

GRACE

Talent | Technology | Trust™



Committed to Environment, Health, & Safety

Environment, Health, and Safety
Management System and Policy
of W. R. Grace & Co.

November 8, 2018

The Grace Environment, Health, and Safety Management System, developed pursuant to the American Chemistry Council's Responsible Care® initiative, provides the framework and performance expectations for planning, prioritizing, implementing, measuring, and continually improving our environment, health, safety, and security performance.

W. R. Grace & Co.
7500 Grace Drive
Columbia, Maryland 21044 USA
grace.com

© W. R. Grace & Co. 2018

1. Establishing a Framework. Setting Expectations.

Introduction

The Environment, Health, and Safety Management System and Policy guide the company, our operating segments, and our facilities worldwide in systematically managing the environmental, health, safety, process safety, product safety, and security (collectively, “EHS”) aspects of our operations. They demonstrate and document how EHS is integrated into Grace business processes and functions such as Human Resources, Supply Chain Management, Strategic Planning, Manufacturing, Mergers and Acquisitions, Communications, and more.

The system establishes performance expectations that address EHS hazards and risks, training and communication, operational control, goals and target setting, assurance, compliance management, product stewardship, and periodic internal review.

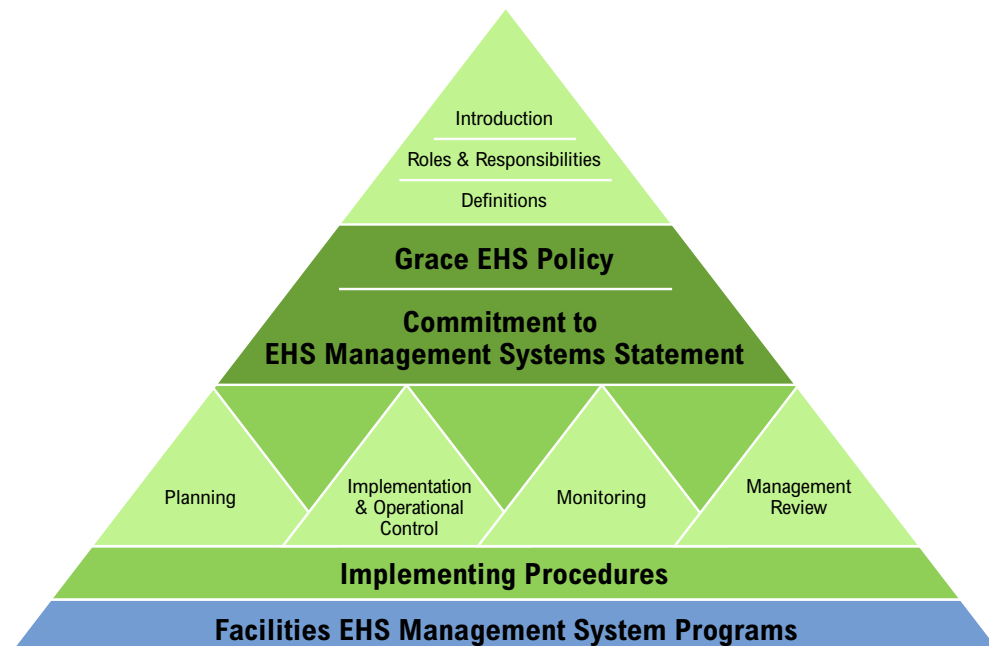
This document sets forth a number of EHS performance standards that every Grace location must meet. The standards are based on the Responsible Care Management System® Technical Specification RC101.04 (RCMS®:2013), industry best practice, and existing internal performance expectations. The EHS Management System enables consistent and reproducible performance across all Grace business units and regions.

This document presents the Grace EHS Policy and performance standards for the Grace EHS Management System.

Included in Appendix A are the roles and responsibilities for Grace management and employees in supporting, developing, implementing, and monitoring the EHS Management System at the corporate, operating segment and facility levels.

Definitions for key terms used in this document are included in Appendix B.

A matrix comparing the Grace EHS Management System with other recognized global standards is included in Appendix C.



2. Our Management Commitments

2.1 Environment, Health, and Safety Policy

The purpose of Grace's Environment, Health, and Safety Policy is to define the company's commitment to preserve and protect the environment and the health and safety of our employees, customers, and communities.

The health and safety of our employees and their families, our customers, and the communities in which we work, and the protection of the environment are among Grace's most critical concerns.

Our EHS Policy

It is Grace policy to conduct its business in compliance with company standards and all applicable health, safety, and environmental laws.

