

# Joining forces with Customs and Enforcement Officers for Safeguarding the Montreal Protocol

## THE MONTREAL PROTOCOL

The *Montreal Protocol on Substances that Deplete the Ozone Layer* controls the production and consumption of over a hundred manufactured ozone-depleting substances (ODS) and global warming hydrofluorocarbons (HFCs). Since it was adopted on 16 September 1987, all member states of the United Nations have ratified the Protocol. It enacts a phase-out in ODS consumption and production, and a phase-down in HFC consumption and production, with different timelines for developed and developing countries.

### ✓ Phase-out of hydrochlorofluorocarbons (HCFCs)

HCFCs are ozone-depleting substances and powerful greenhouse gases. They are widely used in refrigeration, foam blowing, fire-fighting and other sectors. The most widely used gas of this group of chemicals is HCFC-22. Developed countries have phased out consumption and production of HCFCs by 2020, allowing a small servicing tail of 0.5% of the baseline until 2030. The HCFC phase-out schedule for developing countries is 35% below baseline in 2020, 67.5% in 2025, and complete phase-out in 2030, allowing a small servicing tail of 2.5% of the baseline until 2040.

### ✓ Phase-down hydrofluorocarbons (HFCs)

HFCs do not contribute to ozone depletion in the stratosphere but are potent greenhouse gases with high global warming potentials (GWPs). Currently, HFC emissions are increasing at a pace of 8% per year, and by 2050 they would account for 7–19% of the global CO<sub>2</sub> emissions without corrective action. Therefore, efforts to limit global warming to 1.5 degrees Celsius this century are hindered by the uncontrolled increase in HFCs. The Kigali Amendment added 18 HFCs to the list of controlled substances and established a schedule for their progressive decrease by 80–85 percent by the late 2040s. As of 3 April 2024, 158 countries have ratified the Kigali Amendment.

## UNEP MONTREAL PROTOCOL NETWORK FOR EUROPE & CENTRAL ASIA (ECA NETWORK)

The ECA network includes 11<sup>1</sup> developing countries that spread from Central Asia and the Caucasus to the Balkans. Neighbouring countries include major trade partners such as China and European Union countries, countries with economies in transition (CEITs), as well as Afghanistan, Islamic Republic of Iran, Iraq, and the Syrian Arab Republic.

1 Albania, Armenia, Bosnia and Herzegovina, Georgia, Kyrgyzstan, North Macedonia, Republic of Moldova, Montenegro, Serbia, Türkiye, and Turkmenistan.

Albania, Republic of Moldova, Montenegro, North Macedonia, Serbia, Türkiye, and Ukraine are candidate countries to the European Union. Armenia and Kyrgyzstan joined the Eurasian Economic Union (EEU) between Belarus, Kazakhstan, and the Russian Federation in 2015.

All ECA countries ratified the Kigali Amendment and committed themselves to freeze their consumption and production of HFCs at the baseline level starting 1 January 2024, and to achieve a reduction by 10% below baseline starting 1 January 2029. In parallel, they are gradually phasing out HCFCs targeting the complete phase-out by 2030, save for the servicing tail mentioned above. Their HCFC phase-out and HFC phase-down schedules differ from those of the developed countries and of the European Union under the EU F-gas regulation.

During this period, some refrigerants might already have been phased out in developed / European Union countries while certain quantities are still allowed in developing countries. What is banned in some countries e.g. the use of disposable refrigerant cylinders, might still be legal in others. Considering the low risk of being prosecuted, and the usually low level of fines and penalties, the risk of illegal trade is increasing as the profit margins for potential criminals are tempting. Hence, this all adds to the complexity of the matter. Furthermore, there will be a continued demand of restricted / banned refrigerants for servicing existing equipment which often has a long lifetime and high costs of replacement or retrofitting. Such equipment might be serviced with recycled / reclaimed refrigerant, but there is usually a shortage of recycled / reclaimed refrigerant. In summary, drivers for illegal trade in HCFCs and HFCs are:

- Different HCFC phase-out and HFC phase-down schedules in developing countries, developed countries and the European Union
- Ongoing legal trade requiring export and import licenses (exemptions for essential or critical uses, recycled / reclaimed substances)
- High profit margin (shortages and high prices in some countries and low prices in others)
- Low risk of being prosecuted (lack of enforcement, small penalties and administrative fines, fines are often not covering the costs of destruction)
- Continued demand for HCFCs and HFCs (long equipment lifetime and high costs of replacement or retrofitting).

