General Décor and Accents
Key Performance Indicators

Version 02.04

THESIS
BY THE SUSTAINABILITY CONSORTIUM

About the General Décor and Accents Key Performance Indicators

This THESIS Performance Assessment covers durable goods used for home tabletop and floor decoration. This includes, but is not limited to, decorative bowls, vases, trays, sculpture, and figurines. It does not include wall décor, rugs, candles, home textiles, pillows, or tablecloths.
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. Certification - Paper and wood sourcing What percentage of your paper and wood supply, by dry mass, was third-party certified or underwent third-party legality verification?	**A.** Not applicable. We do not use paper and wood in our products. **B.** We are unable to determine at this time or we do not source paper and wood under a forest certification or legality verification program. **C.** The following percentage of our paper and wood supply, by mass purchased, was sourced in accordance with a certification program: **C1.**_____% of our paper and wood only underwent third-party legality verification. **C2.**_____% of our paper and wood supply was certified as FSC Controlled Wood. **C3.**_____% of our paper and wood supply was certified to the SFI Fiber Sourcing Standard or under a PEFC Due Diligence System. **C4.**_____% of paper and wood supply was FSC-certified. **C5.**_____% of our paper and wood supply was SFI-certified or certified under another PEFC-endorsed certification.
2. 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 was traced to the slaughterhouse of origin. **C2.**_____% of our leather supply 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 sourced from tanneries that were audited in the last three years for worker health and safety.
3. Responsible metals supply What percentage of your metal suppliers for this product category, by total spend, required all of their raw material suppliers to perform a verifiable site-level environmental and social sustainability assessment, subject to corrective action?	**A.** Not applicable. We do not manufacture products that contain metals. **B.** We are unable to determine at this time. **C.** The following percentage of our metal suppliers, by total spend, required an assessment of their suppliers: **C1.**_____%.
4. Safe transportation of plastic resin How does your organization address the release of plastic pellets or resins into the environment that can occur during their transportation and transfer?	**A.** Not applicable. We do not manufacture products that contain plastic. **B.** We have no policy in place to minimize or eliminate pellet or resin release into the environment during material handling and transportation. **C.** We have released our corporate policy that addresses the responsible material handling and transportation of our purchased pellets and resins throughout our operation and supply chain. **D.** In addition to (C), we have joined a stewardship program to stop plastic pellet or resin release into the environment. **E.** In addition to (D), we actively engage in programs that clean up plastic waste in the environment.
5. Greenhouse gas emissions - Supply chain What percentage of materials, ingredients, and components used in your final products, by total spend, 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, ingredients, and components, by total spend, was produced by suppliers that reported Scope 1 and 2 greenhouse gas emissions: **B1.**_____%.

6. Worker health and safety - Supply chain How did your organization manage worker health and safety risks in the operations that produced your materials, ingredients, and components?	**A.** We are unable to determine at this time. **B.** We are able to report the following for our supply: **B1.**_____% of our materials, ingredients, and components, by mass, was produced in operations that have performed a risk assessment to identify high-risk areas for health and safety. **B2.**_____% of our materials, ingredients, and components, by mass, was produced in operations that train workers on health and safety procedures. **B3.**_____% of our materials, ingredients, and components, by mass, was produced in operations that implement a verifiable worker health and safety plan. **B4.**_____% of our materials, ingredients, and components, by mass, was produced in operations that have a worker health and safety performance monitoring system in place. **B5.**_____% of our materials, ingredients, and components, by mass, was produced in operations that were audited in the last three years on worker health and safety issues.
7. Greenhouse gas emissions intensity - Manufacturing What was the greenhouse gas emissions intensity associated with final manufacture of your product?	**A.** We are unable to determine at this time. **B.** Our greenhouse gas emissions intensity was: **B1.**_____ kg CO2e per dollar of final product. **B2.**_____% of our product, by revenue, is represented by the number reported above.
8. 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.** Not applicable. We do not manufacture our own products. **B.** We are unable to determine at this time. **C.** Our injury and illness rate over our last twelve-month reporting period was: **C1.**_____. **C2.**_____% of our product, by revenue, is represented by the number reported above.
9. Priority chemicals - Disclosure What level of disclosure does your organization require from your ingredient and raw material suppliers?	**A.** We require that a materials safety data sheet accompany all raw materials and ingredients. **B.** In addition to (A), we require a list of all substances intentionally added to the ingredient or raw material, or have ensured that priority chemicals are identified in the composition. **C.** In addition to (B), we require a list of all priority chemicals present at a level greater than 1000 ppm, whether intentionally added or not. **D.** In addition to (C), we require a list of all priority chemicals present at a level greater than 100 ppm, whether intentionally added or not.
10. Product Design Does your organization consider resource conservation, material efficiency, durability, and end-of-life during product design?	**A.** We do not consider any of these factors during product design. **B.** We provide tools and training that help designers address these factors during product design. **C.** In addition to (B), we formally assess whether these factors are applied during product design. **D.** In addition to (C), we publicly disclose information on how our product design addresses these factors.
11. Recycled content What percentage, by mass, of the products you manufactured was made from post-consumer recycled content?	**A.** We are unable to determine at this time. **B.** The percentage of post-consumer recycled content is: **B1.**_____ %.
12. Transportation to Retailers What percentage of your final product was transported to downstream retail or distribution centers by logistics providers (carriers) that reported their annual greenhouse gas (GHG) emissions associated with transportation?	**A.** We are unable to determine at this time. **B.** The following percentage of our product, by mass, was shipped to retail or distribution centers by carriers who reported their GHG emissions associated with transportation: **B1.**_____%.

13. Product stewardship How does your organization promote recycling of any used durable goods you manufactured?	**A.** Not applicable. We do not sell durable goods. **B.** We neither operate nor partner with programs that recycle our products. **C.** We operate or partner with programs that recycle our products. **D.** The programs that we operate or partner with track and report the unit volumes of our products recycled, and the percentage recycled is: **D1.**_____%.
14. 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.
15. 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 product: **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.

Key Performance Indicators with Guidance

1. CERTIFICATION - PAPER AND WOOD SOURCING

Question

What percentage of your paper and wood supply, by dry mass, was third-party certified or underwent third-party legality verification?

Response Options

A. Not applicable. We do not use paper and wood in our products.

B. We are unable to determine at this time or we do not source paper and wood under a forest certification or legality verification program.

C. The following percentage of our paper and wood supply, by mass purchased, was sourced in accordance with a certification program:

C1._____% of our paper and wood only underwent third-party legality verification.

C2._____% of our paper and wood supply was certified as FSC Controlled Wood.

C3._____% of our paper and wood supply was certified to the SFI Fiber Sourcing Standard or under a PEFC Due Diligence System.

C4._____% of paper and wood supply was FSC-certified.

C5._____% of our paper and wood supply was SFI-certified or certified under another PEFC-endorsed certification.

Guidance

Calculation & Scope

Calculate C1 as the dry mass of your paper and wood supply that only underwent third-party legality verification, divided by the total dry mass of your paper and wood supply, then multiply by 100. Do not include in this calculation any supply that is included under one of the other response options.

Calculate C2 as the dry mass of your paper and wood supply that had FSC Controlled Wood certification, divided by the total dry mass of your paper or wood supply, then multiply by 100.

