Board of Pesticides Control

Report to the 130th Maine State Legislature on LD 264 Resolve, Directing the Board of Pesticides Control to Gather Information Relating to Perfluoroalkyl and Polyfluoroalkyl Substances in the State

LEGISLATIVE REPORT FISCAL YEAR 2021



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I. Acronyms and Definitions

Adjuvant	A chemical added to a pesticide product to enhance or stabilize the		
/ Aujuvant	product's performance.		
BPC	Board of Pesticides Control		
CIASA	Constituents ineffective as spray adjuvants; the portion of an adjuvant that		
CIASA	is effectively equivalent to the inert/other constituents of registered		
	pesticide		
CSF	Confidential Statement of Formula		
DACF			
	State of Maine Department of Agriculture, Conservation, and Forestry		
DEP	State of Maine Department of Environmental Protection		
DFAS	Defense Financial Accounting Service		
EPA	U.S. Environmental Protection Agency		
FFDCA	Federal Food Drug and Cosmetics Act		
FIFRA	Federal Insecticide Fungicide and Rodenticide Act		
HDPE	High Density Polyethylene		
Inert	The constituents of a pesticide product that are not specifically acting to		
	control the pest. Synonymous with 'other' ingredients.		
LD	State of Maine Legislative Document		
MEPRLS	Maine Pesticide Enforcement, Registration & Licensing System		
OECD	Organization for Economic Co-operation and Development		
OPP	EPA's Office of Pesticide Programs		
OPPT	EPA's Office of Pollution Protection and Toxics		
Other	The constituents of a pesticide product that are not specifically acting to		
	control the pest. Synonymous with 'inert'.		
PFA	Primary Functioning Agent. PFAs are the term of art used to identify the		
	"active ingredient" in spray adjuvant products while simultaneously		
	avoiding confusion with the term "active ingredient". PFAs are the portion		
	of the spray adjuvant responsible for the effects of the spray adjuvant.		
PFAS	Per and poly fluoroalkyl substances		
Spray Adjuvant	A term used in this report to delineate the products sold separately from		
	registered pesticide products which function to enhance or stabilize the		
	performance of the pesticide. These products are frequently mixed with the		
	registered pesticide product at the time of application.		
TSCA	Toxic Substances Control Act		

II. Introduction

In 2021, the Maine Legislature passed LD 264, Resolve, Directing the Board of Pesticides Control to Gather Information Relating to Perfluoroalkyl and Polyfluoroalkyl Substances in the State. One of the two major provisions of the bill directed the Board of Pesticides Control (BPC) to amend its rules relating to the registration of pesticides and require submission of two affidavits. The affidavits address 1) the use of fluorinated high-density polyethylene containers for storing, distributing and packaging pesticide products and 2) the inclusion of perfluoroalkyl or polyfluoroalkyl (PFAS) substances in the formulation of the pesticide product.

The second provision directed the Board to gather information relating to PFAS substances with a specific focus on developing 1) the framework necessary to regulate fluorinated adjuvants, 2) the framework necessary to prohibit the distribution and use of pesticides and adjuvants containing PFAS substances, and 3) a feasible definition of PFAS adulteration in a pesticide.

This report summarizes the BPC activities and findings. Specifically, the report summarizes the implementation of the required affidavits; findings on what is needed to regulate spray adjuvants (and thus fluorinated spray adjuvants); findings on how to prohibit distribution and use of pesticide and adjuvant products containing PFAS; and findings on how to define PFAS adulteration in pesticide products.

A. Constraints and Demands on Resources

LD 264 was passed with no additional funding to support BPC activities relating to its implementation. The Department of Agriculture, Conservation, and Forestry (DACF) and EPA have committed PFAS related funds and multipurpose grant funding, respectively, allowing the development of key components originating from this resolve. At the time of this writing, approximately \$75,000 has been committed for web development for implementation of the required affidavits and collection and flagging of related product formulation information. An additional \$4,800 has been used to support a part-time student assistant (approximately 320 hours). Within the BPC, work on this resolve has extensively included the Director and the Pesticides Toxicologist, and also involved the Pesticides Registrar, the Policy & Regulations Specialist, and the Certification & Licensing Specialist. Meetings with personnel outside of the BPC office involved staff from EPA Region 1, DACF, DEP, and the Office of the Maine Attorney General. Additionally, this topic has been discussed at each of the 2021 meetings of BPC's public policy board.

