2023 Pohnpei State Chemical Profile

Pohnpei Environmental Protection Agency

FSM Department of Environment, Climate Change and Emergency Management
Waste Management and Pollution Control Unit
Federated States of Micronesia

Supported by the United Nations Environment Programme

FSM Department of Environment, Climate Change and Emergency Management
Federated States of Micronesia
Palikir, FSM

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Acronyms

ADB	Asian Development Bank
ASYCUDA	Automated System for Customs Data
BL	Bill of Ladings
CAS	Chemical Abstracts Service
CIF	Cost, Insurance, and Freight
COM	College of Micronesia
COO	Country of Origin
DCT	Division of Customs and Tax
DECEM	Department of Environment, Climate Change and Emergency Management
DFA	Department of Finance & Administration
DHS	Department of Health Services
DOE	Department of Education
DTI	Department of Transportation and Infrastructure
ENSO	El Niño-Southern Oscillation
EPA	Environmental Protection Agency
FSM	Federated States of Micronesia
FSMCT	FSM Customs & Tax
FSMNG	Federated States of Micronesia National Government
GDP	Gross Domestic Product
HCDCS	Harmonized Commodity Description & Coding System
HCS	Harmonized Commodities System
HFCs	Hydrofluorocarbons
HS	Harmonized System
KG	Kilograms
L	Liters
NCP	National Chemical Profile
OCT	Office of Customs & Tax
OEEM	Office of Environmental and Emergency Management
PC	PC Trade
PICs	Pacific Island States
POP	Persistent Organic Pollutants
PSCP	Pohnpei State Chemical Profile
P_2O_5	Diphosphorus pentoxide
RAC	Refrigerants and Air Conditioning
R&D	Department of Resources and Development
SCP	State Chemical Profile
SL	State Law
T	Tons
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organization

USD	United States Dollar
Vital	FSM Petroleum Corporation
WCO	World Customs Organization

Authors' Note

The State Chemical Profile (SCP) is a desktop study that lists and summarizes relevant laws, policies, governmental institutions, and other mechanisms of the State of Pohnpei relevant for managing and implementing chemical management in Pohnpei. The SCP is part of the FSM's National Chemical Profile (NCP) and includes data and information about the chemicals entering the State. Furthermore, data and information were collected to evaluate the management of chemicals and hazardous waste in the State. The SCP analyzed vital policy and legislative items: environmental, chemical control, customs and taxation, chemical management regulations and policies, and health. This report will inform discussion for further policy and legislative development in the FSM and the four States to support the implementation of proper chemical and hazardous waste management across the FSM.

Every effort was taken to ensure that the information written in this report is accurate. This report is provided for informational and educational purposes only. It is intended, but not promised or guaranteed, to be current and complete as of the date of its publication. This analysis should not be used as a legal document, and organizations should consult with lawyers to provide legal advice on implementing chemical and waste management in the FSM.

The contents of this report, including any errors or omissions, are solely the responsibility of the authors at OCEA, Inc. The authors invite corrections and additions.

Executive Summary

Understanding the critical nature of efficient chemical and hazardous waste management, the FSM has been fervently involved in global collaboration, aligning its strategies with international frameworks and treaties. Embracing global conventions and accords, like the Basel Convention, marks a noteworthy advancement for the FSM. Similarly, the nation's engagement in actualizing the Stockholm Convention is pivotal in curbing and eradicating persistent organic pollutants (POPs).

Between 1997 and 2006, the FSM actively participated in the Persistent Organic Pollutants in Pacific Island Countries (POPs in PICs) initiative, underscoring its resolve to combat chemical contamination. This participation reinforced the FSM's steadfastness in confronting the ecological threats presented by POPs.

The FSM has initiated measures to tackle chemical handling and safety at the national level via specific laws and programs. The FSM's Department of Environment, Climate Change and Emergency Management (DECEM) defines baseline standards and creates the legislative framework concerning chemical management. However, each State within the FSM is responsible for establishing legislation, regulations, and policies at the State level. Furthermore, each state is responsible for executing and implementing chemical and hazardous waste management initiatives within its jurisdiction.

Pohnpei State has taken proactive steps by passing laws and formulating various resource management strategies to meet its obligations regarding the stewardship, safeguarding, and preservation of the environment and its natural resources. The state has developed regulations that address the handling and removal of chemicals and hazardous waste only for development projects. It has established an Act related to POPs and maintains a registry of prohibited chemicals. It also has legislation that requires proper labeling of all chemicals and hazardous materials.

However, Pohnpei is burdened by several challenges:

- Lacking a comprehensive list of chemicals that enter the State;
- Having appropriate legislation, regulations, and policies that address the importation, handling, and disposal of chemical and hazardous waste;
- Identifying the major importers of chemicals and hazardous materials into the FSM;
- There is a lack of clarity concerning which agencies are responsible for managing the proper disposal and management of chemicals and hazardous waste.

The project "*Strengthening Institutional Capacity of Chemical Management in the FSM*," funded by UNEP and implemented by the FSM's National and State Governments, is designed to assist FSM States, including Pohnpei State, in creating extensive State Chemical Profiles. This involves pinpointing the varieties and quantities of chemicals arriving in the State, understanding their usage and management, identifying the sectors engaged in chemical importation, and evaluating the existing laws and enforcement.

The analysis conducted to develop the Pohnpei State Chemical Profile (PSCP) required data collection from various sources, documentation of existing chemical storage sites, and stakeholder engagement to discuss policy recommendations and legislative reforms on chemical management. In doing so, the following activities were carried out:

- Collection of import statistics from the State Customs office for Chapters 28-40 of the 2018 Harmonized Commodities System (HCS) to assess chemical imports, their sources, and their intended use.
- Provide import statistics for the island state, including data on the types and amounts of chemicals imported, their sources, and their intended use.
- Capture photographs of chemical storage sites across the island state to assess compliance with storage and handling requirements and identify potential risks or hazards.
- Inspection of the domestic market to assess the availability and use of chemicals and identify any potential risks or hazards associated with their use.
- Facilitation of stakeholder engagement workshops to collect feedback and provide policy recommendations on chemical management. The workshop aims to bring together key stakeholders, including government agencies, industry representatives, and civil society groups, to discuss the situational analysis findings and identify policy improvement opportunities.

This analysis aims to identify the current status of the legal, institutional, administrative, and technical infrastructure for chemical management in the State of Pohnpei, FSM. The results will help implement environmental and chemical management priorities and inform necessary legislative reforms to improve chemical management in the FSM at the state and national levels.

1. Introduction

The project entitled "*Strengthening Institutional Capacity for Chemical Management in the FSM*" requires each FSM state to complete a situational analysis of its chemical use and management, including identifying the types and amounts of chemicals used in various sectors and industries and assessing the current regulatory framework and enforcement mechanisms for chemical management. FSM and its four states have imported chemicals in multiple sectors, including education, agriculture, health, and pest control. These chemicals and associated waste could pose severe environmental and local health risks without adequate management.

1.1. Geography

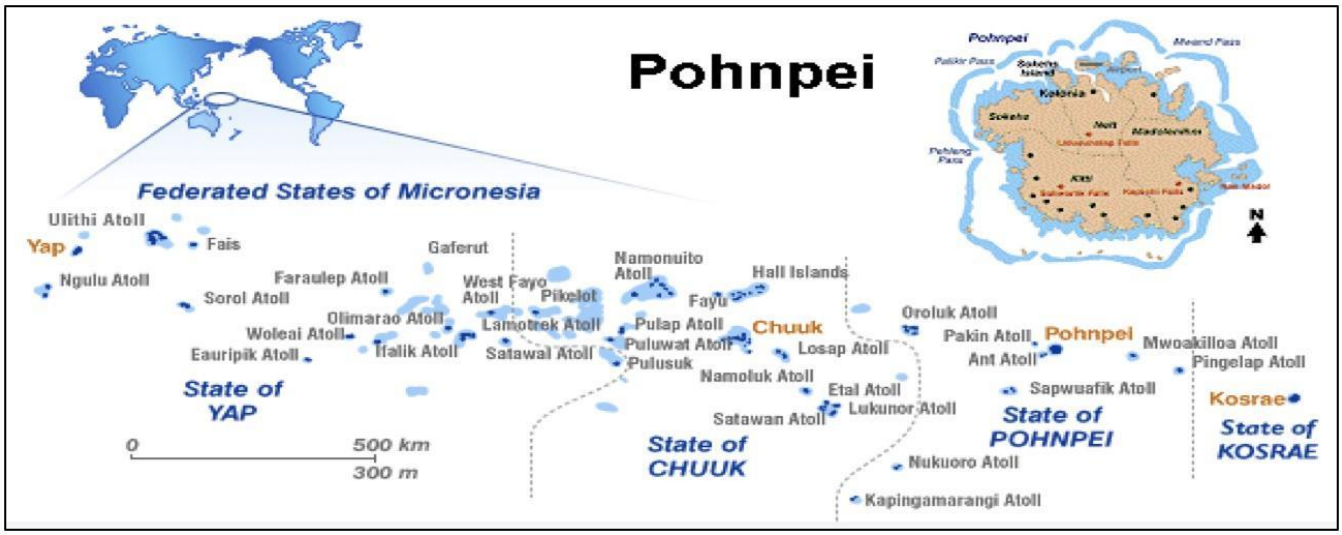

Image 1: *Map of FSM (**Federated States of Micronesia - CartoGIS Services Maps Online - ANU**)*

Pohnpei consists of a central island and its respective outer island groups of Pingelap, Mokil, Nukuoro, Sapwuahfik, and Kapingamarangi. Pohnpei is the second most populous State of the FSM, with approximately 40,000 people. Pohnpei's main island is made up of one large volcanic island encircled by a reef and six (6) inhabited coral atolls (Mwoakilloa, Pingelap, Kapingamarangi, Nukuoro, Sapwuafik, and Oroluk). Pohnpei's high volcanic island is the largest in the FSM (345 km^2) and has the highest peak elevation, Nahna Laud, at 734m (2,408 ft) above sea level.[1] Pohnpei is home to the FSM's capital and FSMNG in Palikir. Pohnpei also hosts the foreign embassies of four countries: Australia, China, Japan, and the United States.

