

SARTOMER

Our name means tailor-made.™

ARKEMA GROUP

**SARTOMER USA, LLC
MANAGEMENT SYSTEM MANUAL**

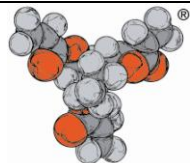
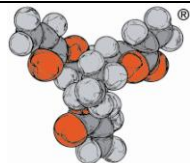


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1.0 INTRODUCTION

1.1 Business Description

Sartomer USA, LLC is a leading manufacturer of liquid monomers and oligomers. The industries served by Sartomer's products include industrial coatings, inks, electronics, adhesives, composites, and other products.

Founded over 50 years ago, Sartomer has pioneered the commercial development of products for cured-in-place technologies. The name, "Sartomer", is derived from Greek and Latin words together meaning "tailor made part", a concept of doing business that clearly sets Sartomer apart from the competition. Every aspect of Sartomer's operations is uniquely structured toward one common goal...to accommodate the special requirements of each individual customer, large or small.

Sartomer's Corporate Headquarters located in Exton, Pennsylvania includes Quality, Environmental, Health & Safety, Quality Assurance, Customer Service – Domestic and International, Procurement, Sales, Business Management, Research & Development, and Human Resources functions for all U.S. based production facilities.

Sartomer produces **liquid monomer** and **oligomers** at its West Chester, Pennsylvania location.

Sartomer produces **liquid monomers** and **oligomers** at its Chatham, Virginia location.

1.2 Scope

Sartomer's Management System is described within this manual. ISO 9000 registered sites and Responsible Care® audited sites are shown as follows:

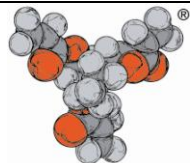
Registered Site	ISO	Responsible Care®
Sartomer Chatham, VA Manufacturing Site	ISO 9001	10/09
Sartomer Exton, PA Corporate Headquarters	ISO 9001	9/09
Sartomer West Chester, PA Manufacturing Site	ISO 9001	9/06

The product lines included within the scope of the Sartomer's Management System are liquid monomers and oligomers.

A third party Registrar independently assesses that the requirements of the applicable standards are satisfied within Sartomer's Management System.

1.3 Management System Outline

The Sartomer's Management System ensures the effective operation and control of our business processes. The Management System is process-based to ensure customer requirements are understood throughout the organization and met through value added activities that result in and enhance customer satisfaction.



Sartomer has recognized the value and synergy that comes about with compatible management systems. Sartomer's Environmental, Health and Safety System and Process Safety System follow a similar structure to the Quality System. Sartomer clearly recognizes that in meeting and enhancing customer requirements it must meet and continually improve its responsibilities to quality, health, safety, and our environment.

2.0 REFERENCES

- 2.1 ISO 9000 - Management Systems-Fundamentals and Vocabulary
- 2.2 ISO 9001 - Management Systems-Requirements
- 2.3 Responsible Care® Management Systems-Technical Specification
- 2.4 International Safety Rating System

3.0 TERMS AND DEFINITIONS

- 3.1 ERP: Enterprise Resource Planning
- 3.2 ISRS - International Safety Rating System
- 3.3 Key Measures: Sartomer's Quality, Environment, Health and Safety Objectives
- 3.4 QEH&S – Quality Assurance, Environmental, Health and Safety and Security
- 3.5 Management Representative – Corporate ISO Coordinator/Responsible Care® Coordinator
- 3.6 MSM - Modern Safety Management measured by ISRS
- 3.7 Top Management - Executive Staff
- 3.8 TMS - Training and Document Management System

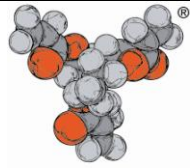
4.0 MANAGEMENT SYSTEM

4.1 General Requirements

The Sartomer Management System is maintained and continually improved in accordance with the requirements of this Management System Manual, ISO 9001, and Responsible Care® Management System Technical Specifications.

The Sartomer Management System consists of a series of inter-related processes applied across the organization that ensure customer requirements are met with the aim of enhancing customer satisfaction. Criteria and methods have determined to make certain that these processes are and remain effective. Resources, including knowledge bases and any other necessary information, have been provided for the proper functioning of the Management System so that its planned results can be obtained. Ongoing monitoring, measuring and analysis of the Management System processes not only provide verification of planned results but also provide the foundation for their continual improvement.

Additionally, for any outsourced processes that affect product conformity, Sartomer's Management System ensures that these processes are controlled to the extent necessary to assure conformance to customer requirements.



4.2.3 Control of Documents

Documents required by the Management System shall be controlled in accordance with the specified Corporate procedures. The Corporate document control procedures include the following:

- *DC-PR-0002 - Preparation and Control of the QEH&S Policy, Management System Manual and Key Measures*
- *DC-PR-0003 - Preparation and Control of Documentation in TMS*
- *DC-PR-0004 - Controlled Document Training*

These procedures, as a minimum, ensure that the Management System documentation is approved for adequacy prior to being issued and used. Documentation is reviewed, updated and re-approved as necessary with any changes and the current revision status clearly identified. Through the use of TMS, the Management System documentation is legible and readily identifiable. Only relevant documents are available for use. Non-current revisions and obsolete documentation are archived in a controlled manner to provide retention and prevent unintended use. Additionally, where applicable in the Management System, documents of external origin are clearly identified and their distribution controlled.

4.2.4 Control of Records

Records required by the Management System are controlled in accordance with the corporate procedure governing control of records, *DC-PR-0003 - Preparation and Control of Documentation in TMS*. Records have been established and are maintained to provide evidence of product conformity to requirements and the effective operation of the Management System. All records remain legible, readily identifiable and retrievable. In addition to the corporate procedure, Site and/or Department specific procedures have been established, which define the controls, needed for the identification, storage, protection, retrieval, retention and disposition of records at all relevant functions of the Management System.

5.0 MANAGEMENT RESPONSIBILITY

5.1 Management Commitment

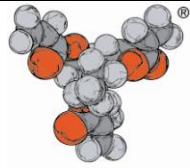
Sartomer through the activities of Top Management ensures that the Management System is developed and implemented, and that its effectiveness is continually improved.

These activities include:

Communicating commitment to meeting our customer requirements including any statutory and regulatory obligations throughout the organization via the Quality, Environmental, Health and Safety Policy, the Sartomer Operating Philosophy, and the Sartomer Vision Statement.

