

# SEMItrack

*The global benchmark in environmental, safety, and health regulatory tracking for the semiconductor industry*



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# Announcing SEMITRACK

**SEMITRACK** systematically tracks, analyses, and reports on product and operational requirements throughout the world, providing companies with a cost effective “early warning system” for monitoring and evaluating EHS and sustainability issues.

**SEMITRACK** is the one-stop source for authoritative, comprehensive and timely information. It features international coverage, and effectively deals with Environmental Safety & Health issues. It is unmatched in terms of high quality, value added content targeting the Semiconductor Industry. It goes beyond basic data delivery and description by providing interpretation on critical regulatory matters.

## **SEMITRACK:**

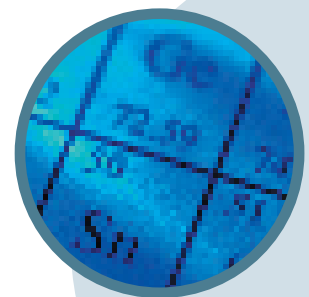
- is an essential information tool
- enables trouble-free access to global regulations that affect your ability to compete
- reduces operational and product risk
- improves efficiency and reduces cost
- maximizes corporate responsibility opportunities

The cost of not knowing is prohibitively high, while ignorance or poor knowledge management can have catastrophic business impacts!

*“In 2001 one of the leading electronics goods manufacturers found out that a restricted chemical was present in one of its products and a major shipment into Europe was blocked. The bottom line impact was estimated to be €52M.”*

Early identification of restrictions can save substantial amounts of money. It can also increase your competitive edge. For example:

- fixing a problem associated with an ESH regulatory issue may cost \$1,000 in the design phase
- if not addressed until the alpha or beta phase that cost may jump to \$10,000-\$20,000
- if not caught until your product is shipped, the cost may exceed \$1,000,000!



As a user-friendly, on-line information resource, **SEMITRACK** has benefits and features that not even a full-time, in-house specialist can provide and maintain. What do you spend per year on regulatory tracking, screening and interpretation?

- 100 hours per year for international legal counsel: \$30,000
- Translation costs (5 languages, 5 reports/yr): \$25,000
- 400 hours per year of staff time: \$25,000
- TOTAL \$80,000

**SEMITRACK** has the straightforward capacity to reduce your costs to about \$20,000

Return on Investment using **SEMITRACK** = 110%!

If **SEMITRACK** prevents one instance of blocking shipment of product or avoids regulatory fines, the return could be greater than 10,000%!

Bruce Klafter, the Director of EHS Legal Affairs at Applied Materials, Inc. is certain about **SEMITRACK's** unique value and benefits to the Semiconductor industry:

*"Identifying, tracking and understanding international EHS laws and regulations is imperative for multinational companies, but is getting more complex all the time. Applied Materials is excited about the web-based SEMItrack tool's capabilities and its focus on semiconductor equipment and device manufacturers. That focus is a huge advantage over the general newsletters and other subscription services that are now available."*

Applied Materials also notes that **SEMITRACK** is expert driven and developed:

*"The site will feature not only text, links and primary materials, but also summaries and analysis by subject matter experts. Such a site can potentially add a lot of value to our business and give greater assurance that our operations comply with regulations worldwide. We hope other companies in our industry will join in this service."*

# SEMITRACK Prospectus

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## What is SEMITRACK?

Understanding EHS requirements can directly affect the ability of your company to manufacture, distribute, sell products, and ultimately to succeed in the ever-changing global market place. Knowledge is a powerful tool to manage and reduce business risks. The **SEMITRACK** global regulatory compliance application provides key decision makers and those charged with implementing corporate objectives with essential information to:

- Reduce operational risks
- Maintain market access
- Decrease the cost of ownership of their products
- Minimize time to market
- Improve customer satisfaction

**SEMITRACK** systematically tracks, analyses, and reports on product and operational requirements throughout the world, providing companies with a cost effective “early warning system” for monitoring and evaluating EHS and sustainability issues.

