

Global Regulatory Compliance Guide for Sulfolane from HiSiaddi

Target Users

Large Petrochemical Traders, Refinery Group Procurement Centers, High-Purity Electronic Material Export Enterprises

Compilation Baseline

Effective global regulations as of June 2026, covering five core markets: EU, North America, Japan & South Korea, Southeast Asia, and China. Includes directory admissibility, registration obligations, SDS/labelling, transportation, environmental protection, industry-specific downstream compliance, and full procurement risk control checklists.

I. Fundamental Substance Compliance Baseline (Global Pre-Qualification Judgment)

1. Core Basic Information

- Common Name: Sulfolane / Tetramethylene Sulfone; CAS: 126-33-0; EC/EINECS: 204-783-1
- Global Unified GHS Classification:
Signal Word: Warning
Hazard Statements: H302 Harmful if swallowed; H315 Causes skin irritation; H319 Causes serious eye irritation
Not classified as carcinogenic, toxic to reproduction, PBT or vPvB; Not listed on SVHC Candidate List or REACH Annex XVII Restriction List
- Hazardous Goods Transport Classification:
Not classified as dangerous goods for road, sea or air transport (No UN number); Non-corrosive, non-toxic, non-flammable chemical; German Water Hazard Class WGK 1 (Low environmental aquatic risk)
- China Export HS Code: 2934999090 Other Heterocyclic Compounds; No export supervision conditions; VAT Rate 13%, Export Tax Rebate Rate 13%

2. Global Existing Chemical Inventory Overview (Minimum Admissibility Threshold)

Sulfolane is listed on all mainstream regional chemical inventories and is not classified as a new chemical substance, eliminating pre-import new substance notification requirements:

Region	Inventory Name	Listing Status	Core Admissibility Precondition
EU	EINECS/EC Inventory	Listed	Full REACH registration required for annual imports ≥ 1 ton
USA	TSCA Inventory	Listed	TSCA compliance declaration accompanying all shipments
Canada	DSL Domestic Substances List	Listed	No new substance notification required
Japan	ENCS Existing Chemicals Inventory	Listed	Annual METI declaration
South Korea	KECL Existing Chemicals Inventory	Listed	K-REACH tonnage band registration
Australia	AIIC	Listed	Import notification
New Zealand	NZIoC	Listed	Import declaration
China	IECSC Inventory of Existing Chemical Substances in China	Listed	No new substance registration for domestic production / import

II. EU Market Compliance (REACH + CLP, Strictest Global Regime; Mandatory Documents for Buyers)

1. Core REACH 1907/2006 Registration Obligations

1. Tonnage Threshold: Any single importer importing ≥ 1 ton per year must complete full REACH registration; "No Registration, No Market Access" rule applies
2. Registration Entity: Non-EU manufacturers must appoint an EU Only Representative (OR); Domestic exporters may share existing registration numbers from major manufacturers (Wanhua, Zhongdan, Bluestar hold complete full tonnage registration dossiers)
3. Registration Dossier Contents: Substance identity, physicochemical & toxicological data, exposure scenarios, Chemical Safety Assessment (CSA), coverage of all downstream uses (aromatic extraction, PEEK polymerization, electronic cleaning, natural gas desulfurization)
4. Exemptions & Favorable Provisions:

- No Annex XVII usage restrictions, no SVHC controls; authorization permits are not required
- Small laboratory shipments <1 ton/year exempt from full registration; only a copy of the registration holder's registration number is required

2. Mandatory CLP Labelling & REACH SDS (Customs Clearance Prerequisites)

1. CLP 1272/2008 Packaging Labelling:

Pictogram: GHS07 Exclamation Mark; Signal Word Warning; Complete Hazard & Precautionary Statements; Manufacturer + EU OR address, emergency contact number, batch number

2. SDS Standard: Strictly 16-section English SDS complying with REACH Annex II; must include REACH registration number, OR details, CSA summary; outdated MSDS documents are prohibited; paper and electronic SDS provided with every shipment