Measuring and communicating organizational performance through the establishment of the Sartomer Key Measures.

Conducting Management Reviews of the Management System at the corporate level and ensuring that they are performed at the Site level.



Ensuring that adequate resources are planned and provided for the continuing effectiveness of the Management System and its continual improvement.

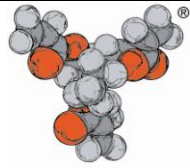
5.2 Customer Focus

Sartomer's Top Management is committed to meeting our customers' requirements and enhancing our customers' satisfaction. This commitment is realized by the establishment of processes that clearly determine our customer's needs and expectations then translating them into product that fulfill requirements. These processes include awareness and training for Sartomer personnel on the importance of fulfilling customer requirements and expectations. Careful analysis of these processes, their subsequent outputs, and multiple feedback systems provide the foundation for their continual improvement.

5.3 Quality, Environmental, Health & Safety Policy

- Sartomer's Top Management has established the following Quality, Environmental, Health and Safety policy, ensuring that it provides a framework for establishing and reviewing the Key Measures. This policy is controlled according to *DC-PR-0002 - Preparation and Control of the QEH&S Policy, Management System Manual and Key Measures*. Top Management ensures that the Quality, Environmental, Health and Safety policy is communicated and understood by all Sartomer personnel and that the policy is implemented throughout the company. The policy is reviewed for continuing suitability annually during the Corporate Management Review.

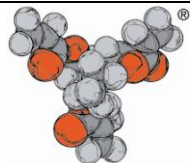
The Sartomer Quality, Environmental, Health and Safety policy is:



QUALITY, ENVIRONMENTAL, HEALTH and SAFETY POLICY

Sartomer's QEHS policy embodies the principles of Sartomer's Operating Philosophy, ISO 9001 and Responsible Care®. It firmly subscribes to the concepts of continual improvement and sustainable development.

1. Sartomer places safety, security, and the protection of health and environment at the center of its company objectives. Product stewardship is addressed throughout the product life cycle: development, manufacture, transport, use and disposal.
2. Sartomer is committed to aggressively identifying and meeting customer requirements to enhance customer satisfaction.
3. Sartomer provides customers with the necessary information and assistance for the proper use and handling of its products.
4. Sartomer manages its activities and provides resources to meet the requirements of all applicable laws and regulations in the locations where business activities are conducted.
5. Sartomer demonstrates trust in its employees by utilizing teams to create an environment of empowerment and innovation.
6. Education, training, and development opportunities ensure the success of the continual improvement approach throughout the Sartomer organization.
7. Each employee's commitment and behavior in QEHS matters are considered essential elements of individual performance.
8. Sartomer regularly evaluates internal management systems in order to ensure the relevance of the actions undertaken, to assess performance, and to define new improvement objectives.
9. Compliance of Sartomer's contractors' and suppliers' practices with these QEHS principles will be taken into account in the evaluation of their proposals and performance.
10. Sartomer regularly evaluates emergency plans designed to manage and limit the consequences of potential industrial incidents.
11. In a commitment to openness, Sartomer endorses an approach of constructive dialogue with the stakeholders and the communities related to its activities.
12. Sartomer actively participates in various research programs and benchmarking activities designed to advance knowledge of products and processes in the fields of quality, environment, health and safety.



5.4 Planning

5.4.1 Management Objectives (Key Measures)

Sartomer's Top Management has developed the highest level Objectives for the organization. These are known as Key Measures. The Key Measures are aligned with and support the Quality, Environmental, Health and Safety Policy, the Operating Philosophy, and the Sartomer Vision.

The Key Measures consist of multiple measurable targets or aims in four primary areas including Customers, Performance, Community, and People. These Key Measures are based on risk and are the core quantifiable indicators of not only actual performance but also continual improvement for the organization.

Top Management conducts results versus target analysis for the Key Measures quarterly throughout each year. During the Corporate Management Review, the Key Measures are reviewed for continuing suitability and adequacy.

Key Measure performance is communicated to Sartomer personnel by the Management Representative through periodic updates to the Sartomer Intranet.

The Key Measures also form the basis for the Site specific goals and objectives that are established and maintained by the Plant/Site Managers. Site specific goals and objectives performance is communicated to the Site personnel through Site management processes.

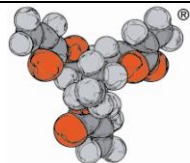
5.4.2 Management System Planning

For Sartomer, Management System planning is a hierarchical process that starts with commitment by Sartomer's Top Management to our stakeholders as expressed in the Quality, Environmental, Health and Safety Policy. Developed from this policy are the risk based Key Measures that provide measurable objectives for organizational performance and continual improvement. To obtain these objectives and support their continual improvement, resources have been provided for the development, implementation, and deployment of the processes described in this Management System Manual. These processes and their interactions provide the fundamental planning for the Sartomer Management System.

Changes or modifications to the Sartomer Management System, typically as a result of altering business conditions, are handled in a planned, controlled manner such that the integrity of the Management System is not compromised. Such changes are managed through Corporate and Site Management Reviews as well as a proactive review of Management System documentation. These management of change processes maintain the integrity of the Management System and ensures its compliance with ISO 9001, the Responsible Care® Management System Technical Specification and Modern Safety Management.

5.4.3 Risk Management

Sartomer has implemented various systems for identifying and evaluating hazards and assessing and prioritizing the risks associated with those hazards. Hazards and risks for existing and new products are assessed in accordance with CD-PR-0002, Product Evaluation and Risk Assessment Procedure. As a part of this system, product distribution, employee health and safety, environmental, security, community and process risks are also



evaluated. Process hazards and risks are evaluated as a part of the Process Safety Management protocol for performing process hazard analysis and as a part of the Management of Change process. The evaluation of risks associated with the use and distribution of raw materials is handled in accordance with Corporate Procurement's protocol for assessing suppliers of new raw materials or alternate suppliers for existing raw materials. Current product and process information related to the potential hazards and their associated risks are maintained.

5.5 Responsibility, Authority and Communication

5.5.1 Responsibility and Authority

All authorities and responsibilities reside with Sartomer's Top Management and are delegated to functions, departments, teams and/or individual personnel within their control as appropriate.

The authorities and responsibilities for the Sartomer Management System are clearly defined and well communicated within the organization. Overall responsibility and reporting functions are documented in Sartomer's organizational charts. These organizational charts are located on the Sartomer Intranet and are available to all employees.

