RoHS and REACH Compliance: Documenting Chemical Safety in B2B Silicone Sourcing

Document Ref: WP-2026-EC136-23 | Regulatory Standards: EU Directive 2011/65/EU (RoHS 2.0) & EC 1907/2006 (REACH) | Reemane Compliance Dept.

1. Executive Summary & The Environmental Sourcing Mandate

In global electronic manufacturing, automotive supply chains, medical device integration, and industrial consumer goods, validating chemical substance restriction compliance is critical to market entry. When engineering custom seals, keypad interfaces, or insulation profiles, procurement departments face strict requirements under two key EU frameworks: **RoHS (Restriction of Hazardous Substances)** and **REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals)**.

Failing a regulatory chemical sweep at customs boundaries can result in total freight rejection, heavy corporate fines, and devastating brand reputation recalls. Reemane operates fully documented compounding and vulcanization tracks to eliminate risk, providing B2B supply channels with clean, trace-certified silicone profiles. This specification dossier breaks down substance restriction matrices, testing protocols, and documentation criteria for compliance managers.

> ***Sourcing Compliance Rule: RoHS applies directly to components within electrical/electronic hardware, while REACH applies broadly to all chemical substances across consumer and industrial commodities.***

2. RoHS 2.0 (Directive 2011/65/EU) & Amendment (EU) 2015/863

RoHS restricts the use of specific hazardous chemicals in electrical and electronic equipment (EEE). While raw silicone is naturally free of heavy metals, contamination risks occur during industrial compounding via low-grade pigments, recycled scrap mixing, or cross-contamination from shared machinery lines.

The standard covers 10 restricted elements, enforcing maximum allowable concentration limits of **≤ 0.1% (1000 ppm)** by weight in homogeneous materials for elements like Lead, Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), and Polybrominated Diphenyl Ethers (PBDE). For Cadmium, the cap is even stricter at **≤ 0.01% (100 ppm)**. Sourcing teams must verify that any pigment or flame-retardant package added to the silicone rubber does not exceed these limits.

3. REACH EC 1907/2006 & SVHC Candidate Tracking Loops

REACH is a broad chemical regulation tracking industrial substances manufactured or imported into the EU market. For B2B silicone buyers, the critical focus point is the rolling **Substances of Very High Concern**

(SVHC) Candidate List. If any single SVHC is present above a threshold of 0.1% by weight in an individual component, importing entities face immediate reporting obligations under the SCIP database framework.

In standard silicone manufacturing, the core SVHC risk centers on trace cyclical siloxane oligomers: **Octamethylcyclotetrasiloxane (D4)**, **Decamethylcyclopentasiloxane (D5)**, and **Dodecamethylcyclohexasiloxane (D6)**. These unreacted cyclical rings are naturally occurring byproducts of basic silicone polymer formulation. Reemane manages this risk by using advanced vacuum thin-film molecular distillation to strip raw siloxane fluids and implementing multi-hour thermal post-curing cycles to volatilize remaining D4/D5/D6 components safely below the 0.1% threshold.

4. Regulatory Compliance Matrix: Reemane Certified Series

Restricted Chemical Substance Class	Testing Protocol	Reemane Ultra-Pure Series	EU Legal Regulatory Cap
Lead (Pb) / Mercury (Hg)	IEC 62321 (ICP-OES)	**ND (< 2 ppm)**	≤ 1000 ppm (0.1%)
Cadmium (Cd)	IEC 62321 (ICP-OES)	**ND (< 2 ppm)**	**≤ 100 ppm (0.01%)**
Polybrominated Biphenyls (PBBs)	IEC 62321 (GC-MS)	**ND (< 5 ppm)**	≤ 1000 ppm (0.1%)
Phthalates (DEHP, BBP, DBP, DIBP)	IEC 62321 (GC-MS)	**ND (< 5 ppm)**	≤ 1000 ppm (0.1%)
Cyclosiloxanes (D4, D5, D6 Oligomers)	EPA 3550C (GC-MS)	**< 300 ppm**	**≤ 1000 ppm (0.1%)**

5. Sourcing Verification Protocols & SCIP Declaration Readiness

To ensure total safety, global B2B procurement networks must avoid generic, static declaration forms. Legitimate original equipment manufacturers (OEMs) require **active, third-party laboratory analysis documentation (such as SGS, Intertek, or TÜV Rheinland reports)** matching the current production lot code. These analysis records must list explicit Method Detection Limits (MDL) rather than simple, unverified checklist declarations.

Reemane provides comprehensive REACH-SVHC declarations alongside up-to-date RoHS 3.0 chemical screening data sheets for every compounded batch order. This trace safety verification allows corporate compliance teams to file their mandatory SCIP database notifications smoothly, ensuring seamless access across European and global retail markets.

Audit Your Silicone Components for Global Compliance

Eliminate environmental customs hold-ups, eliminate hazardous phthalate risks, and secure certified material traceability for your global electronic, automotive, or consumer supply chains. To request an unredacted copy of our latest third-party RoHS/REACH laboratory reports, contact our corporate compliance division at **sales@siliconefactories.com** or visit our online validation center at **www.siliconefactories.com**.