Goodrich Program for Complying with Customer and Regulatory Requirements for Hazardous Materials

I. Introduction

Goodrich has developed a comprehensive program for compliance with customer and regulatory requirements regarding hazardous materials. Oversight responsibility for this program is shared between the Hazardous Materials Steering Committee (HMSC) and the Environmental Health and Safety (EHS) Steering Committee. The HMSC focuses primarily on product-related hazardous materials regulations, while the EHS Steering Committee concentrates on process and facility-related regulatory issues.

A. The Hazardous Materials Steering Committee

The Hazardous Materials Steering Committee **(**HMSC) is an enterprise level committee that provides policy and guidance tools to facilitate Goodrich's Strategic Business Units' (SBUs') compliance with customer and regulatory hazardous materials requirements for products. The HMSC's responsibility is to support and enable Goodrich Corporation to continue to produce safe, high quality products while efficiently managing compliance with customer and regulatory requirements for the management and restriction of hazardous substances..

The HMSC is comprised of leadership representatives from Technology, Supply Chain, Materials and Process Engineering, the three Goodrich Business Segments, Information Technology, Communication, Legal and Environmental, Health and Safety.

The HMSC has the following specific responsibilities:

1. Identifying hazardous substances that are being targeted for elimination by regulation and/or by customers worldwide;
2. Communicating information about the substance and proposed bans/restrictions to the appropriate individuals within Goodrich, including Enterprise Management and the Strategic Business Units (SBUs);
3. Requesting analysis of the impact of the substance ban/restriction from Goodrich SBUs;
4. Reporting on impact to SBU Presidents and Business Segment leaders;
5. Determining Goodrich's legal requirements and advising management of compliance recommendations;
6. Coordinating efforts to interface with government agencies, if applicable. Working through trade associations and customers to partner for solutions to domestic and foreign environmental issues;
7. Communicating to enterprise (as appropriate) recommending the solution/method for addressing issues;
8. Identifying and addressing other areas that may be impacted by the regulation or customer, such as customer communications, supplier and customer contracts, etc.; and
9. Monitoring compliance progress enterprise wide.

B. The Environmental Health and Safety Steering Committee

Each of the 9 Goodrich SBUs and the Customer Service organization has a representative on the Goodrich EHS Steering Committee. The responsibilities of the Committee are as follows:

1. Reviewing current and emerging EHS issues that have the potential to impact Goodrich;
2. Defining EHS strategy for Goodrich;
3. Identifying specific programs and resources and providing oversight and advice to Steering Committee subcommittees to achieve EHS strategy;
4. Gaining Senior Leadership concurrence on the EHS strategy and implementation plans;
5. Soliciting site and business feedback on EHS implementation plans;
6. Communicating EHS strategy to senior management, site management, EHS organization and ensuring effective communication to all employees;
7. Monitoring progress of strategic programs and take active measures to address EHS program gaps; and,
8. Assisting with the development of the Goodrich EHS Organization.

II. Management of Declarable Substances in Products

A. Phased Materials Declaration Process for Product Chemicals

Increasingly, regulations such as the European Union's REACH[1] regulation and the requirements of various customers mandate knowledge of the chemical substances contained in the products Goodrich manufactures. In order to meet these requirements, Goodrich, through its affiliations in the AIA and ASD, is participating in the aerospace industry's effort to develop a comprehensive list of chemical substances meeting the REACH criteria for Substances of Very High Concern (known as the "Declarable Substance List") and a Declarable Substances Data Collection Form. This successful effort culminated in the aerospace industry standard published simultaneously by SAE International (AS9535/ARP9536) and ASD-Stan (TR9535/TR9536).

This standard was developed to address, in a consistent way, the collection of information on chemical substances in products throughout the aerospace supply chain. This information is key for compliance with numerous regulatory requirements as well as to meet customer and other stakeholders' expectations and obligations. This SAE/ASD-Stan standard consists of two components; (1) a Declaration Form with instructions for completion (SAE 9535) and (2) a list of declarable substances (ARP 9536). A standard format was intended to ensure consistency and to eliminate duplicative and unnecessary costs in the reporting process. The standard was also intended to facilitate mechanization of data on component chemistry. The SAE/ASD-Stan standard (AS 9535) facilitates reporting either against a substances list or full disclosure of chemical composition.