While safe behavior is ultimately the responsibility of each of us, Grace will provide a safe and healthful workplace and will ensure that safety and environmental issues are incorporated in the planning and execution of the Company's business.



Hudson La Force
President and Chief Executive Officer
November 8, 2018

2.2 Our Commitment to Responsible Care®

Chemistry is essential to the products and services that help make our lives safer, healthier, and better. Through the Responsible Care® initiative and the Responsible Care Global Charter, Grace and the chemistry industry have made a worldwide commitment to continually improve environmental, health, safety, and security performance.

Our Commitment to Responsible Care®

Throughout the development, manufacture, and delivery of our products and services, Grace adheres to our Environment, Health, and Safety Management System and to the following commitments:

- To lead in ethical ways that increasingly benefit society, the economy, and the environment.
- To design and develop products that can be manufactured, transported, used, and disposed of or recycled safely.
- To work with customers, carriers, suppliers, distributors, and contractors to foster the safe and secure use, transport, and disposal of chemicals and to provide hazard and risk information that can be accessed and applied in their operations and products.
- To design and operate facilities in a safe, secure, and environmentally sound manner.
- To instill a culture throughout all levels of our company to continually identify, reduce, and manage process safety risks.
- To promote pollution prevention, minimization of waste, and conservation of energy and other critical resources at every stage of the life cycle of products.
- To collaborate with organizations and governments at all levels in the development of effective and efficient safety, health, environmental, and security laws, regulations, and standards.
- To support education and research on the health, safety, environmental effects, and security of products and processes.
- To communicate product, service, and process risks to stakeholders and to listen to and consider their perspectives.
- To make continual progress toward a goal of no accidents, injuries, or harm to human health and the environment from products and operations, and to openly report health, safety, environmental, and security performance.
- To seek continual improvement in the integrated Responsible Care Management System® to address environmental, health, safety, and security performance.
- To promote Responsible Care® by encouraging and assisting other companies to adhere to these guiding principles.



Hudson La Force
President and Chief Executive Officer
November 8, 2018

3. Planning

3.1 Identification of Hazards & Risks

The company, operating segments, and facilities shall maintain programs to identify and manage significant EHS hazards and risks associated with its processes, operations and other activities. Programs shall include:

- Regular assessment of EHS hazards, their probability of occurrence and severity of outcome;
- Identification and evaluation of hazards and risks associated with operations, distribution, security, and management of product and process information;
- Identification and evaluation of activities associated with operations including operational energy efficiency and waste minimization, reuse, and recycling;
- Communication of actual and potential EHS hazards and risks associated with raw materials, processes, operations, and products to employees, distributors, transporters, customers, contractors, and other end users;
- Implementation of Management of Change programs applicable to raw materials, products, processes, operations, facilities, and equipment;
- Assessment of hazards, risks, and opportunity associated with transactions involving real property or other business assets including liabilities, costs of transaction, EHS integration, and product integrity;
- Assurance that results of internal prioritization processes, existing information, and third-party assessments are considered and evaluated when maintaining the EHS Management System.

3.2 Legal & Other Requirements

The company, operating segments, and facilities shall identify, communicate and comply with applicable EHS legal and other requirements, and have programs to:

- Identify, understand and communicate applicable EHS laws, regulations, permits, and other requirements;
- Communicate compliance and other EHS obligations to employees and others as appropriate to their function;
- Maintain a system to comply with EHS laws, regulations, permits, and other requirements;
- Maintain appropriate EHS documents and records consistent with applicable legal and other requirements;
- Track and communicate the consequences of significant emerging EHS issues;
- Foster open relationships with regulatory agencies;
- Participate in the formulation of laws, regulations, and other requirements to promote sound public policies, as appropriate;
- Manage legacy EHS issues in a relevant and appropriate manner.

3.3 Objectives, Targets & Programs

The company, operating segments, and facilities shall develop objectives, targets, and programs to provide for continual improvement in EHS and business performance. Objectives and targets shall:

- Fulfill our EHS Policy;
- Fulfill our Commitment to Responsible Care®;
- Consider significant EHS risks;
- Address legal and other requirements;
- Address EHS risk and opportunity, and improve EHS performance;
- Measure EHS and business performance and be tracked and reported to internal and external stakeholders;
- Consider input from the business stakeholders and other interested parties.

Programs shall:

- Be developed to achieve objectives and targets;
- Include time frames and resources, and identify responsibility for achieving EHS and business objectives and targets.