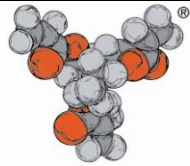
Detailed responsibilities and specific authorities are contained within the controlled documentation for the Management System. Training on these documents ensures that affected personnel clearly understand these responsibilities and authorities. Changes in responsibilities and/or authorities are communicated in a timely manner to all Sartomer personnel by the Human Resources department. This allows any changes that may affect the Management System to be handled in a planned, controlled manner such that its integrity is not compromised.

Sartomer personnel who manage, perform and/or verify work are responsible for the quality of the work. All personnel are authorized to identify and record problems relating to products and processes including Environmental, Health and Safety issues as well as Quality issues. All personnel have the responsibility to assure that processes are in a state of control and that the tasks are completed in a responsible manner. All personnel are also responsible for identifying nonconforming product, segregating such product as being nonconforming, notifying management, and controlling further processing until the problem has been corrected. To prevent nonconformities, they may also initiate, recommend, or provide solutions through designated channels, such as the Corrective and Preventive Action system.

5.5.2 Management Representative

ISO Corporate Management Representative

Sartomer's Top Management has appointed a Corporate ISO Coordinator, who has the authority and responsibility, to ensure that processes needed for the Management System are established, implemented, maintained and continually improved across the organization. The Corporate ISO Coordinator is responsible for evaluating the effectiveness of the Management System organizational wide and reports on its effectiveness and improvements to Top Management during the Corporate Management Review. Also, the Corporate ISO Coordinator is responsible for the promotion of awareness of customer requirements throughout the organization and acts as a corporate liaison with external parties on matters relating to the Management System. Top



Management has appointed the Quality, Environmental, Health & Safety Manager as the Corporate ISO Coordinator.

Site ISO Management Representative

Site ISO Coordinators assist the Corporate ISO Coordinator in executing these duties at each of the ISO 9000 registered Manufacturing Sites. The Site ISO Coordinators are responsible for coordinating the Quality Assurance activities at their respective manufacturing Sites. These individuals, irrespective of other duties, have the authority and responsibility to ensure that the requirements of the Management System are established and implemented at their respective locations. The Site ISO Coordinators are responsible for evaluating the effectiveness of the Management System processes at their respective locations and reporting on it to the Site Management during the Site Management Reviews. The Site ISO Coordinator is responsible for reporting the results of the Site Management Review Meetings to the Corporate ISO Coordinator who will communicate the results to Top Management during the Corporate Management Review. The Site ISO Coordinator is responsible for the promotion of awareness of customer requirements throughout their respective Site and acts as the Site liaison with external parties on matters relating the Management System. In the absence of the Site ISO Coordinator, the Corporate ISO Coordinator will assume these responsibilities.

Responsible Care® Coordinator

The Responsible Care® Coordinator serves as the focal point within the company for Responsible Care implementation activities as well as the liaison between the American Chemistry Council Responsible Care staff and the company.

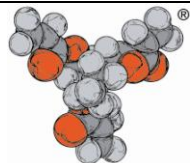
The Responsible Care® Coordinator has responsibility and accountability for the overall plan for Responsible Care implementation including: implementation of the Responsible Care Management System® (RCMS®); headquarters and facility RCMS and/or RC14001® certification; the Responsible Care Security Code; reporting Responsible Care performance measure data; and all other related requirements.

Additionally, the Coordinator:

- Maintains ongoing communications with senior management on a predetermined agenda of Responsible Care® activity.
- Obtains and allocates resources, including people and time.
- Reviews the progress of the overall initiative and recommends corrective actions as needed.
- Establishes key resources at every facility within the company to assist in implementing Responsible Care®.
- Coordinates internal and external communications about the initiative.
- Works closely with the company's Executive Contact to support the company's participation with the Responsible Care® program.

5.5.3 Internal Communication

Internal communication processes are an essential component of the Sartomer Management System and are recognized as such by Top Management. Objectives, performance and changes for the Management System are communicated within the organization through both formal and informal mechanisms.



Effectiveness of the Management System is communicated to various levels and functions throughout the organization through the use of periodic Key Measure Updates, Corporate and Site Management Reviews, Internal and External Audits, Corrective and Preventive Action Systems, Training and Awareness Programs on the company intranet. Sartomer maintains and encourages numerous Teams that are focused not only on resolving issues and problems but are also working on continual improvement projects. Records of these teams' activities are maintained through meeting minutes. Augmenting the formal processes that are in place are regular Management System topics and updates in the company newsletter, electronic articles sent through company e-mail, and related information made readily available on the company intranet.

Employee Involvement

Sartomer has established processes by which employees can participate in the development, communication, and implementation of Management System processes. Manufacturing facilities have developed employee participation programs in accordance with PS-RR-0004, Employee Participation, to ensure employee involvement in the development and maintenance of the elements of process safety. Employees are encouraged to participate on cross functional teams, identify and communicate safety concerns, report and aide in the investigation of accidents/incidents, participate in the identification and implementation of corrective/preventive actions, and to participate in community outreach activities.

5.5.4 Public and other Stakeholder Communications

Sartomer has established and implemented mechanisms to seek public and stakeholder input regarding products and operations. Information is provided to the public and relevant stakeholders concerning environmental, health, safety, and security risks and feedback is solicited in accordance with Sartomer's Community Outreach Procedure, SC-PR-0001. Prompt investigation and response to community and stakeholder concerns is carried out in accordance with Sartomer's Community Contact Procedure, SC-SR-0001.

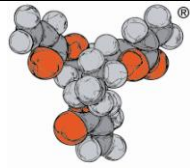
5.6 Management Review

5.6.1 General

Corporate and Site Management Reviews are held to assess and evaluate the Management System to ensure its continued effectiveness and suitability in satisfying the requirements of this Management System and Key Measure performance.

Corporate Management Reviews are conducted annually in accordance with *QA-PR-0023 - Corporate Management Review*. Site Management Reviews are conducted at least annually in accordance with the site-specific procedure.

Topics discussed during the Management Reviews and resulting action plans are recorded in Management Review agendas and meeting minutes, which are maintained as records. The results of the Corporate Management Reviews are communicated to the Site ISO Coordinators for dissemination to Site personnel as appropriate. Results of the Site Management Reviews are communicated to the Management Representative for incorporation into the Corporate Management Review Meeting.