## ✓ ECA network and enforcement meetings

The ECA network implements enforcement-related activities since its inception in 2003 including regional enforcement meetings, border dialogues and a series of awards for Customs and Enforcement Officers. This year's [ECA network and enforcement meeting takes place in April 2024 in Tirana, Albania](#).

This article will also serve as a background document for the meeting. The meeting is jointly organized by UNEP and the Montreal Protocol Unit of Albania's Ministry of Tourism and Environment. Participants include the Montreal Protocol Officers and Customs / Enforcement Officers of the 11 ECA network countries, 5 European Union countries as well as Enforcement Experts from World Customs Organization, Regional Intelligence Liaison Offices for Western Europe (RILO WE) and Eastern and Central Europe (RILO ECE), Interpol, Europol, European Commission DG Climate Action, European Anti-Fraud Office OLAF, Environmental Investigation Agency, CEFIC/EFCTC, Ozone Secretariat, Fund Secretariat, UNIDO, UNDP, World Bank and UNEP. The meeting documents and presentations will be shared on OzonAction's meeting portal <https://www.ozonactionmeetings.org/>.

## ✓ Global Montreal Protocol Award

Customs and Enforcement Officers play a crucial role in monitoring and controlling trade in ODS and HFCs and help countries meet their Montreal Protocol commitments, including data reporting. The global award sought to recognize Customs and Enforcement Officers for their efforts in combating illegal ODS and HFC trade, but also aimed at collecting data on the magnitude of illegal trade in controlled substances and the smuggling schemes and routes used, and at encouraging the reporting of illegal trade cases and seizures to the Ozone Secretariat and WCO's Customs Enforcement Network (CEN). The series of award schemes was initiated in the ECA region in 2009 and thus far, five regional editions of the ECA award have been conducted, and one global edition.



Photo: Awardees during the ECA ceremony of global award in Kiev, Ukraine in September 2019



Cover page: UNEP publication *Watch out for illegal trade of HCFCs and HFCs – Lessons learnt from the Global Montreal Protocol Award for Customs and Enforcement Officers*

Within the context of the Global Montreal Protocol Award for Customs and Enforcement Officers, 24 countries reported 587 seizures of ODS and HFCs, corresponding to 256 MT of substances, 19,992 cylinders and 27,944 items of equipment. The cases showed that illegal trade in controlled substances continues and that the different phase-out and phase-down schedules encouraged illegal trade. The publication [Watch out for illegal trade of HCFCs and HFCs – Lessons learnt from the Global Montreal Protocol Award for Customs and Enforcement Officers](#), is available at UNEP's document repository.

Based on the [fifth edition of ECA Montreal Protocol Award for Customs & Enforcement Officers](#), the collected data related to illegal trade cases during the period 2019–2020 shows:

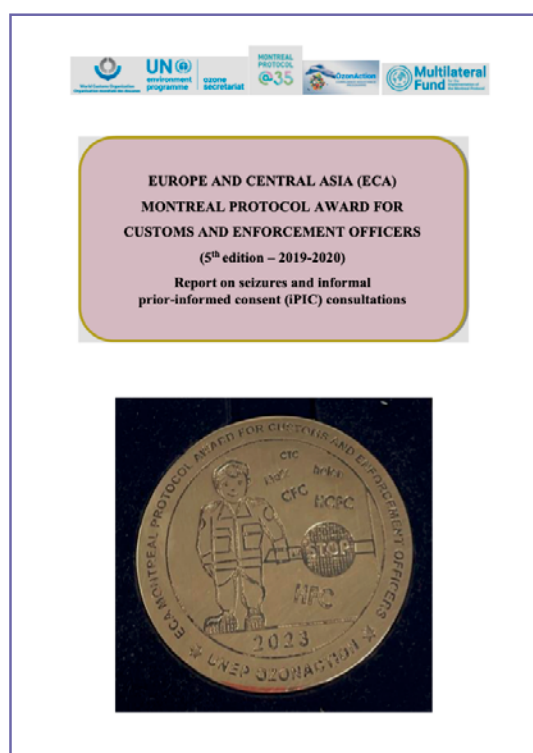
- 64 seizures reported by 10 countries: Bulgaria (5 cases), France (4 cases), Georgia (2 cases), Germany (1 case), Italy (2 cases), Netherlands (2 cases), Poland (5 cases), Romania (10 cases), Spain (2 cases), Uzbekistan (31 cases)
- 380 MT of ODS / HFCs seized
- 14,617 refrigerant cylinders (including 9 ISO containers) seized
- 215 pieces of equipment / compressors seized.

