GRACE

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W. R. Grace & Co.
GRI Report
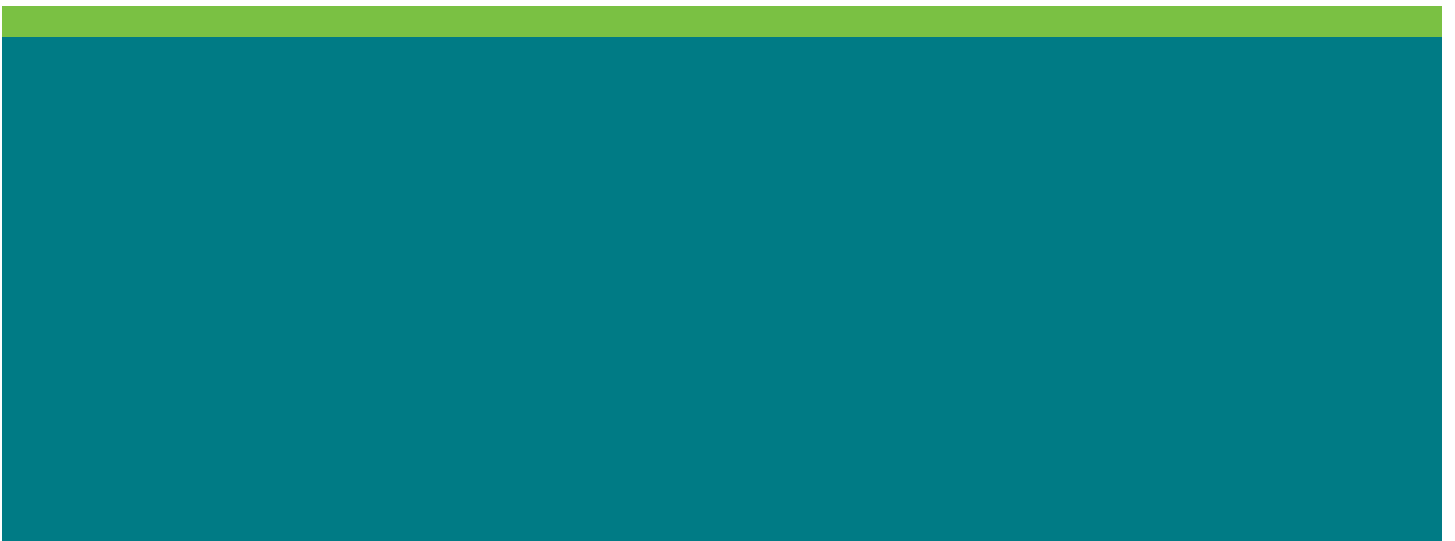
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About This Report

GRI 102-45, 102-46, 102-47, 102-48, 102-49, 102-50, 102-51, 102-52, 102-53, 102-54, 102-56

This report describes W. R. Grace and Co.'s (Grace) sustainability strategy and initiatives for the calendar year 2019, covering all manufacturing and administrative facilities under Grace's operational control. This report has been prepared in alignment to the GRI Core Option requirements.

We consider SASB's materiality matrix for the chemical industry as relevant to Grace and have used that as the basis for our report. In addition, Grace solicits input from a variety of stakeholders that informs its overall sustainability strategy and disclosure approach. A discussion on our materiality matrix can be found on our website and through the SASB standard for the chemical industry.

Grace currently collects sustainability metrics on an annual basis. These metrics include greenhouse gas emissions, energy, water withdrawal and consumption, hazardous and non-hazardous waste generated, health & safety recordable incidents and Process Safety Tier 1 and 2 events. This data is aggregated, analyzed and reviewed by Grace's Corporate EHS function and other key internal stakeholders. Our data has not undergone a third-party validation and assurance process.

The material topics that will be discussed in this report are listed below. The GRI standards addressed by each topic will be indicated as a marker below the topic heading.

- About Grace
- Economic Value Generated and Distributed
- Governance
- Ethics
- Stakeholder Engagement (Community, Customers, Raters, Employees, etc.)
- Employee Retention, Diversity, and Inclusion
- Health, Safety, and Process Safety
- Mitigation and Adaptation (Risk Management, Climate, Water, Physical and Transition)
- Natural Resource Management (GHG, Energy, Water, Waste)
- Product Safety and Sustainability
- Sustainable Sourcing

For any questions on this report, please contact John Oliver (john.oliver@grace.com) or Nathan Hipolito (nathan.hipolito@grace.com) of Grace's Corporate Sustainability team.

About Grace

GRI 102-1, 102-2, 102-3, 102-4, 102-5, 102-6, 102-7

W. R. Grace & Co. is engaged in the production and sale of specialty chemicals and specialty materials on a global basis through two reportable business segments: Grace Catalysts Technologies, which includes catalysts and related products and technologies used in refining, petrochemical and other chemical manufacturing applications; and Grace Materials Technologies, which includes specialty materials, including silica-based and silica-alumina-based materials, used in consumer/pharma, chemical process, and coatings applications.

W. R. Grace & Co. delivers value through performance. Our catalysts and specialized silicas improve the products and processes of many of the world's best companies. Through world-class knowhow, collaboration, and experience, we help customers in 70 countries achieve some of their most important goals, from high-performing products and high-productivity manufacturing, to improved efficiency, sustainability, and profitability.

Grace currently operates manufacturing facilities in 9 countries globally: Brazil, Canada, Germany, Malaysia, Philippines, Republic of Korea, Spain, Sweden and the United States of America. Grace also owns its Corporate Headquarters located at 7500 Grace Drive, Columbia, Maryland 21044 USA.

Economic Value Generated and Distributed

Our Business Segments

GRI 102-9

Catalysts Technologies

Catalysts Technologies uses our significant catalysts knowledge and applications expertise to design and manufacture products to create significant value for our customers. Our customers include plastics and chemicals manufacturers as well as oil refiners. We believe that our technological expertise and broad technology platform provide a competitive advantage, allowing us to quickly design products that help our customers create value in their operations and their end markets. Our Catalysts Technologies products are manufactured by a network of globally coordinated plants. Our integrated supply chain organization is responsible for the effective utilization of our manufacturing capabilities.

Specialty Catalysts

Grace Specialty Catalysts provides process technology for polypropylene and a broad range of high-performance catalysts and supports for specialized processes in the chemical value chain, from plastics to petrochemicals.

We are the only fully integrated supplier of polyolefin catalyst solutions across all process and catalyst technologies. Our strong strategic position is particularly evident in our worldwide polyolefin catalysts and process technology licensing business. Polyolefin catalysts are used to produce plastics including HDPE (high density polyethylene), LLDPE (linear low density polyethylene) and PP (polypropylene). Applications include packaging, consumer/ housewares, food packaging, construction, and automotive segments providing recyclable, lightweight, durable and versatile materials.

Grace's POLYTRAK® catalyst enables manufacturers to produce plastic auto parts for automotive applications that aid in reducing vehicle weight and improving fuel efficiency.

US Department of Energy estimates that reducing a vehicle's weight by 10% can increase its fuel economy by 5-7%. U.S. carmakers will be relying more on plastics and plastic composites to reduce the weight of the cars they produce in order to meet the U.S. government requirement for 54.5 miles per gallon by 2025. Industry analyst IHS Chemical estimates that the use of plastic in cars will jump by 75% by 2020.

Grace's POLYTRAK® catalyst enables manufacturers to produce key polypropylene grades for automotive applications, including exterior, interior and under-the-hood components. The growth in these applications come from replacement of more costly polymers and metal. The improved strength to weight ratio of reinforced polypropylene grades means that weight can be reduced by up to 50 – 80% over aluminum and steel parts.

FCC Catalysts and Additives

We are a global leader in developing and manufacturing fluid catalytic cracking, or FCC, catalysts and additives. Our FCC products also enable refiners to reduce emissions from their FCC units and reduce sulfur content in the transportation fuels they produce. Oil refining is a highly specialized discipline, and FCC catalysts must be tailored to meet local variations in crude oil feedstocks and a refinery's desired product mix. We work regularly with our customers to identify the most appropriate catalyst and additive formulations for their changing needs. FCC units are designed to produce a broad spectrum of refined product yields, including gasoline, middle distillates, and liquefied petroleum gas, or LPG. Traditionally, many FCC operators have focused on maximizing yields of transportation fuels. However, as demand for petrochemicals increases, a growing segment of refiners have transitioned their FCC operations with the primary objective of maximizing yields of petrochemical feedstocks, such as propylene.

