

Market evolution: Halogenated hydrocarbons (CN 2903) — 2015–2025

Introduction

Between 2015 and 2025, the European Union's trade in halogenated derivatives of hydrocarbons (CN 2903) underwent a profound transformation. While the physical volume of exports increased and that of imports shrank, the trade balance in value terms deteriorated sharply because import prices soared and export prices fell. This report unpacks the main dynamics behind these diverging trends by examining price vs. volume shifts, the changing product mix towards high-value fluorinated substances, and the evolving geography of both imports and exports. All figures are drawn from the EU trade dashboard for product 2903.

1. Diverging price trajectories reshape the trade balance despite growing net export volumes

Import prices surge while export prices erode

The most striking feature of the period is the opposite direction of unit prices on the two sides of trade. The average import price of halogenated hydrocarbons rose from **EUR 1 282/tonne** in 2015 to **EUR 3 002/tonne** in 2025, an increase of **134.1 %**. In contrast, the average export price dropped from **EUR 863/tonne** to **EUR 710/tonne**, a decline of **17.8 %** (based on overview trade data). This fundamental divergence is the main driver of the worsening value balance.

Indicator (EUR or tonnes)	2015	2025	Change (%)
Export value (EUR)	662.8 mn	612.6 mn	−7.6 %
Export volume (tonnes)	767 854	863 200	+12.4 %
Export unit price (EUR/t)	863	710	−17.8 %
Import value (EUR)	725.9 mn	960.9 mn	+32.4 %
Import volume (tonnes)	566 223	320 114	−43.5 %
Import unit price (EUR/t)	1 282	3 002	+134.1 %
Trade balance (EUR)	−63.1 mn	−348.3 mn	−451.7 %

Volume trends point to an EU net exporter position in physical terms

Measured in physical quantities, the EU became a growing net exporter of halogenated hydrocarbons. Export volume expanded by **12.4 %**, while import volume contracted by **43.5 %**. As a result, the net-import reliance ratio (computed from physical flows and domestic production) fell from **−6.6 %** in 2015 to **−10.5 %** in 2024 – the most recent year for which production data are available – indicating that the EU's net export position deepened (see net import reliance).

The trade deficit widens as value divergence overwhelms volume gains

Despite the physical net export surplus, the monetary trade balance swung from a deficit of **EUR 63 mn** in 2015 to **EUR 348 mn** in 2025 – a worsening of **451.7 %**. The ever-higher unit cost of imported products, especially new-generation fluorinated gases, more than offset the rising export tonnage and falling import tonnage. This value-versus-volume disconnect underscores a structural shift in the EU's external positioning: the Union ships out large volumes of mature, lower-priced chemicals while importing smaller, far more expensive specialty substances.

2. A structural shift towards high-value fluorinated imports and mature chlorinated exports

Imports are dominated by costly HFOs and HFCs, while exports remain centred on ethylene dichloride and other chlorinated intermediates

The product-level breakdown of trade reveals that the dramatic import price increase is driven by unsaturated and saturated fluorinated derivatives. For instance, imports of **HFO-1234yf and similar unsaturated HFOs (CN 290351)** – a category that appeared in the data only from 2022 – rose from **EUR 336 mn** in 2022 to **EUR 412 mn** in 2025, with unit prices around **EUR 19 000/tonne**. The same dynamic is visible for **HFC-134a and HFC-134 (CN 290345)**, whose import price climbed from **EUR 5 236/tonne** in 2022 to **EUR 7 483/tonne** in 2025. On the export side, the leading products by volume are lower-unit-price chlorinated compounds: **ethylene dichloride (CN 290315)** – with an export price that fell from **EUR 188/tonne** to **EUR 141/tonne** – and **tetrachloroethylene, dichloromethane, and chlorobenzene** (see product segment comparison).

Top import products (2025)	Value (EUR mn)	Unit price (EUR/t)	Volume (t)
Unsaturated HFOs (290351)	411.7	18 594	22 144
Aromatic halogenated deriv. (290399)	113.9	6 899	16 494
HFC-134a / HFC-134 (290345)	109.6	7 483	14 644
Ethylene dichloride (290315)	50.3	340	148 207

Top export products (2025)	Value (EUR mn)	Unit price (EUR/t)	Volume (t)
Ethylene dichloride (290315)	62.0	141	439 060
Chlorobenzene (290391)	41.5	891	46 600
Dichloromethane (290312)	38.3	609	62 833
Tetrachloroethylene (290323)	30.2	420	71 917

The United States emerges as both the top supplier and a key customer, reflecting two-way trade in specialty fluorochemicals

The United States became the EU's single most dynamic partner. US imports into the EU rose from **EUR 65.6 mn** in 2015 to **EUR 376.1 mn** in 2025 (+473.1 %), while EU exports to the US grew from **EUR 110.3 mn** to **EUR 176.4 mn** (+59.9 %) (see top partners). This two-way trade is strongly shaped by the exchange of high-value fluorinated gases used in refrigeration and air-conditioning, where US-based multinationals play a dominant role.