Pohnpei's abundant rainfall – reputedly some of the most plentiful on earth – accounts for its lush tropical forests, beautiful waterfalls, and rivers. Pohnpei is also home to the ancient ruins of Nan Madol, the first UNESCO World Heritage site in the FSM. Pohnpei's main island is heavily forested and home to many endemic species. Vegetation maps conducted in Pohnpei report approximately 2,548 hectares of upland forest and 5,525 hectares of mangrove. 1,945 hectares of native palm forest, 214 hectares of swamp forest, six (6) hectares of plantation forest, and one (1) hectare of dwarf cloud forest.[2]

[1] Government of the Federated States of Micronesia (2016). Pohnpei Joint State Action Plan for Disaster Risk Management and Climate Change. SPC's Suva Regional Office, Fiji.

[2] Government of the Federated States of Micronesia. (2020). FSM Forest Action Plan 2020-2030. https://fsm-data.sprep.org/index.php/resource/fsm-fap-2020-2030

1.2. Climate Overview

Table 1: *Overview of climate trends in Pohnpei State*

Climate feature	Climate trends
Air Temperature	In Pohnpei annual mean air temperatures have increased at a rate of +0.34°F (0.19 ˚C) per decade since 1951. Extreme temperatures in Pohnpei have increased at a rate of +0.22°F (0.12°C) per decade. The number of warming days and nights have also significantly increased between 1952 and 2011.
Rainfall	Interannual rainfall variability, associated with ENSO events, has been observed in Pohnpei since 1950. There is a significant declining trend in May through October in which the annual rainfall has decreased 1.8 inches (45.5mm) per decade since 1950.
Sea Level	Pohnpei experiences its highest monthly mean sea levels around March and its lowest around November and December. Extreme sea levels in Pohnpei are associated with changes due to El Niño Southern-Oscillation. These extreme events are typically observed during la Niña and are recorded by tide gauges. The data collected from 1969 to 2011 indicate that of the 10 highest water levels recorded at Pohnpei, seven occurred during La Niña conditions. Records on sea level over the past 20-year period between 2001 and 2021 indicate that the mean sea level in Pohnpei was 2.53 feet (0.77m). The minimum of -0.29ft (-0.091m) on 11 January 2016 was recorded during El Niño conditions and the maximum of 5.87ft (1.79m) on 6 November 2017 was recorded during la Niña conditions.
Storm patterns	Most of the tropical cyclones that are produced in the western edge of the Micronesia Region basin tend to increase in intensity after passing over Pohnpei State. However, the intense rainfall associated with these events can still cause significant damage to infrastructure, people, and natural systems. In 2019, Typhoon Wutip passed over the state of Pohnpei causing intense rainfall that resulted in landslides that claimed a fatality and damage to homes, infrastructure, and crops.
Sea Surface Temperature	Historically, warming was relatively weak. Between the 1950s and the late 1980s, there was a period of rapid warming (approximately 0.11°C per decade and approximately 0.08°C per decade from 1970 to present). Natural variability still plays a large role in determining the sea-surface temperature.
Ocean Acidification	Ocean acidification is projected to continue, with consistent decline in aragonite saturation.

Sources: *Pacific Climate change data portal, Data portal, NOAA National Centers for Environmental Information (NCEI), Australian Bureau of Meteorology and CSIRO-2014.*

1.3. Demographics

With a population of 35,981, Pohnpei state makes up approximately 35% of the FSM population. Kolonia is the capital and largest town in Pohnpei. Palikir, the FSM's capital, is also located in Pohnpei.

The annual population growth rate in Pohnpei between 1985-2010 was 93%, but the pattern varies by island. Notably, the outer islands have experienced a population decline of 2.3% within this same time frame.[3]

1.4. Education

Pohnpei State has the largest public education sector in the FSM, consisting of thirty-one (31) elementary schools and three (3) high schools. According to the latest Pohnpei State Department of Education (DOE) audit, these public schools cater to approximately 10,300 students.[4] Only 6% of students in Pohnpei attend private institutions. In Pohnpei, roughly 2% of children ages six (6) and above never attend school, approximately 44.7% of Pohnpei's population ages 25 and above completed secondary education, and 14.7% completed a tertiary education.[5]

1.5. Resources and Economy

National and state governments account for more than half of the nation's employment and approximately 38% of the nation's GDP. Pohnpei shares many of the same economic difficulties with its sister states. The Asian Development Bank (ADB) attributes these significant economic difficulties to (i) "reduced public expenditures in response to Compact II; (ii) under-spending of grants; and (iii) the inability of both national and state governments to meet requirements for obtaining Compact II development and capacity building funds." Additionally, a struggle exists to increase private sector contributions to the economy.[6]

The 3rd Economic Summit in Palikir identified three major potential areas of growth for Pohnpei: fisheries, agriculture, and tourism. Natural resources such as marine products, timber, minerals, and phosphate are limited. Like the rest of the states, commercial fishing is essential to Pohnpei's economy and contributes to revenue generation. Most agricultural pursuits are subsistence farming endeavors, although sakau (kava) is an essential source of income for many households. Tourism assets include coastal and marine resources, diverse land-based natural resources, globally significant cultural sights, and traditional crafts.[7]

1.6. Government Structure

The state of Pohnpei has four branches of government established by the Constitution: legislative, executive, judicial, and municipal. Furthermore, the Constitution recognizes and protects tradition and customs' profound societal role.

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[3] Pohnpei State strategic Development plan. https://www.national.doe.fm/wp-content/uploads/2023/03/Pohnpei-State-SDP-1-31.pdf

[4] Management audit and functional analysis report Pohnpei State Department of Education. Palikir, Pohnpei: FSM National Department of Education. https://www.national.doe.fm/wp-content/uploads/2023/03/Pohnpei-State-Audit-Report-May-2010.pdf

[5] Federated States of Micronesia 2013/2014 HIES. National Department of Education https://www.national.doe.fm/wp-content/uploads/2023/03/FS-FSM-Education.pdf

[6] Pohnpei State strategic Development plan. https://www.national.doe.fm/wp-content/uploads/2023/03/Pohnpei-State-SDP-1-31.pdf

[7] Federated States of Micronesia 2013/2014 HIES https://spccfpstore1.blob.core.windows.net/digitallibrary-docs/files/41/41e3dab004b856ac1054f7932529d987.pdf?sv=2015-12-11&sr=b&sig=2z%2FAp5qTBLfN%2Bv%2B0UGxGnlMMHTf2YsEQ6DXnW6JztkU%3D&se=2024-05-11T10%3A23%3A06Z&sp=r&rscc=public%2C%20max-age%3D864000%2C%20max-stale%3D86400&rsct=application%2Fpdf&rscd=inline%3B%20filename%3D%22FS_FSM_2013_14_HIES_Agriculture.pdf%22 & ibid

1.6.1. Legislative

The Pohnpei State Legislature is a unicameral body comprised of 23 senators who are elected by the voters of the electoral districts of Kapingamarangi, Kitti, Kolonia Town, Madolenihmw, Mwokil, Nett, Ngetik, Nukuoro, Pingelap, Sokehs, and Uh. The Legislature's power "extends to all rightful subjects of legislation not inconsistent with" the Pohnpei Constitution.

1.6.2. Executive

The governor and lieutenant governor lead Pohnpei's Executive Branch. Unlike in other States, they are elected separately by majority vote, although both serve four-year terms.

1.6.3. Judicial

The judicial branch in Pohnpei State consists of the Pohnpei Supreme Court and such inferior courts as may be established by law. Akin to the FSM Constitution, Pohnpei's Constitution contains a judicial guidance clause. However, the language of this clause is distinctive to Pohnpei: "The decisions of all courts and adjudicatory bodies shall be consistent with this Constitution and the concepts of justice of the people of Pohnpei." The Pohnpei State Supreme Court has exclusive appellate jurisdiction over any matter relating to the Constitution, Pohnpei law, and customs and traditions.

1.6.4. Municipal

Pohnpei's Constitution recognizes the existence of local governments in Pohnpei State — the local governments are colloquially referred to as municipalities. Pohnpei's constitution also identifies the municipal authorities' limits and boundaries. Each local government may establish its constitution, which must not be inconsistent with the Pohnpei Constitution or law. The local governments may exercise all authority that is not prohibited under the state Constitution or Pohnpei law.

The Pohnpei State Constitution "upholds, respects, and protects the customs and traditions of the traditional kingdoms of Pohnpei." The government of Pohnpei is further required to respect and protect the customs and traditions of Pohnpei. State statutes may be enacted to uphold customs or traditions, and, if such a statute is challenged as violating rights guaranteed by the State Constitution, it will be upheld on proof of the existence and regular practice of the custom or tradition and the reasonableness of the means established for its protection, as determined by the Pohnpei State Supreme Court.