Materials Technologies

Materials Technologies uses our significant specialty silica, zeolite and fine chemical knowledge and applications expertise to design and manufacture products to create significant value for our customers. Our customers include pharmaceutical companies, consumer products manufacturers, coatings manufacturers, emission control system manufacturers, petrochemical and natural gas processors, and plastics manufacturers.

Our Commitment

GRI 103-1

We create value for customers and investors by profitably growing our specialty chemicals and specialty materials businesses and achieving high levels of efficiency and cash flow. To meet these objectives, we:

- Invest to accelerate growth and extend our competitive advantages;
- Invest in great people to strengthen our high-performance culture;
- Execute the Grace Value Model to drive operating excellence
- Acquire to build our technology and manufacturing capabilities for our customers.

Our Management Approach

GRI 103-2

Growth Strategy

Our businesses are well-positioned to grow through our customer-driven innovation, commercial and operating excellence and thoughtful, disciplined merger and acquisition approach. Our businesses are interconnected through shared materials science and our highly integrated global manufacturing and supply chain operations. Our organic growth drivers include: global demand for cleaner fuels; rising living standards and growing middle class incomes; stricter environmental standards; and increased focus on health and wellness.

Grace Value Model

The Grace Value Model is our framework for creating and delivering value to customers, investors and employees. At the Company level, we create value through our focused portfolio, strong strategic position, and disciplined capital allocation. At the business level, we create value through customer-driven innovation, commercial excellence, and operating excellence. Linking and enabling all of these elements are great talent, high-performance culture, and integrated business management processes. Our ability to rigorously execute the Grace Value Model is a principal source of our competitive advantage in the global marketplace and our financial performance. The Grace Value Model is illustrated as follows:

Our Performance

In the Coatings market, our Materials Technologies accelerated the introduction of key additives for more environmentally friendly, aqueous-based coatings formulations, enhancing our customers' ability to meet or exceed evolving regulations.

ART® Hydroprocessing catalysts technologies, provided through our joint venture with Chevron, remain in high demand as regulations around the world continue the move to cleaner-burning fuels, and transportation fuels demand increases in developing economies. These leading technology catalysts upgrade heavy oils, enabling refiners to use less-expensive feedstocks and improve their profitability.

Sales for 2019 increased 1.3% overall compared with the prior year, up 3.0% on constant currency. The increase was driven by improved pricing in both segments and all regions. Higher sales volumes in Catalysts Technologies were driven by Specialty Catalyst growth in EMEA and Asia Pacific and the 2018 second quarter polyolefin catalysts acquisition, partially offset by certain discreet items. Sales volume in Materials Technologies were up driven by growth in the Americas, partially offset by a decline in Asia Pacific and EMEA.

Gross margin increased 80 basis points to 40.5% from 39.7% for the prior year. Adjusted Gross Margin increased 70 basis points to 41.4% from 40.7% for the prior year. Improved pricing, higher sales volumes, favorable mix, and lower depreciation were partially offset by higher manufacturing costs, including a 20 basis point impact related to higher raw materials and energy costs.

Governance

GRI 102-18

Board Leadership

Grace governance is led by its Board of Directors. We have established corporate governance principles, business ethics, and conflicts of interest polices to guide employees in their daily business interactions. The policies reaffirm Grace's commitment to comply with all applicable laws and be governed by the highest level of business ethics. In addition, Grace's Environment, Health, and Safety (EHS) Management System is Grace Company policy, with all appropriate audit and compliance procedures.

The standing committees of the Board of Directors are:

- Audit Committee
- Compensation Committee
- Nominating and Governance Committee
- Corporate Responsibility Committee

Additional information on our Board of Directors can be found in pages 15-18 of our 2020 Proxy

Sustainability Governance

The Corporate Responsibility Committee composed of all members of the board including the chairman, CEO and all other board members. This committee assists the Company's Board of Directors and management in addressing the Company's responsibilities as a global corporate citizen (including its responsibilities to its various stakeholders, such as shareholders, customers, employees and the communities in which the Company operates). The Committee addresses the Company's responsibilities in a wide range of areas, including affirmative action, equal employment opportunity and diversity initiatives; corporate contributions and community service programs; corporate training programs; sustainability; environmental, health and safety matters, and climate-related issues as they rise to the level of importance that would have a substantive impact on the operations or finances of the Company. The Board of Directors decided to endorse our emissions reduction target of 22% over 10 years in line with SBTi's limiting warming to well below 2ºC above pre-industrial levels.

Risk Mitigation and Adaptation

GRI 102-15, 201-2

Grace recognizes that it faces emerging transition and physical risks related to climate change which can negatively impact its operations and business. We evaluate these risks through our Enterprise Risk Management Committee, comprised of cross-functional Grace senior leaders. These risks are reported on a semi-annual basis and to the Corporate Responsibility Committee as needed.

Transition Risks

Regional, national and international governments are increasingly regulating GHG emissions through cap and trade systems, such as the EU's Emission Trading System or the proposed carbon pricing mechanism in North America. Emission credit prices associated with these systems may result in increased operating cost for Grace facilities. To mitigate this, Grace has begun integrating an assumed carbon price into the capital planning process, particularly for facilities under the EU-ETS, to promote investments in projects that meet our sustainability objectives.

The growth of electric vehicles and emerging regulations may lead to reduced demand for liquid transportation fuels. The resulting decrease in refining activities could negatively impact our revenues and business.

Physical Risks

Certain Grace facilities globally are located in areas that may be prone to increasing severe weather events such as hurricanes and flooding which can result in production disruptions. These weather events can also negatively impact our suppliers and customers, which can delay raw material and utility supply to our facilities and decrease production demand.

Ethics

GRI 102-16, 102-17

Our Commitment

GRI 103-1

Grace is dedicated to the values of teamwork, performance, integrity, speed, and innovation. Grace expects the highest level of ethical behavior from its employees and representatives throughout its global operations. Our Business Ethics and Antitrust Compliance policies embody our unwavering commitment to integrity and ethics and outlines the principles that each director, officer, employee, and other representative acting on behalf of Grace and its subsidiaries are expected to follow.

Our Management Approach

GRI 103-2

Grace conducts periodic corruption and bribery risk assessments through the Board of Directors Audit Committee which oversees Grace's Internal Audit function. The internal audit function is designed to provide independent, objective assurance and advisory results to evaluate and improve the effectiveness of business, risk management, control, and governance processes. Control procedures are audited on a regular basis using independent third-party auditors as well as internal audits through the independent internal audit function.

Grace frequently audits with due diligence for projects that have a higher risk of fraud or corruption. In addition, continuous monitoring is done across all functions for various business activities such as travel and transactions, with advanced data analytics being used for high-risk transactions. Rollout of additional

internal controls and Company training across functions related to fraud and anti-bribery are being done currently, with more to be expected in the future.

Grace, through its Board of Directors has established an Ethics and Integrity Action hotline that employees, customers, vendors, or other interested persons can use to anonymously report violations of or express concerns regarding (including, but not limited to, any matters involving accounting, internal accounting controls, audit matters or fraud). Stakeholders can also express their concerns to their Grace contact, the Chief Ethics Officer or the independent Chairman or Lead Independent Director, as appropriate.

We provide annual training for all employees on our business ethics and antitrust compliance policies. Upon completion of these trainings, select employees are required to sign the Ethics Certificate to certify that they will conduct all business on behalf of Grace in compliance with all applicable laws and regulations and in conformance with these policies. The Antitrust Compliance policy provides employees with guidelines covering relations with competitors, customers, mergers and acquisitions, joint ventures, and documentation.

Our anti-corruption policy is also incorporated into our Supplier Code of Conduct. Grace requires 100% of its suppliers to abide by the Code and encourages its Suppliers to require their suppliers and subcontractors to follow the principles of this Code in their operations. Failure of a Supplier to comply with the requirements in this Code may be considered a material breach by Grace in the related contract(s) or transaction(s) between Grace and Supplier and Grace may terminate such contract(s) or transaction(s) with Supplier at its discretion as a result.