3. Downstream Supply Chain Transmission: Traders must pass compliant SDS and Declaration of Conformity (DoC) to downstream manufacturing customers

3. Supplementary EU Industry-Specific Compliance

1. Electronics / Lithium Battery Customers: Comply with RoHS 2015/863 and WEEE; no phthalate or heavy metal additives; original manufacturer Product Regulatory Overview (PRO) reports deliverable directly to clients

2. Refining / Natural Gas Desulfurization Industry: SEVESO Major Accident Directive does not apply (no explosion or acute toxic hazards); standard ventilation and bund containment required for on-site storage

3. Packaging Compliance: Comply with Directive 94/62 Packaging Waste; IBC totes and 200L steel drums meet heavy metal limit standards

4. EU Buyer Risk Control Document Checklist (Mandatory Annual Budget Filing)

REACH Registration Certificate, OR Power of Attorney, DoC Declaration of Conformity, English CLP SDS, PRO Product Compliance Report, Batch COA Certificate of Analysis, TDS Technical Data Sheet

III. North American Market Compliance (US TSCA + Canadian CEPA)

(I) US EPA TSCA Controls

1. Core Admissibility Rule: Sulfolane is active on the TSCA Inventory; no Pre-Manufacturing Notice (PMN) pre-production filing required for new chemicals
 2. Mandatory Import Obligations: Every shipment accompanied by a positive TSCA compliance certification; importers file electronic declarations via the ACE system stating CAS number, purity and annual import tonnage
 3. California Special Compliance:
 - Proposition 65: Sulfolane is not listed as a toxic substance, eliminating warning label requirements
 - CONEG Packaging Act: Barrel/IBC lead, cadmium, mercury and antimony limits must be met; suppliers provide packaging test reports
 1. Environmental Controls: Groundwater contamination prevention mandates solvent recovery systems for large refinery clients; waste disposal compliance clauses embedded in procurement contracts
- (II) Canadian CEPA/DSL Compliance
1. Listed on DSL; unrestricted imports at any annual tonnage; SDS and COA must be retained on file
 2. Sulfolane is excluded from CEPA Challenge Substances List with no usage limitations; waste materials must be disposed of by licensed hazardous waste incinerators

Full North America Delivery Document Package

TSCA Compliance Declaration, English GHS SDS, Packaging Heavy Metal Test Report, Batch COA, Original Manufacturer Compliance Letter

IV. Japan & South Korea Market Access Compliance (Core High-End Electronics & Refining Markets in Asia-Pacific)

1. South Korea K-REACH (ARECS Chemical Evaluation Act)
 1. Tonnage Band Registration Deadlines (Effective 2026)
 - ≥ 1000 tons/year: Registration completed by end-2021
 - ≥ 100 tons/year: Registration completed by end-2024
 - ≥ 10 tons/year: Registration deadline end-2027
 - ≥ 1 ton/year: Registration deadline end-2030
 1. Mandatory Requirement: Chinese exporters must appoint a local Korean Only Representative (KR-OR) to submit registration dossiers; annual purchases ≥ 10 tons require a Chemical Safety Report (CSR)
 2. Customs Clearance Documents: K-REACH Registration Certificate, Bilingual Korean SDS, Import Declaration Form, Batch COA

2. Japan METI ENCS + Industrial Safety & Health Act

1. Listed on ENCS Existing Chemicals Inventory; no new substance registration required; annual import tonnage declarations submitted to METI every March
2. Industrial Safety & Health Act: Japanese-language MSDS and local ventilation protection required for on-site operations; Electronic Grade products additionally submit metal impurity test reports (Na/Fe/K/Ca ≤ 1 ppb)
3. Waste Disposal: Industrial waste handled by licensed operators; direct discharge to water bodies prohibited