B. Summary of Completed and Ongoing Activities

In response to LD 264, the BPC has performed the following activities further described in this report. Throughout the course of this project, staff have:

- developed affidavit language and consulted with the BPC's legal representation for appropriateness;
- researched, planned, and will now work with software programmers to add functionality to the existing registration platform to incorporate the PFAS affidavits starting with the 2022 registration year;
- added functionality of the existing registration platform to collect confidential statements of formula (CSF) for pesticide and, in the future, adjuvant products;
- collected information from other states on the registration of spray adjuvants;
- analyzed statutes, rules, and regulations from Maine and other states in order to identify mechanisms of gaining authority to regulate spray adjuvants;
- collected lists of registered spray adjuvants from those states that collect registrations on spray adjuvants;
- added/commissioned functionality of our existing registration platform to collect spray adjuvant registrations, fees, and CSF data;
- explored definitions of PFAS and PFAS adulteration;
- determined limits of BPC enforcement authority in cases of PFAS adulteration:
- communicated with pesticide repackaging entities in the state about repackaging activities related to the use of fluorinated HDPE containers in product distribution;
- communicated with DEP staff concerning overlap with LD 264 and LD 1503, An Act To Stop Perfluoroalkyl and Polyfluoroalkyl Substances Pollution;
- identified several currently registered pesticide active ingredients that meet the definition of PFAS established in LD 1503; and
- identified areas of concern for implementation of LD 264 due to ambiguity in interpreting the definition of PFAS.

C. PFAS and Pesticides

LD 264 focused on the potential nexus between pesticides and PFAS due to the detection of PFAS in one pesticide product utilized for mosquito control in Massachusetts.

Ultimately, it has been determined that the underlying pesticide formulation does not contain PFAS, nor does the HDPE container that it is packaged within. However, because the container underwent further fluorination treatment by a third party (to prevent container degradation), this process appears to be the source of PFAS compounds found in the sampled pesticide product. As a result, EPA is investigating container fluorination, possible leaching of PFAS, the conditions under which this is likely to occur, and the toxicological significance of the potential leachates.

The insecticide in question in Massachusetts is manufactured by Clarke Mosquito Control. The product is called Anvil 10+10 ULV. In 2018, BPC had one Clarke product registered under the name Anvil—Anvil 10+10 ULV. According to BPC distribution records this product appeared to have been purchased by an entity within Maine (Defense Finance and Accounting Service (DFAS) at Loring Air Force Base in Limestone, Maine), however following investigation, BPC staff have determined that the product invoice was paid by DFAS but shipped directly from Clarke to Altus Air Force Base in Altus, Oklahoma.

In 2021, BPC had two Clarke products registered—Duet Dual-Action Adulticide and Natular DT. Natular DT is a solid tablet packaged in a blister pack and is a ready-to-use larvicide applied directly to water. It is not to be applied via aerial application, and Clarke has indicated that it is not packaged in fluorinated HDPE containers. The sole purchase in Maine of Duet Dual-Action Adulticide was in 2019 by DFS at Loring Air Force Base, and the product was again shipped directly from Clarke to Altus Air Force Base.

Later in 2021, EPA was made aware of PFAS detected in another mosquito control product used in Maryland—Permanone 30+30—manufactured by Bayer. In response to this information, EPA applied its new 2021 internally validated oily matrix method to analyze three stored samples of mosquito control pesticide products (Permanone 30-30 and PermaSease 30-30) and determined that none of the tested samples contained PFAS at or above the Agency's method limit of detection.

It is important to stress that the initial and emerging studies of the Clarke Mosquito Control product links PFAS contamination to containers, not the pesticide formulation. The current science and testing around PFAS leaching due to fluorinated HDPE containers continues to evolve. The BPC staff are actively engaged on this broad topic with colleagues in state pesticide programs, EPA Region 1, and is routinely briefing the BPC board on developments at its monthly meetings.

PFAS detection in pesticide formulations is a whole new area of consideration, investigation, and response, beyond the current issues the Department has already been navigating related to PFAS impacted farms. Information will continue to emerge that will help shape and identify BPC's role related to PFAS. This report reflects BPC staff's current understanding of PFAS and pesticides, the applicability and limitations of current authority, and the applicability of parallel regulations.