Table 2. *Executive Departments of the State of Pohnpei*

Department	Website
Department of Education (DOE)	https://pohnpei.doe.fm/
Environmental Protection Agency (EPA)	https://pohnpeistate.gov.fm/agency_protect.html
Department of Finance (Pohnpei Department of Treasury and Administration)	https://www.pohnpeidota.fm/finance
Department of Health (and Social Services)	https://pohnpeistate.gov.fm/dept._health.html
State Attorney General	https://pohnpeistate.gov.fm/office_attorney.html

Department of Resources & Development (R&D)	https://pohnpeistate.gov.fm/resources-and-development/
Department of Transportation & Infrastructure (DTI)	https://pohnpeistate.gov.fm/office-of-transportation-and-infrastructure-t-i/

Stakeholder Meetings on Data Collection and Coordination

Stakeholders and Informants at the State Level

Department of Finance & Administration, Division of Customs & Tax

The FSMNG Department of Finance and Administration (DF&A), specifically the Division of Customs and Tax (DCT), plays a crucial role in chemical management. DCT controls and monitors chemical imports, ensuring compliance with documentation and restrictions on certain substances. They set and collect tariffs on imported chemicals, thereby regulating the influx of certain substances by promoting safer alternatives or discouraging harmful ones. In collaboration with DECEM, Pohnpei State DHS and EPA, DCT supports national and state regulations on chemical imports, storage, and usage.

Data collection is another critical aspect of their responsibilities. They offer insights on chemical types and quantities imported, which aid in environmental, public health, and economic planning. The Division's role also extends to implementing international chemical-related agreements, raising public awareness of chemical safety, and potentially issuing licenses for specific chemical imports.

Pohnpei State Attorney General's Office

The Pohnpei State Attorney General's Office drafts, reviews, and updates chemical-related laws and regulations and ensures that the legalities surrounding chemical import, use, disposal, and transport are clear and comprehensive. They are responsible for representing the government's interest in chemical-related disputes or challenges and work with the FSM Department of Justice (DOJ) to ensure that any international chemical-related agreements FSM is a party are effectively integrated or utilized to update state law.

Pohnpei EPA – Pohnpei Environmental Protection Agency

Pohnpei EPA was established by the Pohnpei State Legislature under State Law No 3L-26-92 in 1992. Section 9 of State Law No 3L-26-92 establishes in large part the powers and duties of the agency, which are to "protect the environment, human health, welfare, and safety and to decrease, control, and prohibit pollution or contamination of air, land and water in accordance with this act and with the regulations adopted and promulgated under this act and any administrative directive issued by the Governor pursuant to this act, balancing the needs of economic and social development against those of environmental quality. To fulfill this obligation and the public policy." [8]

EPA is permitted to establish rules and regulations concerning, but not limited to:

- Earthmoving and dredging regulations;
- Environmental impact assessment regulations;
- Water supply systems regulations;
- Pesticide regulations;
- Sewage regulations;

[8] A Review of Environmental Laws in the Federated States of Micronesia https://www.sprep.org/att/IRC/eCOPIES/Countries/FSM/62.pdf

- Solid waste regulations;
- Marine and freshwater quality regulations;
- Air pollution regulations;
- Groundwater regulations; and
- Hearing procedure regulations for the Board.

DHS– Department of Health Services

As a result of its engagement with various chemicals for health purposes, DHS plays a significant contributing role in the importation, management, and disposal of chemical products. DHS, in coordination with other government departments such as EPA and DTI, is responsible for disposing of any medical waste that is expired, contaminated, or unfinished.

DTI– Department of Transportation and Infrastructure

Pohnpei State Department of Transportation and Infrastructure plays a role in chemical management, not only through its responsibility for managing waste at the state dumpsite in Deketik and the leeches pond but also through its engagement with construction projects, government building management and monitoring, and regulation of any sea-based transportation.

Table 3: Pohnpei State Departments responsible for chemicals, biohazards, and other hazardous materials

Department	Mandate
Pohnpei EPA	"The main functions of the Agency are performed under the following Divisions: Management, Pollution Control (Permitting System), Laboratory & Safe Drinking Water, Quarantine, Establishment, Climate Change and Community Improvement, Environmental Education. Outputs of all divisions are aimed at ensuring wise use and protection of Pohnpei's natural resources. The EPA's Board of Directors, established through Act S.L. No. 3L-26-92, main function is to evaluate and monitor development projects proposed through the Agency's development project permitting process. The Board also has the authority to cease development projects not complying with Permit Conditions as issued according to the Laws and Regulations."[9]
DHS	"Establish and maintain hospital services and facilities such as inpatient wards, x-ray services, pharmacy services, anesthesia, operating and recovery services, laboratory and morgue, labor and delivery services, central supply services, emergency services, physical therapy and rehabilitation, and outpatient services."[10]
DTI	"The Office of Transportation and Infrastructure is responsible for the administration of construction projects, maintenance of

[9] Office of the Governor, Pohnpei State. https://pohnpeistate.gov.fm/environmental-protection-agency-epa/
[10] Office of the Governor, Pohnpei State. https://pohnpeistate.gov.fm/department-of-health-and-social-services-2/

	government property and infrastructure. The management of the government field trip ship and other assistance, as well as regulating the provision of public transportation within the State." [11] "Based on State Law (SL) 5L-14-00, T&I is also responsible for maintaining the dump site at Dekehtik."[12]

2. Insights on Chemical Consumption and Imports in Pohnpei

2.1 Data Collection

Collecting customs import data is crucial for understanding a country's goods and services. In the FSM, the Office of Customs & Tax (OCT) manages and regulates imports under the Department of Finance & Administration (DFA). The International Convention on the Harmonized Commodity Description and Coding System (HCDCS), commonly called the Harmonized System (HS), was adopted in 1983. The HS is an international nomenclature developed by the World Customs Organization (WCO) to facilitate the systematic classification of goods traded across borders. The HS is a universal language describing commodities, enabling countries to standardize their customs and trade procedures. The primary objective of the HS is to promote uniformity and efficiency in how countries track the movement and assess the volume of goods, both in terms of costs, weight, and country of origin, to facilitate better trade flows to better inform statistical analysis of international trade and support economic decision-making and policy formulation.

2.2 Data Assessment & Methodology

2.2.1 Top-down Analysis of Chemical Imports:

The top-down approach to assessing chemical imports provided a comprehensive overview of the national and, in other instances, the regional chemical import landscape. Starting with a macro perspective, this method identifies overarching patterns and trends, pinpoints high-import volume or high-risk substances, gauges existing policies' impact, and sets regulatory and action planning priorities. The derived insights from this approach will inform national chemical management policies and action plans for the national government (FSMNG) and at the state levels, ensuring they are effectively aligned with national public health, environmental, and economic objectives and goals set forth under international conventions and agreements the FSM is a Party to.

2.2.2 Bottom-Up Analysis of Chemical Imports:

This approach focused on gathering granular data on chemicals directly from the source, i.e., laboratories throughout FSM. By distributing a chemical inventory survey, specific data about chemical names, quantities, storage methods, usage patterns, and more can be collected. A chemical inventory survey was distributed to all known laboratories throughout Pohnpei State to collect the following data:

- **CAS Number[13]:** Unique identifier for chemical substances.

[11] Office of the Governor, Pohnpei State. https://pohnpeistate.gov.fm/office-of-transportation-and-infrastructure-t-i/
[12] Performance Audit of Solid Waste Management Fiscal year 2007-2009. Office of the National Public Auditor Federated States of Micronesia. https://www.environmental-auditing.org/media/116846/solid_waste_2010_08.pdf
[13] A CAS Number is a unique numeric identifier designating only one substance. It provides a standard line between the various nomenclature used to describe substances. It serves as an international resource for chemical substance

- **Chemical Name:** The standardized name of the chemical.
- **Location - Building:** Specific building where the chemical is stored or used.
- **Location - Room Name or Number:** Specific room or area within the building.
- **Physical State:** Solid, liquid, gas, etc.
- **Description of Hazards:** Specific risks associated with the chemical.
- **Disposal Method:** Recommended ways to discard the chemical safely.
- **Safety Precautions:** Guidelines for safe handling, transport, storage, etc.
- **Amount:** Quantity of the chemical in possession.
- **Units:** Measurement units (from the approved list) for the quantity.

A bottom-up approach through a chemical inventory survey provided the granularity and specificity needed to understand the on-ground reality of chemical usage in FSM's laboratories. When used with a top-down import analysis, it provides a comprehensive picture of the chemical landscape, from import to end-use, guiding informed policy decisions and safety protocols. The surveys can offer data at a national level and provide insights into chemical usage patterns across individual states and specific laboratories. Detailed inventorying can help ascertain if laboratories adhere to safety norms, proper storage practices, and usage guidelines. Another helpful outcome of a national chemical inventory is that it prompts chemical management stakeholders to assess and highlight specific laboratory needs, such as requirements for safety equipment, better storage solutions, and training for lab personnel. The collected data can help identify gaps in knowledge and information about specific chemicals or highlight discrepancies in reported amounts compared to the top-down analysis of imports. It is anticipated that there may be significant discrepancies between the two approaches, given the need for chemical monitoring and reporting systems and licensing systems for more hazardous chemicals.

2.3 Chemical Import Statistics

The chemical import statistics, analyzed for the baseline years of 2019 – 2021, were sourced directly from the DCT division system called PC Trade (PC), which currently uses the 2017 version of the HS codes. Through a rapid analysis, the datasets covering the 13 chapters of interest, from chapter 28 to chapter 40, had a significant lack of data for the "Quantity" and "Unit" columns. Only 7.5% (356 of 4753 records) of the dataset had "Quantity" and "Unit" data values.