Award schemes	Year	Number of seizures	Number of cylinders seized	Number of equipment seized	Amount of chemicals seized/MT	iPIC prevented trade/MT	Pasr illegal trade detected/MT
ECA award 1 <sup>st</sup> edition	2010	4	35	248	368	87	805
ECA award 2 <sup>st</sup> edition	2012	17	3,016	72	61	342	103
ECA award 3 <sup>st</sup> edition	2014	133	9,513	7,370	467	846	175
ECA award 4 <sup>st</sup> edition	2016	258	10,201	9,947	70	174	50,000 fridges
ECA award 5 <sup>st</sup> edition	2023	64	14,617	215	380	167	31 HFC trade 589 hazard. waste 100 illegal venting

Table 1. Comparison of the ECA award editions in relation to number of seizures, type of seizure, amount seized, etc.

## ✓ Informal Prior Informed Consent (iPIC)

iPIC consultations between exporting and importing countries prior to the issuance of the mandatory export and import licenses avoided significant amounts of unwanted / illegal shipments of controlled substances. The reasons for not issuing export / import licenses include existing import bans, importers who are not authorized or not registered, fake licenses, no or not sufficient import quota, import licenses already used, or presenting a safety sheet instead of an import license (language issue).



Cover page: ECA report on seizures and iPIC consultations reported under the 5th edition of the ECA Montreal Protocol Award for Customs and Enforcement Officers

Under the Global Montreal Protocol Award, 11 countries and the European Commission on behalf of four member states reported successful iPIC consultations. They prevented 47 cases of illegal trade, corresponding to more than 2,000 MT of ozone-depleting substances (ODS), making it a notable accomplishment.

In the context of the 5<sup>th</sup> edition of the ECA Montreal Protocol Award, iPIC consultations between ECA countries and their trade partners in just a two-year period (2019–2020) avoided 12 illegal shipments of more than 167 MT of controlled substances. iPIC consultations have been regularly initiated by exporting countries such as China and European Union countries. The *Report on seizures and informal prior-informed consent (iPIC) consultations* is available at UNEP's document repository.

## ✓ Lessons learnt and recommendations for successful enforcement

- Customs inspections are the most common means of detecting illegal trade.
- Provide continued training and instructions to Customs and Enforcement Officers, including training on the methods of identification of traded substances.
- Employ a range of enforcement actions, recognize the need for a multifaceted approach to combating illegal trade, including preventive actions.
- Apply different types of controls, including joint inspections, post-entry controls and in-country inspections.
- Blockchain technology has been used by Customs Authorities in some countries to enhance the tracking and monitoring of transboundary movement of goods.
- Enhance risk profiling and regional cooperation on illegal trade in ODS, HFCs, mixtures and products / equipment.
- Standardize the reporting and record-keeping procedures (consistency / comparability of reporting), improve the reporting rate and the quality of information reported, and encourage voluntary reporting.
- Encourage participation in WCO operation DEMETER focusing on illegal trade in ODS, HFCs, mixtures and waste.
- Include illegal trade in ODS, HFCs, mixtures and products / equipment in the RILO work programmes.
- Encourage reporting of cases of illegal trade / seizures of ODS, HFCs, mixtures and products / equipment and share seizure data with other countries via CEN, also in bilateral contacts and to the Ozone Secretariat.
- Continued vigilance and effective monitoring frameworks to deter and tackle illegal trade in controlled substances.
- Implement positive reinforcement and visibility schemes (i.e. Customs and Enforcement Award initiated by the ECA network in 2009) toward an effective strategy to incentivize actions in detecting illegal trade and enforcing measures against such instances and fostering a culture of transparency and accountability as well as reporting of such cases.
- Promote international cooperation and exchange of information with Montreal Protocol Officers.
- Review the publications *Watch out for illegal trade of HCFCs and HFCs*, the *seizure report of the 5<sup>th</sup> edition of the ECA Award for Customs and Enforcement Officers* and the [resources on the Ozone Secretariat's website](#) including [information reported by the Parties on illegal trade](#).