Our Performance

GRI 103-3, 205-1, 205-2, 205-3, 206-1

Grace's Audit Committee conducts regular reviews of the Internal Audit function's performance and all corruption, bribery and antitrust risk assessments during the calendar year. Our Chief Ethics Officer also reviews all calls made to the Ethics Hotline for potential business ethics breaches such as antitrust violations or corruption incidents. In 2019, we received 20 calls to the Ethics Hotline and had 0 business ethics policy breaches. We also had 0 corruption and anti-trust incidents in 2019.

In 2019, 100% of the 1,971 selected employees signed our ethics certification. All 3,360 Grace employees received ethics training on the below courses:

- Company code of conduct
- Anti-Bribery Course
- Un-conscious Bias
- Respectful Communications
- Discrimination and Harassment
- Bystanders of Sexual Harassment

Our anti-corruption policy is also incorporated into our Supplier Code of Conduct, signed by 100% of Grace suppliers with annual spend over $1 Million per year.

Stakeholder Engagement

GRI 102-40, 102-42, 102-44, 403-4

Grace is an active member of the communities and markets in which we participate. We recognize that our operations, products and services impact a variety of internal and external stakeholders, which include our customers, investors, employees, communities, regulators and many more. We regularly engage with these stakeholders through formal and informal channels to understand their interests and maintain mutually beneficial relationships with them. We also communicate our sustainability performance to our stakeholders and consider their feedback as valuable inputs for the continuous improvement of our sustainability initiatives.

Approach to Stakeholder Engagement

GRI 102-43

Grace is an active member of the communities and markets in which we participate. We rely heavily on our understanding of this network and the voices of our customers and neighbors. Across a broad spectrum of stakeholders, we enable dialogue through a variety of channels.

Our Stakeholders	Sharing and Listening	Typical Areas of Interest
Customers	We are proud to serve many of the most respected and successful companies in the world. Large or small, our customers engage with us through our global sales network, customer service, our trusted distributors, our global technical service teams, and product development projects. We are active participants and frequent sponsors of conferences and events, from Grace user groups to the leading trade groups in countries around the world.	Our relationship with customers is built on talent, technology, and trust. Our mutual interest in the development, manufacture, and delivery of quality products that improve our customers' products and processes lies at the core of our engagement.
Candidates and Employees	Prospective and current employees are the lifeblood of Grace. Our media channels range from regular face-to-face conversations to social media and our other digital connections, including the Careers section of our website.	Our relationships with candidates and employees are rich, deep, and highly consequential. Our commitment is to be as transparent as is legal and practical as we strive to identify countless opportunities for mutual benefit.
Unions, Works Councils, and Safety Committees	Many Grace employees are represented by unions or local works councils. Engagement with these groups is constant and an integral part of our operations in those locations. Employee-driven health and safety	Matters that fall within the purview of unions, bargaining units, and works councils span working conditions as well as ways to improve our business and commitments to other stakeholders. Worker health and

	committees have been long-established at many of our sites.	safety is a key priority for our many safety committees that are a collaboration between employees, EHS staff, and site leadership.
Suppliers	Current and prospective suppliers reach us through our website and global Strategic Supply Chain organization. Our interaction is supported by the SAP Ariba solution.	We strive to achieve mutually beneficial partnerships with our suppliers around the world. We share our commitment to ethical standards through our Supplier Code of Conduct.
Local Communities	We participate in many advisory groups, neighborhood and business associations, and countless ad hoc conversations with our communities around the world. Our employees volunteer time, talent, and charitable gifts that often are matched by Grace.	Each of our facilities is engaged with groups in their area on matters of public safety, charitable giving, health and human services, education, and more.
Industry Groups	We are members of many industry, trade, and professional associations around the world. Our participation spans the breadth of ways in which these groups engage their members.	Our participation is driven and informed by many priorities including our need to be aware of developments affecting our business and many stakeholders. In our industry, trade groups offer a means to engage customers, comply with regulations, and much more.
Regulators and Policy Makers	We engage with regulators and policy makers at various local, national, and international levels through a variety of methods and functions within Grace including our site leaders, business leaders, government affairs and communications team, trade associations, and legal counsel.	Grace's engagement with regulators and policy makers is focused on ensuring compliance with laws and regulations affecting our business in jurisdictions around the world. Relationships are often collaborative and subject to disclosure under a variety of reporting standards.

Engagement with Workers

For example, many Grace facilities have established worker-management health & safety committees to evaluate and eliminate Environment, Health, Safety, and Security (EHSS) risks as part of our Responsible Care Management System. Facilities also engage with our neighbors through community action panels and many participate in paid volunteering initiatives by our employees to support the development of their local communities. At the corporate level, Grace engages its customers on sustainability through the development of products designed to meet our customers' sustainability objectives and response to customers' sustainability questionnaires as part of their requirements for doing business with Grace.

Engagement with Suppliers

In our supply chain, Grace engages with suppliers on sustainability issues through its Responsible Sourcing Program. The foundation of our responsible sourcing approach is the Grace Supplier Code of Conduct, which outlines our requirements for suppliers in the areas of environmental responsibility, labor and human rights, and business ethics.

Engagement with Communities

Grace's Corporate Communications and EHS functions communicate key EHS issues to both internal and external stakeholders we interact with through various channels. Our safety contact program has created multiple points of contact as we strive towards our goal of no one hurt by making safety the first thing we talk about in every meeting. Other EHS engagement initiatives include Safety Good News at our Curtis Bay facility and a company-wide Safety Contact contest participated by all our manufacturing sites.

Additional information can be found in the Stakeholder Engagement section of our website.

People, Inclusion and Diversity

Our Commitment

GRI 103-1

Grace's great talent and high-performance culture are the most important sources of our competitive advantage. Our high-performance culture is based on our commitment to performance and our five Grace Leadership Behaviors: Deliver Results; Think Critically; Be Authentic; Communicate; and Engage and Include. We aspire to strengthen these by welcoming and valuing the unique backgrounds, cultures, ethnicities, genders, experiences, perspectives, and contributions of our employees around the globe.

Our Management Approach

GRI 103-2, 401-2, 401-3, 404-2

Talent Acquisition and Retention

All employment decisions at Grace are based on business needs, job requirements and individual qualifications, without regard to race, color, religion or belief, national, social or ethnic origin, sex (including pregnancy), age, physical disability, HIV status, sexual orientation, gender identity and/or expression, marital, civil union or domestic partnership status, past or present military service, family medical history or genetic information, family or parental status, or any other status protected by the laws or regulations in the locations where we operate.

Grace also cultivates its talent pipeline through the 12-week Summer Internship Program, wherein qualified students work on projects across different functional areas that contribute to Grace's business objectives and complement their academic learning. Graduates of the Summer Internship Program are often recruited into the 3-year Manufacturing Leadership program upon completion of their undergraduate degrees. MLP Participants are given rotational assignments across various Integrated Supply Chain areas for facility and corporate roles. The program provides participants with valuable experience in Grace's operations and processes and prepares them for future leadership roles within Grace.

Professional Development

Grace uses multiple approaches to encourage and reinforce the ongoing professional development of its people's talents. Our high-performance culture is fueled by the engagement and inclusion and diversity of our workforce's array of experiences as well as their innate curiosity and desire to be lifelong learners.

Grace encourages the creation of robust development plans and a healthy coaching relationship between employees and their managers. All are encouraged to consider ways to improve technical, business, and leadership capabilities for both their current role and any potential roles they may aspire to. Employees are expected to take responsibility for their growth and development plan, seek support when needed, take advantage of tools and resources, and continually reassess their needs and plans. Managers are accountable for supporting these efforts and role modeling leadership behaviors.

Employees are encouraged to apply a 70-20-10 rule of thumb—70 percent of learning from work/job experience; 20 percent coaching, feedback, and peer mentoring; and 10 percent formal training—when planning their development and to work with their manager to identify real-world opportunities. For the 10 percent of traditional development, there is a wide array of business, professional, and leadership training available in the Company's online learning center and through facilitated courses.

Grace supports continuing education, including tuition reimbursement for eligible employees.

Total Rewards

Grace is dedicated to achieving equal opportunity for all employees and applicants for employment. In this connection, we comply with the Equal Employment Opportunity Posting (for U.S. locations) policy.