A major concern for the chemical import statistics was the amount of chemicals labeled "other" in the tariff codes. Such tariff codes do not provide any helpful information in describing the chemicals being brought into Pohnpei State. This stands as a substantial gap in the importation and monitoring of chemicals. For customs, the lack of technical capacity and discipline in capturing precise monetary values or exact imports of the imported chemicals also stands as a substantial gap. However, large importing companies tend to be better informed and more organized regarding their imports and the appropriate tariff numbers for their chemical imports.

2.3.1. General Observations

All chemical and chemical-related products originate outside of the FSM. The country has no production base for chemical or industrial products (aside from those used in construction, such as gravel, coral, and sand). Imports across Chapters 28 - 40 of the HS codes have steady trends. There were no significant spikes or deviations from the average within the baseline years.

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identifiers used by scientists, industry, and regulatory bodies. See: https://www.cas.org/support/documentation/chemical-substances/faqs

However, observations within specific Chapters reveal different trends throughout the baseline years. In addition, a significant number of imported products was also not specified within all the explored chapters. Those products were labeled as "Others" and often had significantly higher values than items that were described and had low values.

2.4 Pohnpei Chemical Import Analysis: Baseline Year 2019 - 2021

Across the baseline years of 2019-2021, the state of Pohnpei imported approximately USD 29 million worth of chemicals and chemical-related products. In 2020, Pohnpei imported the most chemicals; Pohnpei's imports of Plastics and associated goods were ranked highest throughout the nation. Despite SARS-CoV-2's halting effects on the global economy, the amount of chemicals imported into the FSM remained on a steady incline, with Pohnpei spending approximately $9.5 million in the 2021 baseline year.

Table 4: *Chemical import across the baseline years. Cost, Insurance, and Freight (CIF) values are reported in US dollars.*

Chapter	2019	2020	2021	Grand Total
28	316,417	204,274	62,603	583,294
29	91,877	119,408	98,643	309,928
30	1,250,291	1,484,410	1,316,134	4,050,835
31	24,201	26,576	15,575	66,352
32	684,473	648,689	721,502	2,054,664
33	493,586	433,544	647,313	1,574,443
34	1,097,143	1,359,548	1,209,157	3,665,848
35	149,143	230,433	121,445	501,021
36	13,426	6,091	58,617	78,134
37	22,073	48,997	183,153	254,223
38	334,900	493,985	515,609	1,344,494
39	757,559	3,695,782	3,500,721	7,954,062
40	166,134	1,556,934	1,088,244	2,811,312
Grand total	9,227,526	10,308,671	9,538,716	29,074,913

2.4.1 Where Quantity is Greater than 1 with Appropriate Unit Measures

Imported chemicals with a quantity value greater than one (1) but not paired with a unit of measure in the statistics were excluded. The unit of measure would provide insight into the weight or volume of the chemical or chemical-related imports.

The incapacity to utilize this information re-emphasizes the need for the current Customs system to define quantity and unit information for their Bill of Ladings (BL). The FSM's adoption of the Automated System for Customs Data (ASYCUDA) in 2023 should aid the Customs Department in ensuring their import statistics are captured going forward, including quantity and unity in the BL.

Fertilizers (Chapter 31), Rubbers and Articles Thereof (Chapter 40), and Paints, Pigments, and Dyeing Products (Chapter 32) are the only chapters with useful import statistics. Both "Unit" and "Quantity" data exist and could be used to develop insights into the nature of such imports. This indicates that imports are adequately declared, given that they deal with the FSM's large hardware and auto parts suppliers.

Table 5: *Chemical import across the baseline years*

Chapter	Unit	2019	2020	2021
Fertilizers	KG	75	65	118
	T	643	895	482
Rubbers and article thereof	NO	108,461	16,630	19,136
Tanning, Dyeing, pigments, paints,	L	33,661	30,235	36,708

2.5 Chemical & Allied Industries (Chapters 28 to 40)

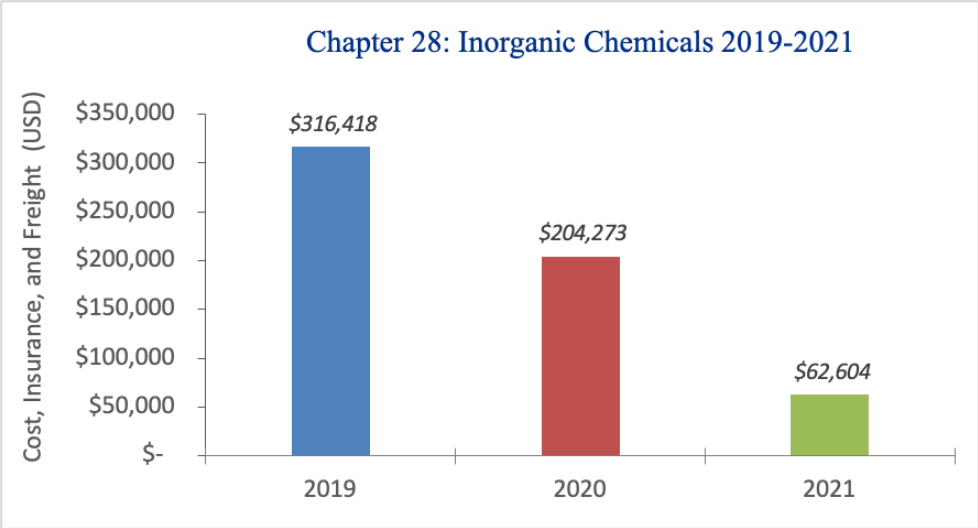
Chapters 28 to 40 of the HS code fall under the "Chemical & Allied Industries" section (Section 6). This section includes a wide range of chemical products and related materials, including inorganic chemicals, organic chemicals, pharmaceutical products, fertilizers, plastics, and rubber articles. The following segments delve into trend reporting for each chapter, measuring Cost, Insurance, and Freight (CIF) for the four states across the baseline years.

The HS's chapters are reviewed in ascending order, from 28 to 40, with an overview of the absolute trade values of imports for each chapter across the baseline year. Then, relative increases or decreases are looked at on a year-over-year basis. General trends are assessed for each chapter to examine if there are consistent or irregular patterns for certain chemicals within Pohnpei State.

2.5.1 Chapter 28: Inorganic Chemicals; Organic or Inorganic Compounds of Precious Metals; Isotopes

In 2020, Pohnpei witnessed a dramatic decline in its inorganic chemical imports across the baseline years. As demonstrated in the graph below (Graph 1), Pohnpei went from spending USD 316,418 in 2019 to roughly USD 62,604 in 2021.

The key chemical imports for Chapter 28, listed from most minor to most significant in terms of CIF value, include a variety of inorganic chemicals such as sodium hydrogen carbonate (sodium bicarbonate), oxygen, compounds of magnesium, phosphorus, soda lye or liquid soda in aqueous solution, chemically pure sugars other than common types like sucrose, lactose, maltose, glucose, and fructose, commercial calcium hypochlorite and other calcium hypochlorites, disodium sulfate, and argon.

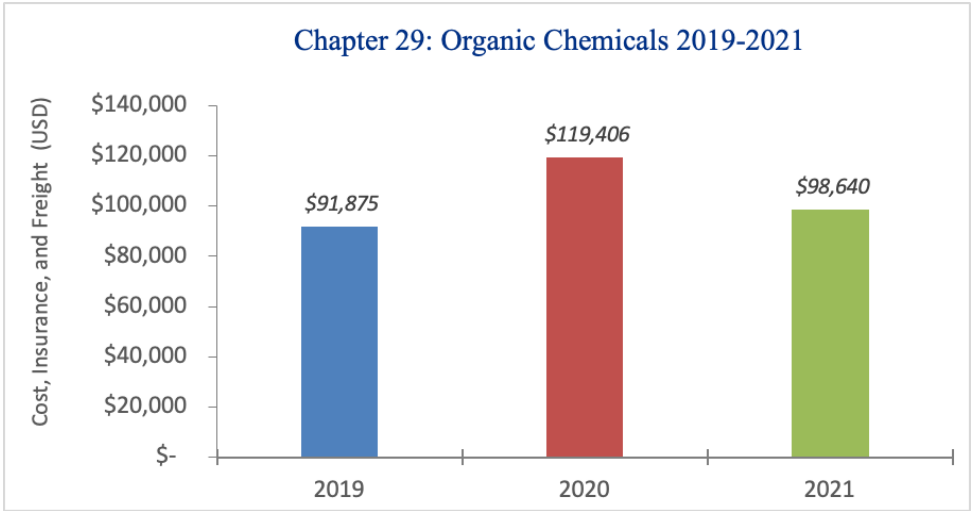


Graph 1: *CIF Value of Inorganic chemicals imported in Pohnpei State over the period 2019-2021. CIF values are reported in USD.*

2.5.2 Chapter 29: Organic Chemicals

Between 2019 and 2020, Pohnpei witnessed an increase of 29.9% in its organic chemical imports from USD 91,875 to $119, 406 USD. In contrast, Pohnpei saw a decrease in 2021, falling back down to $62,604 USD (a decrease of 17.3%, slightly above 2019's levels).

The imports under Chapter 29 are primarily composed of various chemical products, starting with a category labeled as 'Other,' which encompasses a range of chemical products not specified in the list. Chemicals in this category include acetone, malaria diagnostics test kit, and a group of chemicals labeled "other organic compounds." This other group includes multiple organic substances that are not listed separately. Medical imports such as penicillin, streptomycin, or other essential antibiotics derivatives are another prominent category of organic chemical imports. Hazardous imports are alcohol peroxides, ether peroxides, ketone peroxides, and their derivatives, which are highly reactive and can be explosive.