Goodrich also played an active role in the prioritization of the Declarable Substance List based on use of the chemical substances in aerospace products. A major concern of the aerospace industry was the continuity of supply of substances/products that assure aircraft safety and product integrity. This priority list will allow Goodrich and other members of the aerospace industry to comply with the law while applying a measured, phased process (Phased Declaration Process) for requesting component chemistry information from suppliers. This will allow Goodrich to collect data in a timely manner while

[1] REACH : EU Regulation No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.

managing the data collection and reporting requirements of suppliers. It is anticipated that it will take several years to collect the required data on component chemistry.

B. Product Component Chemistry Database

Goodrich has developed an external data collection portal for suppliers (Co-eXprise Database) and has purchased an enterprise resource planning data analysis (ERP) software application (SAP REACH Compliance application) to calculate the concentration of declarable substances in products and components to ensure compliance with product-related EHS regulations such as REACH.

1. Co-eXprise Database

Goodrich has created a web-based data collection tool for suppliers to provide component chemistry data. The web tool is based on the AS9535 Form.

Goodrich is requiring key suppliers to provide component chemistry for the products they supply in a phased manner based on the prioritized 9536 List.

2. REACH Compliance Application

Goodrich has purchased the SAP REACH Compliance application to extract ERP data and component chemistry data to determine if any REACH thresholds are triggered for Substances of Very High Concern (SVHCs) in products.

Goodrich will utilize this software for REACH compliance and will notify downstream users (and the European Chemicals Agency [ECHA], if required by law to do so) concerning the presence of SVHCs in products.

Currently, Goodrich is piloting this software and anticipates that a fully integrated solution will be implemented over the course of several years.

The supplier data entry portal and the data analysis software are illustrated in Figure 1.