Calculate C3 as the dry mass of your paper and wood supply that was certified to the SFI Fiber Sourcing Standard or sourced under a PEFC-Due Diligence System, divided by the total dry mass of your paper and wood supply, then multiply by 100.

Calculate C4 as the dry mass of your paper and wood supply that was FSC-certified, divided by the total dry mass of your paper and wood supply, then multiply by 100.

Calculate C5 as the dry mass of your paper and wood supply that was SFI-certified or certified under another PEFC-endorsed program, divided by the total dry mass of your paper and wood supply, then multiply by 100.

The sum of C1, C2, C3, C4, and C5 must not exceed 100%. Do not include the same paper or wood supply in the calculation of more than one response option. The last day of the 12-month reporting period must be within 12 months of the completion date of this question.

Certifications, Standards & Tools

CERFLOR - Brazilian Forest Certification Program: This organization is an independent, third-party certification program that focuses on sustainable management of natural and planted Amazonian tropical forests. CERFLOR is a PEFC-endorsed certification.
https://www.pefc.org/discover-pefc/our-pefc-members/national-members/brazilian-forest-certification-programme-cerflor

CSA - Canadian Standards Association: CSA Group is an internationally-accredited standards development and testing and certification organization that provides consumer product evaluation, education, and training services dedicated to advancing safety, sustainability, and social good. Some programs include environmental product performance, management systems and processes, registry services, worker and workplace safety, energy efficiency verification, and greenhouse gas clean projects. Programs specific to wood sourcing are outlined in Canada's National Standard for Sustainable Forest Management. CSA is a PEFC-endorsed program.
http://www.csagroup.org/

EU Forest Law Enforcement, Governance and Trade Volunteer Partnership Agreement: Voluntary Partnership Agreements (VPAs) are a central element of the EU's strategy in the fight against illegal logging. A VPA is a bilateral trade agreement between the EU and a timber-exporting country outside the EU.
https://www.euflegt.efi.int/vpa

Forest Legality Alliance's Risk Tool: This tool is designed to present useful information about the sourcing of forest products. You can search the tool's content by country or by species to find specific information.
https://forestlegality.org/risk-tool/

FSC Controlled Wood: The Forest Stewardship Council (FSC) Controlled Wood is non-certified material subject to controlled conditions that can be mixed with FSC-certified material during manufacturing FSC-Mix products. This has enabled manufacturers to manage low and fluctuating supplies of FSC certified forest products, while creating demand for FSC certified wood.
https://us.fsc.org/en-us/certification/controlled-wood

FSC Forest Certification: Products with FSC certification come from responsibly managed forests that provide environmental, social, and economic benefits. The following website provides more information related to the principles that guide the certification process.
https://us.fsc.org/en-us/certification

PEFC - Program for the Endorsement of Forest Certification: The Program for the Endorsement of Forest Certification (PEFC) provides guidance for integrating best practices for the entire forest supply chain to ensure that timber and non-timber forest products are produced with consideration of ecological, social, and ethical standards.
http://www.pefc.org

PEFC - Program for the Endorsement of Forest Certification Due Diligence System: The PEFC DDS is an integral part of the PEFC Chain of Custody standard and is the mechanism that avoids the inclusion of timber from controversial sources in products with a PEFC claim.
https://www.pefc.org/for-business/supply-chain-companies

SFI - Sustainable Forestry Initiative - 2015-2019 Fiber Sourcing Standard: The SFI Fiber Sourcing Standard is for organizations that do not own or manage land but do procure wood directly from forests. Program Participants must show that the raw material in their supply chain comes from legal and responsible sources, whether the forests are certified or not. Primary producers must be third-party audited and certified to the SFI 2015-2019 Fiber Sourcing Standard. SFI is a PEFC-endorsed program.
https://www.sfiprogram.org/fibersourcingstandard/

SFI - Sustainable Forestry Initiative - 2015-2019 Standard: The SFI 2015-2019 Standard addresses sustainable forest management and responsible sourcing. SFI also has a chain of custody standard to track wood and paper flow through the supply chain. SFI is a PEFC-endorsed program.
http://www.sfiprogram.org/sfi-standard/

Hotspots Addressed

1. *Land conversion and deforestation - Forestry operations*

2. 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 was traced to the slaughterhouse of origin.
  - **C2.**_____% of our leather supply 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 sourced from tanneries that were audited in the last three years for worker health and safety.

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

5. *Animal welfare - Material production*

6. *Environmental impacts - Leather production*

3. RESPONSIBLE METALS SUPPLY

Question	Response Options
What percentage of your metal suppliers for this product category, by total spend, required all of their raw material suppliers to perform a verifiable site-level environmental and social sustainability assessment, subject to corrective action?	**A.** Not applicable. We do not manufacture products that contain metals. **B.** We are unable to determine at this time. **C.** The following percentage of our metal suppliers, by total spend, required an assessment of their suppliers: **C1.**_____%.

Guidance

Calculation & Scope

Calculate C1 as the spend on metal suppliers who require site-level assessments from all of their suppliers divided by the total spend on product units manufactured in this product category, then multiply by 100.

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

An assessment should include an on-site audit of environmental and social sustainability performance by a second or third party, or a systematic risk assessment against a standard or set of principles to determine risk based on conditions, controls, or other mitigating factors. Examples of standards or sets of principles include those developed by the International Council on Mining & Metals (ICMM) and the Initiative for Responsible Mining Assurance (IRMA).

Background Information

Aluminum Stewardship Initiative: The Aluminum Stewardship Initiative has created standards to assess responsible aluminum production, and supports an audit-based certification program.
https://aluminium-stewardship.org/

Better Sourcing Program: The Better Sourcing Program (BSP) provides a technology-based communications solution to allow global organizations to source artisanal and small-scale mining (ASM) ores through upstream due diligence, auditing and risk management.
https://www.rcsglobal.com/bettersourcing/

Initiative for Responsible Mining Assurance: This website outlines a multi-stakeholder initiative building a sustainability certification system for mining operations. Participation is open to manufacturers.
https://responsiblemining.net/

International Council on Mining & Metals: The International Council on Mining and Metals (ICMM) is a membership organization that serves the mining and metals industry by offering a sustainable development framework and an annual assessment of member progress towards addressing social and environmental sustainability issues in mining.
http://www.icmm.com/

Responsible Cobalt Initiative (RCI): An initiative under the Chinese Chamber of Commerce for Metals, Minerals & Chemicals (CCCMC), in collaboration with OECD, to bring importers and exporters of cobalt together with supply chain stakeholders to address social and environmental risks in the cobalt supply chain.
http://en.cccmc.org.cn/news/58372.htm

Responsible Jewellery Council (RJC) chain-of-custody certification: The Responsible Jewellery Council is a standard-setting and certification organization that has developed an ISEAL-accredited chain-of-custody certification program for use by the jewellery industry and manufacturers, which applies to gold and platinum group metals.
https://www.responsiblejewellery.com/rjc-certification/

Responsible Mica Initiative: A multi-stakeholder focused on responsible sourcing of mica in Indiay through the development and deployment of fair, responsible and sustainable practices, local community empowerment, and building a legal and liveable environment in local communities.
https://responsible-mica-initiative.com/

Responsible Minerals Initiative (RMI): Formerly known as the Conflict-Free Sourcing Initiative, the Responsible Minerals Initiative (RMI) is a joint effort between the Responsible Business Alliance (RBA) and GeSI to establish supply chain transparency tools, resources and training to assist organizations in responsibly sourcing conflict-free minerals from the Democratic Republic of Congo (DRC) and adjoining countries. Of note is their Responsible Minerals Assurance Process, which enables auditing and assessment of smelters for responsible ore sourcing and provides a centralized database for tracking smelter performance.
http://www.responsiblemineralsinitiative.org/

Responsible Steel: A multi-stakeholder initative bringing together organizations across the steel supply chain to develop a standard for responsible steel supply and related certifications.
https://www.responsiblesteel.org/

Definitions

Corrective actions: Prompt actions taken to eliminate the causes of a problem, thus preventing their recurrence.