We provide the following benefits to all full-time U.S.-based employees at all of Grace's significant operating locations. We offer similar benefits to employees at our international facilities in compliance with local employment laws.

Medical	Physera
Dental	Livongo
Vision	Omada
Flexible Spending Account	Critical Illness Insurance
Life Insurance	MetLaw Legal Services
Supplemental and Dependent Life Insurance	Health Advocate
Accident Insurance	Employee Assistance Program
Business Travel Insurance and Assistance	Tuition Reimbursement
Parental Leave	Savings and Investment
Short- and Long-Term Disability Insurance	Retirement Contribution Plan
Grace Wellness Program	Company Donation Match Program
Holidays/Vacation	

Transition Assistance Programs

Grace makes every effort to reduce the impact of layoffs that occur during operations in a highly dynamic and competitive industry. Where changes in workforce are unavoidable, Grace works to lessen the impacts to its employees:

- Separation package based on pay and tenure for qualified involuntary.
- Outplacement services to assist employees with finding a new employer if layoffs occur.

Our Performance

GRI 103-3, 401-1, 404-1, 404-3, 405-1, 405-2, 406-1

Executive Diversity and Inclusion

The Nominating and Governance Committee has included diversity of industry and product experience among its criteria for recommendation and nomination of director candidates. In 2019, 38% of our independent directors were women, and on the Grace Leadership Team, 40% of our executives are women or people of color, including three of four business unit leaders.

Our corporate Human Resources regularly reviews diversity and inclusion within our organization. In 2019, all 3,360 Grace employees completed training on the following diversity and inclusion modules:

- Company code of conduct
- Anti-Bribery Course
- Un-conscious Bias
- Respectful Communications
- Discrimination and Harassment
- Bystanders of Sexual Harassment

We are currently undertaking a diversity and inclusion benchmarking survey to identify additional opportunities for improvement.

Professional Development

We have invested heavily in our global talent and talent management system, which includes aligned goal setting, ongoing feedback and coaching, effective performance reviews, and a continuous cycle of professional development. In 2019 we upgraded talent where needed and added key leadership roles throughout the organization.

Training Hours by Gender[1]	Number of Training Hours
Male	27,602
Female	6,885
Total	34,487

1 – Training data for operations personnel only and not inclusive of all training conducted globally.

Training Hours by Employee Category	Number of Training Hours
Early Career	8,295

Mid Career	4,344
Late Career	3,542
Total	16,181

2 - Due to data collection limitations, the total here will not align to annual training hours by gender. Efforts are underway to improve data collection and reporting.

Human Rights

Our Commitment

GRI 103-1

Grace is committed to the protection and advancement of human rights wherever we operate. We do not tolerate any form of exploitative child labor as defined in the International Labor Organization Convention 182, Article 3 (Worst Forms of Child Labor). We also do not use indentured, slave, bonded, or other forced involuntary labor and reject corporal punishment of any kind. Our commitment to human rights extends to both our operations and supply chain.

Our Management Approach

GRI 103-2

Grace adheres to the principles in the United Nations Universal Declaration on Human Rights and the International Labor Organization's Declaration on Fundamental Principles and Rights at Work as the basis of our human rights commitments. Our Human Rights policy outlines our commitment to the following:

- Employee, customer and community health & safety
- Compliance with all EHS and human rights laws and Grace requirements
- Non-tolerance towards child and human labor in our operations and supply chain
- Fair employee working hours and compensation
- Diverse and inclusive workplace free from discrimination
- Employee right to freedom of association
- Non-tolerance towards corruption, bribery and other business ethics violations

Facility management and human resources regularly engage with unionized employees of their facilities on health & safety, working conditions and compensation. Collective bargaining agreements are regularly reviewed with union leadership to ensure compliance with local labor laws and regulations. Many facilities have established management-employee health & safety committees for employees to raise any EHS hazards and issues.

All Grace employees are required to complete annual human rights training through our learning system. Any human rights violations can be reported confidentially by employees, customers, vendors, or other

interested persons to our Ethics Hotline. Employees can also report any these violations to their managers or local human resources representatives.

Grace has participated in internship programs sponsored by the German and Brazilian governments allowing interns to start at age 17. No other facilities employ labor under the age of 18.

All Grace suppliers must ensure that they do not use child or forced labor, respect their employees' right to bargain freely and comply with all local labor and human rights laws, as stipulated in our Supplier Code of Conduct. Suppliers are required to report violations or legal proceedings related to human or labor rights to Grace. We also encourage our suppliers to require their own suppliers and subcontractors to adopt the principles of Grace's Supplier Code of Conduct in their operations. Failure to meet these standards is grounds for us to terminate contracts and transactions with the supplier.

Our Performance
GRI 103-3, 407-1, 408-1, 409-1, 412-1, 412-2

In response to specific inquiries we conduct internal human rights and workforce reviews for Grace facilities to ensure full compliance with labor and human rights laws and Grace requirements.

In 2019, there were 0 freedom of association, child labor or forced labor violations reported from both our operations and value chain. All 3,360 Grace employees received human rights training on the below courses:

- Company code of conduct
- Anti-Bribery Course
- Un-conscious Bias
- Respectful Communications
- Discrimination and Harassment
- Bystanders of Sexual Harassment

Health, Safety and Process Safety

Our Commitment
GRI 103-1

At Grace, the safety and health of our employees are among our most critical concerns. In alignment with our EHS Goal of No One Hurt, all Grace employees are expected to work, think and be safe. We believe that safety is more than a priority; it must come first in everything we do and every decision we make.

Our Management Approach
GRI 103-2, 403-1, 403-2, 403-3, 403-4, 403-5, 403-6, 403-8

Leadership

Grace's commitment towards providing a safe and healthy workplace is anchored on its EHS policy and implemented through its global EHS Management System. All Grace employees, contractors and suppliers are also empowered to Lead with Safety through the following principles:

- All Grace employees, contractors, and suppliers make a personal commitment to working safely.

- We take ownership of our actions to drive our culture of safety, ethics, and core values.

- We speak up when we observe unsafe behaviors or conditions.

- We are all responsible for recognizing risks and doing something about them.

- Crucial conversations lead to safe workplaces.

- Safety is not an action but a mindset.

Grace's EHS Core Values are: No One Hurt, Nothing out of Place, and No Harm from our Products. Globally, we aspire to have zero recordable health & safety incidents, and zero Tier 1 process safety events at our facilities. To achieve this, we have set a short-term target to meet or exceed top quartile performance within the chemical industry for Total Recordable Incident Rate (TRIR) and Tier 1 & 2 Process Safety Event (PSE) rate.

Grace facility managers are accountable for effective implementation of the EHS Management System at their individual facilities in accordance with Grace's EHSS Core Values. Each facility employs full-time EHS leaders who are responsible for its day-to-day implementation and promoting the Lead with Safety culture among plant leaders and employees.

EHS Management System

The global framework for Grace's EHS activities is our EHSS Management System. Our US facilities adhere to the chemical industry-specific Responsible Care Management System to evaluate and manage all environmental, health & safety, process safety, product safety and security risks. Our International facilities adhere to the International Organization for Standardization (ISO) 14001, 45001, and 50001 to manage their environmental, energy, and occupational safety impacts. Occupational Safety and Process Safety are managed through the Responsible Care Management System or through ISO 45001.

Conformance to the EHSS Management System at both the facility and corporate level is audited annually and certified every three years by third-party registrars to demonstrate conformance with Responsible Care® or ISO 14001 / 45001 requirements.

Safety is managed through the Responsible Care Management System or through ISO 45001.

Hazard and Risk Identification

Grace uses a tiered structure to identify and assess its hazards and risks based on the scope and operational context. At the Corporate level, risks are identified and managed through a hazard and risk assessment process in alignment with the Responsible Care Management system. Each facility is required to maintain its own hazard and risk assessment (HRA) specific to its operational risks. For new and existing processes that meet applicability thresholds, a process hazard analysis (PHA) with Layer of Protection Analysis (LOPA) is conducted using tools and methodologies based on industry standards and best practices. A management of change (MOC) process is in place at all Grace facilities, to carefully consider the impacts of process, equipment, and organizational changes throughout the process and

facility lifecycle. Grace has aligned all above risk assessment processes to a unified risk matrix ensuring that risks are consistently evaluated and prioritized across the organization.