## WORD CUSTOMS ORGANIZATION (WCO) INITIATIVES

### ✓ Operation DEMETER

Operation DEMETER is the flagship law enforcement operation of the WCO that targets the illicit trade of wastes regulated under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, as well as substances controlled under the Montreal Protocol. UNEP OzonAction is supporting this initiative since 2019. The DEMETER operations also focus on strengthening law enforcement efforts, while emphasizing the importance of combating environmental crime for Customs Administrations. Additionally, they help the WCO and its partners identify areas requiring capacity building and shaping future support activities.

The ninth iteration of WCO Operation DEMETER in October 2023 witnessed a record level of participation, with the involvement of 106 Customs Administrations. This edition also led to a record number of 46 seizures of substances controlled under the Montreal Protocol and

equipment containing such substances. This represented a significant increase of more than 250% compared to Operation DEMETER VIII in 2022. In terms of quantities, a cumulative total of more than 130 MT of controlled substances were seized, showing a substantial increase of more than 420% compared to the previous edition. Moreover, 575 pieces of appliances were seized during this operation in 2023.

Among the illicit commodities seized, HFCs stood out as the most prominently trafficked, accounting for 19 seizures, constituting 41% of the total number of seizures, and more than 74 MT seized, constituting 57% of the total quantity of seized refrigerants.

In addition to the commendable efforts of participating Customs Administrations and their growing interest in fighting the trafficking of wastes and controlled substances, Operation DEMETER IX notably highlighted the need for implementing:

- Effective cooperation mechanisms: fostering collaboration among environmental authorities, other law enforcement agencies, the private sector, and the public
- Training focused on risk analysis and intelligence sharing: empowering Law Enforcement Officers to work more effectively and efficiently
- Sound reporting mechanisms: increasing the submission of high-quality data to allow for a better grasp of the latest global trends in illicit trade.

## ✓ Harmonized System (HS) for traded goods

The Harmonized Commodity Description and Coding System, generally referred to as “Harmonized System” or simply “HS”, is a multipurpose international product nomenclature developed by the World Customs Organization. It is commonly used by Customs and traders for the uniform classification of goods traded internationally.

On 1<sup>st</sup> January 2022, the 7<sup>th</sup> edition of the HS nomenclature came into force. New subheadings were created for commonly traded substances controlled by the Montreal Protocol, and mixtures containing them. They are structured according to the importance of controlled substances in international trade and their environmental impacts.

Controlled substances like CFCs, HCFCs and HFCs are recorded in subheadings to the heading **29.03**, and mixtures containing them in subheadings to the heading **38.27**. Please refer to the Annex for the list of subheadings and to UNEP’s “WhatGas” application allowing to search substances or mixtures by HS code, ASHRAE designation, trade or chemical name.