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.

Hotspots Addressed

2. *Mining - Environmental impacts*

3. *Mining - Social impacts*

4. SAFE TRANSPORTATION OF PLASTIC RESIN

Question

How does your organization address the release of plastic pellets or resins into the environment that can occur during their transportation and transfer?

Response Options

- **A.** Not applicable. We do not manufacture products that contain plastic.
- **B.** We have no policy in place to minimize or eliminate pellet or resin release into the environment during material handling and transportation.
- **C.** We have released our corporate policy that addresses the responsible material handling and transportation of our purchased pellets and resins throughout our operation and supply chain.
- **D.** In addition to (C), we have joined a stewardship program to stop plastic pellet or resin release into the environment.
- **E.** In addition to (D), we actively engage in programs that clean up plastic waste in the environment.

Guidance

Certifications, Standards & Tools

THESIS Help Center Video: Safe Transportation of Plastic Resin KPI: Short video tutorial on the Safe Transportation of Plastic Resin KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/533750731

Background Information

Marine Litter Solutions: Marine Litter Solutions is a plastics-industry initiative to protect seas and oceans with efforts to reduce waste, increase recycling and litter prevention programs, and foster regional and global partnerships.
https://www.marinelittersolutions.com/

Nurdle Patrol: Nurdle Patrol is a citizen science initiative from the University of Texas Marine Science Institute that measures and tracks the volumes of plastic pellets washing up on shore and educate the public on the issue.
https://nurdlepatrol.org/Forms/Home/

Operation Clean Sweep (OCS): According to their website, "The Operation Clean Sweep (OCS) is an international program designed to prevent resin pellet loss and help keep pellets out of the marine environment. The program and manual contain guidelines to help plastics industry operations managers reduce the loss of pellets to the environment."
https://www.opcleansweep.org/Manual/

Hotspots Addressed

***8.** Disposal - Pre-production pellets*

5. GREENHOUSE GAS EMISSIONS - SUPPLY CHAIN

Question

What percentage of materials, ingredients, and components used in your final products, by total spend, was produced by suppliers that reported their annual Scope 1 and 2 greenhouse gas emissions?

Response Options

A. We are unable to determine at this time.

B. The following percentage of materials, ingredients, and components, by total spend, 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 spend on materials, ingredients, and components from suppliers that reported emissions, divided by total spend on all materials, ingredients, and components, 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.

Certifications, Standards & Tools

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

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

4. *Energy and material use - Metal supply chain*

9. *Energy consumption - Plastics conversion*

6. WORKER HEALTH AND SAFETY - SUPPLY CHAIN

Question

How did your organization manage worker health and safety risks in the operations that produced your materials, ingredients, and components?

Response Options

- **A.** We are unable to determine at this time.
- **B.** We are able to report the following for our supply:
  - **B1.**_____% of our materials, ingredients, and components, by mass, was produced in operations that have performed a risk assessment to identify high-risk areas for health and safety.
  - **B2.**_____% of our materials, ingredients, and components, by mass, was produced in operations that train workers on health and safety procedures.
  - **B3.**_____% of our materials, ingredients, and components, by mass, was produced in operations that implement a verifiable worker health and safety plan.
  - **B4.**_____% of our materials, ingredients, and components, by mass, was produced in operations that have a worker health and safety performance monitoring system in place.
  - **B5.**_____% of our materials, ingredients, and components, 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 your materials, ingredients, and components 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 your materials, ingredients, and components, 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 your materials, ingredients, and components that came from operations that train workers on health and safety procedures, divided by the total mass of your materials, ingredients, and components, 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 your materials, ingredients, and components that came from operations that implement a verifiable worker health and safety plan, divided by the total mass of your materials, ingredients, and components, 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, and the handling of animals (if applicable). 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 your materials, ingredients, and components that came from operations that have a worker health and safety performance monitoring system in place, divided by the total mass of your materials, ingredients, and components, 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 your materials, ingredients, and components that came from operations that were audited in the last three years on worker health and safety issues, divided by the total mass of your materials, ingredients, and components, 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

Recommended Practices for Safety and Health Programs: Defines and enforces standards for the safe and healthful working conditions for working men and women. OHSA also provides training, outreach education, and assistance. The OSHA tools can be used for self-evaluations, to compare elements and actions of different health and safety standards, to track implemented actions, identify remaining weaknesses, and strategies for continued improvement.
https://www.osha.gov/shpguidelines/explore-tools.html

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/

Sedex Members Ethical Trade Audit: Sedex Members Ethical Trade Audit is an auditing system that aligns with Ethical Trading Initiative's Base Code as well International Labour Organization Conventions. It has been developed to provide a public auditing methodology and format for companies to use to assess compliance.
https://www.sedex.com/our-services/smeta-audit/

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

IS0 26000 Social Responsibility: ISO 2600 is not a certification tool, but it offers guidance about social responsibility to all sorts of organizations regardless of their activity, size or location.
https://www.iso.org/iso-26000-social-responsibility.html

Social Accountability International Guidance Document for Social Accountability 8000: According to Social Accountability International, "this guidance document provides various tools and information for users of the Social Accountability 8000 standard, including definitions, background information, and examples."
https://sa-intl.org/wp-content/uploads/2020/02/SA8000-2014-Guidance-Document.pdf

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

Corrective actions: Prompt actions taken to eliminate the causes of a problem, thus preventing their recurrence.

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

7. *Chemical use - Plastics processing*

11. *Worker health and safety - Manufacturing and assembly*

7. GREENHOUSE GAS EMISSIONS INTENSITY - MANUFACTURING

Question

What was the greenhouse gas emissions intensity associated with final manufacture of your product?

Response Options

- **A.** We are unable to determine at this time.
- **B.** Our greenhouse gas emissions intensity was:
  B1._____ kg CO2e per dollar of final product.
  B2._____% of our product, by revenue, is represented by the number reported above.

Guidance

Calculation & Scope

Included in the scope of this question are fuels combusted and electricity used in facilities that perform final manufacturing activities, including product assembly and the manufacture of any materials, ingredients, and components purchased directly by your organization for inclusion in your products, as well as trace gases released during manufacture. This may include some or all of your organization's corporate scope 1 and 2 emissions, as well as scope 1 and 2 emissions from any final manufacturing facilities not within your organization's financial or operational control (e.g., contract manufacturers). Excluded from the scope of this question are GHG allowances, offsets, and credits.

You may calculate B1 using product-specific data or estimate intensity via facility data that is not product specific. If using product-specific data, calculate B1 as the average of each product's greenhouse gas emissions intensity, weighted by the total revenue of produced product.