4. Implementation & Operational Control

4.1 Resources, Roles, Responsibility & Authority

The company, operating segments, and facilities shall provide resources and define roles, responsibilities, and authority necessary to establish, implement, maintain, improve, and review EHS compliance and the Management System.

This includes:

- Documentation and communication of EHS roles and responsibilities at all levels;
- Communication of authority and accountability to support, implement, and maintain the EHS Management System and EHS compliance;
- Allocation of resources (human, financial, and technological) to meet objectives and targets and to maintain EHS compliance and the EHS Management System.

4.2 Competence, Training & Awareness

The company, operating segments, and facilities shall provide resources and maintain programs for EHS training, awareness, and competency. Programs shall include:

- Identification, documentation, and implementation of individual EHS training needs, including specialized training as appropriate;
- A process to review and document the effectiveness of EHS training and competency;
- Training that addresses facility-specific management systems, EHS programs, procedures, controls, and significant actual or potential EHS risks;

- Communication on the importance of conformance with the EHS Policy and Management System and the consequences of non-conformance;
- Maintenance of appropriate EHS training records.

4.3 Communications

The company, operating segments, and facilities shall have EHS communication programs that:

- Communicate significant internal EHS developments and related matters;
- Ensure employee involvement in the development and implementation of the EHS Management System;
- Engage Grace employees, customers, end users, contractors, distributors, and transporters regarding product EHS performance, new product uses, identified misuses, potential hazards and risks or adverse effects, and suggestions for improvement;
- Communicate and report relevant EHS information to external stakeholders and other interested parties;
- Consider formal communication of significant EHS hazards and risks to external stakeholders;
- Include a process to receive, assess, and respond to EHS-related communications and inquiries from external stakeholders and other interested parties;
- Ensure the periodic review of the effectiveness of EHS communications;
- Make product safety and product stewardship information publicly available;
- Participate in industry trade organizations and local industry groups that promote understanding of EHS risks.

4.4 Documentation

The company, operating segments, and facilities shall maintain, or have access to, EHS Management System documentation and processes that include:

- The Grace EHS Policy, EHS Management System Commitment statement, and EHS Management System document;
- Description of the scope and interaction of the elements of the EHS Management System;
- Procedures, work instructions, model programs, and other relevant documents that support and demonstrate implementation of the EHS Management System, as appropriate.

4.5 Control of Documents & Records

The company, operating segments, and facilities shall have programs to control and manage EHS documents and records including ensuring documents and records are:

- Readily identifiable, legible, dated, retrievable, and periodically reviewed as appropriate;
- Created, modified, and approved by authorized and qualified personnel;
- Maintained in an appropriate manner, and protected, and secured as appropriate;
- Removed and destroyed when determined to be obsolete or archived as appropriate.

4.6 Operational Controls

The company, operating segments, and facilities shall have Operational Control Programs to manage identified significant EHS hazards and risks, including:

- Established and effective operating criteria, procedures, and processes addressing actual and potential hazards and risks;
- Identification of process design, technology, operating parameters, and procedures consistent with generally accepted industry codes of practice and Grace internal standards;
- Maintenance and inspection programs to ensure facility, equipment, and operational integrity;
- Established and effective Management of Change processes;
- A formal product commercialization approval process for all new, modified, and existing Grace products throughout their lifecycle;
- Programs to address emissions reduction, resource conservation, and pollution prevention, as appropriate;
- Purchasing and procurement controls that identify, communicate, and effectively address EHS risks and requirements to appropriate Grace personnel, suppliers, contractors, toll manufacturers, and contract manufacturers;
- Visitor management programs appropriate to the hazards and risks at every facility.

4.7 Emergency Preparedness & Crisis Response

The company, operating segments, and facilities shall have, as appropriate, Emergency Preparedness and Response and Crisis Response Plans, which consider:

- The capability to manage and respond to crises, emergencies, and incidents;
- Contingencies for crises, emergency situations, and incidents, including communications and response;
- Mechanisms and resources to prevent or mitigate associated adverse EHS impacts, including community recovery needs as appropriate;
- Communications to key employees and appropriate stakeholders, including any mandatory reports to regulatory authorities;
- Periodic simulations to ensure adequacy, preparedness and effectiveness of these processes.

5. Monitoring

5.1 Monitoring & Measurement

The company, operating segments, and facilities shall establish programs to:

- Monitor and measure operations and activities that present significant EHS hazards and risks;
- Maintain and calibrate equipment that controls EHS hazards and risks;
- Monitor, measure, and report progress toward achieving EHS objectives and targets;
- Monitor, measure, and maintain effectiveness of operational controls;
- Review and communicate EHS objectives, targets, and performance trends.

