WHEN BATTERY RECYCLING MEETS TSCA: NAVIGATING CONSENT ORDERS AND SIGNIFICANT NEW USE RULES

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Introduction

The rapid growth of the U.S. battery industry has created tremendous opportunities for manufacturers, recyclers, and downstream processors. At the same time, it has introduced new regulatory complexity that many organizations have never encountered before. While most companies are familiar with environmental permitting requirements, hazardous materials regulations, and workplace safety obligations, fewer organizations recognize that battery components themselves may be subject to restrictions under the Toxic Substances Control Act (TSCA).

For one battery recycling client, this realization occurred when the company began evaluating opportunities to process battery materials containing substances regulated under TSCA Section 5. What initially appeared to be a straightforward recycling and materials recovery operation evolved into a sophisticated compliance challenge involving Significant New Use Rules (SNURs), TSCA Section 5(e) Consent Orders (CO), industrial hygiene (IH) requirements, hazard communication obligations, customer notification provisions, recordkeeping responsibilities, and downstream product stewardship considerations.

The project illustrated how increasingly complex chemical regulations are affecting not only chemical manufacturers, but also downstream users, processors, recyclers, and other participants throughout the supply chain. It also demonstrates the value of a multidisciplinary approach, bringing together toxicology, regulatory affairs, IH, environmental compliance, and hazard communication expertise to develop practical strategies for clients facing novel regulatory challenges.

Understanding the Challenge

TSCA Section 5 authorizes the U.S. EPA to review new chemical substances before they enter commerce. In many cases, EPA allows commercialization of a substance under specified conditions documented in a CO. EPA may subsequently issue a SNUR that extends certain restrictions more broadly across industry.

While chemical manufacturers often understand these obligations, downstream entities frequently discover that restrictions associated with a new chemical can follow the material long after it leaves the original manufacturer. This is particularly true when regulated substances enter complex supply chains such as battery



manufacturing, battery recycling, materials reclamation, and metals recovery operations.

A client's battery materials recycling facility was evaluating the receipt and processing of battery materials containing substances regulated under TSCA Section 5. Although the client was not the original submitter of the new chemical notification, its activities potentially brought it within the scope of both a CO and associated SNUR requirements. The key question was straightforward: *Could the client continue its desired recycling operations while remaining compliant with TSCA requirements?* Answering that question turned out to require much more than simple regulatory interpretation.

The Regulatory Gray Area of Recycling

Battery recyclers frequently operate at the intersection of several regulatory programs. Depending on the specific material and process involved, operations may be governed by TSCA, Resource Conservation and Recovery Act (RCRA) requirements, OSHA requirements, state recycling regulations, transportation rules, export notification obligations, and various customer-specific contractual provisions.

One of the first challenges facing the client was determining how EPA might view specific recycling activities. Questions emerged regarding:

- Whether the processing activities could constitute manufacturing under TSCA?
- Whether recovered materials remained subject to Consent Order restrictions?
- How do downstream distribution limitations apply to recycled material streams?
- Do certain activities trigger a Significant New Use Notification (SNUN)?
- How should worker protection requirements be implemented in a recycling environment?
- What information must be communicated throughout the supply chain?

These questions are increasingly common throughout the battery industry. As domestic battery manufacturing expands and recycling infrastructure grows, more companies are encountering TSCA provisions that were originally developed for new chemical commercialization rather than end-of-life battery management.

Moving Beyond Regulatory Interpretation

Many consulting engagements begin and end with identification of applicable regulations. This project quickly demonstrated why that approach alone is often insufficient.

The client needed a practical framework for operationalizing compliance requirements. In other words, understanding the regulatory requirements was only the first step. The greater challenge involved translating those requirements into workplace practices, procedures, monitoring programs, documentation systems, and business decisions.

To support the client, Trinity assembled a multidisciplinary team that combined expertise from several practice areas. The IRRS team led interpretation of the COs, SNUR requirements, and broader TSCA obligations. Environmental compliance specialists evaluated operational practices and facility controls. IH professionals reviewed monitoring approaches and workplace exposure assumptions. Hazard communication specialists assessed Safety Data Sheet (SDS) requirements and workplace communication obligations. Together, the team provided an integrated assessment of regulatory applicability and risk management requirements.

Evaluating Real-World Operations

A critical component of the project involved understanding what actually occurs at the facility. Consent Orders and SNURs often contain requirements related to worker exposure controls, environmental releases, personal protective equipment, engineering controls, waste management, and recordkeeping. Determining applicability therefore required careful evaluation of how battery materials moved through the client's operations.

Trinity reviewed material handling practices, recycling processes, operational controls, waste streams, and employee protection measures. The goal was to compare actual facility practices against the assumptions and requirements embedded within the TSCA regulatory framework.

This evaluation identified areas where existing practices already aligned well with regulatory expectations as well as opportunities to strengthen documentation, procedures, and compliance systems. Importantly, the review provided the client with a roadmap for demonstrating compliance during future regulatory inspections or customer audits.

This type of operational assessment is often where organizations derive the greatest value. Many companies discover that their facilities are already implementing appropriate controls but lack the documentation or compliance framework to connect those controls to regulatory requirements.