There is a wide range of products and equipment containing or relying on controlled substances, including cooling and heating equipment, foams and foamed products, aerosols, fire extinguishers, pre-blended polyols, dry cleaning machinery and others. The Montreal Protocol does not impose trade restrictions on products and equipment, but national legislation often does. Products and equipment are classified under different HS chapters, headings, and sub-headings. Examples of classifications for these types of products and equipment include the following:

- Air-conditioners (under 84.15 but also 94.06.00)
- Refrigerators, freezers, water coolers, ice machines, heat pumps (under 84.18 but also 84.15, 84.19, 89.09, 87.16)
- Milking machines and dairy machinery (under 84.34)
- Machinery, not specified or included elsewhere (under 84.38)
- Fork-lift trucks, other works trucks fitted with lifting or handling equipment (under 84.27)

- Other lifting, handling, loading or unloading machinery (under 84.28, but also 89.29, 89.30, 89.31, 89.32, 89.33, 89.36)
- Compressors (under 84.14 but also 84.11, 84.12, 84.15, 84.18, 84.24, 84.25, 84.30)
- Cars, vans, trucks, buses, tractors, agricultural and building machines and parts thereof (under 87.01, 87.02, 87.03, 87.04, 87.05, 87.08, 87.09, 87.10)
- Other means of transport, like railway or tramway vehicles, trailers, and parts thereof (under 86.04, 86.05, 86.07, 87.16)
- Bicycles and motorcycles, carriages, and parts thereof – saddles only (under 87.11, 87.12, 87.13 and 87.14)
- Ships, yachts and boats if refrigerated or/and containing molded foamed and microcellular elements (under 89.01 – 89.08)
- Fire extinguishers (under 84.24)
- Dry cleaning machinery (under 84.50, 84.51)
- Aerosols (under 33.05, 33.07, 34.03, 38.08, 38.14, 38.24, 93.04)
- Pre-blended polyols (under 39.09, but also 39.07, 39.99)
- Foamed plastics (under 39.21 and 39.26, but also waste, parings and scrap of plastics if foamed or microcellular (under 39.15) and other foamed or microcellular plastic goods (under 39.17 – 39.19, but also 39.23 or 39.25)
- Containers if containing foamed or microcellular elements (under 86.09)
- Medical goods, e.g. orthopedic appliances, foot impression boxes, enclosures/housings for medical equipment, some devices used in dental surgery if containing foamed or microcellular elements (under 90.21)
- Skis, water-skis, surfboards, sailboards and other water-sport equipment if containing foamed or microcellular elements (under 95.06)
- Various tanks, boxes or other containers if containing foamed or microcellular elements (under 73.09 – 73.12)
- Building structures and elements if foamed or microcellular, e.g. garage doors or panels with insulating core (under 73.08)
- Trunks, suitcases, vanity cases if containing foamed or microcellular elements (under 42.02).

The classification of products and equipment is rather complex and additional information can be found in [UNEP's Customs Manual \(3<sup>rd</sup> edition\) in Annex B4](#). HS codes for products and equipment that contain or rely on ODS are basically the same as those for products and equipment containing or relying on HFCs.

The [European classification system CN \(8 digits\)](#) and the [European TARIC system \(10 digits\)](#) provide additional granularity than the HS system (6 digits). To provide an example for air-conditioning (AC) systems:

- 84.15.10                    HS code for self-contained or split AC systems
- 84.15.10.10                CN code for self-contained AC systems
- 84.15.10.10.10            TARIC code for self-contained AC systems pre-charged with HFCs
- 84.15.10.10.90            TARIC code for self-contained AC systems other
- 84.15.10.90                CN code for split AC systems
- 84.15.10.90.10            TARIC code for split AC systems pre-charged with HFCs.
- 84.15.10.90.90            TARIC code for split AC systems other

The classification of products and equipment containing or relying on controlled substances is increasingly getting important. Many countries have introduced or are planning measures to control, restrict or ban their imports, exports or placing on the market. These measures might depend on the type of equipment and products, their capacity, refrigerant charge, GWP of the

refrigerant, energy–efficiency (MEPS), or whether they are new or used (second hand). The correct classification of such equipment and products is crucial to enforce such measures as e.g. by providing risk indicators triggering the review of shipment papers and physical inspection.