If using facility data, calculate B1 as the average of each final manufacturing facility's greenhouse gas emissions intensity, weighted by the total revenue of produced product.

Calculate B2 as the revenue of produced products for which you are able to obtain data, divided by total revenue of produced products, then multiply by 100.

For each final manufacturing facility, follow the instructions in the Greenhouse Gas Protocol Corporate Standard (2015) to calculate scope 1 and 2 greenhouse gas emissions generated from electricity purchased or produced, fuels combusted, and trace gases released, and then add them together. Worksheets are available on the GHG Protocol web site to facilitate these calculations.

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

The data required for the CDP Climate Change 2020 Questionnaire combined with production data can be used to calculate your response (refer to C7.3b and C7.6b). The data required for "Disclosure 302-1 Energy consumption within the organization" in GRI 302: Energy 2016 or "Disclosure 305-1 Direct (Scope 1) GHG emissions" and "Disclosure 305-2 Energy indirect (Scope 2) GHG emissions" in GRI 305: Emissions 2016 can also be used to calculate your response.

Certifications, Standards & Tools

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 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

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/

Background Information	**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
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	***10.*** *Electricity consumption - Product manufacturing*

8. WORKER HEALTH AND SAFETY - MANUFACTURING

Question

What was the injury and illness rate at company-owned or contract manufacturing facilities that produced your final product?

Response Options

- **A.** Not applicable. We do not manufacture our own products.
- **B.** We are unable to determine at this time.
- **C.** Our injury and illness rate over our last twelve-month reporting period was:
  C1._____.
  C2._____% of our product, by revenue, 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 C1 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 C2 as the revenue from your final product for which you were able to obtain data divided by the total revenue from 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 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	***7.*** *Chemical use - Plastics processing* ***11.*** *Worker health and safety - Manufacturing and assembly*

9. PRIORITY CHEMICALS - DISCLOSURE

Question

What level of disclosure does your organization require from your ingredient and raw material suppliers?

Response Options

- **A.** We require that a materials safety data sheet accompany all raw materials and ingredients.
- **B.** In addition to (A), we require a list of all substances intentionally added to the ingredient or raw material, or have ensured that priority chemicals are identified in the composition.
- **C.** In addition to (B), we require a list of all priority chemicals present at a level greater than 1000 ppm, whether intentionally added or not.
- **D.** In addition to (C), we require a list of all priority chemicals present at a level greater than 100 ppm, whether intentionally added or not.

Guidance

Calculation & Scope

For this question, a priority chemical is one that meets the criteria for classification as a carcinogen, mutagen, reproductive toxicant, or is persistent, bioaccumulative, and toxic; or any chemical for which there is "scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern" (REACH Title VII, Chapter 1, Article 57). Priority chemicals are identified on a case-by-case basis.

Relevant criteria in the US EPA Safer Choice Program and Globally Harmonized System of Classification and Labelling of Chemicals, listed below, may be used to identify scientific evidence of probable serious effects to human health and the environment.to health or the environment from multiple agents or stressors" (EPA, 2003).

Certifications, Standards & Tools

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

THESIS Help Center Video: Priority Chemicals - Disclosure KPI: Short video tutorial on the Priority Chemicals - Disclosure KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/533750684

Definitions

Priority chemical: A chemical that meets the criteria for classification as a carcinogen, mutagen, reproductive toxicant, or is persistent, bioaccumulative, and toxic; or any chemical for which there is "scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern" (REACH Title VII, Chapter 1, Article 57). Priority chemicals are identified on a case-by-case basis.

Hotspots Addressed

14. *Additive ingestion - Product use*

10. PRODUCT DESIGN

Question

Does your organization consider resource conservation, material efficiency, durability, and end-of-life during product design?

Response Options

- **A.** We do not consider any of these factors during product design.
- **B.** We provide tools and training that help designers address these factors during product design.
- **C.** In addition to (B), we formally assess whether these factors are applied during product design.
- **D.** In addition to (C), we publicly disclose information on how our product design addresses these factors.

Guidance

Calculation & Scope

This question does not address packaging materials. Product design strategies may include design for lightweighting, durability, disassembly, reuse, recycled content, recyclability, and compostability.

Background Information

Autodesk - Design for Sustainability: Autodesk® Sustainability Workshop provides resources, tools and online learning opportunities to teach the principles of sustainable design.
https://academy.autodesk.com/sustainable-design

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

UN Environment Design for Sustainability: Materials Efficiency: One example of a tool and protocol for material efficiency is included in the Design for Sustainability report published by UN Environment.
https://wedocs.unep.org/handle/20.500.11822/7961

Hotspots Addressed

15. *Product disposal - Landfill & incineration*

11. RECYCLED CONTENT

Question	Response Options
What percentage, by mass, of the products you manufactured was made from post-consumer recycled content?	**A.** We are unable to determine at this time. **B.** The percentage of post-consumer recycled content is: **B1.**_____ %.

Guidance

Calculation & Scope

This question covers materials, such as metals, plastics, and wood, as well as ingredients, such as motor oil and refrigerants. Calculate B1 by dividing the mass of post-consumer recycled materials or ingredients in the final product by the total mass of the final product, then multiply by 100. If multiple product configurations are sold, perform this calculation for each configuration, then calculate B1 and the sales-weighted average across all configurations. Treat refurbished goods as 100% post-consumer recycled material. Some materials and ingredients will have no available recycling stream, but the masses of these should still be included in the final product's mass.

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: Recycled Content KPI: Short video tutorial on the Recycled Content KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/531017179

Background Information

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

Prospector: This searchable database from UL allows product designers to search for materials and ingredients that meet a set of user-defined specifications, including those that contain some amount of recycled content.
https://www.ulprospector.com/en/na

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))

Hotspots Addressed

4. *Energy and material use - Metal supply chain*

15. *Product disposal - Landfill & incineration*

12. TRANSPORTATION TO RETAILERS

Question	Response Options
What percentage of your final product was transported to downstream retail or distribution centers by logistics providers (carriers) that reported their annual greenhouse gas (GHG) emissions associated with transportation?	**A.** We are unable to determine at this time. **B.** The following percentage of our product, by mass, was shipped to retail or distribution centers by carriers who reported their GHG emissions associated with transportation: **B1.**_____%.

Guidance

Calculation & Scope

Include shipments of your product from final manufacturing facilities to downstream retailers or distributors. Include both company-owned and contracted fleet. Exclude data for return trips. If retailers are responsible for the transportation of some or all of your final product, the retailer may hold the information necessary to calculate your response. It may be made available in a public report or by request.

Calculate B1 as the volume of product transported by carriers that reported emissions, divided by total volume of product transported, 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 a supplier completed the CDP Climate Change 2020 Questionnaire, you may count that as compliance with this question. Examples of other compliant standards are provided in the Certifications, Standards, & Tools section below.