China consolidates as a stable large-scale supplier, while the United Kingdom's role shrinks dramatically

China remained the largest single source by value throughout the period, with imports climbing from **EUR 272 mn** to **EUR 351 mn** (+29.2 %), although its share of total imports is now challenged by the US. In contrast, the United Kingdom – the top import source in 2018 – saw its shipments collapse from **EUR 247 mn** to **EUR 91.5 mn** (–49.2 %). The UK's decline accelerated after 2021, with a severe volume contraction that drove import prices to levels above **EUR 8 000/tonne** in 2023, as documented in the shock analysis. Meanwhile, EU exports to the UK held relatively steady at around **EUR 129 mn**, making the UK a net importer from the EU.

3. Geographic concentration, price shocks, and the regional hub model

Export destinations become markedly more concentrated, while import sources remain moderately concentrated

The Herfindahl-Hirschman Index for export destinations rose from **967** to **1 578** (+63.1 %), indicating that EU exporters are increasingly reliant on a small set of markets – notably the

United States, the United Kingdom, and Türkiye (whose EU exports jumped by **117 %** to EUR 66.2 mn). Import concentration, already moderate (HHI from **2 767** to **3 035**, +9.7 %), edged higher but remains more diversified, thanks to multiple large suppliers (China, US, UK, Norway, India) (see concentration indicators).

Price shock events in UK imports and US/India/Egypt export flows underline the disruptive impact of policy shifts and supply constraints

The volatility analysis detects several extreme price episodes:

- **UK import price shock (2023):** a **1 045 %** jump in unit value as import volumes plummeted to just 8 196 tonnes (from over 250 ktonnes earlier), suggesting a regulatory-driven phase-out or supply disruption.
- **US export price spike (2022):** a **56.9 %** price rise coinciding with tightened global markets for fluorinated refrigerants.
- **India and Egypt export price shocks (2018 and 2021):** price increases of **125.8 %** and **172.7 %**, respectively, reflecting sudden demand or supply imbalances in specific chlorinated products (see volatility and shocks).

These events highlight the sector's sensitivity to environmental regulations (the Kigali Amendment to the Montreal Protocol, REACH restrictions) and to logistical disruptions in concentrated supply chains.

Member-state specialisation reveals a clear hub-and-spoke model centred on the Netherlands and Belgium

In 2025, the Netherlands and Belgium are the only EU countries with a revealed symmetric comparative advantage (RSCA) clearly above zero (**0.406** and **0.5018**, respectively), while traditional chemical powerhouses like Germany and France have RSCA values close to zero or slightly negative (see specialisation map). The Netherlands alone accounted for **52 %** of EU imports of halogenated hydrocarbons in 2025, and **22 %** of exports, acting as the main entry and exit port for fluorinated gases. This configuration suggests that the physical trade flows through a few logistical hubs (Rotterdam, Antwerp)ES, while production activities are more dispersed, though heavily concentrated in a handful of member states.

Conclusion

The 2015-2025 period has reshaped the EU's trade in halogenated hydrocarbons along three axes. First, a profound price divergence – import prices more than doubling while

export prices steadily declined – transformed the EU from a slight net importer in physical terms into a net exporter that nonetheless faces a rapidly widening value deficit. Second, the product composition of imports has shifted decisively towards high-value fluorinated gases (HFOs and HFCs), driven by climate-friendly refrigerant regulations, whereas exports remain dominated by older chlorinated intermediates with low unit prices. Third, the geography of trade has become more concentrated, with the United States and China acting as the poles of the import side and the US, the UK and Türkiye serving as key export destinations, while intra-EU specialisation funnels goods through the Benelux hubs. The combination of strong regulatory pressure, price volatility, and industrial re-positioning will likely keep the sector on a trajectory of high-value import dependence and mature commodity export, with persistent trade deficits in monetary terms.

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If you need advice on European trade policy, or representation for your interests in Brussels, feel free to contact me at support@tradedashboard.eu. You can find my CV at [this address](#).