

Restricted Substances List (RSL): List of restricted substances in the procurement process

The Restricted Substances List (RSL) is an industry- or company-specific list of substances whose use in products, components and materials is prohibited or restricted. For technical buyers it is a central control instrument for product conformity, as it translates requirements from legislation, standards and customer specifications directly into supplier requirements. Anyone who consistently embeds the RSL in the requirements specification, the request for quotation and the approval workflow avoids costly complaints, recalls and market access risks. The following article explains the structure, application, key figures and practical challenges of the RSL in industrial procurement.

Key facts

- The RSL lists prohibited and restricted substances in a structured manner, including threshold values, test methods and exemptions.
- It is typically based on regulatory requirements such as REACH, RoHS and the POP Regulation, as well as customer- and industry-specific requirements.
- Supplier confirmations are frequently provided via standardised material data declarations, increasingly in machine-readable form in practice.
- The list is dynamic: regulatory changes require regular updates and defined transition periods.
- RSL requirements belong in the requirements specification, tender documents and framework agreements, not only in incoming goods inspection.
- Typical KPIs are the conformity rate, the currency of declarations and the complaint rate due to substance deviations.

Definition: Restricted Substances List

The Restricted Substances List (RSL) is a documented register of chemical substances or substance groups that must not be contained in purchased and manufactured goods, or only in compliance with defined threshold values. It forms part of chemical compliance management and applies as a binding technical requirement for suppliers.

Distinction from other substance lists

The RSL must be distinguished from the Declaration of Compliance, from substance lists for approvals and from the product life cycle assessment. While notification obligations (such as the SVHC candidate list under REACH) primarily trigger information duties, the RSL is directed at concrete prohibition and threshold value requirements for the product. The two lists complement each other: the RSL governs the specification-side requirement, while the declaration provides the evidence.

Legal and normative foundations

Typical drivers are the REACH Regulation (Annex XVII, candidate list), the RoHS Directive for electrical and electronic products, the POP Regulation on persistent organic pollutants, and industry-specific requirements from the automotive, textile, toy or medical technology sectors. In addition, major customers often impose their own RSL requirements that go beyond statutory minimum requirements. Whether a list is legally conclusive or requires case-by-case review should, if in doubt, be clarified legally.

Structure and content of a practical RSL

An effective RSL is more than a substance table. It links the chemical substance, the regulatory framework, the threshold value, the affected material classes and the test standard in a traceable structure that suppliers and internal departments alike can apply.

Structure of list entries

In practice, entries typically contain: substance name and CAS number, EC number, substance group, legal basis, threshold value (e.g. ppm or mg/kg), restriction on use, test method and validity date. Additional useful features are designations such as 'prohibited', 'restricted' or 'notifiable' as well as references to permitted exemptions. Clear version and history management is mandatory, as transition periods become contractually relevant.

Master data and system integration

For the RSL to be effective in day-to-day operations, it must be linked to unit and currency master data, material master records and the Approved Vendor List (AVL). Assignment at material level is important: does the data relate to material data, trade articles or assemblies? Only those who know where the requirement sits within the item data model can automatically issue RSL requirements in requests for quotation and call-off orders.

Methods and approach in the procurement process

The RSL takes effect when it is embedded along the entire procurement process – from the requirements specification via tender management to ongoing monitoring. Experience shows that individual checks at goods receipt are not sufficient.

Embedding in requirements specification and request for quotation

The RSL requirements belong in the requirements specification and in all tender documents, for example as an annex with a validity date and a reference to the current version of the list. Bidder information must be structured so that bidders can confirm their conformity or declare deviations. Substance-related questions can usually not be clarified during bidder negotiations or an e-auction; they must therefore be resolved before the evaluation and documented in the bidder register.

Contract and approval process

In framework and term contracts, an RSL clause should reference: the valid list version, the update mechanism, evidence obligations, notification obligations in the event of formulation changes, and consequences in the event of violations. The approval workflow for new items and new suppliers checks RSL declarations before the first order, preferably combined with the supplier audit score. A deviation approval with a defined expiry date permits temporary, assessed exceptions.

Ongoing monitoring and substance surveillance

Regulatory changes – such as new candidate substance classifications or tightened threshold values – require regular monitoring, in practice often on a quarterly basis. Changes are communicated via a defined operational process: compliance officers prepare the update, procurement addresses affected suppliers and part numbers. For critical changes, a crisis team may assess alternatives at short notice and secure transition periods.

Key KPIs for RSL management

Without measurement, substance conformity remains an aspiration. Established metrics uncover gaps, guide supplier prioritisation and provide procurement controlling with reliable reporting content.

Conformity and evidence metrics

Key KPIs are the proportion of compliant items and suppliers, the completeness rate of material data declarations and their currency (proportion of declarations younger than a defined threshold, typically 12–24 months). In addition, the change response time shows how quickly suppliers respond to new versions of the list.

Risk and process metrics

Further relevant indicators are the complaint and blocking rate due to substance deviations, the number of open deviation approvals and the proportion of critical parts without valid evidence. These figures can be combined with the supplier audit score and supplier visit results to assess risks within the supply portfolio. In procurement controlling, this metric base also serves to prioritise category playbooks for substance-intensive commodity groups.