Certifications, Standards & Tools

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

Clean Shipping Index: According to their website, "Clean Shipping Index is a tool for cargo owners to select clean ships and quality ship operators" to minimize environmental footprint and identify areas for environmental improvement.
https://www.cleanshippingindex.com/

Clear Cargo: The Clean Cargo Working group is a business initiative created by BSR to collaboratively address the environmental impacts of shipping and transportation.
https://www.clean-cargo.org/data-methods

Ecotransit: EcotransIT World calculates and quantifies environmental impacts of different carriers across the world in terms of direct energy usage and emissions during the operation of vehicles during the transport of products.
http://www.ecotransit.org/

EN 16258:2012: The European Committee for Standardization's EN 16258:2012 standard deals with the methodology for calculation and reporting of energy consumption and greenhouse gas (GHG) emissions of freight and passenger transport services.
https://shop.bsigroup.com/ProductDetail/?pid=000000000030241098

IATA CO2 Emissions Measurement Methodology: This document includes a methodology for measuring CO2 emissions from air cargo.
https://www.iata.org/en/programs/cargo/sustainability/carbon-footprint/

THESIS Help Center Video: Transportation to Retailers KPI: Short video tutorial on the Transportation to Retailers KPI. Use case-sensitive password 'thesis' when prompted.

	https://vimeo.com/529545735
Background Information	**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
Hotspots Addressed	***13.*** *Fuel combustion - Transportation and distribution*

13. PRODUCT STEWARDSHIP

Question	Response Options
How does your organization promote recycling of any used durable goods you manufactured?	**A.** Not applicable. We do not sell durable goods. **B.** We neither operate nor partner with programs that recycle our products. **C.** We operate or partner with programs that recycle our products. **D.** The programs that we operate or partner with track and report the unit volumes of our products recycled, and the percentage recycled is: **D1.**_____%.

Guidance

Calculation & Scope

This question addresses takeback programs that an organization may fund, contract, or physically operate, in whole or in part, to enable consumers to return products for responsible end-of-life management. Include only products and materials for which an organization has the ability to decide or influence the handling, treatment, and disposal of returned devices, components, and materials. These calculations should be made at the program level rather than category level. The same percentage can be reported across multiple product categories if the products are collected and managed in the same program within the organization. Separate programs require separate percentage calculations when reported in different product category questionnaires. If products under the same category are collected in separate programs, average the recycling performance of the two programs and report that value in D1.

Calculate D1 as the number of product units returned through the program(s) for recycling divided by the total number of product units sold, then multiply by 100. If this number exceeds 100, report it as 100.

Perform this calculation using data from a 12-month period that ended within 12 months of the date you respond to this question. Data for both the unit volume returned and unit volume sold should come from the same year, even though units may be returned in a different year than they were sold.

Examples of stewardship programs include extended producer responsibility programs and product takeback programs. Such programs should ensure that materials are recycled or disposed of in an environmentally sensitive manner.

Certifications, Standards & Tools

THESIS Help Center Video: Product Stewardship KPI: Short video tutorial on the Product Stewardship KPI. Use case-sensitive password 'thesis' when prompted.
https://vimeo.com/533750712

Definitions

Durable good: A durable good is a product whose expected lifespan is three years or more.

Product stewardship: The set of activities by which those who participate in a product's life cycle share responsibility for its total life cycle impacts.

Takeback program: A collection method whereby consumers return specific products or classes of products at the end of their useful lives for potential reuse and refurbishment, followed by material recovery and appropriate disposal.

Hotspots Addressed

4. *Energy and material use - Metal supply chain*

15. *Product disposal - Landfill & incineration*

14. 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

Global Protocol on Packaging Sustainability: The Global Protocol on Packaging Sustainability provides metrics and a framework for businesses on the relative sustainability of packaging.
https://www.theconsumergoodsforum.com/wp-content/uploads/2017/11/CGF-Global-Protocol-on-Packaging.pdf

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

ISO 18604:2013: ISO 18604:2013 (Packaging and the environment -- Material recycling) provides measurement standards for determining how recyclable a particular product is.
https://www.iso.org/standard/55872.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

***12.** Packaging disposal - Resource impacts*

15. 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 product:
  - **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

***12.** Packaging disposal - Resource impacts*

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 EXTRACTION

1. Land conversion and deforestation - Forestry operations Ineffective forest management and the conversion of natural forest can lead to losses of biodiversity and ecosystem services and to greenhouse gas emissions. **Related Improvement Opportunities** ***1.*** *Increase the use of wood from certification and third-party verified traceability programs* ***3.*** *Preservation of high conservation value areas* **KPIs** ***1.*** *Certification - Paper and wood sourcing*	**References** ▪ Adeoye & Ayeni, 2011 ▪ Durall, Gamiet, Simard, Kudrna, & Sakakibara, 2006 ▪ Sangermano, Toledano, & Eastman, 2012 ▪ Siikamaki & Newbold, 2012
2. Mining - Environmental impacts Metal mining can create many adverse environmental impacts, such as depletion of natural resources, greenhouse gas emissions, ecosystems damage, biodiversity loss, water quality degradation, and toxic gas releases. **Related Improvement Opportunities** ***2.*** *Mine land reclamation and restoration* ***4.*** *Acidic byproduct and emission abatement during ore processing* ***33.*** *Water management in ore extraction and processing* **KPIs** ***3.*** *Responsible metals supply*	**References** ▪ Gardner & Bell, 2007 ▪ Gould, 2012 ▪ Haque & Norgate, 2010 ▪ Harris & Mainiero, 2008 ▪ International Council on Mining & Metals, 2008 ▪ International Council on Mining & Metals (ICMM), 2010 ▪ Lottermoser, 2007 ▪ Norgate, Jahanshahi, & Rankin, 2007 ▪ Spitz & Trudinger, 2009 ▪ United States Department of Energy, 2002 ▪ Zhang, et al. 2011
3. Mining - Social impacts Mining operations (particularly small-scale mining operations in developing countries) can violate worker rights and endanger the safety and quality of life for both workers and the surrounding communities. **Related Improvement Opportunities** ***25.*** *Local community engagement around mine sites* ***30.*** *Social sustainability in mining operations* **KPIs** ***3.*** *Responsible metals supply*	**References** ▪ Azman & Hudak, 2011 ▪ Blackmore, Holzman, & Buxton, 2013 ▪ Buxton, 2013 ▪ Chernaik, 2010 ▪ Colinet, Cecala, Chekan, Organiscak, & Wolfe, 2010 ▪ Nelson, Nelson, Marisol & Fingerhut, 2005 ▪ Smith, 2013 ▪ Stark & Levin, 2011

4. Energy and material use - Metal supply chain

Metal production requires high levels of energy generation, with its commensurate environmental impacts, and depletes both fossil and mineral resources that can be offset by using recycled material.

Related Improvement Opportunities

4. *Acidic byproduct and emission abatement during ore processing*
28. *Metals - Recycled content*

KPIs

5. *Greenhouse gas emissions - Supply chain*
11. *Recycled content*
13. *Product stewardship*

References

- Igarashi, Daigo, Yasunari, & Adachi, 2007
- Norgate, Jahanshahi, & Rankin, 2004
- Norgate, Jahanshahi, & Rankin, 2007

RAW MATERIAL PROCESSING

5. Animal welfare - Material production

There is potential for poor animal welfare practices associated with handling, housing, and treatment practices on the farm, during transportation, and at the slaughterhouse in livestock supply chains.