5.6.2 Review Input

As a minimum for the Corporate and the Site Management Reviews the following topics are addressed:

- Results Of Internal And External Audits
- Stakeholder Feedback
- Process Performance And Product Conformity
- Status Of Preventive And Corrective Actions
- Key Measure and/or Site-Specific Objectives Performance vs. Target
- Follow-Up Actions From Previous Management Reviews
- Changes That Could Affect The Sartomer Management System
- Recommendations For Improvement

During the Corporate Management Review, the Quality, Environmental, Health and Safety policy is reviewed for continuing suitability.

5.6.3 Review Output

Outputs from the Corporate and Site Management Reviews include action items regarding the improvement of the Management System, improvement of the product in relation to customer requirements, and the identification of any needed resources to ensure the continuing satisfaction of our stakeholders. The Corporate Management Review output also includes the results of the analysis for the continuing suitability of the Quality, Environmental, Health and Safety policy.

6.0 RESOURCE MANAGEMENT

6.1 Provision of Resources

Top Management ensures that resource requirements are identified and provided to implement, maintain and continually improve the Management System to meet and enhance customer requirements.

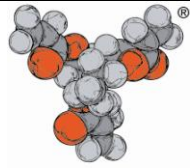
6.2 Human Resources

6.2.1 General

Sartomer personnel performing work affecting product conformity to requirements are competent on the basis of appropriate education, training, skills and experience as evidenced by training records. Training needs are determined and fulfilled according to *TR-PR-0001 - Personnel Competence, Training and Awareness For The Management System*

6.2.2 Competence, Training and Awareness

Sartomer's Top Management ensures that staffing and skill levels within the organization are appropriate to ensure the optimal efficiency and effectiveness of our operations.



Sartomer's Top Management ensures where applicable that training or other actions achieve the necessary competence by evaluating the effectiveness of the training or other actions taken are carried out by departments responsible for the work.

Required Sartomer personnel receive a Management System orientation in accordance with *QA-PR-0018 – Management System Awareness Training*. Sartomer's Quality, Environment, Health and Safety Policy is communicated during this training. This includes conveying the importance of each individual's role and function within the organization, and how they contribute to the achievement of the Key Measures. All employees receive Responsible Care® Employee Awareness Training – RC-TE-0001.

Specific requirements for education, skills, training and experience can be found in Department and or Site documentation. Individual Departments and or Sites maintain training records.

6.3 Infrastructure

Sartomer's Management ensures that facilities are maintained appropriately to achieve conformity of the product, including workspaces, equipment, software and any supporting services related to facilities maintenance.

6.4 Work Environment

Sartomer Management determines and manages the work environment needed to achieve conformity to product requirements. This is done through ensuring that appropriate human and physical factors of the work environment are considered and provided. Consideration of such factors includes; environmental, health and safety conditions; work methods; handling methods, and ambient working conditions.

7.0 PRODUCT REALIZATION

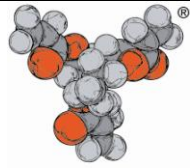
7.1 Planning of Realized Product

Sartomer plans and develops the processes needed for product realization. Planning of product realization is consistent with the requirements of the other processes of the Management System. In planning for product realization, Sartomer considers the following as appropriate:

- a) Specific quality objectives and requirements for the product.
- b) Specific processes and documents, infrastructure and resources required for the product
- c) Verification, validation (if applicable), monitoring, measurement, inspection and test activities and criteria required for product acceptance.
- d) Records to demonstrate achievement of requirements.

In general Sartomer's realization process planning includes the following:

- a) New Item Setup Plan
- b) Contract Review and Acceptance
- c) Purchasing Specifications for Critical Raw Materials
- d) Quality Control Inspection of Incoming Materials
- e) Process Trials
- f) Detailed Procedures and Work Instructions for Product Realization



- g) Control of Monitoring and Measuring Equipment
- h) In-Process Sampling and Testing
- i) Final Product Inspection and Testing
- j) Storage and Handling Requirements
- k) Preventive Maintenance Programs to Maintain Critical Equipment Conditions
- l) Maintenance of Records
- m) Competence, Awareness and Training Requirements for Personnel
- n) Internal Audit Program
- o) Corrective and Preventive Action Systems (Including Customer Complaints)

7.2 Customer Related Processes

7.2.1 Determination of Requirements Related to the Product

Customer Service and Sales determine customer requirements during the inquiry, quotation and order acceptance stages of the customer contact process.

These requirements include the following:

- a) Requirements specified by the customer, including the requirements for delivery and post-delivery activities.
- b) Requirements not stated by the customer but necessary for specified or intended use, where known.
- c) Statutory and regulatory requirements applicable to the product.
- d) Any additional requirements considered necessary by Sartomer.

7.2.2 Review of Requirements Related to Product

Prior to the submission of a quotation or acceptance of an order, including verbal orders, Customer Service and Sales documentation require that a review take place to ensure that the customer's requirements for the product have been clearly defined and documented. Such reviews also ensure that Sartomer has the ability to meet those requirements. If a received order or contract differs from the associated quotation, the differences are resolved before accepting and processing the order.

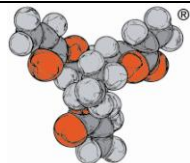
Contract amendments, notifications, and change orders regarding the product or order are received and reviewed against the original contract and or order in accordance with applicable Customer Service and Sales process and are documented accordingly.

Records of these reviews are kept in the Customer Service and Sales departments.

7.2.3 Customer Communication

Sartomer determines and implements multiple effective communication processes with customers including but not limited to the following areas:

- a) Product Information
- b) Inquiries, Contracts, or Handling Including Amendments
- c) Customer Feed Back, Including Customer Complaints



Customer communications are typically routed through Sales, Business Management and/or Customer Service. Where appropriate Sales, Business Management and/or Customer Service personnel may contact other Sartomer personnel to assist and provide customers with technical information or information related to specific issues. Customers may also communicate directly with Quality Control and Quality Assurance staff on quality issues. Sartomer personnel are empowered to take customer complaints and enter the complaint information into the corrective action system whereby the complaint is routed to the responsible party in a timely and effective manner. A cross-functional team consisting of relevant functions solicits customer feedback through use of customer surveys. Sartomer maintains partnership teams with multiple customers with which information is shared and acted upon.