Risks and controls when dealing with the RSL

The greatest risks arise from gaps in evidence, outdated list versions and a lack of communication along the supply chain – especially in multi-tier procurement, where upstream suppliers are difficult for the direct supplier to see through.

Typical risk areas

Common weak points: missing declarations or declarations copied from the internet that are not product-related; reliance on incorrect REACH exemptions; supplier formulation changes without notification; a substance banned in one target market but not in the country of production. Insufficient linkage with KYC in procurement can also become problematic when traders or intermediaries without their own substance responsibility sit in the chain.

Controls and audit concept

Effective controls include risk-based random laboratory testing, supplier visits for critical commodity groups, verification of evidence as part of the supplier audit score, and system-based blocking: no approval in the master data process without a valid declaration. Order processing and call-off orders can be configured so that approved, compliant parts are prioritised. Violations require defined escalation paths, up to and including removal from the AVL.

Current developments: digitalisation and sustainability requirements

Substance data is increasingly exchanged digitally and integrated into sustainability reporting. For procurement, the focus is shifting from checking individual declarations to structured, supply-chain-wide data management.

Machine-readable substance data

Standardised, machine-readable material data declarations have largely replaced classic PDF declarations in practice. They enable automated checks against the RSL, clear histories and faster responses to list changes. Prerequisites are well-maintained master data and clear responsibilities between quality, compliance and procurement – ideally anchored in the operational organisation.

Link with sustainability and the circular economy

The RSL becomes the foundation for further requirements: pollutant information for recycling and reuse quotas, CO2 and life cycle assessment data, and customer sustainability declarations build on the same substance data basis. Supply chain requirements are also shifting evidence obligations more strongly towards the buyer. Companies that manage the RSL, the Approved Vendor List (AVL) and sustainability data in one process significantly reduce effort and coordination risks.

Typical metrics

Item conformity rate: > 98 %

Proportion of items with a valid, compliant material data declaration

Currency of evidence: > 90 % < 24 months

Proportion of declarations within the defined validity window

Response time to list changes: < 30 days

Time until suppliers confirm new RSL versions

Blocking rate due to substance deviations: < 0.5 %

Proportion of blocked deliveries related to the RSL

Practical example

A medium-sized mechanical engineering company supplies customers in several European countries and received criticism during a customer audit: RSL declarations were mostly older than three years, and several purchased parts had no valid conformity evidence. The company revised its RSL, embedded it in the requirements specification and established a risk-based testing strategy.

- Updating the RSL with clear version management and transition periods for affected parts
- Requirement for a valid material data declaration in the approval workflow for items and suppliers
- Risk-based laboratory testing for critical materials combined with supplier visits
- Quarterly substance monitoring with a defined escalation process and deviation approvals with an expiry date

Conclusion

For technical buyers, the Restricted Substances List is not merely a compliance document but a control

instrument that takes effect along the entire procurement process. What matters is its embedding in the requirements specification, request for quotation and contract, a sound master data basis and measurable conformity KPIs. Companies that combine RSL management, supplier audits and substance monitoring significantly reduce recall and market access risks. At the same time, verification effort decreases because machine-readable evidence is automatically checked against the current list. Those who manage the RSL proactively turn regulatory pressure into a competitive advantage with increasingly sustainability-oriented customers.

Frequently asked questions

What is a Restricted Substances List (RSL)?

An RSL is a binding list of substances that are prohibited in products and components or only permitted up to defined threshold values. It is based on regulations such as REACH or RoHS and supplements corporate and customer requirements. In procurement it serves as a requirement for suppliers and as the basis for verifying evidence of conformity.

Which substances are typically listed on an RSL?

Frequently listed are plasticisers (phthalates), flame retardants, heavy metals such as lead, cadmium or mercury, certain solvents and azo dyes. The exact composition depends on the industry, target markets and customer requirements. The applicable legal sources, including their respective threshold values and exemptions, are always decisive.

Who is responsible for the RSL within a company?

Shared responsibility is typical: compliance, quality or product development maintains the list on a technical level, while procurement translates it into supplier requirements and contracts. Clearly defined roles in the operational organisation prevent updates from being lost at interfaces. Ultimately, the company bears the risk of the product it sells.

How often must an RSL be updated?

Quarterly monitoring has become established practice, as regulatory lists such as the REACH candidate list are updated several times a year. In addition, events such as newly banned substances or customer requirements should trigger an extraordinary update. Defined transition periods for existing items and ongoing call-off orders are essential.

How do you verify supplier compliance with the RSL?

The basis is product-related material data declarations, which are checked against the current version of the list. This is supplemented by risk-based laboratory testing, supplier visits and audits, especially for critical commodity groups. Systematically, it can be stipulated that no item or supplier approval takes place without valid evidence.

What happens in the event of an RSL violation?

Depending on severity, consequences include blocked parts, complaints, recall obligations or sanctions imposed by customers, as well as regulatory consequences up to market access bans. Contracts should therefore govern consequences, notification obligations and emergency measures. In an acute case, a crisis team typically coordinates substitute materials, customer communication and interim solutions.