V. Southeast Asian Market Compliance (ASEAN Unified Framework: Indonesia, Malaysia, Thailand, Vietnam, Singapore)

1. Universal Baseline Admissibility

Sulfolane listed on national chemical inventories across all ASEAN states with no usage bans or restrictions; core threshold: local-language SDS + GHS labelling

2. Country-Specific Special Requirements

1. Singapore: NEA environmental filings; annual environmental reports required for imports exceeding 5 tons per year
2. Vietnam: Listed on VCI National Chemicals Inventory; online pre-import notification mandatory
3. Malaysia: DOSH occupational safety filings; bund containment & anti-seepage storage requirements
4. Indonesia: BPOM imposes no controls on industrial solvents; customs only verifies SDS and ingredient lists

3. Simplified ASEAN Trade Solution

Source material from manufacturers holding full REACH registration; EU compliance documentation is accepted by most ASEAN customs authorities to reduce duplicate testing costs

VI. Domestic China Compliance (Pre-Requisite Qualifications for Production, Domestic Trade & Export)

1. Mandatory Production Enterprise Qualifications (Verified During Procurement)

1. Sulfolane is excluded from the 2015 Hazardous Chemicals Catalogue; no hazardous chemical production license required; classified as a general fine chemical

2. Pollutant Discharge Permit: Mandatory for manufacturers to control sulfur and butadiene by-product wastewater and exhaust emissions
3. New Chemical Substances: Listed on IECSC; no new chemical environmental registration certificate required

2. Export Customs Clearance Documentation

GB/T16483 Chinese SDS, COA Batch Analysis Certificate, Certificate of Origin, Factory Inspection Report; no mandatory statutory inspection; third-party testing available on demand

3. Domestic Downstream Industry Compliance

- Refining Extraction: No special controls
- Electronics / Lithium Batteries: Electronic High-Purity Grade requires ICP metal ion test reports
- Pharmaceutical Intermediates: Must meet internal pharmacopoeia purity standards with supporting internal analytical method documentation

VII. Global Unified Transportation Compliance (Sea / Road / Air)

1. Classification Outcome: Not classified as dangerous goods under ADR/RID (road), IMDG (sea), IATA (air); no UN number, no hazardous goods declaration or hazardous container requirements
2. Universal Packaging Specifications
 - 200L Galvanized Closed Steel Drums: Solvent-resistant sealing gaskets, anti-freeze labels (crystallization point 26°C with low-temperature crystallization warning)
 - Reusable HDPE-lined Steel Frame IBC Totes: Anti-static grounding, recycling qualification documentation
 - Bulk Tank Transport: Stainless steel tanks with anti-static piping
1. Transport Incompatibility: No co-loading with strong oxidizers or concentrated strong alkalis; stowage separated from food and feed cargoes

VIII. Differentiated Compliance Requirements for Three Product Grades (Cost Control Budget Segmentation for Procurement)

1. General Industrial Grade (99.5%, Metals ≤10 ppm, Refining / Natural Gas Desulfurization)

- Lowest compliance cost; only base REACH/TSCA registration and standard SDS/COA required; no additional trace impurity testing mandates

- Ideal for high-volume procurement to Middle East, Southeast Asia and South America with low allocated certification costs per ton
- 2. High-Purity Premium Grade (99.9%, Metals ≤ 5 ppm, Polyimide / Fine Chemicals)
 - EU, Japan and South Korea clients mandate annual full impurity testing; third-party testing budget reserved in annual procurement plans
 - RoHS compliance reports mandatory delivery document
- 3. Electronic / Lithium Battery Ultra-High-Purity Grade (99.99%, Metals ≤ 1 ppb, Semiconductors / High-End Polymerization)
 - 1. Mandatory Specialized Testing: ICP-MS trace metal ion analysis, trace mercaptan impurity screening, particle size test reports
 - 2. Additional Client Compliance Mandates: Dust-free production certification, full batch traceability documentation, annual third-party audit reports
 - 3. Compliance Premium: Registration, testing and administrative documentation costs per ton rise 15%–20% versus Industrial Grade; separate line item required in annual budgets