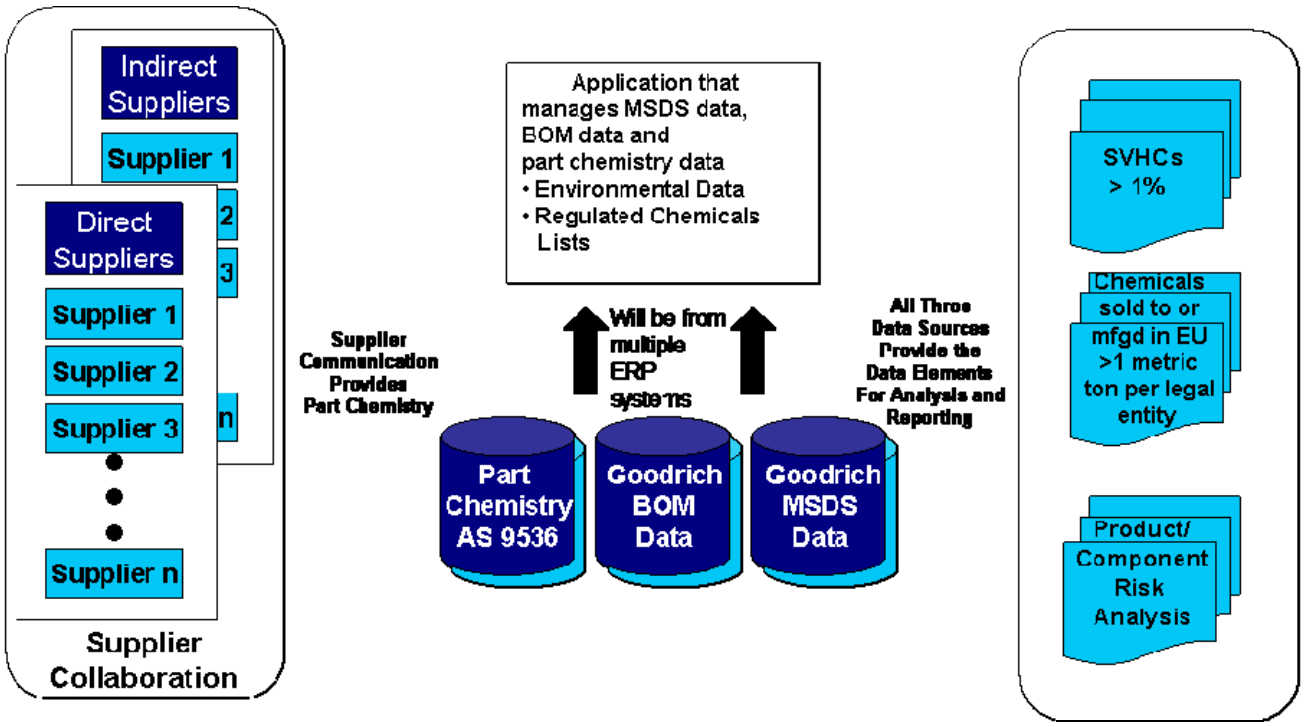

Figure 1: Goodrich Information for REACH Compliance.

C. REACH Product Workshops

To assist Goodrich with its legal compliance requirements, a workshop method has been developed to assess any given product for the risk of containing a declarable substance in an amount > 0.1 wt% as required by REACH. The output from the workshop drives collection of data from suppliers by Co-eXprise and minimizes the effort needed to collect data on parts on which Goodrich owns the intellectual property, whether or not manufactured by Goodrich. The information provided on products feeds into the Product Family Group method.

D. Product Family Group Method

To provide early information concerning SVHCs and to minimize the data collection burden on upstream suppliers, Goodrich has developed the Product Family Group Method for identifying which suppliers should be contacted and requested to provide data on declarable substances.

A Product Family is a group of products that have definable characteristics, and which are expected to result in consistent material compositions. Products associated with a Product Family are called Product Family Members. A properly defined Product Family will consist of products that contain the same materials, including declarable substances. The material declaration data for a given product should closely track with other members of the Product Family.

The Product Family Method will establish a declarable substance profile for the family based on substance data collected from its members. A Declarable Substance Profile will be used to (1) identify the presence of declarable substances in our products, (2) compute substance weights and percent concentration in our products and (3) estimate total quantity of declarable substances per year in our products.

Product Families will be continuously validated against new declarable substance profiles collected from product samples within the family.

The steps in the Product Family Group Method are illustrated in Figure 2. Standard work (GRMA-019-PRO-00 Family Group Model) has been created to ensure consistent use of the method.

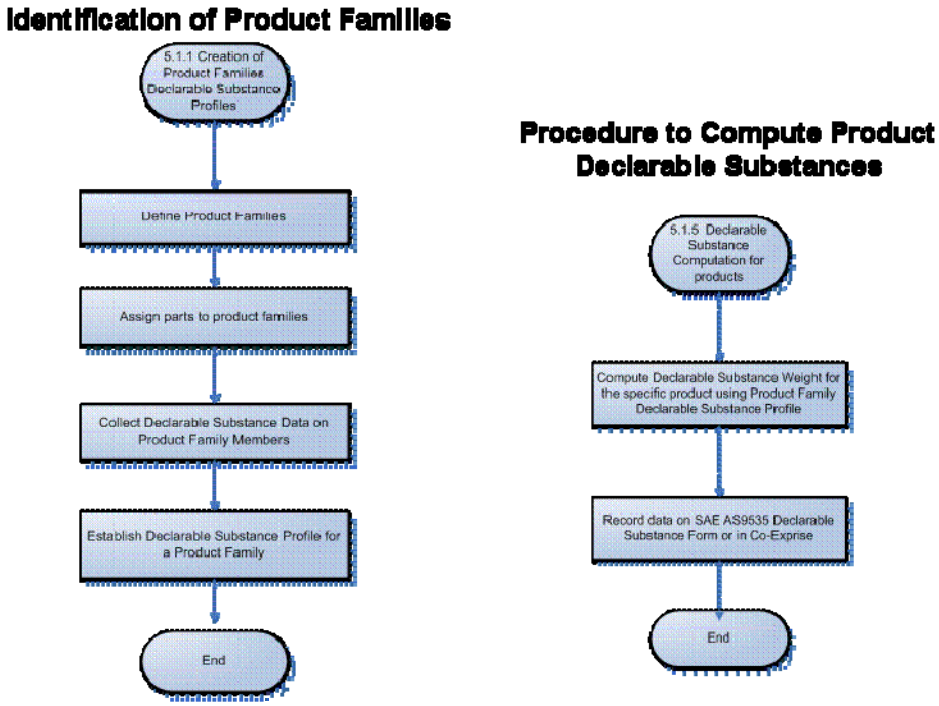

Figure 2 Product Family Group Method

E. EHS in Product Design

Goodrich has included EHS milestones, especially the materials selection process, in the enterprise product development process (STReamlined Innovation & Development Excellence, or "STRIDE") to minimize the environmental health and safety impact of products throughout the product life cycle.