As part of its HRA, each facility identifies and evaluates hazards associated with each area or task and implements the appropriate engineering or administrative controls to mitigate identified risks. Personal protective equipment (PPE) is provided as an additional protection layer for employees exposed to these risks. PPE are selected in consultation with the affected employees and in compliance with all applicable national, state or local regulations.

Stop Work Authority

Employees at all levels are empowered to stop work should unsafe conditions be identified. Plant leaders are expected to model these behaviors through regular safety walkarounds at the facility. Employees can also report unsafe activity anonymously through the Grace Ethics Hotline.

EHS Engagement

All employees are required to undergo training to enable them to identify and eliminate EHS risks associated with their job, using the local language used by employees. These requirements are supplemented by specific training requirements contained in corporate implementing procedures for lock-out tag-out, confined space entry, hot work, fall protection, safety observations and other similar scenarios. Each Grace facility is responsible for maintaining a site-specific training program covering Grace employees and contractors that meets both regulatory and Responsible Care requirements.

Many Grace facilities have established worker-management health and safety committees which make decisions and investments on workplace health and safety. A tiered meeting structure from the facilities up through corporate headquarters meets on a weekly and monthly basis and includes representatives from all levels of facility leadership and workers. Committees develop and implement programs to eliminate EHS-related risks at the facility as part of internal initiatives. Many committees also have long-standing programs to track and report leading indicators, near-misses, incidents and other safety priorities. A robust program of internal and management system audits often engages committee members in audit interviews and facility tours.

Process Safety

Our commitment to providing a safe and healthful workplace extends to our Process Safety program. The key metric for assessing Process Safety performance is the number and rate of Process Safety Events as defined by the American Petroleum Institute Recommended Practice 754, which has been adopted by the American Chemistry Council's Responsible Care program. This metric is aligned with Grace's EHS goal of Nothing Out of Place from our operations. Grace has set a short-term target to meet or exceed top quartile performance within the chemical industry for Tier 1, Tier 2, and combined Tier 1&2 Process Safety Events. Our risk-based Process Safety program aims to safeguard the well-being of our employees and the communities in which we live and work, and responsibly meet our obligations to all our stakeholders. Over half of our facilities are regulated under a local or national process safety regulation.

Because the prevention of unplanned releases (including compressed air, water and steam) is critical to both the Process Safety and Environmental programs, the implementation of this metric provides synergies across multiple disciplines and is fully integrated into our EHS Management System. Grace has a global corporate goal of zero Tier One process safety events. Plant-specific goals for process safety events are KPIs tied to pay and performance evaluations within the Grace Integrated Supply Chain

organization. Grace has also defined additional process safety metrics which measure the health of our protective barriers and other process safety related impacts across all our facilities.

Process safety and occupational health and safety events are reported using a centralized incident management system available to any individual within the organization globally. Significant Near Miss events are investigated to identify the root cause using methods appropriate to the context of the event. EHS and Facility leadership identify containment, corrective, and preventive actions to ensure the root cause of each event is addressed and prevent reoccurrence. High learning value events are reviewed by global leadership and communicated throughout the integrated supply chain organization through defined meeting cadences.

Emergency Response

Emergency preparedness is a key component to our Management System. All Grace facilities are required to maintain emergency response programs and plans. We conduct emergency response drills involving cross-functional teams up to and including the Grace Leadership Team on a regular basis. Post-drill evaluation is conducted as part of the continuous improvement of the emergency procedure.

All of our facilities have one or more of the following: specialized onsite emergency response teams, contracts with local third-party response providers or a close working relationship with local governmental authorities to be prepared for emergencies. Several locations with onsite teams also participate in local mutual assistance programs. Additionally, Grace has HAZMAT specialists trained and available to quickly advise on off-site incidents involving certain high hazard chemicals. (Grace.com > Emergency Response)

Grace uses CHEMTREC as its 24/7/365 emergency response call center and has several country/regionally specific arrangements in Asia. All known incidents are tracked, and investigations conducted following the procedures employed for other incidents. (Grace.com > Emergency Response)

Occupational Health Services

Grace provides occupational health services for our employees. Several manufacturing locations have an on-site occupational health nurse and visiting physician who provide risk-based medical surveillance clearances, care for work-related illness and injuries and as appropriate, assist with non-occupational illness and injury management. Facilities without an on-site medical professional, work with local clinics to follow our surveillance protocols and manage work related illness and injuries. All facilities maintain stocked first-aid kits, AEDs and train volunteer medical responders in first aid/CPR/AED to assist in injuries and illness that may occur at the location.

Routine industrial hygiene sampling is conducted at the manufacturing facilities, pilot plants and laboratories to ensure proper exposure controls are available and functional. Sampling is conducted by trained onsite personnel or industrial hygiene consultants. All samples are obtained following established sampling protocols and analyzed per established procedures at accredited laboratories.

Grace provides several resources to support employee wellness. Programs are provided through our benefits network such as EAP, Diabetes Management, employee health advocate. Our online training software provides access to ergonomic training and access to software that can be downloaded to help employees remember to take ergo break and stretches. In additional, several sites provide access to onsite gyms and fitness classes.

Our Performance

GRI 103-3, 403-9, 403-10

In 2019, Grace's employee recordable incident rate was 0.48, which represents a 45% decrease from 2019. The number of our recordable incidents also decreased to 24 in 2019 (from 30 in 2018). Grace also reported a Lost Time Incident Rate (excluding contractors) of 0.20, marking a decrease from 2018.

Safety Metric	2019	2018
Work-Related Fatalities	0	0
Lost-Time Incident Rate	0.20	0.46
Lost-Time Injuries	10	17
Recordable Rate	0.48	0.87
Recordables	24	30

*Note: Recordable rate for all employees calculated (Number of Recordables * 200,000) / Hours Worked*
*Lost Time Incident Rate for all employees (Number of Lost Time Injuries * 200,000) / Hours Worked.*

In 2019, Grace recorded a total of 17 Tier 1 and Tier 2 PSE events. 2019 was also the first year Grace began aggregating Tier 1 and 2 PSE events across its global operations.

Process Safety Metric	2019
Tier 1	4
Tier 2	13
Total	17

Cybersecurity

Our Commitment

GRI 103-1

Information Security is critical for W. R. Grace & Co. (Grace) and its subsidiaries to meet its business objectives, protect our stakeholders, and ensure sustainability of our operations. Grace is committed to protecting the privacy of its stakeholders and their personal information.

Our Management Approach

GRI 103-2

Grace's Information Security strategy is an iterative process that is designed to develop and evolve to counter changes in the threat environment pursuant to the unique risks, threats, and vulnerabilities across the global scope of our operations. Grace Information Security program uses a layered approach to information security with Corporate and Internal IT policies, procedures, processes, standards, and information technology controls. Grace adheres to the National Institute of Standards and Technology

(NIST) Cybersecurity Framework built around the identification, protection, detection, response, and recovery across physical, cyber, and people dimensions.

The collection and use of information are guided by Grace's Privacy, Metadata Removal, and Information Security Policies. These policies are designed to protect customer/client data from unauthorized access or disclosure as well as protect Grace employees, visitors, contractors, and others who utilize Grace Information Technology resources. Confidentiality is ensured through these corporate and internal IT policies, procedures, and processes and standards.

Grace has dedicated resources and specialized response teams providing around-the-clock coordinated computer incident response throughout the Grace network. This tactical team executes response and recovery plans to ensure minimal disruption to ongoing operations. All response teams and systems undergo regular internal and external simulated drills to test and identify gaps in Incident Response, Business Continuity, Incident Recovery, and Disaster Recovery plans and procedures.

Prior to disposal of electronic waste (e-waste) Grace utilizes a qualified third-party to conduct asset decommissioning which removes all data including files and licensed software using U.S. Department of Defense standards for disk sanitization. Qualified third-party also manages disposal of electronic waste (e-waste) in a manner consistent with Grace's internal policies and regulations. Current vendors are certified to the SERI R2:2013 standard for responsible recycling. The R2 standard is designed to help ensure the quality, transparency, environmental and social responsibility of electronics recycling facilities. The R2 standard requires the documentation of waste anonymization and defines specific envlife requirements. Certificates of data destruction are issued on request.