ODS and HFC licensing systems are mandatory and of vital importance for legal trade. Trade statistics are normally collected by Customs using the HS codes. Trade statistics are important for governments to monitor and report consumption of controlled substances and mixtures containing them. The Montreal Protocol defines consumption as imports – exports + production – destruction. Compliance with the Montreal Protocol depends on timely and accurate reporting of trade data separately on specific substances and mixtures, and timely establishment and reporting

of licensing systems for controlled substances. The updated HS nomenclature enables Customs Officers to differentiate between the most common ODS, HFCs and mixtures for reporting purposes. It also supports Customs in enforcing ODS and HFCs licensing systems, monitoring cross–border trade, verifying compliance with regulatory requirements, and preventing illegal activities.



Photo: ISO tank of HFC–32; Courtesy of © Polish Customs Administration

## OZONE SECRETARIAT INITIATIVES

The Ozone Secretariat organized a *Workshop on Strengthening the Effective Implementation and Enforcement of the Montreal Protocol* (Bangkok, Thailand, 2 July 2023). [The workshop report and pre-session documents are available from the Ozone Secretariat’s website.](#)

As of 3 April 2024, 568 cases of illegal trade were reported to the Ozone Secretariat over the period 2002–2024. The number of submissions per year fluctuates, with an overall increase in the number of submissions in the last five years (Figure 1). The Ozone Secretariat informs all Parties on newly reported cases during the annual Meetings of the Parties.

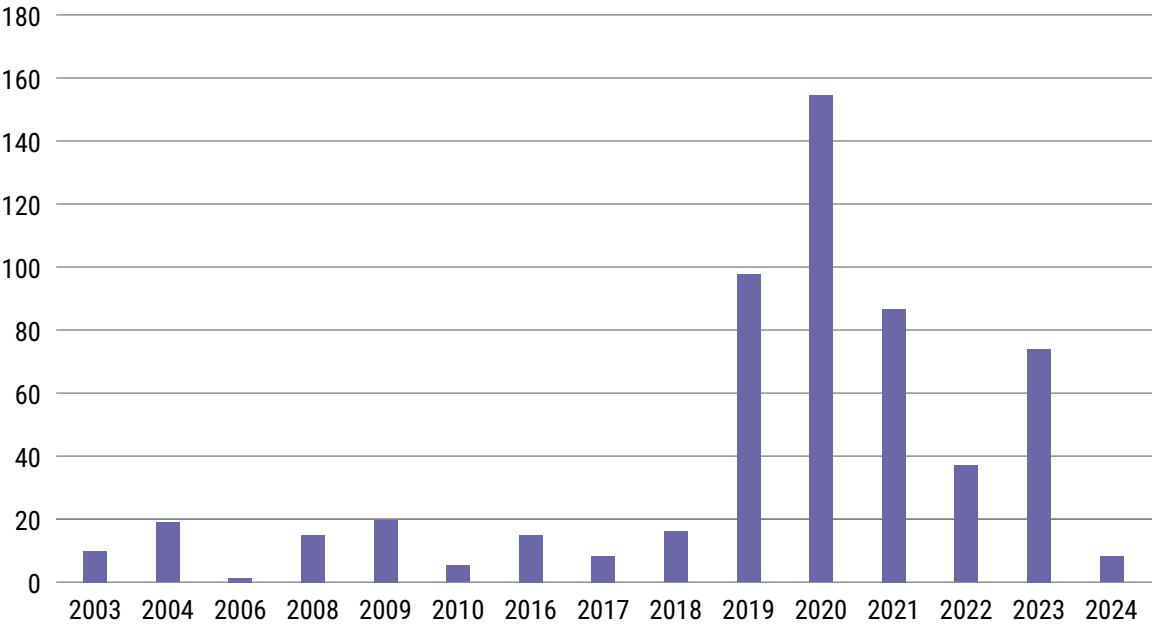


Figure 1. Number of reported cases, by year



Forty-six of the 198 parties to the Montreal Protocol (23 per cent) have reported cases of illegal trade since 2002. The geographical distribution of reported cases is shown in Figure 2. The highest number of cases has been reported by ECA countries, which does not necessarily mean there are less illegal trade activities in other regions. Since 2009, ECA countries were encouraged to report illegal trade cases to the Ozone Secretariat and through WCO's Customs Enforcement Network (CEN).