Customer communication processes are documented in multiple procedures and work instructions. Objective evidence is provided through quality records such as corrective action records, meeting minutes, surveys, signed mutually agreed upon specifications and other documents.

7.3 Design and Development

7.3.1 Design and Development Planning

New products intended for commercial development and realization at a Sartomer manufacturing facility or an approved external manufacturing facility such as a toller are designed and developed according to planned and controlled arrangements.

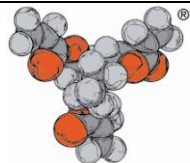
These planned and controlled arrangements consist of a detailed plan, prepared as a new item setup, which includes inputs from our Research & Development, Sales, Business Management, Quality, Environmental, Health & Safety, Production Management, Quality Control and Finance groups. Responsibilities for all design and development activities are all assigned to qualified personnel as part of the New Item Setup Planning for Manufactured Items procedure, IT-PR-0025. Availability of adequate resources for design and manufacture of the product are also considered.

The new item setup is interfaced with our manufacturing facilities to allow transfer from Technology to Commercial Production through the use of planned and controlled process trials. To ensure effective communication, process trial plans and controls are documented in applicable manufacturing site procedures which include defined responsibilities and authorities for qualified personnel.

Throughout the new item setup process and the process trial, appropriate reviews, and verifications are conducted in accordance with the documented procedures. Validations (if applicable) are conducted in accordance with mutually agreed upon instructions with the customer.

7.3.2 Design and Development Inputs

New product specifications, including formulations, product characteristics, bill of materials, packaging, resource needs including warehousing, and where applicable; performance requirements are inputted to the manufacturing facilities by our Research & Development, Sales, Business Management, Production Management, Quality Control and Finance groups in a planned and controlled manner through the new item setup plan, lab reports, and where applicable; pilot plant reports.



Our Quality, Environmental, Health and Safety and Research & Development groups ensure that for new products, appropriate safety and environmental requirements and considerations are inputted during the new item setup process. This provides for the safe manufacturing and handling of the product by all stakeholders and the protection of the environment. Sartomer is a Responsible Care® company.

Where applicable design and development information from previous similar products is considered and used during the design and development input phase. This information is documented in the applicable lab reports, pilot plant reports and process trial reports, as well as; any other requirements that are necessary for a successful new product introduction.

7.3.3 Design and Development Outputs

Sartomer's design and development output for a successful new product introduction consists of the following;

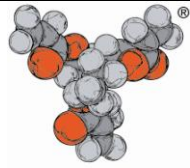
- a) completed and approved new item setup plan
- b) completed and approved process trial
- c) risk assessment
- d) controlled product specifications, including formulation and bill of materials
- e) MSDS and any other pertinent environmental and safety information required for the safe manufacturing and handling of the new product
- f) identification of the manufacturing site and any additional warehouses required for product realization
- g) identification of any new critical raw materials including the recommended supplier/producer
- h) production manufacturing plan (e.g. production batch packet)
- i) quality control inspection plan for critical raw materials, in-process and final product testing (e.g. qc inspection datasheets)
- j) identification of any new critical raw materials including the recommended supplier/producer
- k) packaging and labeling requirements
- l) new or modified procedures/work instructions for product realization
- m) training records for any new or modified procedures/work instructions for product realization
- n) costing

Using the outputs referenced above, Sartomer ensures that new product is not released unless it meets the design and development inputs unless authorized by the internal or external customer.

7.3.4 Design and Development Review

Sartomer's design and development reviews involve the analysis by responsible and authorized individuals of the new item setup plan and process trial at planned intervals. Research & Development, Sales, Business Management, QEH&S, Production Management, Quality Control and Finance groups are involved in these reviews during various stages of the design and development process.

The reviews include a verification that all required inputs and outputs are in place. Product verification and validation (if applicable) are performed in accordance with the applicable quality control and production process trial procedures.



During the course of these reviews, any actions resulting from them are documented accordingly in the applicable record.

7.3.5 Design and Development Verification

Design and development verification for new products is performed according to planned and controlled arrangements primarily using laboratory analysis of product characteristics and a production engineering (or equivalent) analysis of the process requirements. These analysis ensure that the new product has met the desired output criteria. New product which does not meet design and development criteria is not released unless authorized by the internal or external customer.

Records of these verifications and any actions resulting from these verifications are maintained in the form of the applicable quality control inspection plan, production batch packet or plan, and the process trial documentation for the new product of interest.

7.3.6 Design and Development Validation

Sartomer's products are designed and developed to be used by a variety of customers in a variety of applications. Sartomer often engages with customers to assist in their formulations and needs through co-operative interactions. However due to the multi-purpose applications and the product transformations that occur as a result of customer formulations, Sartomer typically does not perform formal validations. Customers often will not share validation results with Sartomer due to their proprietary nature. However should a formal validation be required for a new product, it will be conducted according to planned and controlled arrangements as mutually agreed upon with the customer. Records of such validations will be maintained by the appropriate Sartomer group responsible for the validation.

7.3.7 Control of Design and Development Changes

Design and development changes are handled in a planned and controlled manner. Changes to product specifications and process are identified, documented, reviewed and approved by authorized personnel prior to implementation. These personnel include representatives from the following groups: Research & Development, Sales, Business Management, QEH&S, Production Management, Quality Control and Finance. In cases where applicable, customers are contacted prior to implementing the design and development change.

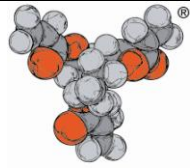
7.4 Purchasing

7.4.1 Purchasing Processes

Sartomer's Procurement, Quality, Environmental, Health & Safety and site Quality Control departments ensure that purchased goods and/or services conform to the Sartomer specified purchase requirements through controls documented in Corporate Procurement and Site specific procedures and work instructions.

Where applicable, suppliers for goods and/or services including but not limited to critical raw materials¹, resale material (including tolled manufactured material) and containers are selected on the basis that they meet

¹ The definition of critical raw materials is site specific and contained in site-specific documentation.



Sartomer's Quality, Environmental, Health & Safety and business criteria. Quality, Environmental, Health & Safety and business criteria are dependent on the purchased goods and/or services impact on the realization process and/or quality of the final product. Quality Environmental, Health & Safety and business criteria are determined by Corporate Procurement and the Site/Departments using the provided goods and/or services.