STRIDE is an initiative focused on improving new product development across Goodrich through four primary areas:

1. An Assessment Process that identifies a capability profile, strengths and weaknesses across New Product Introductions (NPI) processes and develops Improvement Action Plans.
2. The Provisioning of Recommended Standard Work (Tools/Processes) to Goodrich SBUs.
3. The Facilitation of "On Project" Application of Recommended Standard Work.
4. The Deployment of STRIDE Know-how through the Training of SBU-based facilitators.

Building EHS requirements and product lifecycle considerations into STRIDE will facilitate each design center in addressing issues such as energy efficiency (use), product lifecycle management, Industrial Hygiene (health) concerns, safety and ergonomics, pollution prevention, etc. as illustrated in Figure 3.

STRIDE Elements / EHS Issues	Opportunity Targeting	Project Screening and Selection	Project Planning	Preliminary Design	Detailed Design	Performance Verification	Manufacturing and Delivery	Assess and Document
Customer Requirements	X		X	X		X		
Legal Requirements	X			X				
Hazardous Materials and Processes	X			X	X			
EHS Costs		X	X	X	X			
Team Staffing (EHS)		X						
EHS Competitive Advantage		X						
Energy Efficiency (Use)		X						
Supplier Collaboration				X	X			
Product Lifecycle Management				X	X			
IH (Health) Concerns				X			X	
Safety/Ergo Concerns				X			X	
Manufacturing Impacts				X	X	X	X	
P2 / Waste Minimization				X	X		X	
EHS Risk Assessment			X			X	X	
Packaging/Transportation							X	
Repair/Dissasembly							X	
End of Life				X	X			

EXAMPLE

Figure 3: Illustration of EHS considerations and product design stages in the Goodrich STRIDE process.

F. Green Materials and Processes

The Materials and Process engineering group has formed a "Green M&P" Steering Committee to establish standards and to efficiently assess risks and evaluate the development of safe materials or technology alternatives for declarable substances across the enterprise.

The Green M&P Steering Committee:

- Supports the corporate strategy to design viable alternatives to the use hazardous substances in Goodrich products while ensuring product safety and aircraft integrity;
- Provides a mechanism for all SBUs to collectively engage in Green M&P activities by leveraging resources and standardizing solutions across the enterprise;
- Presents a positive, innovative image to Goodrich's customers that could enable an increased product presence on future products;
- Eliminates waste in the process by replacement of declarable substances and associated environmental controls; when safely feasible to do so; and,
- Participates in or consults on industrial initiatives on declarable substance issues.

III. Compliance Systems

A. Environmental Health and Safety Management Systems

Goodrich has developed an EHS Management System that meets or exceeds the requirements of ISO 14001:2004 and OHSAS 18001:2007. Each Goodrich site is required to implement this management system. Goodrich has an audit tool that allows sites or the enterprise audit team to evaluate performance against the management system. Sites are required to audit their management system annually and to develop a corrective action plan to address any program deficiencies. The EHS Management System evaluation scores are reported to management on a quarterly basis. Beginning in

2009, Goodrich supplier requirement GRGS 100: *Control of Substances in Product* requires that Goodrich suppliers have a management system that conforms to ISO 14001.

B. Compliance with Environmental Health and Safety Regulations

The EHS Steering Committee requires that:

- Each Goodrich site annually reviews the local, regional and country regulations and determines applicability to the site.
- Each site conducts an EHS compliance audit following the corporate guidelines and uses a robust audit protocol selected by the Steering Committee. Sites are required to develop a corrective action plan and to correct any findings within 60 days.

In addition to the site audit program, Goodrich has an enterprise regulatory compliance audit program and an EHS Management System audit program that meet the requirements of ISO 19011:2002. Goodrich benchmarks their audit program against programs of other members of the Auditing Roundtable and periodically has their audit program evaluated by an external auditor. The Goodrich compliance assurance process (understanding the regulations, determining applicability to the site and auditing for compliance) is illustrated in Figure 4.