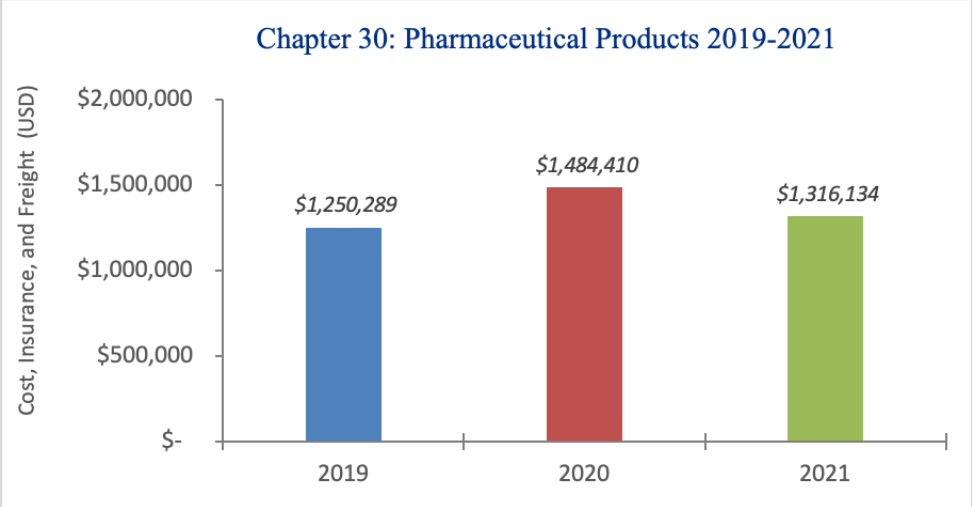


Graph 2: *CIF Value of Organic chemicals imported in Pohnpei State over the period 2019-2021. CIF values are reported in USD.*

2.5.3 Chapter 30: Pharmaceutical Products

In 2020, Pohnpei had the highest pharmaceutical imports, reaching $1,484,410 USD. By 2021, the import decreased by 11.3% to $1,3116,134 USD.
Chemical imports under Chapter 30 encompass various medical and healthcare-related products, such as:

- Adhesive dressings and other articles with adhesive layers, used for wound care.
- Vaccines for human medicine, essential for preventing infectious diseases but carry the risk of adverse reactions.
- First-aid boxes and kits, which contain various medical supplies for emergency situations.
- Opacifying preparations for X-ray examinations and diagnostic reagents, crucial for medical diagnostics.
- Products containing penicillin, streptomycin, or their derivatives, which are vital for treating bacterial infections but can trigger allergic reactions.
- Dental cements, other dental fillings, and bone reconstruction cements are necessary for dental and orthopedic procedures but may cause irritation or allergic reactions.
- Products containing antibiotics, essential for combating bacterial infections but carry the risk of antibiotic resistance and allergic reactions.
- Sterile surgical catgut, similar sterile suture materials, and sterile tissue adhesives for surgical wound closure, critical for surgical procedures but carry the risk of infection if not properly sterilized.
- Sterile laminaria and sterile laminaria tents are also included in this category.
- Gel preparations used as lubricants during surgical operations, physical examinations, or coupling agents between the body and medical instruments, are essential for minimizing friction and facilitating medical procedures.

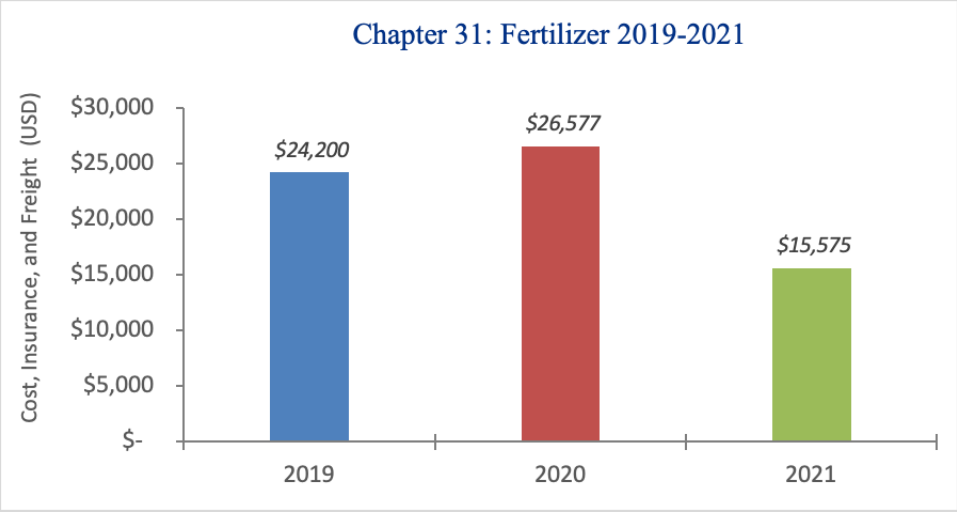


Graph 3: *CIF Value Pharmaceutical Products imported in Pohnpei State over the period 2019-2021. CIF values are reported in USD.*

2.5.4 Chapter 31: Fertilizers

Overall, the data reveals an inconsistent trend across the years. The spectrum of these products extends from unspecified mixtures to mineral or chemical fertilizers enriched with essential nutrients like nitrogen, phosphorus, and potassium. It also includes goods from this chapter available in tablet form or similar or in packages not exceeding 10 kg, as well as fertilizers derived from animal or vegetable sources. Coloring substances from plants and animals are also included in this category. Synthetic organic substances used in tanning chemicals and compounds comprising 35% or more diphosphorus pentoxide

(P_2O_5) are also included.

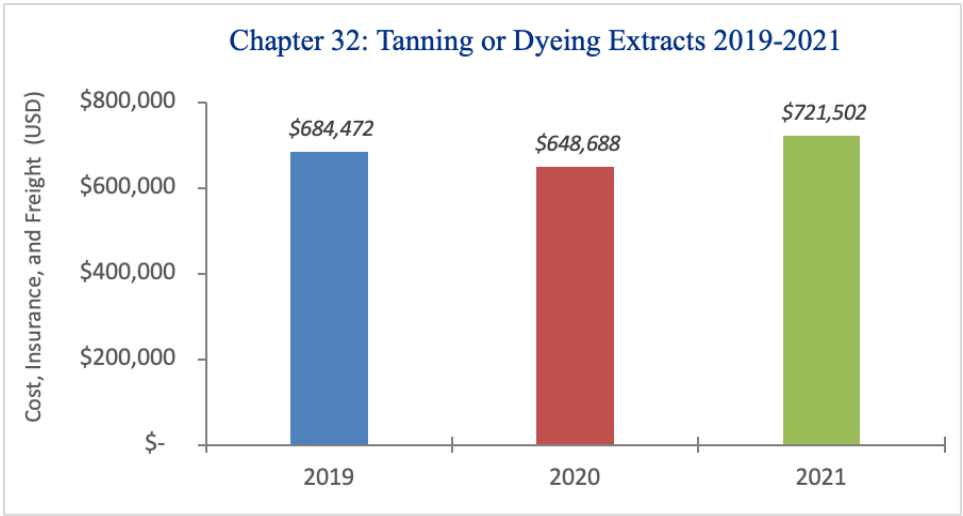


Graph 4: *CIF Value for Fertilizers imported in Pohnpei State over the period 2019-2021. CIF values are reported in USD.*

2.5.5 Chapter 32: Tanning or Dyeing Extracts; Tannins and Derivatives; Dyes, Pigments, and Other Colorants

Pohnpei's import value in this category decreased modestly, around 5.2%, from 2019 to 2020, followed by a slight increase of about 11.2% in 2021.

The top 10 imports under Chapter 32 include various products related to tanning, dyeing, pigments, and paints. 'Other paints and varnishes', which include enamels, lacquers, distempers, and prepared water pigments used for finishing leather, indicate the broad spectrum of paint-related products imported. 'Marine paints', used for coating ships and other marine structures, and products 'Based on acrylic or vinyl polymers', which include a wide range of paints, varnishes, and coatings, round out the list of top 10 imports under Chapter 32.



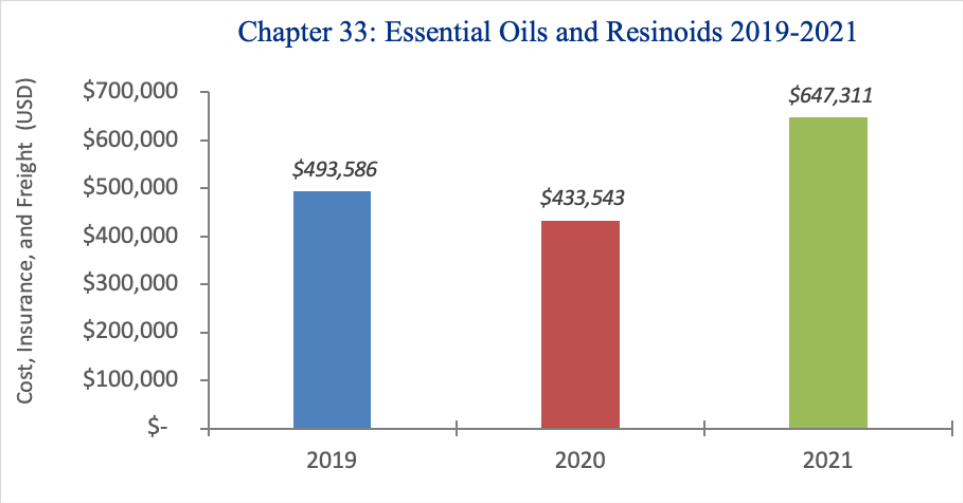
Graph 5: *CIF Value for products imported in Pohnpei State under the HS's Chapter 32 over the period 2019-2021. CIF values are reported in USD.*

2.5.6 Chapter 33: Essential Oils and Resinoids; Perfumery, Cosmetic, or Toilet Preparations

Across the baseline years 2019-2021, Pohnpei experienced a decrease in 2020 followed by a significant rebound in 2021. Between 2020 and 2021, this category of imports in Pohnpei increased by 49.3% increasing to $647,311 USD.