As part of its Ethics program, Grace conducts annual cybersecurity awareness training that includes multiple phishing simulation throughout the year. All Grace employees are required to complete the annual cybersecurity training as part of their performance development review. Employees can report any cybersecurity violations to their line manager or anonymously through the Ethics Hotline.

Our Performance
GRI 103-3, 418-1

In 2019, Grace employees completed our cybersecurity training. We also did not receive any Ethics Hotline calls regarding customer privacy breaches from either external parties or regulatory agencies.

Natural Resource Management
Energy, Greenhouse Gas, and Emissions

Our Commitment
GRI 103-1

Grace is committed to cutting energy consumption and associated greenhouse gas emissions by improving energy efficiency and sourcing energy from renewables across our operations. We have also refined our product innovation process and designed new products for use-phase resource efficiency.

These products enable our customers to be more efficient, requiring fewer resources and energy per unit of production, thus enhancing our sustainability value proposition.

Our Management Approach

GRI 103-2

The global framework for Grace's EHS activities is our EHS Management System. Our US facilities adhere to the chemical industry-specific Responsible Care Management System to evaluate and manage all environmental, health & safety, process safety, product safety and security risks. Our International facilities adhere to the International Organization for Standardization (ISO) 14001, 45001, and 50001 to manage their environmental, energy, and occupational safety impacts. Energy, GHG, and Emissions are managed through the Responsible Care Management System for US based facilities or through ISO 14001 / ISO 50001 for international facilities.

Grace's commitment towards GHG emission reduction and enhanced energy efficiency is anchored on its global EHS policy and managed on a corporate and facility level through our global EHS Management System. Grace has set 22% global GHG Scope 1 and 2 emissions reduction target by 2029, from a 2019 baseline, which has been endorsed by its Board of Directors.

The Sustainability Leadership Team (SLT) is responsible for Grace's overall climate strategy and oversight. It is comprised of business presidents and Integrated Supply Chain senior leaders and is chaired by the Senior Vice President Public Affairs and EHS and Chief Sustainability Officer. Facility-level execution of emission and energy reduction initiatives are spearheaded by facility managers and process operation managers. These plant leaders develop and implement productivity projects to reduce resource (i.e. raw materials, energy and water) requirements for production, improve yields and manage cost.

Our Performance

GRI 103-3, 302-1, 302-2, 303-3, 303-4, 305-1, 305-2, 305-3, 305-4, 305-5, 305-7

Greenhouse Gas Emissions

Grace has recently aligned its greenhouse gas reporting processes to conform with the World Resource Institute's (WRI) Greenhouse Gas Reporting Protocol. This process changes the scope of reported emissions, and how emissions are calculated, and was utilized in our 2019 submission to CDP. Going forward, Grace will use the baseline established in our CDP submission using the WRI Protocol for energy and carbon emissions reporting.

Absolute Emissions	2019
Scope 1 (MT CO2-e)	575,774
Scope 2, Location-Based (MT CO2-e)	165,732
Scope 2, Market-Based (MT CO2-e)	175,675

Emissions Intensity	2019
Combined Scope 1 and 2 Emissions (MT CO2-e)	751,449

Total Revenue (including ART Joint Venture, USD)	2,468,500,000
Emissions Intensity (MT CO2-e / USD Revenue)	0.00030

Region	2019 Scope 1 Emissions (MT CO2-e)	2019 Scope 2 Emissions Market-Based (MT CO2-e)	2019 Scope 2 Emissions Location-Based (MT CO2-e)
Asia Pacific	8,391	13,039	13,039
Europe, Middle East, Africa	157,223	38,489.19	31,695.97
Americas	384,780	124,147	120,997
Total	575,774	175,675	165,732

Energy Consumption

Energy Metric	2019
Total Energy Consumption (MWh)	2,018,270
Total Revenue (Includes ART Joint Venture, USD)	2,468,500,000
Energy Intensity (MWh / USD Revenue)	0.00081761008

Energy Source	2019 (in MWh)
Purchased and Consumed Nonrenewable Fuels	1,519,813
Purchased Electricity from Nonrenewable energy sources	366,202
Purchased and Consumed Steam	132,255
Purchased and Consumed Heat	0
Purchased and Consumed Cooling	0.01
Total Nonrenewable Energy Sold	0
Total Purchased or Self-Generated Renewable Energy	0
Total Energy Consumption	2,018,270

Emerging regulations such as the EU ETS may impact the cost of energy with restrictions of emission allowances within cap and trade systems. As Grace facilities require a significant amount of energy for its operations, these restrictions are expected to increase our operating costs in the short to medium term. We are also facing increasing pressure from our customers and investors to report organizational emission data, as well as carbon footprint of our customer's products.

To meet these challenges, Grace will reduce emissions and increase efficiency at our facilities, particularly those under carbon trading systems. For example, the combined heat and power plant at our Worms, Germany facility supplies 95% of the facility's electricity requirements.

Air Emissions

Grace facilities utilize pollution control devices such as baghouses and scrubbers to ensure dust, particulate and fugitive emissions do not exceed federal, national, state or local emission standards. Certain of our facilities maintain Compliance Assurance Monitoring plans to identify all emission sources at the facility and install and maintain appropriate control devices such as baghouses and scrubbers. Many facilities have comprehensive workplace emissions measurement programs that monitor a variety of chemicals and particulates such as dust, ammonia, CO, and NOx emissions. Where required, certain facilities implement leak detection and programs to ensure compliance with regulatory and Grace requirements. These programs help us strive towards our goal of Nothing Out of Place.

Process Emissions	2019
SOx (MT)	143
NOx (MT)	133
VOCs (MT)	46

Water Management

Our Commitment

GRI 103-1, 301-1

Grace recognizes the importance of water availability and quality for both its manufacturing processes and its value chain. We also acknowledge that water is a finite resource that should be protected for future generations. We withdraw most of the water we use from third party sources, from surface water bodies close to our facilities, or from on-site groundwater wells.

Grace is committed to reduce water consumption throughout its operations, reuse water where feasible and treat and discharge wastewater in accordance with all applicable regulations.

Our Management Approach

GRI 103-2, 302-2

Grace's commitment to manage and conserve water resources is based on our global EHS policy, our EHSS Management Systems, and tied to our goal of Nothing Out of Place. To achieve this, we have set a global target to reduce our water consumption by 10% from a 2019 baseline. Grace monitors its annual water withdrawal, discharge and consumption for manufacturing and administrative facilities under its operational control.

Water reduction initiatives are driven at the facility level by the plant managers and process operation managers through the reuse of process water and implementation of productivity projects. Plant leaders

may also establish facility-specific water reduction targets should water availability be deemed a significant risk for the facility.

Grace maintains compliance with all local, state, federal, and regional effluent quality standards through the incorporation of management systems, management of change processes within our operational facilities, and robust incident reporting procedures. As part of our commitment to Nothing Out of Place, facilities have primary and secondary containment measures in place to prevent unplanned or uncontrolled chemical releases from entering groundwater. Facilities are also equipped with a variety of administrative, treatment, and operational controls to treat all wastewater parameters to permitted limits prior to discharge. Success is measured by achieving our target of 0 Tier 1 Process Safety Events and receiving no regulatory citations (notices of violation) from regulatory agencies.

Our Performance

GRI 103-3, 303-3, 303-4, 303-5

Many of our facilities collect stormwater sending it to onsite treatment systems prior to discharging to publicly owned treatment works or surface water discharges. We assumed that water consumption was 100% water withdrawal whenever stormwater cannot be separated from wastewater volume. This avoided negative consumption values but limited comparability of the data set. Going forward consumption will not be modified, and raw calculated values will be reported for all facilities. Grace's total water consumption in 2019 was 8,384.77 megaliters.