The criteria for supplier selection, evaluation, and re-evaluation are documented in the Corporate Procurement procedures with the exception of incoming inspection activities, which are documented in Site specific procedures and work instructions. In addition to initial evaluation and selection, where applicable, suppliers are re-evaluated through incoming inspection and annual supplier performance evaluations.

7.4.2 Purchasing Information

Resource or purchasing requirements are typically initiated through a Purchase Order in the ERP System by authorized Sartomer personnel. Some resourcing/purchasing requirements may be initiated through ancillary systems that does not use a formal purchase order but still meet the information requirements of this section (e.g., use of a Procurement credit card).

Where applicable, Procurement documents shall contain information and requirements deemed necessary by Corporate Procurement, Quality Assurance and the Site/Departments using the goods and/or services. This information contains where appropriate:

- a) A Clear Description of the Goods and/or Services
- b) Pertinent Specifications
- c) A Precise Definition of the Type, Class or Grade of the Goods and/or Services
- d) Identification of any Required Management System or Applicable Standards
- e) Requirements for Approval or Qualification for the Goods and/or Services, Procedures, Processes or Personnel

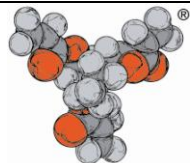
Procurement documents are reviewed by Procurement personnel and where applicable by Quality Assurance and Quality Control personnel for accuracy and completeness prior to use.

7.4.3 Verification of Purchased Product

Purchased products, where applicable, are verified upon receipt according to Receiving, Receiving Inspection and Test procedures. These procedures ensure that purchased product is not used or processed until it has been inspected or otherwise verified to meet specified requirements.

The extent of the receiving inspection and testing performed is based on the nature of the purchased product and the history of the Supplier providing the product. Where testing of purchased product is deemed not necessary, Certificates of Analysis or review of manufacturing SPC records may be required.

In the event that incoming purchased product is used prior to verification of meeting specified requirements, the product must be approved for use in accordance with site specific procedures. The Production Department documents the final product batch/lot that the purchased product was used for should it become necessary to reject or recall the final product due to a failure caused by the purchased product not meeting specified



requirements. Use of purchased product not meeting specified requirements is procedurally controlled at the individual manufacturing Sites including authorization only by responsible qualified personnel.

Should Sartomer or our customers decide to verify purchased product at our supplier's premises prior to delivery, the arrangements, verification and release of such purchased products will be determined by Sales, Quality Control and Operations and when applicable by our customers. These arrangements and verification/release requirements will be documented on the Purchase Order by Procurement or on the Contract by Sales and Marketing.

7.5 Product and Service Provision

7.5.1 Control of Production and Service Provision

The production of Sartomer product is planned and carried out by qualified and trained personnel according to controlled procedures and work instructions. Groups responsible at the manufacturing Sites include; Production, Production Engineering, Safety, Maintenance, Shipping/Receiving and Quality Control. At the Corporate level responsible groups include; Product Supply, Quality Assurance, Marketing, Sales and Business Management, Environment Health and Safety, Process Engineering, and Project Engineering.

The controls in place for production include:

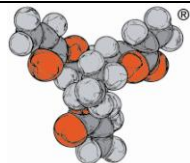
- a) Product characteristic information, including quality criteria (critical raw material requirements, in-process product requirements and final product requirements) and frequency of testing.
- b) Documented procedures and work instructions, which define proper work practices, equipment, production processes and criteria for use required for product conformity.
- c) Availability and use of approved equipment required for product conformity.
- d) A preventive maintenance and calibration program to ensure process capability for process equipment and monitoring and measuring equipment.
- e) The implementation of monitoring and measurement activities as specified in Production and Quality Control documentation to verify product conformity.
- f) Release, delivery and post delivery activities in accordance with contractual requirements, sales order requirements and regulatory requirements.

Sartomer does not service product. Should servicing become necessary, processes will be established to meet these requirements.

7.5.2 Validation of Processes for Production and Service Provision

Production process outputs at Sartomer are verifiable by subsequent monitoring and measuring typically during in-process and final testing of product. Should any production process whereby the output cannot be verified be included in the Sartomer realization processes, they will be validated prior to use to demonstrate the process's ability to meet requirement. Such validation will involve qualifying the process, equipment, and personnel, as well as defining the work methods, procedures, required records for the process and its re-validation.

7.5.3 Identification and Traceability



Sartomer's manufacturing Sites maintain procedures to assign all final products with a unique identification whether it is manufactured via a batch or continuous process. These identifications are recorded and provide traceability of all batches and continuously produced products from raw material stage to final testing. This identification follows the product through the completion of processing steps. In some instances, a unique lot number in addition to the unique batch number will be assigned. This Sartomer lot number and/or batch number will become the Sartomer identification used for traceability of all Sartomer final products through delivery. These records are maintained at each manufacturing facility.

7.5.4 Customer Property

Customer supplied property shall be handled by Sartomer in accordance with applicable Site controls. These controls include as a minimum, identification, verification, and protection. Customer supplied property will be received in a manner similar to any other materials purchased by Sartomer that are incorporated into product sold by Sartomer. If any customer-supplied property is lost, damaged or found to be unfit for use, the customer will be promptly notified. Records of customer property including notifications of any degradation will be maintained at the applicable Site.

7.5.5 Preservation of Product

All materials and products under Sartomer's control are stored and handled in such a way as to preserve the product (including any constituent parts) in order maintain conformity to requirements. Such protection is also extended to product being delivered, which is packaged appropriately to preserve product during delivery in order maintain conformity to requirements.

At all times, employees handle items in such a manner as to ensure their own safety and the safety of others. All employees involved in the handling of products take care to handle and store them in such a manner as to prevent damage and deterioration and to maintain product identification. Appropriate handling and transport equipment is used at all times.

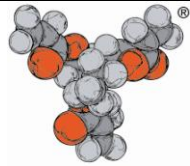
Products stored and shipped from off-site contracted warehouses are handled in such a manner as to preserve conformity of the product. Sartomer evaluates potential warehouses and communicates all applicable storage, handling, and shipping requirements to the warehouses. As a minimum, contracted warehouses must have in place the types of storage and shipping controls that are required by Sartomer before they will be used.

7.6 Control of Measuring and Monitoring Equipment

Monitoring and measuring equipment that are used to demonstrate product conformity are controlled according to the Manufacturing Site's production and quality control processes. The appropriate measuring and monitoring equipment are selected based on the parameters to be measured and accuracy required.