Related Improvement Opportunities

22. *Implement animal welfare best practices during transport*
23. *Implement animal welfare best practices during slaughter*
24. *Implement animal welfare programs, plans, and practices on-farm*

KPIs

2. *Leather impacts - Supply chain*

References

- Gregory, 2008

AGRICULTURE AND LIVESTOCK

6. Environmental impacts - Leather production

Activities associated with the production of leather materials impact animal welfare, climate change, pollution, ecosystem quality and biodiversity, and resource depletion.

Related Improvement Opportunities

17. *Collaborate with supply chain partners on sustainable initiatives*
22. *Implement animal welfare best practices during transport*
23. *Implement animal welfare best practices during slaughter*
24. *Implement animal welfare programs, plans, and practices on-farm*

KPIs

2. *Leather impacts - Supply chain*

References

- China Water Risk, 2011
- Jacques, Agogino, & Guimaraes, 2010
- Rydin, Black, Scalet, and Canova, 2013

INTERMEDIATE PRODUCTION

7. Chemical use - Plastics processing*

In manufacturing facilities with inadequate controls, workers may be exposed to hazardous chemicals, fumes, and other occupational risks that may lead to serious health problems.

Related Improvement Opportunities

27. *Materials restriction for priority chemicals*
29. *Reduction of worker exposure to occupational hazards*
31. *Supplier codes of conduct for improved working conditions*

KPIs

6. *Worker health and safety - Supply chain*
8. *Worker health and safety - Manufacturing*

References

- Attarchi, Aminian, Dolati, & Mazaheri, 2007
- Edwards, 2010a
- Gennaro, Ceppi, Crosignani, & Montanaro, 2008
- United States Department of Labor, 2013
- Occupational Safety & Health Administration (OSHA), 2012

8. Disposal - Pre-production pellets

Loss of pre-production resin pellets (nurdles) leads to pollution on land and in oceans, potentially causing loss of sea life and plastics contamination of the food chain.

Related Improvement Opportunities

8. *Plastics - Recovery initiatives for resin pellets*
14. *Consumer education about plastics end of life*

KPIs

4. *Safe transportation of plastic resin*

References

- Costa et al., 2010
- Karlsson, Arneborg, Bronström, Almroth, Gipperth, & Hassellöv, 2018
- Sheavly & Register, 2007
- Tunnell, Dunning, Scheef, & Swanson, 2020

9. Energy consumption - Plastics conversion

Energy intensive resin conversion processes lead to greenhouse gas, nitrous oxide, sulfur oxide, and particulate emissions and non-renewable resource use at power generation plants.

Related Improvement Opportunities

5. *Advanced technology research for energy efficiency*
6. *Best practices for energy-efficient manufacturing*
7. *Manufacturing - Track and report emissions*

KPIs

5. *Greenhouse gas emissions - Supply chain*

References

- Bassi, Tan, & Mbi, 2012
- Huijbregts et al., 2010
- International Energy Agency, 2008
- Kanungo & Swan, 2008
- KEMA, 2012
- Weissman, Ananthanarayanan, Gupta, & Sriram, 2010

MANUFACTURING AND ASSEMBLY

10. Electricity consumption - Product manufacturing

Energy consumption (primarily electricity) demand from final manufacturing and assembly of metal and plastic products leads to greenhouse gas emissions, nitrous oxide and sulfuric oxide emissions, particulate emissions and non-renewable resource use at power generation plants.

Related Improvement Opportunities

9. *Manufacturing energy efficiency*
20. *Greenhouse gas reduction - Metal maufacturing*
21. *Greenhouse gas emission reduction - Plastics manufacturing*

KPIs

7. *Greenhouse gas emissions intensity - Manufacturing*

References

- Igarashi, Daigo, Yasunari, & Adachi, 2007
- Johnson, Reck, Wang, & Graedel, 2008
- Norgate, Jahanshahi, & Rankin, 2004
- Norgate, Jahanshahi, & Rankin, 2007
- United States Environmental Protection Agency, 2012e
- Von Schéele, 2010

11. Worker health and safety - Manufacturing and assembly

Workers in product manufacturing facilities face potential injury from industrial equipment as well as exposure to silica or plastic-based dust, noise, glass shards, chemical fumes, and heat.

Related Improvement Opportunities

19. *Control of occupational silica exposure*
29. *Reduction of worker exposure to occupational hazards*
31. *Supplier codes of conduct for improved working conditions*

KPIs

6. *Worker health and safety - Supply chain*
8. *Worker health and safety - Manufacturing*

References

- Abdel-Rasoul, Al-Batanony, Abu-Salem, Taha, & Unis, 2013
- Amtrust, 2011
- European Commission, 2007a
- International Finance Corporation, 2007
- IFC, 2007c
- Leung, Yu, & Chen, 2012
- Manufacturing Skills Australia, 2012a
- Manufacturing Skills Australia, 2012b
- Steenland & Ward, 2013

PACKAGING

12. 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

10. *Optimize packaging-product systems*
11. *Utilize recycled content*
12. *Utilize renewable content*

KPIs

14. *Packaging Raw Material Sourcing*
15. *Sustainable Packaging Design and Production*

References

- European Commission, 2014
- Randell, Picken, & Grant, 2014
- US EPA, 2014b

DISTRIBUTION

13. Fuel combustion - Transportation and distribution

Consumer good transport to and from distribution centers and to recycling facilities leads to nitrous oxide and sulfuric oxide emissions, particulate emissions, greenhouse gas emissions, and depletion of non-renewable resources from diesel and other fuel combustion during transport.

Related Improvement Opportunities

13. *Maximize efficiency of transportation modes and routes*

KPIs

12. *Transportation to Retailers*

References

- Igl & Kellner, 2017
- Munksgaard, Lenzen, Jensen, & Pade, 2005
- Ugarte, Golden, & Dooley, 2016

USE

14. Additive ingestion - Product use

Exposure to plastic additives such as phthalates and brominated flame retardants as well as unreacted monomers that may leach from plastic products leads to potential human health impacts from bioaccumulation in humans and the environment.

Related Improvement Opportunities

16. *Alternatives assessment for priority chemicals*
26. *Materials disclosure for priority chemicals*
27. *Materials restriction for priority chemicals*

KPIs

9. *Priority chemicals - Disclosure*

References

- Babich et al., 2004
- Silva, Rajapakse, & Kortenkamp, 2002
- Stapleton et al., 2011
- Vandenberg, Maffini, Sonnenschien, Rubin, & Soto, 2009
- Zhang & Horrocks, 2003

END-OF-LIFE AND DISPOSAL

15. Product disposal - Landfill & incineration

Incinerating waste plastic generates greenhouse gas (GHG) emissions, sending recyclable plastics to landfills prevents recovery of non-renewable resources and risks long-term contamination of soils and groundwater by component chemicals, and generating plastic litter can adversely impact marine life.