At a time when environmental, safety and health and business profitability are becoming compatible goals, a new competitive landscape is emerging. Lack of knowledge or ignorance about environmental and safety policies and regulations could not only result in non-compliance and financial penalties, it is also likely to result in competitive disadvantage for slow-to-act companies. **SEMITRACK** helps avoid such scenarios.

As a user-friendly, on-line information resource, **SEMITRACK** has benefits and features that not even a full-time, in-house specialist can provide and maintain.

**SEMITRACK** reflects innovation in knowledge delivery, efficiency in access, and above all, authoritative content. **SEMITRACK** is underpinned by a world-class group of experts and specialists cutting across the disciplines of law, environmental policy and science. Collaborative, globally networked, yet practically grounded, the **SEMITRACK** team is unmatched in terms of experience and commitment. Led by ESHconnect, a spin-off of semiconductor industry EHS management consulting leader EORM<sup>®</sup>, the global team consists of recognized leaders such as Hunton & Williams, LLP; Beveridge & Diamond, LLP; TUV; EORM; CREM; and others. This product is being provided in conjunction with and supported by SEMI<sup>®</sup> (Semiconductor Equipment & Materials International).

## **SEMITRACK Content**

The content of **SEMITRACK** focuses on product and operational ESH issues in geographical regions where the semiconductor industry is concentrated. The following list details the subject reports that are included. It is important to note that in addition to reports supporting these standard subjects, regular regulatory alerts and special reports are developed and issued as regulatory issues change around the world.

### **Product Safety & Stewardship**

#### **Electrical Design, Interlocks, & Emergency Shutdown**

Requirements associated with the design of electrical components and electrical/electronic safety controls on semiconductor process equipment.

#### **Fire Protection**

Requirements associated with the design of semiconductor process equipment regarding the prevention of fire or explosion, as well as the requirements associated with fire detection and suppression.

#### **Ergonomics / Human Factors**

Requirements associated with the design of semiconductor process equipment regarding man-machine interface and human factors.

#### **Hazardous Energy Control**

Requirements associated with the control of hazardous energies (e.g., electrical, mechanical, thermal, pressure, chemical, electromagnetic, etc.) in the design of semiconductor process equipment.

#### **Mechanical Design & Seismic Protection**

Requirements associated with the control of design and installation of semiconductor process equipment with respect to seismic design.

#### **Automated Material Handlers / Robotics**

Requirements associated with the use of automated systems and robotics integrated in the semiconductor process equipment.

#### **Resource Conservation & Solid Waste Management**

Requirements associated with the conservation of water, power, and other resources regarding machinery used in semiconductor processing. In addition addresses activities that result in the generation of solid (non-hazardous) wastes such as packaging and materials used in maintenance/repair of semiconductor manufacturing equipment.

#### **Chemical Safety**

Requirements associated with the following chemical safety/industrial hygiene issues: general chemical safety design, chemical detection, and exhaust ventilation. This section doesn't include chemical restrictions or exposure limits (these are covered under Product Safety & Stewardship: Restriction of Hazardous Substances) nor requirements for individuals using/exposed to chemicals (these are covered under Operational ESH Issues: Chemical Safety & Hazard Communication).

#### **Ionizing & Non-ionizing Radiation, Lasers & Noise**

Requirements associated with industrial hygiene issues regarding electromagnetic radiation exposures and controls for semiconductor process equipment.

**Batteries**

Requirements specific to battery requirements including: restricted substances, labeling, and take-back.

**DfE Product Stewardship**

Requirements relating to regulatory requirements that require environmental impacts be considered from the design of the products such as the Electric Using Products Proposal in Europe.

**Packaging**

Labeling and take-back requirements for packaging used to ship products.

**Product Takeback / Recycling**

Legislative requirements for the collection and recycling of products such as the European WEEE Directive.