Essential oils 'Of peppermint (Mentha piperita)', 'Of lemon', and 'Of orange' are part of the list, highlighting the demand for natural products used in various industries such as food, cosmetics, and pharmaceuticals; however, this category also encompasses various personal and hygienic care products.

The 'Other' category likely includes a variety of products not fitting into specified categories, such as room deodorizers used to mask or eliminate unpleasant odors indoors. Manicure and pedicure preparations, including nail polishes and cuticle removers, perfumed bath salts, and other bath preparations, like bath oils and bubbles, are also commonly imported. Products such as eye makeup and dental floss are also included in this list.

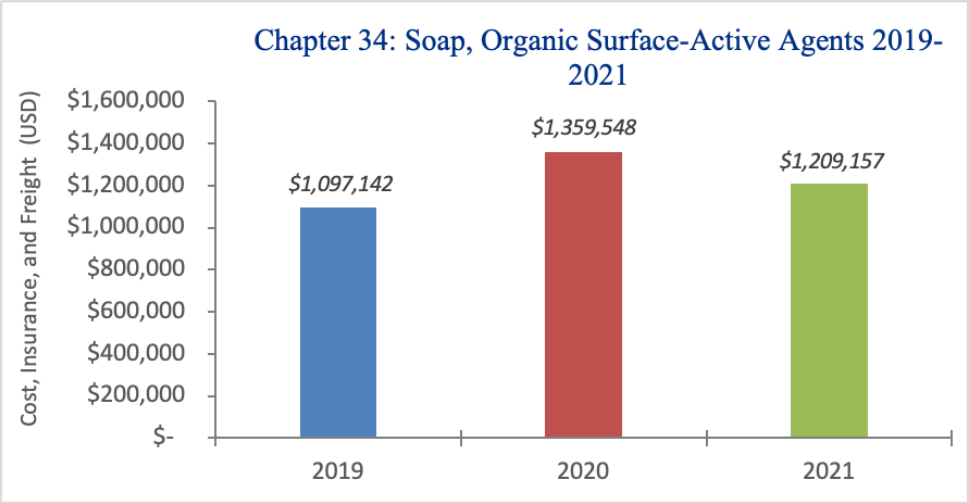


Graph 6: *CIF Value for Essential Oils, Resinoids, Perfumery, Cosmetic, or Toiletries Preparations products imported in Pohnpei State over the period 2019-2021. CIF values are reported in USD.*

2.5.7 Chapter 34: Soap, Organic Surface-Active Agents, Washing Preparations, Lubricating Preparations, Artificial Waxes, Prepared Waxes

Pohnpei saw fluctuations across the baseline years in this category of chemical imports. These chemicals saw an increase of around 23.9% in 2020 to $1,359,548 USD but experienced a decrease of about 11.1% in 2021, falling to $1,209,157 USD.

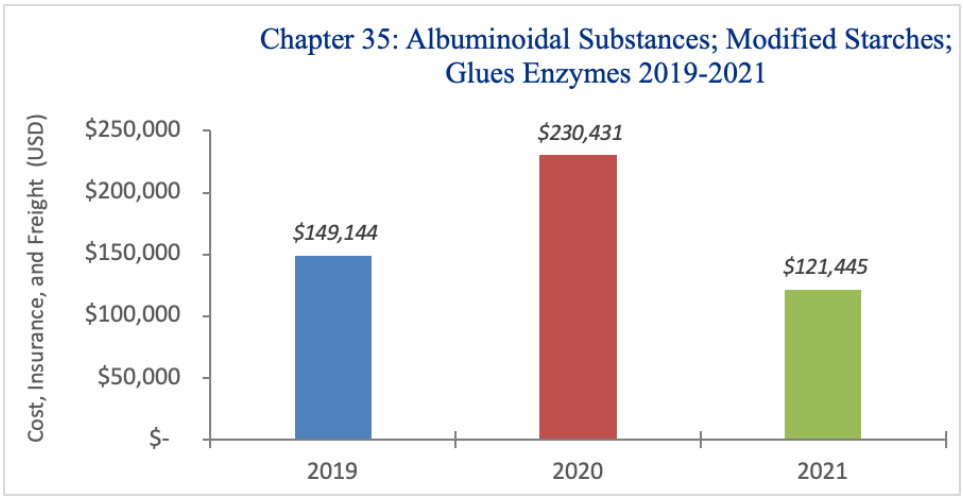
The chemical imports in this chapter encompass various textile preparations and products, as well as products used for washing the skin, in liquid, cream, or solid form. The list also includes cationic, nonionic, and anionic surface-active agents, essential components in detergents and cleaning products, but which may pose environmental hazards if not properly disposed of.



Graph 7: *CIF Value for Soap, Organic Surface-Active Agents, Washing Preparations, Lubricating Preparations, Artificial Waxes and Prepared Waxes products imported in Pohnpei State over the period 2019-2021. CIF values are reported in USD.*

2.5.8 Chapter 35: Albuminoidal Substances; Modified Starches; Glues; Enzymes

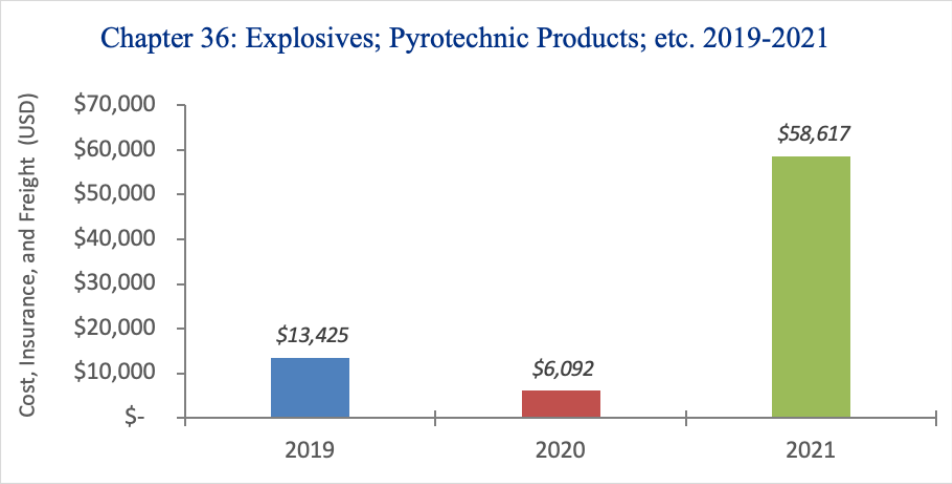
In 2020, Pohnpei's import value in this category spiked. With an increase of nearly 54.6% from its 2019 imports. In 2021, Pohnpei's imports dropped back below 2019 levels.



Graph 8: *CIF Values for products imported in Pohnpei State under the HS's Chapter 35 over the period 2019-2021. CIF values are reported in USD.*

2.5.9 Chapter 36: Explosives; Pyrotechnic Products; Matches; Pyrophoric Alloys; Certain Combustible Preparations

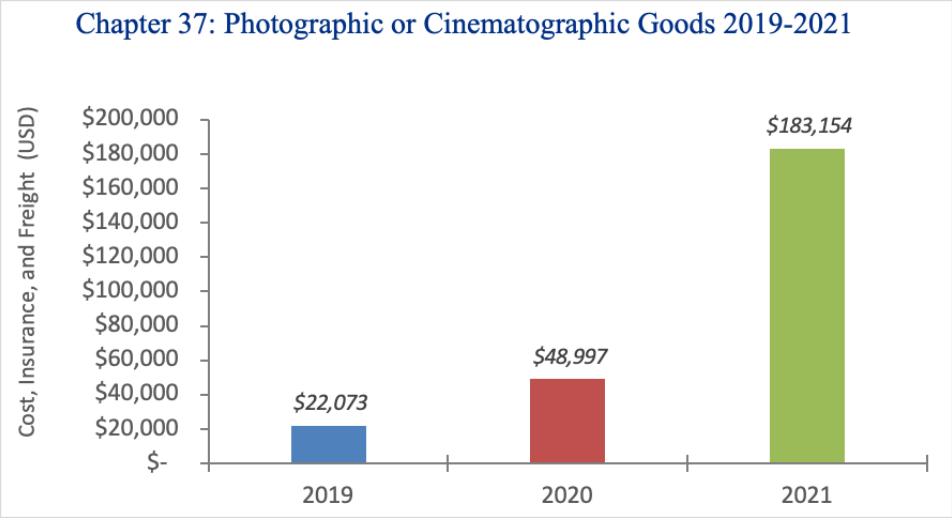
The importation of explosives, pyrotechnic products, matches, pyrophoric alloys and certain combustible preparations fluctuated dramatically over the baseline years. Dropping by half between 2019 and 2020, then increasing massively by 861% between 2020 and 2021.