Related Improvement Opportunities

15. *Landfill diversion*
18. *Consumer education for material efficiency*
32. *Sustainable design*

KPIs

10. *Product Design*
11. *Recycled content*
13. *Product stewardship*

References

- Barnes, Galgani, Thompson, & Barlaz, 2009
- Costa et al., 2010
- Dlamini, Fujimura, Yamasue, Okumura, & Ishihara, 2011
- Eriksson & Finnveden, 2009
- Foolmaun & Ramjeeawon, 2013
- Ocean Conservancy, 2009
- Sheavly & Register, 2007
- Tabasová, Kropáč, Kermes, Nemet, & Stehlík, 2012
- Teuten et al, 2009

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 EXTRACTION

1.	**Increase the use of wood from certification and third-party verified traceability programs** Use third-party verified traceability and certification systems to address social and environmental risks at the forest management level and to ensure transparency along the supply chain. Effective traceability systems (for non-certified fiber) and certification systems should be rigorous, transparent, and involve multiple stakeholders, and should provide clear rules for sustainable forest management. **Related Hotspots** ***1.*** *Land conversion and deforestation - Forestry operations*	**References** ▪ Espach, 2006 ▪ Forest Stewardship Council, 2012 ▪ Kuemmerle et al., 2009 ▪ Newsom, Bahn, & Cashore, 2006 ▪ Nogueron, Laestadius, & Lawson, 2009 ▪ Sangermano, Toledano, & Eastman, 2012 ▪ Siikamaki & Newbold, 2012 ▪ World Wildlife Fund, 2006 ▪ World Wildlife Fund, 2010b
2.	**Mine land reclamation and restoration** Engage stakeholders in developing and executing sustainable mine-closure and mine-land reclamation projects to restore wildlife habitat, biodiversity, and aesthetic appeal, and help repurpose the land for new recreational and business opportunities for the surrounding community. **Related Hotspots** ***2.*** *Mining - Environmental impacts*	**References** ▪ Gardner & Bell, 2007 ▪ International Council on Mining & Metals, 2008 ▪ United States Department of Energy, 2002
3.	**Preservation of high conservation value areas** Protecting high conservation value habitat (e.g., old growth, forest habitat for endangered, threatened, critically imperiled, and vulnerable species) protects biodiversity and avoids significant carbon emissions to the atmosphere. **Related Hotspots** ***1.*** *Land conversion and deforestation - Forestry operations*	**References** ▪ Durall, Gamiet, Simard, Kudrna, & Sakakibara, 2006 ▪ Keith, Mackey, & Lindenmayer, 2009

RAW MATERIAL PROCESSING

4.	**Acidic byproduct and emission abatement during ore processing** Reduce acid byproducts from material production by using alternative raw materials and recycled scrap and by recapturing emissions during processing. **Related Hotspots** ***2.*** *Mining - Environmental impacts* ***4.*** *Energy and material use - Metal supply chain*	**References** ▪ Norgate, Jahanshahi, & Rankin, 2007 ▪ United States Environmental Protection Agency, 2012e ▪ Von Schéele, 2010

INTERMEDIATE PRODUCTION

5.	**Advanced technology research for energy efficiency** Support advanced energy efficiency technology research and development efforts to further improve facility performance. **Related Hotspots** ***9.*** *Energy consumption - Plastics conversion*	**References** ▪ Bassi, Tan, & Mbi, 2012
6.	**Best practices for energy-efficient manufacturing** Increase the energy efficiency of chemical manufacturing plants through adoption of best available practices and technologies. **Related Hotspots** ***9.*** *Energy consumption - Plastics conversion*	**References** ▪ International Energy Agency, 2008 ▪ Neelis, Worrell, & Masanet, 2008
7.	**Manufacturing - Track and report emissions** Measure, report, and be accountable for organizational performance towards the goal of sustainable development using the GRI framework or equivalent. **Related Hotspots** ***9.*** *Energy consumption - Plastics conversion*	**References** ▪ Global Reporting Initiative, 2013
8.	**Plastics - Recovery initiatives for resin pellets** Participate in initiatives aimed at mitigating the loss of pre-production pellets (nurdles) during pellet transportation and handling. **Related Hotspots** ***8.*** *Disposal - Pre-production pellets*	**References** ▪ Ocean Conservancy, 2013 ▪ Sheavly & Register, 2007 ▪ Tunnell, Dunning, Scheef, & Swanson, 2020

MANUFACTURING AND ASSEMBLY

9.	**Manufacturing energy efficiency** Engage suppliers to incorporate energy-efficient technology that reduces the amount of energy consumed during product manufacturing. **Related Hotspots** ***10.*** *Electricity consumption - Product manufacturing*	**References** ▪ International Energy Agency, 2008

PACKAGING

10.	**Optimize packaging-product systems** Optimized packaging systems reduce environmental and social impacts associated with packaging production while appropriately protecting products. **Related Hotspots** ***12.*** *Packaging disposal - Resource impacts*	**References** ▪ Sustainable Packaging Coalition, 2009 ▪ The Consumer Goods Forum, 2011

11. Utilize recycled 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. **Related Hotspots** ***12.*** *Packaging disposal - Resource impacts*	**References** ▪ European Commission, 2001b ▪ IFC, 2007c ▪ Miller, Justiniano, & McQueen, 2005 ▪ Pulselli et al., 2009 ▪ Sustainable Packaging Coalition, 2009 ▪ The Consumer Goods Forum, 2011 ▪ US EPA, 2012b ▪ U.S. General Services Administration, 2013 ▪ US EPA, 2008c
12. Utilize renewable content 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** ***12.*** *Packaging disposal - Resource impacts*	**References** ▪ Sustainable Packaging Coalition, 2009 ▪ The Consumer Goods Forum, 2011

DISTRIBUTION

13. Maximize efficiency of transportation modes and routes Encourage use of transport vehicles that have increased fuel efficiency and improve logistics management to minimize transport distances. **Related Hotspots** ***13.*** *Fuel combustion - Transportation and distribution*	**References** ▪ Behrends, Lindholm, & Woxenius, 2008 ▪ Mathers, 2012 ▪ SmartWay Transport Partnership, 2010 ▪ The World Bank, 2013

END-OF-LIFE AND DISPOSAL

14. Consumer education about plastics end of life Educate consumers about the impacts of littering and landfilling and about ways to reduce waste and recycle. **Related Hotspots** ***8.*** *Disposal - Pre-production pellets*	**References** ▪ Keep America Beautiful, 2012 ▪ Ocean Conservancy, 2013 ▪ Sheavly & Register, 2007

RECYCLING

15. Landfill diversion Support regulatory policies that encourage recycling and capture the fuel value of the plastics that cannot be economically/physically recycled. **Related Hotspots** ***15.*** *Product disposal - Landfill & incineration*	**References** ▪ Al-Salem, Lettieri, & Baeyens, 2009 ▪ Eriksson & Finnveden, 2009 ▪ Kuczenski & Geyer, 2013