IX. Procurement Compliance Risk Checklist (Annual Risk Control for Traders & Group Procurement)

- 1. Registration Risks (Highest Financial Exposure)
 - 1. Shipments sourced from suppliers without valid REACH registration detained, returned or subject to fines of tens of thousands of euros per batch upon EU customs inspection
 - 2. Absence of TSCA/K-REACH compliance declarations results in import denial at US and South Korean customs
Mitigation Strategy: Verify supplier registration numbers and original OR authorization prior to procurement; include indemnification clauses for breach in procurement contracts
- 2. Documentation Risks
 - 1. SDS non-compliant with destination country regulations (wrong language, missing registration data, outdated MSDS versions) leading to customer rejection of goods
 - 2. COA without full impurity testing results resulting in full batch rejection by electronics and semiconductor manufacturers
Mitigation Strategy: Standardize bilingual compliant SDS from fixed suppliers categorized by market region with archived template libraries

3. Environmental & Usage Restriction Risks

Large EU/US refinery customers enforce groundwater protection controls; low-purity sulfolane exhibits high solvent loss with potential soil leakage fines; trace metal contamination from mixed industrial-grade material causes full production line scrapping at high-end electronics facilities

Mitigation Strategy: Match product purity grade to downstream industry applications; prohibit supply of Industrial Grade to electronics customers for cost savings

4. Hidden Supply Chain Compliance Costs

Small manufacturers without shared REACH registration force buyers to independently appoint ORs and complete registration, adding \$300–800 USD per ton in allocated compliance costs; international brand manufacturers embed compliance fees within high FOB unit prices with limited cost optimization opportunities

Budget Optimization Strategy: Prioritize domestic leading manufacturers (Wanhua, Zhongdan) with shared registration access to drastically reduce annual allocated compliance expenses

X. Standardized Global Market Compliance Delivery Document Checklist (Embeddable Directly Into Procurement Contracts)

Universal Base Document Package (All Markets)

1. English/Chinese TDS Technical Data Sheet (Original Manufacturer Stamped)
2. Batch COA Certificate of Analysis (Supplied with every shipment)
3. GHS 16-Section SDS (Local language version matching destination country)
4. Original Manufacturer Compliance Letter
5. Packaging Material Safety Report

Supplementary EU Documentation

REACH Registration Certificate, EU OR Power of Attorney, DoC Declaration of Conformity, CLP Label Sample, PRO Product Regulatory Overview Report

Supplementary US Documentation

TSCA Compliance Declaration, CONEG Packaging Heavy Metal Test Report, WGK Aquatic Hazard Certificate

Special Supplementary Documents for Electronic / Lithium Battery Ultra-High-Purity Grade

ICP-MS Metal Ion Test Report, Particle Size Analysis Report, RoHS Halogen-Free Test Report, Dust-Free Production Qualification Certificate

XI. Annual Compliance Budget Calculation Guidance (For Procurement Department Budget Formulation)

1. Allocated Compliance Costs for Domestic Leading Manufacturers
 - Industrial Grade: RMB 300–350 per ton per year (Shared REACH registration)
 - Electronic Ultra-High-Purity Grade: RMB 450–550 per ton per year (Includes annual trace impurity third-party testing)
 1. International Premium Brands (Chevron / BASF): Compliance costs integrated into FOB unit pricing with no separate allocation; overall procurement cost 3–4x domestic alternatives
 2. Fixed Annual Additional Compliance Expenses (Group Procurement ≥10,000 tons per annum)
 - EU OR Annual Retainer Fee, Korean KR-OR Annual Retainer Fee, Annual Third-Party Testing Fees, Compliance Documentation Specialist Labor Costs
 1. Risk Contingency Reserve: 1.5%–2% of total annual procurement value to cover emergency customs testing, compliance rectification and return logistics indemnification
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