5.2 Evaluation, Monitoring, & Review of EHS Compliance & EHS Management System Conformance

The company, operating segments, and facilities, as appropriate, shall establish programs to assure EHS compliance and EHS Management System conformance through periodic auditing and assessment. The scope of EHS assurance shall also, commensurate with risk, consider the EHS performance of carriers, suppliers, distributors, customers, contractors, and third-party providers. These programs shall:

- Verify compliance with laws and regulations and conformance with the EHS Management System requirements and other Responsible Care® requirements;
- Establish periodic internal audits of the effectiveness of the EHS Management System;
- Assure and verify timely and effective corrective and preventive actions;

- Include communications mechanisms that ensure audit results and follow-up are communicated to management;
- Include a formal process to establish and communicate audit schedules and scope.

5.3 Non-Conformity, Corrective Action & Preventive Action

The company, operating segments, and facilities shall establish preventive and correction action programs and processes to identify, document, communicate, and correct EHS non-conformances, including those associated with carriers, suppliers, distributors, customers, contractors, and third-party vendors. These programs and processes shall include:

- Developing communication mechanisms for timely reporting of EHS non-conformance;
- Conducting formal incident investigations and root cause analysis of identified EHS non-conformance;
- Implementing timely and effective corrective action and tracking corrective and preventive actions to closure;
- Communicating and sharing best practices and lessons learned across facilities.

6. Management Review

6.1 Management System Review

The company, operating segments, and facilities shall establish programs to provide for Management Review.

These programs shall ensure a review of:

- The EHS Policy, EHS goals and objectives, and the suitability and performance of the EHS Management System;
- Status of implementation of the EHS Management System;

- Opportunities for continual improvement of the EHS Management System;
- Previous EHS Management System review topics.

The Management Review shall document any decisions and actions arising therefrom.

Revision History

Version	Date	Summary of Changes
0	November 2, 2005	Original version.
1	March 1, 2006	Added Appendix C cross-referencing EHS MS to recognized standards.
2	January 1, 2015	Updated EHS MS Commitment and revised EHS MS to reflect RC101.04 Technical Specification, Process Safety, and Product Safety Codes.
3	November 8, 2018	Updated CEO commitment

APPENDIX A:

Roles and Responsibilities

Board of Directors

Monitor the company's EHS strategic direction, objectives, and targets.

Chief Executive Officer

Establish, reinforce, and communicate Grace's commitment to its EHS Policy; review EHS Management System as necessary to achieve the commitments of the EHS Policy, corporate EHS standards, objectives, and targets; promote a culture of continuous improvement in environmental, health, safety, process safety, product safety, and security performance.

Executive Leadership Team

Monitor overall EHS Management System implementation and EHS performance of the company; provide management support for EHS activities related to development, communication, and execution of Grace's EHS Policy, corporate EHS standards, objectives and targets; support a culture of continual improvement in environmental, health, safety, process safety, product safety, and security performance.

Operating Segment Presidents

Support the EHS Management System by providing resources necessary to assure conformance with Grace's EHS Policy and standards, and to meet applicable EHS objectives and targets.

Operating Segment Vice Presidents and General Managers

Reinforce and communicate organizational commitment to Grace's EHS Policy and standards; establish operating segment EHS objectives and targets, and support the management programs necessary to achieve them.

Vice President, Operations

Ensure implementation and maintenance of the EHS Management System at Grace facilities in conformance with the EHS Policy and corporate EHS standards to meet applicable EHS objectives and targets; promote a culture of continual improvement in environmental, health, safety, process safety, and security performance.

Operations Directors

Direct implementation and maintenance of Management System at Grace facilities to ensure conformance with the EHS Policy and corporate EHS standards to meet applicable EHS objectives and targets; ensure a culture of continual improvement in environmental, health, safety, process safety, and security performance.

Environment, Health and Safety

Steering Committee

Ensure implementation of Grace's EHS Policy, programs, initiatives, and EHS Management System; monitor EHS Management System activities and the overall EHS performance of the company; provide strategic guidance for EHS initiatives and sharing of best practices.

Vice President, Environment, Health and Safety

Oversee EHS Management System activities and communicate Grace's EHS performance to appropriate stakeholders; drive cultural change through the company by promoting EHS excellence; provide strategic direction to the company for continued improvement of EHS programs.