The Industrial Hygiene Connection

One of the most significant aspects of the project involved worker protection and exposure assessment. Certain TSCA Section 5 restrictions include detailed workplace protection requirements, including engineering controls, respiratory protection, and exposure controls. In some cases, EPA defaults to conservative assumptions when site-specific exposure data are unavailable.



For the client, evaluation of exposure conditions became an important component of the overall strategy. IH specialists reviewed monitoring approaches and exposure assumptions to help determine whether worker protection measures aligned with regulatory expectations. The team also provided input regarding air monitoring strategies and exposure characterization.

This highlights an emerging trend for TSCA compliance projects. Successful compliance requires collaboration between toxicologists, regulatory specialists, and IHs. Regulatory obligations can no longer be viewed solely as paperwork exercises; they increasingly depend on demonstrating how workplace controls manage actual exposure risks.

Product Stewardship and Hazard Communication

Another important component involved downstream communication. Many organizations focus on manufacturing operations and overlook the product stewardship obligations for regulated substances. However, COs and SNURs frequently contain employee communication, labeling, SDS content, customer notification, and recordkeeping requirements.

Trinity's hazard communication specialists worked to evaluate and develop SDSs for recycled material streams while considering both conventional hazard communication requirements and additional obligations associated with TSCA-regulated substances. The effort involved reviewing hazard classifications, labeling considerations, workplace communication requirements, and specialized language associated with regulated materials.

This work illustrates another important lesson for industry: compliance with TSCA obligations often extends beyond the environmental department. Legal teams, EHS personnel, operations personnel, logistics teams, and commercial functions may all play a role in ensuring compliance.

Bridging the Gap Between Business Objectives and Regulatory Requirements

Perhaps the most valuable aspect of the project involved helping the client understand the practical implications of regulatory requirements on its business.

In several instances, the client needed to evaluate how specific material recovery activities, downstream transfers, and commercial arrangements intersected with restrictions embedded within the CO framework. Trinity facilitated discussions among stakeholders, evaluated potential compliance pathways, and helped identify approaches that balanced operational flexibility with regulatory obligations.

This role is becoming increasingly important throughout the battery industry and other advanced manufacturing sectors. Regulatory requirements are no longer simply compliance exercises; they can directly influence supply chain design, investment decisions, commercial agreements, and long-term business strategy. Organizations that understand these implications early are better positioned to avoid costly redesigns and compliance surprises.

A Repeatable Model for Emerging Technologies

Although this project focused on battery materials, the underlying approach applies to a wide range of emerging technologies. Many sectors are now encountering TSCA Section 5 restrictions associated with advanced materials, specialty chemicals, biotechnology products, recycled materials, and novel manufacturing processes. Organizations often find themselves navigating complex regulatory requirements that were not originally developed with their operations in mind.

The client's situation demonstrates how multidisciplinary consulting support can help bridge that gap. Rather than approaching compliance as a narrow regulatory exercise, Trinity combined expertise across:

- TSCA compliance and regulatory strategy
- Toxicology and risk assessment
- Industrial Hygiene
- Environmental compliance
- Hazard communication
- Product stewardship
- Operational auditing
- Supply chain communication and documentation systems

This integrated approach enabled the client to better understand regulatory obligations, evaluate operational practices, strengthen compliance systems, and support business objectives simultaneously.

Key Takeaways for Industry

Several lessons emerged from this project that are relevant to manufacturers, recyclers, processors, and downstream users across many industries.

First, TSCA obligations do not stop at the manufacturer. Downstream processors, recyclers, and customers may inherit compliance responsibilities associated with regulated substances.

Second, operational details matter. Regulatory applicability often depends on actual workplace practices, recycling methods, material handling procedures, and exposure conditions.

Third, environmental compliance, IH, and toxicology increasingly intersect. Modern compliance challenges frequently require expertise from multiple disciplines.

Fourth, product stewardship extends beyond simply preparing SDSs. Effective compliance involves communication throughout the supply chain, employee training, customer notifications, and supporting documentation.

Finally, organizations benefit from evaluating these issues proactively. Early assessment can identify practical compliance pathways before operations become constrained by regulatory requirements.

Looking Ahead

The growth of the battery industry, advanced materials sector, and circular economy will almost certainly continue creating novel regulatory questions. As manufacturers seek sustainable pathways for material recovery and reuse, regulators and industry participants alike will face new challenges regarding the application of existing regulatory frameworks.

For many organizations, the most effective solution will be a multidisciplinary approach that combines scientific expertise, regulatory knowledge, operational understanding, and practical implementation support.

As regulatory expectations continue to evolve, organizations that proactively assess TSCA obligations, CO requirements, SNUR applicability, and product stewardship responsibilities, will be best positioned to maintain compliance while preserving business flexibility.

For companies navigating complex chemical regulations, whether in battery manufacturing, recycling, specialty chemicals, advanced materials, or other emerging technologies, early engagement and cross-functional expertise can make the difference between viewing compliance as a barrier and using it as a strategic advantage.

For assistance evaluating your facility's compliance obligations or developing a practical compliance strategy, contact Trinity Consultants at 800.229.6655 or visit trinityconsultants.com.