**Restriction of Hazardous Substance**

Provides a searchable relational database covering hazardous substances that may be used in the manufacturing of semiconductor process equipment, or are used in semiconductor equipment during end-use and maintenance. For materials which will have restrictions on use, a detailed report will be provided. For other materials the database will provide information about exposure and discharge limits.

**Transboundary Waste Controls**

Covers international agreements (e.g., Basel Convention) and requirements regarding the shipment of waste between international boundaries.

**Warning Labels**

Will cover the requirements associated with the design and placement of hazard warning labels on semiconductor process equipment.

## Operational ESH Issues

### **Occupational Health & Safety Overview**

General OHS requirements associated with in a semiconductor processing facility. This will include injury/illness prevention programs, injury/illness reporting and recordkeeping, OSHAS, risk assessment of operations, etc.

### **General Facility Design & Construction**

An overview of requirements for general facility design and construction, and work space requirements for semiconductor facilities. [Note: this will not go into the level of detail needed to comply with all local building- or fire-related codes.]

### **Life Safety & Emergency Response**

Requirements associated with life safety and emergency response issues (including alarms and plans) that are applicable to persons working with or near semiconductor process equipment. Included in this will be access, work space, and work area requirements, evacuation, aisles, confined spaces, etc.

### **Chemical Safety & Hazard Communication**

Requirements associated chemical use regulations and the information required to be communicated to workers and contractors in semiconductor process areas. Note: chemical restrictions and occupational limits are addressed in Product Safety & Stewardship: Restrictions of Hazardous Substances.

### **Physical Safety**

Requirements for the following subtopics:

- Hand and portable power tools
- Machine guarding
- Work from elevated heights (including fall protection, ladders, elevated work platforms, etc.)
- Welding and cutting operations
- Hoists and lifts
- Powered industrial trucks

[Note: information on ionizing and non-ionizing radiation and noise exposures will be covered under Product Safety & Stewardship: Ionizing & Non-ionizing Radiation, Lasers & Noise.]

### **Ergonomics**

Requirements for ergonomics and material handling within semiconductor operations.

### **ESH Training**

ESH training requirements applicable to personnel working in semiconductor manufacturing facilities.

### **Environmental Impacts**

ISO14001 requirements that may be applicable in jurisdictions such as EMAS in Europe.

### **Equipment Decontamination and Hazardous Materials Transportation**

Requirements associated with the decontamination and shipment of equipment, components and materials that are shipped from semiconductor manufacturing facilities.

### Hazardous Wastes

General requirements associated with the generation, collection, and disposal of hazardous wastes from semiconductor equipment operation and maintenance.

### Environmental Discharges

Requirements associated with activities that result in discharge of contaminants to air, water or soil from semiconductor manufacturing facilities.

## Jurisdictions

The manufacture of semiconductor products is a truly global industry covering four continents. Jurisdictions<sup>1</sup> in which semiconductor equipment is manufactured, semiconductor devices are fabricated, or in which semiconductor products are assembled and tested include:

Asia	Europe	North America	U.S. (cont.)
<ul style="list-style-type: none"><li>• China</li><li>• India</li><li>• Indonesia</li><li>• Israel</li><li>• Japan</li><li>• Korea</li><li>• Malaysia</li><li>• Philippines</li><li>• Singapore</li><li>• Taiwan</li><li>• Thailand</li></ul>	<ul style="list-style-type: none"><li>• European Union</li><li>• Austria</li><li>• Denmark</li><li>• France</li><li>• Germany</li><li>• Ireland</li><li>• Italy</li><li>• Netherlands</li><li>• Portugal</li><li>• Russia</li><li>• United Kingdom</li></ul>	<ul style="list-style-type: none"><li>• Canada (Federal)</li><li>• Costa Rica</li><li>• Mexico</li><li>• U.S. (Federal)<ul style="list-style-type: none"><li>• Arizona</li><li>• California</li><li>• Florida</li><li>• Idaho</li><li>• Maine</li><li>• Maryland</li><li>• Massachusetts</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Minnesota</li><li>• New Jersey</li><li>• New Mexico</li><li>• New York</li><li>• Oregon</li><li>• Pennsylvania</li><li>• Texas</li><li>• Virginia</li><li>• Washington</li></ul> <p><b>South America</b></p> <ul style="list-style-type: none"><li>• Brazil</li></ul>