Facility Managers

Assure the implementation of Facility EHS Management Systems and provide the resources necessary for conformance with Grace's EHS Policy and standards to meet operating segment EHS objectives and targets; establish, evaluate, and periodically review annual facility EHS objectives and targets; promote a culture of continuous improvement in environmental, health, safety, process safety, and security performance.

Grace Employees

All employees are empowered to recognize, eliminate, or report hazards to management. Each employee is encouraged to embrace a culture of EHS excellence and recognize that compliance is a core value of the organization.

APPENDIX B:

Definitions

Operating Segment: Grace's primary operational (business) units (Grace Catalysts Technologies, Grace Materials Technologies, and Grace Construction Products).

Contract or Toll Manufacturer: A supplier who manufactures a product to Grace's specification.

Contractors: Companies or persons that perform work and/or provide services at Grace facilities.

Company: W. R. Grace & Co.-Conn

Crisis: An incident that involves a fatality, a life-threatening injury, harm to the public or the environment, the potential for substantial harm to the public or the environment, or any event that results in unsolicited media attention.

Documents: Written policies, standards, guidance and procedures in paper or electronic form.

Environment, Health, and Safety: Environmental, health, safety, process safety, product safety, and security (collectively, "EHS").

Environment, Health, and Safety (EHS) Objectives: Actions to minimize significant EHS hazards and risks

Environment, Health, and Safety (EHS) Risks: Elements, activities or hazards of the company's operations with potential human or environmental exposure; a significant environment, health and safety risk is one that has or could have a significant environment, health or safety impact.

Environment, Health, and Safety (EHS) Targets: Goals set to drive continual improvement in EHS performance.

Facilities: All corporately owned or leased manufacturing and research and development operations, and any office, warehouse, and other facilities that have potential significant environment, health, and safety impacts.

Facility EHS Management System: The document used to guide a company facility in systematically managing the environmental, health, safety, process safety, product safety, and security aspects of its operations, consistent with the EHS performance standards described in Grace's corporate EHS Management System.

Interested Third Parties: Individuals or groups concerned with or affected by the company's safety, health, or environment performance.

Legal Requirements: Mandates and prohibitions contained in governmental laws, regulations, ordinances, etc., at all government levels (e.g., supranational, national, regional, provincial, state, and local); also includes obligations prescribed by government permits, judicial and administrative enforcement orders, and non-governmental legally-enforceable contracts.

Operations: All company activities, products and services, including maintenance, storage, and transport of materials (including off-site transportation and storage of products) and office activities.

Other Requirements: Environment, Health, and Safety obligations provided by the company's Environment, Health, and Safety Policy and its EHS Management System Standards, as well as any additional safety, health, and environment requirements prescribed by or committed to by the company, its operating segments and/or its facility management, including voluntary commitments.

Records: Data, reports, completed forms, etc., including those relating to EHS Management System training and EHS Management System audit and review results, which are final and not subject to modification.

Transporters: Non-Grace personnel who are responsible for shipping products, raw materials, supplies, and other materials to or from a Grace location.

APPENDIX C:

Comparison of Grace EHS Management System to Other Recognized Standards

Component/Element	Grace EHS MS Reference	RC14001 Reference	ISO14001 Reference	OHSAS18001 Reference
EHS Policy	2.0	4.2	4.2	4.2
Identification of Hazards and Risks	3.1	4.3.1	4.3.1	4.3.1
Legal and Other Requirements	3.2	4.3.2	4.3.2	4.3.2
Objectives, Targets and Programs	3.3	4.3.3	4.3.3	4.3.3 and 4.3.4
Resources, Roles, Responsibility and Authority	4.1	4.4.1	4.4.1	4.4.1
Competence, Training and Awareness	4.2	4.4.2	4.4.2	4.4.2
Communications	4.3	4.4.3	4.4.3	4.4.3
Documentation	4.4	4.4.4	4.4.4	4.4.4
Control of Documents	4.5	4.4.5	4.4.5	4.4.5
Control of Records	4.5	4.5.4	4.4.5	4.4.5
Operational Controls	4.6	4.4.6	4.4.6	4.4.6
Emergency Preparedness and Crisis Response	4.7	4.4.7	4.4.7	4.4.7
Monitoring and Measurement	5.1	4.5.1	4.5.1	4.5.1
Evaluation, Monitoring, and Review of EHS Compliance and EHS Management System Conformance	5.2	4.5.2	4.5.2	
Internal Audit	5.2	4.5.5	4.5.2	4.5.2
Non-Conformity, Corrective Action and Preventive Action	5.3	4.5.3	4.5.3	4.5.3
Management Review	6.0	4.6	4.6	4.6