Graph 9: *CIF Values for products imported in Pohnpei State under the HS's Chapter 36 over the period 2019-2021. CIF values are reported in USD.*

2.5.10 Chapter 37: Photographic or Cinematographic Goods

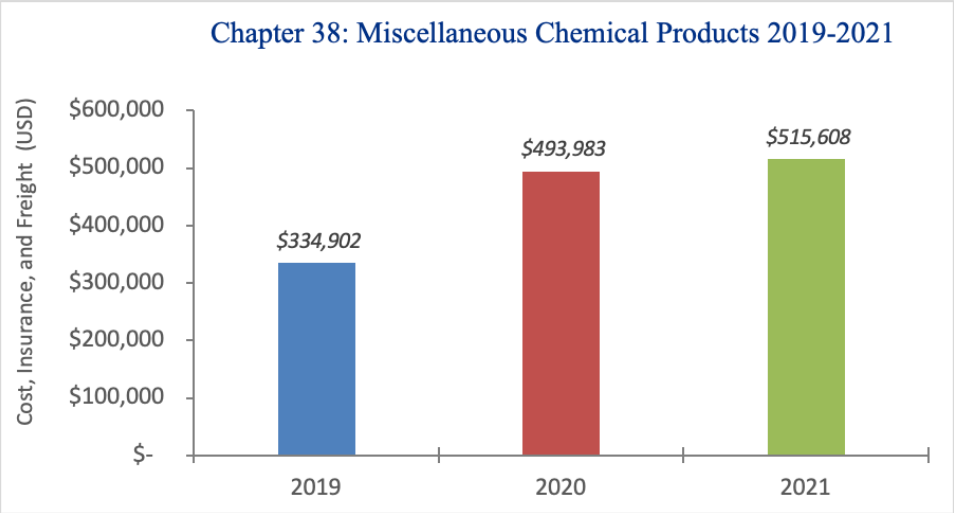
Pohnpei's imports of photographic or cinematic goods increased across each of the baseline years. Increasing first by 121% between 2019 and 2020, then again dramatically by 217.2% by 2021.



Graph 10: *CIF Value for Photographic or Cinematographic goods imported in Pohnpei State over the period 2019-2021. CIF values are reported in USD.*

2.5.11 Chapter 38: Pesticides and Miscellaneous Chemical Products

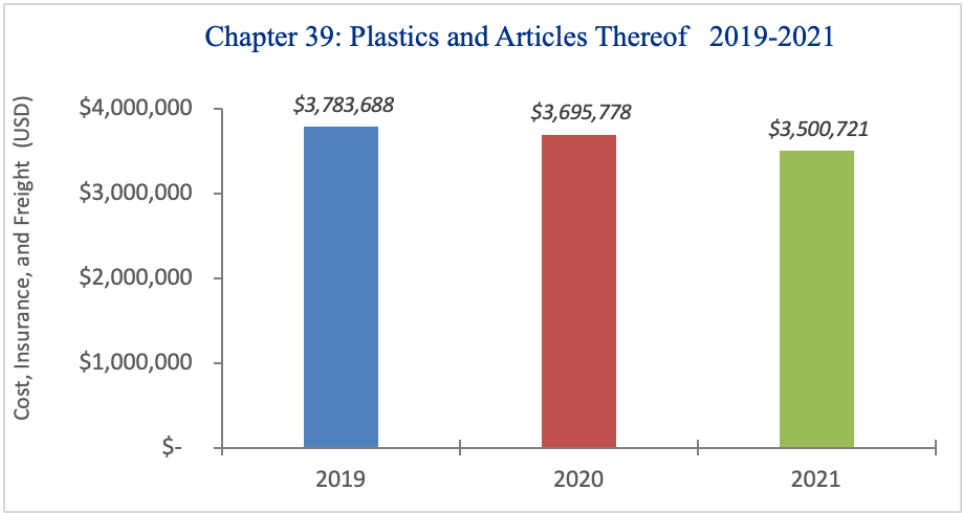
Pohnpei's import values increased each year with a regular annual growth rate for pesticides and related chemical products.



Graph 11: *CIF Value for Pesticides and Related Chemicals imported in Pohnpei State over the period 2019-2021. CIF values are reported in USD.*

2.5.12 Chapter 39: Plastics and Articles Thereof

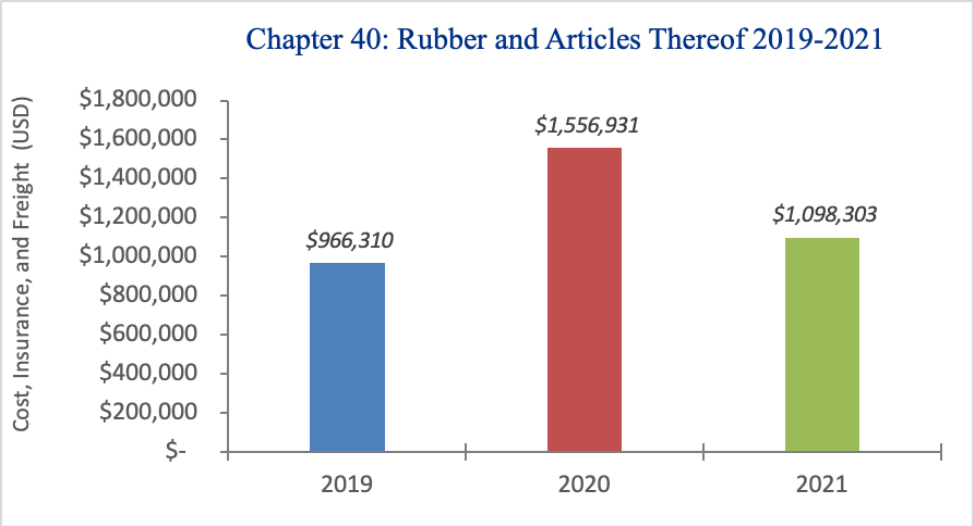
The import of plastics and articles thereof dropped by roughly 200K between 2019 and 2021. Overall, Pohnpei consistently maintained high import values, albeit with successive decreases.



Graph 12: *CIF Value for Plastics and Articles Thereof imported in Pohnpei State over the period 2019-2021. CIF values are reported in USD.*

2.5.13 Chapter 40: Rubber and Articles Thereof

Pohnpei reported high values of rubber and articles thereof across each of the baseline years. Spiking in 2020 with an import of $1,556,931 USD.



Graph 13: *CIF Value for Rubber and Articles Thereof imported in Pohnpei State over the period 2019-2021. CIF values are reported in USD.*

2.6 Summary of Chemical Imports in the Baseline Period (2019 – 2021)

2.6.1. Summary of Chemical import in Pohnpei State

The analysis of 4753 records of chemical import statistics across Chapters 28 - 40 of the 2017 version of the HS codes for the FSM reveals critical insights that have significant implications for the country's chemical management policy and profile. Currently, the CIF column is the only useful metric available, serving to determine the magnitude of the trade flow of chemicals for each chapter, each state, and for the 2019 - 2021 baseline years.

The COVID-19 pandemic likely had a significant impact on the imports of the top three chapters. For instance, the pandemic might have led to an increase in the import of pharmaceuticals (Chapter 30) due to the heightened demand for medical supplies, medications, and vaccines. Similarly, the demand for soaps and surface agents (Chapter 34) might have surged due to increased hygiene practices.

A summary of the top 10 imports under each chemical chapter was listed, and the expanded imports for each chapter can be referenced in the decem.cloud database. We included the top 10 imports (top 20 for Chapters 39 & 40) in section 3.9, with their import values for 2019, 2020, and 2021 in descending CIF values.

2.6.2 Gaps in Chemical Import Data for Pohnpei State

The current state of chemical import statistics presents several critical weaknesses that significantly hinder effective chemical management. Firstly, the 'Others' category in every chapter can be disaggregated, but doing so would require a considerable amount of time to determine which information is useful and relevant. Secondly, there is an absence of mandatory reporting for quantity and unit under the current PC Trade System, which is a significant limitation. Thirdly, while CIF data is routinely collected, it is challenging to disaggregate information based solely on CIF. This alone is insufficient to gauge importers' compliance level and detect counterfeit or unauthorized chemical imports. To effectively assess compliance and detect unauthorized or counterfeit imports, it is imperative to have detailed information on the chemical's characteristics, origin, manufacturer, quantity, packaging, and any accompanying certifications or documents.

Moreover, there are certain mismatches in the current PC Trade System between the description of a good and its tariff number assigned under the World Customs Organization's (WCO) 2017 version of the HS codes. This inconsistency can lead to challenges in accurately categorizing and regulating the imported chemicals. Similarly, the CoO is not a mandatory data field, which explains why approximately 75% of the analyzed data does not include it. This lack of mandatory reporting for essential data fields such as CoO, Quantity, and Unit severely limits the ability to perform a comprehensive analysis and effectively manage chemical imports. These weaknesses highlight the urgent need for revising the data collection and reporting requirements to ensure comprehensive, accurate, and useful information for effective chemical management.

3. Current Chemical Management Practices

In Pohnpei, FSM Customs and Office and Pohnpei EPA are responsible for the inspection and enforcement of regulations for chemicals that come into the state. All chemicals imported into Pohnpei must first be cleared by these two departments prior to transportation by government or private sector entities. Under Pohnpei's ship inspection regulations, EPA is the first to board ships that enter Pohnpei's port.[14] If there is an incident during inspection or if the inspection involves suspected health problems, EPA will contact health and quarantine.

EPA is responsible for inspecting chemicals but requires updated measures and regulations. Current chemical handling practices in Pohnpei by EPA are held to pesticide measures set in 1992 and 1995 which make no mention of hazardous chemicals.[15] Pohnpei currently lacks a storage method and penalties for illegal or confiscated hazardous materials. According to the Director of Pohnpei EPA, EPA currently lacks the capacity to store any chemicals. If materials are confiscated by EPA, the FSM national government or Pohnpei R&D assumes responsibility for the storage, disposal, and destruction. The national government, which is housed in Pohnpei, owns a storage facility and has previously confiscated materials; however, the state and national governments lack cooperative regulations concerning the transportation of these materials via public roads. Serious conflict exists between Pohnpei State and FSM as infringement of jurisdiction is a recurring issue.