Because of the large number of jurisdictions, the release of content by jurisdiction will be phased in over a 3-year period (or sooner if subscription revenue can support it). The initial release of **SEMITRACK** covers the following jurisdictions:

- Asia: China, Japan, Taiwan, Korea
- Europe: European Union
- North America: U.S. Federal

Subsequent tiers of jurisdictions to be covered will be:

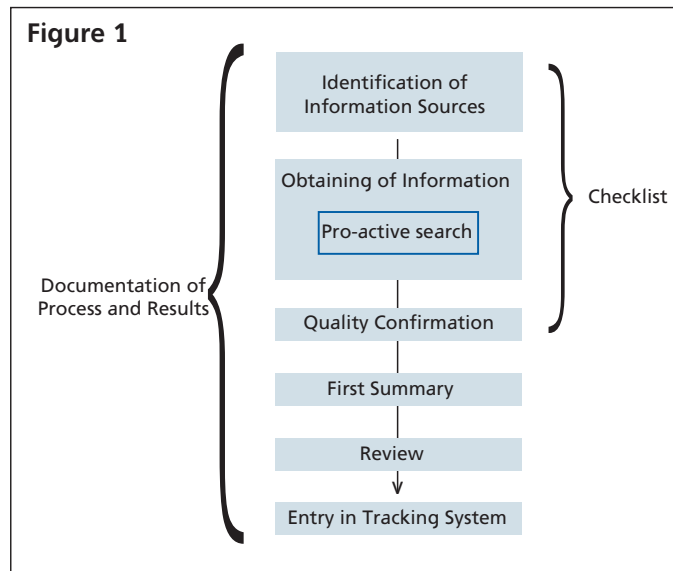
- Other North America: Mexico, Canada, Costa Rica
- Other Asia: Malaysia, Thailand, Philippines, Singapore
- Europe: Country-specific
- U.S: State-specific

<sup>1</sup>For purposes here, jurisdictions are defined as a sphere of authority (e.g., country, state) that regulates environmental and safety regulations.

## Quality Program

To ensure as far as possible a consistent high standard the service for each subject and jurisdiction, the development team has implemented stringent quality procedures that have been defined in a written document (available upon request). (Figure 1 gives an overview of the procedure)

The procedure is summarized in the figure. This procedure is completed for each subject and each jurisdiction. The procedure is a pro-active process entailing active searching and contacting of the information sources to ensure that the information in the application is as complete, up to date and correct as possible.



## Subscription Costs

The cost of the service will be based on an annual subscription rate of \$20,000. For this license fee, participating organizations will be given unlimited access to users within their organization. If an organization wishes to sign a multi-year subscription, the fees would be:

- \$36,500 for two years (9% discount)
- \$53,000 for three years (12% discount)

Organizations who are also subscribers to the Electronics Industry Alliance (EIA) EIAtrack service (see [www.eiatrack.org](http://www.eiatrack.org)) will receive an additional 10% discount on the combined total of their EIAtrack and **SEMITRACK** subscriptions (e.g., if subscribing to EIAtrack and **SEMITRACK**, the total fee would be \$37,500 per annum, this would be discounted to \$33,750).

## Schedule

The initial site will be operational within 8 weeks of having participants committing to US\$200,000 in subscription revenue. This will include the complete site design, the initial database, any subject reports that are completed and quality checked at that time, and the regulatory alert service. Within 8 weeks of the initial release, all of the initial jurisdiction reports will be operational and available.