization" were updated.
- Definitions: "Resource conservation" was previously included as a separate factor and was included in the definition for material and process efficiency.

TSC’s Multi-stakeholder Process
The Sustainability Consortium (TSC) is a multi-stakeholder organization comprised of leading companies, non-profit organizations, and other members that represent broad perspectives on sustainability. To build a KPI set that can be deployed widely, TSC acknowledges that members have diverse points of view. As such, the attributes, activities, KPIs, and scoring used in this KPI set represent a composite perspective of the current market and are not necessarily the views, policies, or program of any single member of TSC.