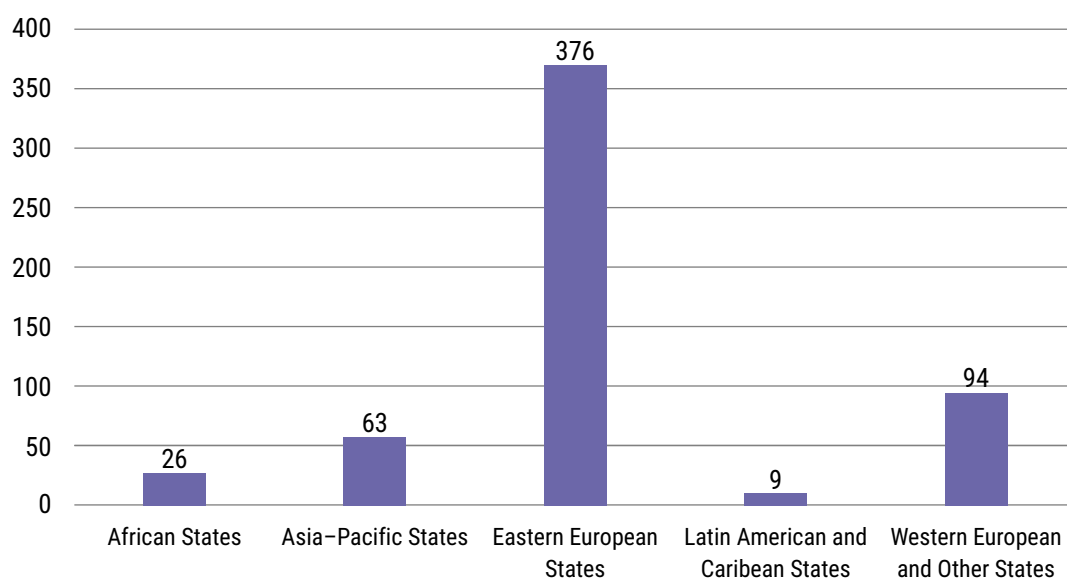


Figure 2. Geographical distribution of reported cases

Table 2 depicts the most common substances and mixtures traded illegally since 2002, with a total substance weight amounting to approximately 1,780 MT. Trade patterns and substances traded illegally might have changed over time.

Substance	Number of reported cases	Weight (kg)
HFC-134a	231	312,787
R-404A	137	137,143
HCFC-22	82	373,242
R-410A	57	62,961
CFC-12	43	345,135
R-407C	21	54,264
HFCs (not specified)	19	190,333
HFC-32	16	32,323
R-507A	10	29,997
CFC-11	9	63,078

Table 2. Most common substances and mixtures traded illegally, by number of reported cases and weight, based on the available data.

The most common methods of illegal trade, as identified in various sources of information on illegal trade in ODS and HFCs, include importing and exporting without a license or without a declaration or with a false declaration; mislabeling and misidentification of substances, including mislabeling of virgin substances as recycled; and concealment. These methods are not mutually exclusive and often overlap.

Many of the reported cases (more than 95 per cent) involved illegal imports, and only 26 (less than 5 per cent) referred to illegal exports. The trading and smuggling of non-refillable/disposable cylinders were found in 208 cases (37 per cent of total cases).

## ✓ Common means of detecting illegal trade and strengthening enforcement frameworks

The most common means of detection include:

- Customs inspections (document inspection, risk-profiling, physical inspection of shipments and random checks)
- Inspection and special law enforcement operations
- Tip-offs from informants and intelligence from other agencies
- Detection of possible illegal trade through data monitoring and analysis of discrepancies
- Detection using identifiers and laboratory analysis
- Post-clearance audit

Despite the limitations, based on available data, the fact that most of the illegal trade cases are detected and intercepted at the border and by Customs Services, as well as through special enforcement operations, indicates the value of building stronger relationships between Customs and Enforcement Agencies. It also shows the importance of promoting cross-border cooperation and allocating more resources to environmental law enforcement frameworks, including sharing information among the agencies for risk profiling, providing refrigerant identifiers and other technological solutions, and enhancing capacity for detection and investigations. Therefore, regional cooperation between Montreal Protocol Officers and Customs Officers is crucial for the efficient monitoring of trade and the prevention of illegal trade.