Another serious challenge that Pohnpei must overcome is dealing with unlabeled, expired chemicals. Pohnpei State R&D owns a storage site located in Madolenihmw, which is managed by the Madolenimhw municipal government's Department of Public Works. Currently, thirteen drums of unidentified chemicals are stored there. Due to their dilapidated conditions and lack of testing capacity, the drums, dated 1999, have not been inspected to identify their content or determine their hazardousness.

3.1. Major Public and Private Sector Entities Involved in the Import and Use of Chemicals

3.1a. Pharmaceuticals

Pharmaceuticals are imported into Pohnpei primarily by the Pohnpei State Department of Health Services and private clinics. Pohnpei state has 5 dispensaries and 3 private clinics (Island Family Clinic, Medpharm, and Genesis). See Graph 3 for the CIF value for Pharmaceuticals in different years.

Pohnpei State Hospital

The disposal of used or expired chemical waste is mainly coordinated with the maintenance division and is collected and transported to the dump site in Dekehtik. In the past, pharmaceutical waste would be disposed of at the Pohnpei State Hospital incinerator; however, due to complaints about fumes from nearby residents, the hospital incinerator is no longer in operation.

3.1b Laboratories

Pohnpei Hospital Laboratory

Pohnpei State has a primary lab at the State Hospital and a secondary lab at the Kolonia Town dispensary. Private sector labs include Genesis, Family Health Clinic, MedPharm, and smaller private physician labs. Reagents are the most commonly used chemicals; however, potentially more hazardous chemicals are utilized in the microbiology labs.

[14]EPA
[15]EPA

Non-medical laboratories in Pohnpei are the Pohnpei EPA laboratory, which currently has a limited supply of chemicals, and the FSM-COM National Campus.

All the chemicals EPA possesses and utilizes in its lab are reagents, which are primarily used for environmental quality testing.

The FSM-COM National campus has a laboratory for instructional purposes. Unlabeled and harmful chemicals are stored in specific metal cabinets with signage to warn students and faculty of the hazardous chemicals in storage. Most of the unlabeled chemicals were brought into Pohnpei 20 or 30 years ago. COM-FSM currently lacks support with the safe disposal of strong acids, such as its high concentration of acetic acids, that are properly stored away from the rest of the standard chemicals used for instruction.

Image 2

3.1c Medical Waste

In Pohnpei, the standard disposal method for medical waste such as syringes, sharps, expired medicine, and laboratory waste was the Pohnpei State Hospital incinerator; however, the incinerator is currently not in operation. As a result, medical waste is collected daily and transported to the Pohnpei State Dump site in Dekehtik for disposal via the dump site's incinerator.

Equipment like X-rays contains hazardous components and emits radiation, safe disposal of such medical equipment in the FSM needs addressing. MedPharm operates a CT scanner that emits radiation and there exist disposal concerns for when the scanner becomes obsolete.

Pohnpei State Morgue

The morgue primarily uses formaldehyde and minor amounts of other chemicals for odor management from decomposition. Disposal methods for spilled chemicals during procedures are directly washed down the drain. Potential public health and environmental implications exist as a result of this practice as public wastewater treatment leads to the Litakika lagoon.

3.1d. Refrigerants

Both private and public sectors import and widely use refrigerants in Pohnpei. Ongoing Refrigerant and Air Conditioning (RAC) trainings are held to keep building local capacity in proper refrigerant handling and use due to its toxicity, flammability, and contribution to ozone depletion and climate change. The FSM College of Micronesia (FSM-COM) national campus, located in Pohnpei, is the only training center

in the FSM that offers a refrigeration and Air-Conditioning program.[16]

3.1e. Fuel and Petrochemicals

The only fuel company that operates in Pohnpei and throughout the FSM is the Vital FSM Petroleum Corporation (Vital). Vital imports and sells petroleum products to its customers in the FSM. Petrochemical products, however, are standard; anyone can import them into the FSM anytime. Petrochemical products such as plastics, fertilizers, detergents, and tires are readily available on shelves in all the islands.

3.1g. Fertilizers, Pesticides, and Fungicides

Fertilizers are imported into Pohnpei primarily through local vendors and the Pohnpei State Department of Resources and Development.

Fertilizers are stored in a cargo container in Madolenihmw (the same container mentioned above). The Division of Agriculture, under Pohnpei R&D, encourages citizens to use organic composts and fertilizers rather than relying on imported inorganic fertilizers. Using inorganic fertilizers can cause the soil to dry out and lose mineral substances.

The FSM-COM National campus, which is a large, developing, agricultural center for Pohnpei, holds no supply of potential pesticides or fungicides. Conscientious of the negative impacts that pesticides and fungicides can have on the environment, the college does not use pesticides or fungicides.

3.2. Legislations and Regulations

Pohnpei State EPA was established in 1992 by Act S.L. No. 3L-26-92. According to this Act, the EPA has the power to adopt, amend, and create regulations to safeguard and improve the environmental conditions related to health, welfare, and economic development. EPA has adopted 20 such regulations which possess the force and effect of the law when issued by the Administrative Procedures Act, Title 8 Chapter 1, which concerns:

- Earthmoving regulations
- Mining and dredging regulations
- Environmental impact assessment regulations
- Water supply systems regulations
- Pesticide regulations
- Sewage regulations
- Solid waste regulations
- Marine and freshwater quality regulations
- Air pollution regulations
- Groundwater regulations
- Hearing procedure regulations for the Board.[17]

For enforcement, EPA has the authority to solicit local law enforcement and other agencies under the

[16] FSM-RAC Technicians Capability Building in Collaboration with DECEM, UNEP and College of Micronesia-FSM. https://www.ozonactionmeetings.org/system/files/ir_session_1.4_-_gsp_training_at_the_national_level_bertoldo.pdf

[17] §1-109.

joint law enforcement agreements in Title 16, Chapter 2 of the Pohnpei State Code. Assistance may also be solicited from the Department of Land and Natural Resources, Department of Education, the Office of Social Affairs, the Office of Transportation and Infrastructure, the Pohnpei Transportation authority, local governments of the state and other public agencies and voluntary groups. [18]

Current laws and regulations concerning chemical and hazardous waste management include:[19]

- Solid Waste Regulation (30 March 1995)
- Drinking Water Regulations (effective 3 April 1995)
- Earthmoving Regulations (amended to 10 April 2008)
- Environmental Impact Assessment Regulations (effective 3 April 1995)
- Pesticide Regulations (effective 3 April 1995)
- Restaurant and Food Selling Places Regulations (effective 3 April 1995)
- Toilet Facilities & Sewage Disposal Regulations (effective 3 April 1995)
- Marine and Fresh Water Quality Standard Regulations (effective 3 April 1995)

[18] §2-103.

[19] No copies of these regulations are published online.

4. Area for Improvement – Recommendations

4.1. Database/Information Sharing

- It is crucial for all departments and organizations to maintain and update a comprehensive list of chemical products they procure and store.
- In addition to maintaining a database, it is also crucial that this information be easily accessible should it need to be called on.

4.2. Chemical Identification

- CAS numbers for all chemical products should be included in chemical inventory lists.
- Chemical identification procedures need to be more thorough and comprehensive. While reviewing chemical import logs, the category labeled “other” encompassed a notable amount of imports, affecting Pohnpei’s capacity to monitor the state's chemicals.

4.3. Labeling

- All labels on chemical products should be visible and legible for inspection when they enter the port in Pohnpei.

4.4. Transportation

- Clarification and regulation concerning chemical transportation must be adopted at both the state and national levels in Pohnpei to mitigate conflict and ensure safe handling.

4.5. Storage

- Each organization and department involved in chemical imports should have a clearly identified storage facility for chemicals.
- Each storage facility should include guidelines for housing and maintenance, specifically for units housing hazardous chemicals that can potentially become hazardous.
- Chemical inventories should also be created for facilities where multiple departments might share a storage location.

4.6. Disposal/Destruction

- Pohnpei requires a management plan for disposing of and destroying chemical waste in all its forms (i.e., solid, liquid, and gas). Comprehensive procedures that clearly identify how the state should handle chemical waste and who is responsible for disposing of and destroying that waste should be developed.
- Public dump sites, as well as the state leachate pond, should be evaluated and assessed. Effective monitoring and operations of these locations are crucial for preventing and mitigating adverse health and environmental impacts.

4.7. Enforcement

- Currently, the Pohnpei EPA only has regulations in place that involve confiscating banned chemicals. The EPA requires a more comprehensive set of regulations and enforcement procedures.

4.8. Monitoring and Evaluation of Chemical Management Practices

- In many instances, the state of Pohnpei lacks the human resources and technical capacity to handle, test, and monitor chemical substances in the state.

- In addition to updated chemical profile regulations, the state needs a comprehensive management plan. This plan should include a detailed outline for monitoring, handling, storage, and disposal of chemical and hazardous waste.

5. Conclusion

Pohnpei State has enacted legislation and established regulating agencies such as Pohnpei State EPA, DTI, and DHS to help safeguard both human and environmental health. Though legislation exists concerning this mandate to safeguard Pohnpei, major gaps still exist, specifically regarding chemicals and chemical waste management. The conflict over jurisdiction and responsibility between the state and national government creates unique circumstances within Pohnpei, which must be addressed. In addition to underdeveloped regulating procedures, Pohnpei state also lacks the human resources and technical expertise to effectively enforce and monitor chemical handling at the optimal level.