Controls for measuring and monitoring equipment include:

- a) Calibrating and/or verifying at prescribed intervals against standards or equipment having a known relationship to nationally recognized standards. Where no such standards exist, the basis for calibration or verification is documented.



- b) Adjusting or re-adjusting measuring or monitoring equipment as necessary during the calibration and or maintenance process.
- c) Measuring and test equipment is suitably identified with an identification tag on the equipment and a calibration record. The calibration status of measuring and test equipment is readily identifiable to preclude the unintended use of equipment out of calibration or under repair/maintenance.
- d) The calibration status of measuring and test equipment is documented and records of calibration are maintained.
- e) When measurement or test equipment is found to be out of calibration, the need for reassessing the validity of previous results is reviewed and the determination arrived at documented. Sartomer shall then take appropriate action on the equipment and if deemed necessary any product affected.
- f) When determined to have an effect on the equipment, environmental conditions are monitored and controlled.
- g) The handling, presentation, storage, and environment of measurement and test equipment are controlled to assure that accuracy and fitness for use is maintained.
- h) Precautions are taken to ensure adjustments are not made which would invalidate calibrations and/or the measurement results.
- i) Computer software when used in the measuring and monitoring process is confirmed for use to satisfy its intended application and is reconfirmed when necessary.

8.0 MEASUREMENT, ANALYSIS AND IMPROVEMENT

8.1 General

The monitoring, measuring, analysis and improvement processes at Sartomer are designed and implemented to ensure that our product requirements meets or exceeds our customer requirements, make certain that the Management System performs as intended, and to continually improve the Management System.

Product requirement conformity is demonstrated through the use of quality plans, which define the necessary monitoring and measurement processes for the manufacture and inspection of our product.

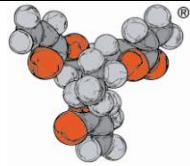
Verification of the Management System's effectiveness and continual improvement is performed through the use of the Quality, Environmental, Health & Safety Policy, Key Measures, internal and external audit results, analysis of product performance and customer feedback data, corrective and preventive actions, and Management Reviews.

Monitoring, measuring, analysis and improvement processes are determined, authorized, and implemented by the responsible individuals within Sartomer and are documented accordingly in appropriate procedures. Where applicable statistical techniques, such as SPC, are utilized.

8.2 Monitoring and Measurement

8.2.1 Customer Satisfaction

Customer satisfaction is determined through multiple measurement processes in the Sartomer Management System. Sartomer management analyzes these measurements so that performance in meeting and exceeding customer requirements and customer perception of Sartomer is determined.



Customer satisfaction measurements with targeted goals form one of the keystone sections of the Sartomer Key Measures with multiple measurements reviewed on a quarterly basis by Top Management. Analysis of this data by Top Management leads to action plans for continual improvement.

These customer satisfaction measurements and goals are released to the entire organization through quarterly updates to each Site's upper management. The customer satisfaction data is also analyzed during the Management Reviews.

Customer satisfaction surveys are conducted every two to three years. Results of these surveys are analyzed by Top Management whereby action plans for continual improvement may be developed and implemented. The results of the customer satisfaction surveys are released to key functional groups within the Sartomer organization and made available to all employees by the Management Representative.

Our Sales and Marketing groups stays in contact with customers regularly where issues such as product performance, current and future needs are discussed and handled. Records of these contacts are maintained through Call Reports, which are sent to Management Representatives throughout the organization.

Sartomer provides opportunities for customer feedback through participation in multiple trade shows throughout the year.

8.2.2 Internal Audit

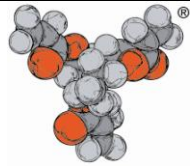
Sartomer conducts Internal Audits at planned intervals to determine whether or not the Management System conforms to the requirements of this Management System Manual, ISO 9001, Responsible Care® Management System Technical Specification and whether or not the system has been effectively implemented and maintained. Such audits are in accordance with the Internal Audit procedures. The procedures define the requirements for qualification of personnel performing auditing, internal audit scheduling, conduct of audits including identification of nonconformities, opportunities for improvement, and for recording the audit results and reporting them to management. These procedures are listed below:

- QA-PR-0001 - *Internal Auditor Qualification and Training*
- QA-PR-0002 - *Developing the Internal Audit Schedule and Conducting Audits*
- QA-PR-0014 - *Internal Audit Corrective Action Requests*

The Internal Lead Auditor, or designee, is responsible for scheduling and managing regular internal audits. Every area of the company that affects product requirements will be scheduled for internal audits according to the status and importance of the activities being audited.

Selection of Internal Auditors for each audit is based on impartiality and objectivity of the area being audited. Internal Auditors are trained in accordance with QA-PR-0001 and do not audit their own work.

Nonconformities are recorded on Internal Audit Corrective Action Requests and issued to the responsible party. QEH&S Management partnering with the Responsible Area Management ensures that timely and effective corrective action is taken. Auditing personnel verify the adequacy and effectiveness of the corrective action and



any preventive action taken. This may be completed by reviewing and verifying any necessary corrections and corrective actions or by inclusion for review in subsequent audits or special follow-up audits. Internal Audit results and subsequent analyses are an integral part of Management Reviews

8.2.3 Monitoring and Measurement of Processes

Sartomer monitors and measures the Management System processes to demonstrate and verify their ability to achieve planned results and to take correction and corrective action when necessary should planned results not be met. Sartomer applies various monitoring and measuring methods both at the Corporate and Site levels to verify the effectiveness of the Management System.

- Corporate and Site objectives are reviewed during applicable Management Review meetings where action plans are initiated for deficiencies and potential deficiencies.
- Internal and external audit performance and results are considered an essential tool in verifying process behavior and are reviewed regularly.
- Production data and performance including delivery is continuously monitored and when necessary acted upon by applicable corrective and preventive action systems.
- Customer satisfaction is measured and monitored through the use of regular customer surveys, customer complaint processes and additional methods as referenced in section 8.2.1.
- Supplier performance through incoming inspection activities, and regular supplier performance evaluations is measured, monitored against specific objectives and when necessary acted upon.

As indicated above, multiple corrective and preventive action processes are used to act upon deficiencies identified versus planned results and when the potential for a deficiency versus planned results has also been identified.

Where applicable, statistical techniques are used in the Management System.

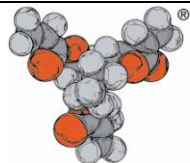
8.2.4 Monitoring and Measurement of Product

Sartomer monitors and measures product characteristics to demonstrate and verify that product requirements are met and to take corrective action as necessary when product requirements are not met.