2019 Water Withdrawn by Source (in megaliters)			
Destination	**Fresh Water**	**Other Water**	**Total Discharge Volume**
Surface Water	6,115	0	6,115
Groundwater	7,243	0	7,243
Third-Party (Municipal) Water	9,438	0	9,438
Total Withdrawal	22,798	0	22,798

2019 Water Discharged by Destination (in megaliters)			
Destination	**Fresh Water**	**Other Water**	**Total Discharge Volume**
Surface Water	3,470	0	6,116
Brackish Water / Seawater	7,550	0	7,550
Groundwater	24	0	24
Third-Party (Municipal) Water	3,370	0	3,370
Total Discharge	14,414	0	14,414

All Grace facilities take steps to detect and eliminate any impacts to ground water and surface water sources through a variety of methods ranging from leak detection and containment systems to the regular collection of monitoring well data. For example, our Hesperia facility installed impermeable groundcover and gravel throughout the facility in order to minimize its stormwater discharge. Many manufacturing facilities perform primary or secondary treatment of wastewater pollutants to meet or exceed regulatory requirements prior to discharge.

Waste Management

Our Commitment

GRI 103-1

As part of its global EHS goal of Nothing Out of Place, Grace is committed to minimizing the generation of and safe disposal of all hazardous and non-hazardous waste from our operations. In addition, we design our products to be manufactured, transported, used, and disposed of safely.

Our Management Approach

GRI 103-2, 306-1, 306-2

Grace's commitment towards waste reduction throughout its operations and value chain is anchored on its global Environment Health and Safety EHS policy, and adherence to the Responsible Care® initiative. Grace has established a target of reducing its waste sent to landfills (in tons) by 5 percent from a 2019 baseline by 2029. This includes reductions in hazardous waste sent to landfills.

Hazardous waste is managed at each Grace manufacturing facility according to applicable regulations, corporate policies, and relevant industry best practices. Operational compliance to these waste management requirements are verified through periodic EHS compliance audits facilitated by third-party registrars.

All Grace facilities have dedicated waste areas allowing segregation of incompatible waste types (such as hazardous and non-hazardous) that meet or exceed regulatory requirements. Wastes are temporarily accumulated on-site in compliance with local regulations until they are hauled for off-site disposal by qualified third-party vendors or sold to recyclers. Grace currently maintains a single landfill at one facility which receives non-hazardous waste for disposal, and is operated in compliance with local and federal requirements. A network of monitoring wells and ongoing maintenance program minimize potential impacts to surrounding areas.

Grace facilities monitor their waste disposal primarily through invoices sent by waste disposal contractors and estimates. Waste disposal measurements are reported in weights disposed. Waste data is collected, aggregated and reported on an annual basis.

Stewardship of our waste is a key concern for Grace. We have established a qualification process for high risk disposal vendors involved in the reclamation or treatment, storage or disposal of hazardous waste. This process is designed to ensure waste is disposed of properly and in accordance to local regulations and our own internal standards. High Risk Disposal Vendors are required to undergo audits to

assess the robustness of their EHS risk management processes, their compliance with applicable regulations, and whether they are in good financial standing with appropriate insurance.
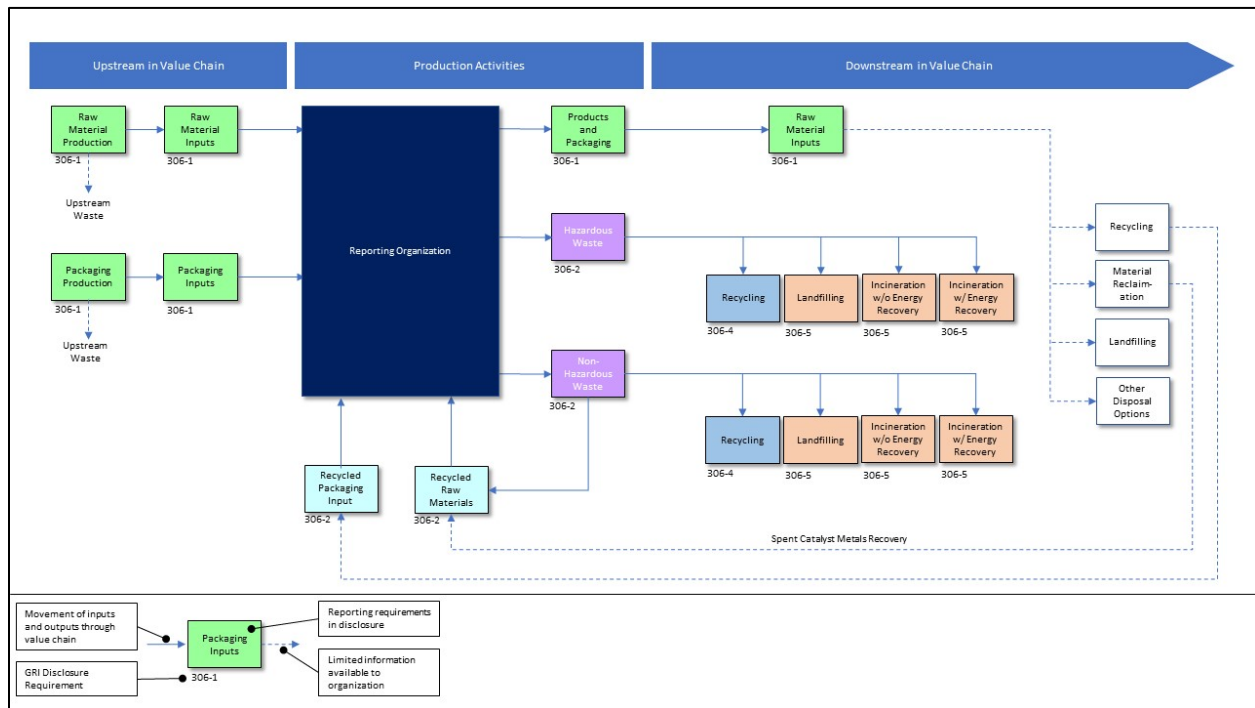
Our Performance

GRI 103-3, 306-3, 306-4, 306-5

In 2019, Grace generated 67,862 MT of hazardous and non-hazardous waste, of which 1% or 663 MT was recycled. 2019 was also the first year Grace began reported hazardous and non-hazardous waste generated from its operations.

Waste Generation	2019 (MT)
Non-Hazardous	57,740
Hazardous	10,122
Total Waste Volumes	67,862
Total Recycled Waste	663
Total Landfill Waste	49,073

2019 Waste Disposed by Treatment Methods	Hazardous Waste (in MT)	Non-Hazardous Waste (in MT)
Converted to Energy	174	0

Chemical Destruction	0	0
Incinerated (energy)	0	0
Incinerated (non-energy)	345	78
Landfill	8,321	40,752
Other	1,193	13,463
Recycled	90	482
Recycled for process inputs	0	84
Reused	0	7
Stored On-Site	0	2,874
Total Waste Generated	10,122	57,740

2019 Recycled Waste by Treatment Method	Hazardous Waste (in MT)	Non-Hazardous Waste (in MT)
Recycled	90	482
Recycled for process inputs	0	84
Reused	0	7
Total Hazardous Waste Recycled	90	573

Grace is constantly improving efficiency of its processes to reduce waste generated by its operations and products to reduce cost and maintain its competitive advantage. For example, Grace's customers can avoid disposal to landfill of spent catalyst by allowing Grace to rework and repurposes the e-catalyst for its customers. Our Kuantan, Malaysia facility significantly reduced its hazardous waste sent to landfill by recycling and selling its wastewater sludge to local brick companies for concrete applications. Other waste management activities include spent solvent reclamation prior to disposal and coordinating with R2 certified electronics recycling vendors and drum recyclers to minimize disposal of waste drums.

Environmental Compliance

Our Commitment

GRI 103-1

Grace's global EHS policy requires us to conduct business and operate facilities in an environmentally sound manner with a focus on eliminating unplanned environmental releases, improving efficiencies and reducing waste, and meeting community, state, and national regulations in jurisdictions where we operate around the world. Our commitment towards EHSS compliance is anchored on our global EHSS goal of

Nothing Out of Place. Progress towards this goal is tracked through our objective of 0 Tier 1 Process Safety Events and top quartile Tier 1 and Tier 2 Process Safety Event rates.

Our Management Approach

GRI 103-2

The global framework for Grace's EHS activities is our EHS Management System. U.S. facilities adhere to the chemical industry-specific Responsible Care Management System to evaluate and manage all environmental, health & safety, process safety, product safety and security risks. Our International facilities adhere to the International Organization for Standardization (ISO) 14001, 45001, and 50001 to manage their environmental, energy, and occupational safety impacts. Environmental Compliance is managed through the Responsible Care Management System or through ISO 14001.