IMPROVEMENT OPPORTUNITIES FOR MULTIPLE LIFE CYCLE STAGES

16.	**Alternatives assessment for priority chemicals** Use an alternative assessment methodology to determine preferable materials and formulations for new products and to improve the environmental and social impacts of existing products. **Related Hotspots** ***14.*** *Additive ingestion - Product use*	**References** ▪ Lavoie et al., 2011 ▪ Rossi, Peele, & Thorpe, 2012
17.	**Collaborate with supply chain partners on sustainable initiatives** Industries and supply-chain entities should partner with leather suppliers to adopt new methods and techniques for producing an improved quality of leather that minimizes environmental impacts. **Related Hotspots** ***6.*** *Environmental impacts - Leather production*	**References** ▪ Jacques, Agogino, & Guimaraes, 2010 ▪ Rydin, Black, Scalet, and Canova, 2013
18.	**Consumer education for material efficiency** Spread awareness among people to reduce waste, encourage recycling for recovery of resources and prevent landfilling and littering. **Related Hotspots** ***15.*** *Product disposal - Landfill & incineration*	**References** ▪ Cierjacks, Behr, & Kowarik, 2012 ▪ Keep America Beautiful, 2012 ▪ Ocean Conservancy, 2013
19.	**Control of occupational silica exposure** Institute training and education programs, improve ventilation, and implement dust-control measures, such as using wet methods, enclosed processes, air curtains, and water spraying to protect workers from silica inhalation. **Related Hotspots** ***11.*** *Worker health and safety - Manufacturing and assembly*	**References** ▪ Leung, Yu, & Chen, 2012 ▪ Steenland & Ward, 2013
20.	**Greenhouse gas reduction - Metal maufacturing** Reduce greenhouse gas emissions due to energy consumption during metal processing and metal product manufacturing through alternate material use and emission and off-gas capture. **Related Hotspots** ***10.*** *Electricity consumption - Product manufacturing*	**References** ▪ Johnson, Reck, Wang, & Graedel, 2008 ▪ Norgate, Jahanshahi, & Rankin, 2004 ▪ Norgate, Jahanshahi, & Rankin, 2007 ▪ World Resources Institute & World Business Council for Sustainable Development, 2004
21.	**Greenhouse gas emission reduction - Plastics manufacturing** The introduction of new technologies and other process improvements can reduce energy consumption during plastics processing, manufacturing, and assembly, leading to reduced greenhouse gas emissions. **Related Hotspots** ***10.*** *Electricity consumption - Product manufacturing*	**References** ▪ Miller, Billington, & Lepech , 2013
22.	**Implement animal welfare best practices during transport** Seek out and implement practices associated with transport of animals that maximize animal welfare. Considerations may include loading density, temperature and moisture control, ventilation, and transportation time. **Related Hotspots** ***5.*** *Animal welfare - Material production* ***6.*** *Environmental impacts - Leather production*	**References** ▪ Compassion in World Farming, 2006 ▪ EU Council Regulation No. 1/2005, 2005

23. Implement animal welfare best practices during slaughter Seek out and implement practices associated with slaughter that maximize animal welfare. Considerations may include adequate stunning and slaughter equipment, alternative procedures, and timing of activities. **Related Hotspots** ***5.*** *Animal welfare - Material production* ***6.*** *Environmental impacts - Leather production*	**References** ▪ Compassion in World Farming, 2009 ▪ EU Council Regulation 1099/2009, 2009 ▪ Gregory, 2008
24. Implement animal welfare programs, plans, and practices on-farm Animal welfare programs, plans, or practices should address several aspects, including comprehensive veterinary care, proper herd management, reasonable housing conditions, and general minimization of pain and fear throughout the animal's life. The Five Freedoms provide principles on which good animal welfare is based. **Related Hotspots** ***5.*** *Animal welfare - Material production* ***6.*** *Environmental impacts - Leather production*	**References** ▪ World Organisation for Animal Health, 2016a
25. Local community engagement around mine sites Educate the local community in job-related skills, relocate community members who are displaced by mining operations, and engage them in integrated mine closure planning. **Related Hotspots** ***3.*** *Mining - Social impacts*	**References** ▪ International Council on Mining & Metals, 2008 ▪ Zhang, et al. 2011
26. Materials disclosure for priority chemicals Report product ingredients that may pose chemical hazards to consumers. **Related Hotspots** ***14.*** *Additive ingestion - Product use*	**References** ▪ European Chemicals Agency, 2012 ▪ Rossi, Peele, & Thorpe, 2012
27. Materials restriction for priority chemicals Implement internal corporate policies or programs that prohibit or restrict use of Substances of Very High Concern and other priority chemicals or materials (i.e., black lists, or conversely, white lists of acceptable materials). **Related Hotspots** ***7.*** *Chemical use - Plastics processing* ***14.*** *Additive ingestion - Product use*	**References** ▪ European Chemicals Agency, 2013 ▪ Panasonic Electronic Devices Co., Ltd., 2010
28. Metals - Recycled content Increase use of recycled content in products to reduce the burden and negative impacts of metal and metal product manufacturing across the metal supply chain. **Related Hotspots** ***4.*** *Energy and material use - Metal supply chain*	**References** ▪ Igarashi, Daigo, Yasunari, & Adachi, 2007
29. Reduction of worker exposure to occupational hazards Control and mitigate manufacturing hazards through engineering and work-practice controls, operator training that addresses emissions control, machine use, maintenance, inspections, and the use of guards and tools, and mitigates the risk of manual handling of heavy and hazardous materials. **Related Hotspots** ***7.*** *Chemical use - Plastics processing* ***11.*** *Worker health and safety - Manufacturing and assembly*	**References** ▪ Amtrust, 2011 ▪ International Finance Corporation, 2007 ▪ Manufacturing Skills Australia, 2012a ▪ Manufacturing Skills Australia, 2012b ▪ United States Department of Labor, 2011a

30. Social sustainability in mining operations Engage mine workers in developing standards and practices that ensure worker health, safety, and rights and in establishing transparent reporting practices that ensure corporate accountability. **Related Hotspots** ***3.*** *Mining - Social impacts*	**References** ▪ Blackmore, Holzman, & Buxton, 2013 ▪ Buxton, 2013 ▪ International Council on Mining and Metals, 2013 ▪ Young, Zhe, & Dias, 2013
31. Supplier codes of conduct for improved working conditions Source from suppliers who implement internationally-recognized social-certification standards and labor practice policies. **Related Hotspots** ***7.*** *Chemical use - Plastics processing* ***11.*** *Worker health and safety - Manufacturing and assembly*	**References** ▪ Ethical Trading Initiative, 2012a ▪ Social Accountability International, 2008 ▪ Verite, 2011
32. Sustainable design Design products to use recycled plastics and minimize the specification of different types of plastics to enhance recyclability at end of life. **Related Hotspots** ***15.*** *Product disposal - Landfill & incineration*	**References** ▪ Association of Postconsumer Plastic Recyclers, 2011 ▪ Bhamra, 2004 ▪ Eureka Recycling, 2012
33. Water management in ore extraction and processing Improve water efficiency in ore mining and processing operations through accurate water accounting and reuse. **Related Hotspots** ***2.*** *Mining - Environmental impacts*	**References** ▪ Calkins, 2008 ▪ International Council on Mining & Metals, 2012 ▪ Lottermoser, 2007

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Release Notes

*** 02.04.10, May 2021 ***
- Added hotspots, improvement opportunities, and references for newly added KPI(s) or response options.
- 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.
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.
02.03.10 May 2020
Added hotspots and improvement opportunities to category.
Combined all material WHS hotspots into Worker health and safety - Manufacturing and assembly to reach 15 hotspot limit. Adjusted improvement opportunities accordingly.
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.
Added hotspots, improvement opportunities, and references for existing KPIs.

02.02.10 June 2019
Major revision of the original set General Merchandise category. Separated out issues related to powered products (e.g., battery stewardship, maintenance and repair, use phase energy efficiency), which can now be found in the new General Merchandise - Powered Products category.
Updated guidance for Greenhouse gas emissions - Supply chain KPI, Transportation to Retailers KPI.
Revised Worker health and safety - Supply chain with new KPI from Social Task Force.

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.