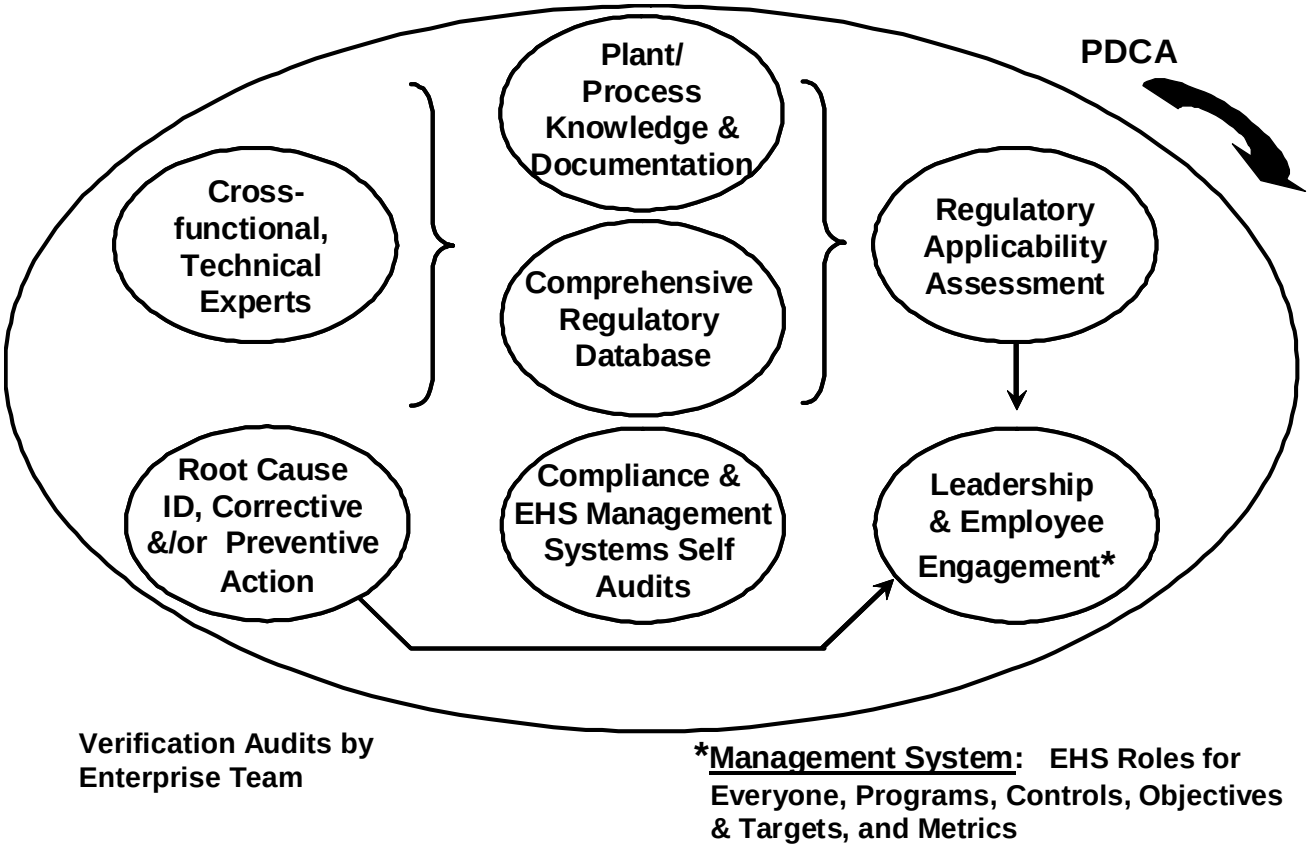

Figure 4: The Goodrich Compliance Assurance Process.

IV. Summary

The Goodrich program for compliance with product and process hazardous materials regulations allows the Corporation to remain current on legal requirements, assure regulatory compliance and maintain business continuity. The program is proactive and enables Goodrich to collect and analyze component chemistry data and to provide customers with the necessary information to meet their regulatory requirements. The program is long term in nature do to the necessity of the Goodrich supply chain to build the capacity to provide component chemistry data.