Grace facilities, through their plant and EHSS leadership are required to develop and maintain a site-specific legal register listing all federal, national, state and local requirements. This register also details all EHSS permit, monitoring and reporting requirements with their respective cadences as required by the relevant EHSS authority. This process is managed through our integrated IT Systems which support our timely and accurate preparation and completion of compliance requirements.

EHS Management System at both the facility and corporate level are audited annually and certified every three years by third-party registrars to demonstrate conformance with Responsible Care® or ISO 14001 / 45001 requirements.

Reportable releases[1], regulatory citations[2], Tier 1 and Tier 2 Process Safety Events, and audit findings are investigated using industry-standard methods to identify the root causes and/or contributing factors leading to these events. Cross-functional facility teams work to identify containment, corrective, and preventive actions to address identified root causes.

Our Performance

GRI 103-3, 307-1

In 2019, we had 4 reportable releases compared to 2 in 2018. No penalties or fines have been issued to Grace facilities by EHS regulatory agencies during 2019.

Metric	2017	2018	2019
Regulatory Citations	5	4	5
Regulatory Penalties	$12,838	$250	$0
Reportable Releases	7	2	4

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[1] *Grace considers reportable releases as releases to the air, water or land that exceed a government reportable quantity, or are otherwise reportable by law, regulation, or permit condition.*
[2] *Grace defines citations as those covering instances of non-compliance with an environmental permit requirement for the operating facility.*

Product Stewardship

Our Commitment

GRI 103-1

As part of its EHS goal of No Harm from Our Products, Grace has developed and maintained a Product Stewardship Program to minimize the health, safety, environmental, and social impacts of our products and their packaging throughout all lifecycle stages, while also maximizing economic benefits. Grace is committed to the Responsible Care Product Safety and follows its eleven core management principles which include performing scientific analyses of our products, working to enhance cooperation and communication along the value chain, providing product safety literature to the public, conducting risk characterizations and ensuring product risks are properly managed.

Our Management Approach

GRI 103-2, 102-11

Risk characterization, management, and communication are important elements of Grace's global Product Stewardship Program. Our risk characterization and management program identifies, reduces, manages, and communicates the environmental, health, and safety impacts associated with our products throughout a product's lifecycle. Responsibility for oversight of and adherence to the Product Stewardship Program lies with Senior Vice President Public Affairs and Environment, Health, and Safety, Chief Sustainability Officer, a corporate officer directly reporting to the CEO and Board of Directors, and has executive oversight of all Environmental, Health, and Safety programs at Grace.

The Grace Product Risk Characterization, Prioritization, and Management Process (PrISM) process adheres to principles of Product Stewardship from the very beginning. A detailed product stewardship checklist is employed as part of this process with specific questions and actions that need to be completed at each gate. The checklist helps ensure that for every new product that we create, we assess potential health and safety risks, we evaluate the need for personnel and customer end-user training on safe use, we define regulatory requirements and we determine labeling required to communicate hazards. This information is documented through safety data sheets for individual products which are prepared in accordance with Global Harmonized System (GHS) and REACH requirements.

We also consider how to safely transport the product and how to keep our customers from unintentionally misusing the product. Grace is relaunching its global Dangerous Goods program, requiring the proper packaging, marking and labeling of all hazardous materials in compliance with facility-specific national, state or local dangerous goods transport regulations. Facilities must ensure that all personnel handling dangerous goods have received required training commensurate with the product risk.

Our business presidents ultimately are responsible for the PrISM process and ensure that new Grace products, or new applications of existing products are assessed using the PrISM process.

The efficient use of natural resources and energy, whether we can use less hazardous raw materials, and whether the full lifecycle of the product, including disposal, recycling, or reuse, is appropriate are also considered. As part of a strategic review of our product portfolio, we identified the products that address five key sustainability drivers.

- Products designed for use-phase efficiency, a concept defined by the Sustainability Accounting Standards Board (SASB) as products that "through their use—can be shown to improve energy efficiency, eliminate or lower greenhouse gas (GHG) emissions, reduce raw materials consumption, increase product longevity, and/or reduce water consumption," either through:
    - **Improved products** – by increasing the efficiency of a product during its use phase
    - **Improved processes** – by increasing the efficiency of the manufacturing process used to make a product
- **Stricter Environmental Standards** – products that directly enable customers to meet environmental regulatory/legal requirements applicable to their products or manufacturing processes.
- **Reduced Consumption/Sustainable** – products that enable customers to reformulate their products to avoid or reduce to *de minimis* levels substances of concern to their customers.

Our Performance
GRI 103-3, 416-1

Recalls, withdrawals or alerts, either required or issued for known or potential safety reasons, of Grace products that could reach a consumer and are directly or indirectly regulated by a governmental agency over the period 2015-2019 have been 0.

Approximately $1.1 billion or 44% of our 2019 revenue were from products that addressed our customers' sustainability objectives. Examples of these products are listed below:

Sustainability Endpoints	Examples of Grace Products
Improving our customers' products	- High-performing PP catalysts for light-weighting auto parts to improve fuel economy - Custom single-site PE catalysts for downgauging packaging to reduce plastics requirements - Silicas for tires to reduce rolling resistance and improve fuel economy - Zeolites for dual pane windows to reduce energy use
Improving our customers' processes[1]	- Advanced FCC catalysts to reduce raw material and energy requirements - Advanced silica gel for filtration to reduce water use and waste
Enabling our customers to meet stricter environmental standards	- Hydroprocessing catalysts to meet cleaner fuels standards - Additives to reduce SOx and NOx emissions from refinery operations - Colloidal silicas for vehicle emission control devices

Enabling our customers to reformulate their products to meet consumer demand	▪ Non-phthalate PP catalysts for safer packaging and household items
	▪ Silicas for anti-corrosive coatings that are heavy-metal free
	▪ Silicas for high performance paints with low-VOCs

Grace is investing heavily into products with at least one of these sustainability drivers. Over 300 employees conduct research at a dozen research and development centers globally. Roughly two-thirds of Grace research projects are focused on products that will deliver one of our sustainability drivers. Over two-thirds of revenues expected from the commercialization of those projects have at least one of the above sustainability drivers, and many have strong sustainability value propositions.

Responsible Sourcing

Our Commitment

At Grace, we strive to create value for our business partners as well as our customers, in a safe and healthy work environment in compliance with all regulatory requirements. We recognize the vital role vendors and suppliers play in helping us meet the needs of our customers, so we seek to foster healthy and mutually beneficial supplier and vendor relationships. Our robust supply chain spans a global, diverse supplier base built upon solid, long-term partnerships.

Worldwide, we work with thousands of direct and indirect suppliers to help us deliver quality products, maintain our competitiveness, and manage our costs. We collaborate with our suppliers to reduce end-to-end supply chain costs through joint initiatives and we always keep communication lines open. We leverage technology and promote the use of e-commerce tools to enable efficient business processes and achieve results faster.

Our Management Approach

The foundation of Grace's approach to responsible sourcing is its Supplier Code of Conduct, which outlines supplier requirements in the areas of environmental responsibility, labor and human rights and business ethics. Grace's policy is that all third-party vendors that provide products or services to the Company act in compliance with this Code and adopt practices that are consistent with it. Failure of a Supplier to comply with the requirements in this Code may be considered a material breach by Grace in the related contract(s) or transactions between Grace and Supplier and Grace may terminate such contract(s) or transactions with Supplier at its discretion as a result.

Grace uses a management of change system to control and validate all raw material changes, critical supplier qualification procedure for high risk raw materials, and a prequalification procedure for all direct and indirect suppliers.

W. R. Grace & Co. (Grace) also performs supplier assessments regarding REACH regulations. Grace has confirmed the REACH status of existing supplier and has a process in place to confirm the REACH

registration status of all new suppliers. Grace does not currently have the results of the assessment process to determine supplier compliance with REACH.

Our Performance

In 2017, Grace began requiring its suppliers to sign its Supplier Code of Conduct. In 2019, 100% of Grace suppliers with minimum spend of 1 million USD signed the Grace Code or provided evidence of their own codes that met or exceeded Grace's own.