The monitoring and measuring of product characteristics takes place through receipt of critical raw materials, in-process manufacturing, final product processing, packaging and delivery and is performed in accordance with production and quality control plans.

The production and quality control plans contain the necessary information to affect the monitoring and measuring process. This includes but is not limited to instructions, methodology or technique, inspection-test-measurement equipment identification, characteristic identification, specifications with acceptance criteria, as well as any special environmental, health or safety information.

The production and quality control plans indicate the authorized personnel releasing the product to subsequent operations throughout the various manufacturing phases through receipt of critical raw materials to finished goods inventory and delivery.



Product (including critical raw materials) is not released to subsequent operations until all planned arrangements have been satisfactorily completed unless authorized by relevant personnel as detailed in controlled procedures.

Product is not released to the customer until all planned arrangements have been satisfactorily completed unless authorized by the customer.

8.3 Control of Nonconforming Product

Product found to be nonconforming to specified requirements is identified as such and is segregated to preclude unintended use while awaiting disposition. Nonconforming product is handled in accordance with *QA-PR-0019 - Nonconforming Product*.

Nonconforming product can occur in one of three primary categories, critical raw material, in-process product and final product.

Critical raw materials and final product found to be nonconforming are identified and segregated electronically through Sartomer's ERP system. Nonconforming product in these categories may also be physically identified and/or segregated. In-process product is identified and segregated through site-specific processes.

Disposition and authorization for use of nonconforming product is made by authorized individuals only in accordance with *QA-PR-0019* and Site-specific processes. Nonconforming product that is reworked is re-verified against specifications to ensure product conformity.

Final product that does not conform to specified requirements may be offered to customers for concession. Corporate Customer Service personnel, who ensure that the actual condition of the product is documented and communicated to the customer, negotiate such concessions. Site Quality Control Management is also involved in the concessions to ensure accurate reporting of the nonconformity.

If nonconforming product is detected only after delivery or use has started, the Marketing and Sales personnel, Customer Service personnel, Quality Control and/or Quality Assurance personnel will ensure that all affected parties are aware of the nonconformity, as appropriate to the effects or potential effects of the nonconformity.

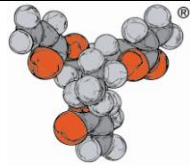
8.4 Analysis of Data

Continuing suitability and effectiveness of the Sartomer Management System is determined through the collection and analysis of data. The evaluation of this data also includes identifying opportunities for improving the effectiveness of the Management System.

The collection and analysis of data is done at both the Site and Corporate levels through the Management Reviews as indicated in section 5.6 of this Management System Manual.

Data presented during these reviews includes multiple sources of information on customer satisfaction, conformity to product requirements, product and process characteristics and trends, opportunities for preventive action, and supplier performance. Records of the analysis of these data sources are maintained in the Management Review meeting minutes.

8.5 Improvement



8.5.1 Continual Improvement

Sartomer continually improves the effectiveness of the Management System through use of the Quality, Environment, Health and Safety Policy, Key Measures, internal and external audit results, analysis of data, corrective and preventive actions and Corporate and Site Management Reviews. Provisions for such improvements are found in sections 5.3, 5.4, 5.6, 8.4 and 8.5.

8.5.2 Corrective Action

Corrective actions are undertaken to eliminate the causes of nonconformities in order to prevent their recurrence. Actions taken are appropriate to the impact of the problems encountered. Corrective Actions may be initiated by anyone in the company according to the corrective action procedure, *QA-PR-0020 - Corrective Action Processes*. Such actions will be handled and recorded according to the applicable corrective action process. Each of the Sartomer corrective action processes includes the following elements:

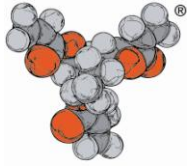
- Determine and implement the immediate action needed to correct the nonconformity as applicable.
- Determine the most probable cause or causes as applicable.
- Evaluate, determine and implement the action needed to prevent recurrence of the nonconformity as applicable.
- Reviewing the effectiveness of the corrective actions taken.

Accident/Incidents

The organization has established and implemented a system to identify and investigate incidents and accidents in order to identify root causes and implement corrective/preventive actions to mitigate any adverse impacts. Accidents and incidents are investigated and reported in accordance with SC-RR-0018, Incident Investigation Reporting Procedure. Records of accident/incident investigations are maintained and key findings are shared with employees and other relevant stakeholders.

8.5.3 Preventive Action

Preventive actions are undertaken to eliminate the causes of potential nonconformities in order to prevent their occurrence. Actions taken are appropriate to the potential impact of the problems that may be encountered. Preventive Actions may be initiated by anyone in the company according to the preventive action procedure, *QA-PR-0021 - Preventive Action Processes*. Such actions will be handled and recorded according to the applicable preventive action process.



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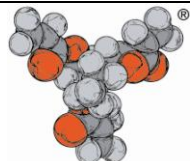
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Preventive action processes vary significantly in technique and application but all typically include the following elements:

- Preventive action processes are used to identify and determine potential nonconformities and their potential probable cause.
- The need for action to prevent occurrence is evaluated based on the magnitude of the risk for the potential nonconformity.
- If action is deemed necessary, the type of action is determined and implemented again based on the magnitude of the risk for the potential nonconformity.
- Records of the preventive actions taken are recorded according to the applicable preventive action process.
- Reviewing the effectiveness of the preventive actions taken.



Appendix I
Corporate RCMS related documents

Document ID	Title
CD-PR-0002	Product Evaluation/Risk Assessment Procedure
CM-PR-0007	Distribution of Non-Regulatory Environmental, Health, Safety and Risk-Related Information to Customers and Other Direct Product Receivers
SU-CM-PR-0025	Product Stewardship Procedure for Customers and Other Direct Product Receivers
PS-RR-0004	Employee Participation
PS-RR-0006	Process Hazard Analysis
PS-RR-0013	Management of Change
SC-PR-0001	Sartomer Community Outreach Procedure
SC-RR-0008	Employee Occupational Exposure Assessment Program
SC-RR-0018	Incident Investigation Reporting Procedure
SC-SR-0001	Sartomer Community Contact Procedure
SC-SR-0010	Security Vulnerability Assessment Procedure
SC-SR-0011	Emergency Contact Procedure