## FURTHER READING

UNEP has a vast document repository which can be accessed online, in various UN languages. Some of the relevant resources pertaining to the topic of Customs and Enforcement, are the following:

- [Training Manual for Customs and Enforcement Officers – 3<sup>rd</sup> Edition: Saving the Ozone Layer \(2013\) English and Russian](#)
- [Green Customs Guide to Multilateral Environmental Agreements \(2022\) English](#)
- [Risk Assessment on Illegal Trade in HCFCs \(2011\) English](#)
- [Watch out for illegal trade of HCFCs and HFCs: Lessons learnt from the global Montreal Protocol award for Customs and Enforcement Officers \(2023\) English](#)
- [Dealing with Seized ODS: Options for Article 5 countries \(2020\) English and Russian](#)
- [Europe and Central Asia \(ECA\) Montreal Protocol Award for Customs and Enforcement Officers \(5<sup>th</sup> edition 2019–2020\): Report seizures and Informal Prior-Informed Consent \(iPIC\) Consultations \(2023\) English](#)
- [Technical Brief on Refrigerant Cylinder Labelling \(2021\) English and Russian](#)
- [Checklist on Auctioning of Seized Refrigerants – How to Get it Right \(2020\) English and Russian](#)
- [Checklist for Environmental Inspectors \(based on Serbia's Checklist\) \(2019\) English and Russian](#)
- [Factsheet on iPIC Platform \(2020\) English](#)
- [WhatGas application to search by HS code, ASHRAE designation, trade or chemical name](#)

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### **World Customs Organization**

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## 2022 HS codes for commonly used substances controlled by the Montreal Protocol

Controlled ozone-depleting substances	HS code	Status
Halons (all), bromofluorocarbon	2903.76	Substance has been phased out and is no longer produced (except for some limited exempted uses). Any proposed international trade should be investigated.
Chlorofluorocarbons – CFCs (all)	2903.77	
Carbon tetrachloride	2903.14	
Methyl chloroform (or R-140a)	2903.19	
HCFC-22	2903.71	Substance currently being phased out – trade restrictions apply
HCFC-123	2903.72	
HCFC-124	2903.79*	
HCFC-141, HCFC-141b	2903.73	
HCFC-142, HCFC-142b	2903.74	
HCFC-225, HCFC-225ca, HCFC-225cb	2903.75	
Hydrobromofluorocarbons – HBFCs (all)	2903.79	Substance has been phased out and is no longer produced (except for some limited exempted uses). Any proposed international trade should be investigated.
Methyl bromide (or Bromomethane)	2903.61	
Controlled global warming substances	HS code	Status
HFC-23	2903.41	Controls on HFCs came into force in 2019, extending to developing countries in 2024.
HFC-32	2903.42	
HFC-41, HFC-152, HFC-152a	2903.43	
HFC-125, HFC-143, HFC-143a	2903.44	
HFC-134, HFC-134a	2903.45	
HFC-227ea, HFC-236cb, HFC-236ea, HFC-236fa	2903.46	
HFC-245ca, HFC-245fa	2903.47	
365mfc, HFC-43-10mee	2903.48	
Mixtures containing controlled substances	HS code	Status
Mixtures containing CFCs (e.g. R-500, R-501, R-502, R-503, R-504, R-505, R-506)	3827.11	Substance has been phased out and is no longer produced (except for some limited exempted uses). Any proposed international trade should be investigated.
Mixtures containing HCFCs (e.g. R-406A)	3827.31, 3827.32	Substance currently being phased out – trade restrictions apply
Mixtures containing HFCs (R-404A, R-507A)	3827.51, 3827.61, 3827.62, 3827.63, 3827.64, 3827.65, 3827.68	Controls on HFCs came into force in 2019, extending to developing countries in 2024.

\* Code **2903.79** covers also other HCFCs which have not been assigned a separate HS code

**Note:** EU legislation also controls HFC-161 and perfluorinated compounds (PFCs) under HS code 2903.49.