III. Activities Related to Amending Rules

A. Affidavits

Section 1 of LD 264 directs the Board to conduct rulemaking to amend the requirements for pesticide product registration and collect affidavits relating to PFAS. These new affidavits will provide attestation to the following:

- 1) whether a perfluoroalkyl or polyfluoroalkyl substance is in the formulation of the registered pesticide
- 2) whether the registered pesticide has ever been stored, distributed, or packaged in a fluorinated high-density polyethylene container

BPC staff have worked with the web development company Stratosphere to allow incorporation of affidavits into the BPC's existing product registration software solution. Following completion of rulemaking and software development, these affidavits will be compulsory questions in the annual pesticide registration process required for lawful distribution of pesticide products in Maine. In addition, BPC staff are developing a new webpage that offers registrants information about these affidavits. Specifically, registrants are directed to the definition of PFAS established by LD 1503 and provided contact information for the Maine Department of Environmental Protection (DEP).

During the affidavit process pesticide registrants will answer the question, "is this product delivered in bulk to any vendors?" The MEPERLS database will flag affirmative entries for follow up by staff. Thus far, BPC staff have identified six vendors that may refill ("repackage") bulk pesticide containers in Maine. BPC staff are in the process of reaching out to these EPA registered Pesticide Producer Establishments in Maine to discuss this issue.

IV. Sale and Use of Fluorinated Adjuvants Used in Maine

The basic definition of an adjuvant is an ingredient that enhances the effectiveness of pesticide product ingredients or modifies the actions of those pesticide product ingredients. With pesticides, adjuvants are added to enhance the pesticide's performance. This report focuses on adjuvants sold separately from the registered pesticide products, those that are added to a tank mix prior to application. The term "fluorinated adjuvants" used in L.D. 264 is not defined, and it is not a term utilized in pesticide terminology. For the purposes of this report, staff have assumed fluorinated adjuvants to contain 1) primary functioning agents or 2) constituents ineffective as spray adjuvants (CIASAs) that could, under Maine's definition of PFAS (described in section VI below), be considered PFAS.

Adjuvant products are not currently regulated by any federal or State of Maine government entity. Determining if fluorinated adjuvants are definitively present in the state requires access to information to which the BPC is not currently lawfully entitled. Based on BPC staff research, the assumption is that fluorinated adjuvants are potentially available for sale and use in Maine. This assumption is based on the discovery that in some states adjuvants are registered and as many as 1,100 adjuvant products are registered annually. The EPA Master List of PFAS chemicals indicates approximately twenty of the inert/other chemicals known to occur in registered pesticide products may be available for use as ingredients in adjuvant products. BPC has not confirmed the presence of any specific fluorinated adjuvant products for sale or use in the State of Maine.

The BPC regulates pesticide products. Pesticide products must be registered by the EPA prior to being allowed on the market but only following an acceptable risk assessment. Pesticide products, as sold, are almost never composed of 100% pesticide active ingredient, most also include inert/other ingredients. The inert/other ingredients used as part of the pesticide product must also undergo a separate risk assessment prior to being allowed for use in registered pesticide products. This section does not apply to those adjuvants already assessed by EPA as part of pesticide products.

As stated, adjuvants are not currently regulated in Maine or in a majority of the states. Research indicates that nine states do regulate adjuvants and that two of those states require a statement of the complete ingredient list, otherwise known as a confidential statement of formula.

A. Identification of Fluorinated Spray Adjuvants

i. Definition of Spray Adjuvants

A spray adjuvant is added to a pesticide spray mixture to enhance the pesticide's performance and/or the physical properties of the spray mixture. Because spray adjuvants have no pesticidal properties (they do not control the pest), they are not required to be registered by the U.S. Environmental Protection Agency (EPA). However, if they are to be used on a food or feed crop, there must be an established tolerance or tolerance exemption for the adjuvant. Tolerances are the legal maximum amount of a chemical that are allowed to be on a food commodity at the point of sale. The process of establishing a tolerance involves understanding sufficient toxicology and chemical fate data in order to complete a risk assessment to demonstrate at what concentration exposure to the chemical would not cause undue harm to humans or the environment.

ii. Adjuvants Used on Food Crops

Spray adjuvant products to be used on food commodities are required to either have an established tolerance or be exempt from tolerance requirements as required by Federal Food, Drug and Cosmetic Act (FFDCA), available as per Code of Federal Regulations (CFR) 40 CFR 180. Tolerances are searchable in the CFR at: https://www.ecfr.gov/current/title-40 by entering the chemical name into the search function. The majority of inert ingredients can be found in 40 CFR 180.910-180.960.

iii. Adjuvants Used on Application Sites Other Than Food Crops

Spray adjuvant products not used on consumable goods are regulated under Toxic Substances Control Act (TSCA). Approval under TSCA requires EPA to review chemicals ensure that chemicals do not present unreasonable risk of injury to health or the environment when used as proposed. Details on how chemicals are assessed under TSCA can be found at: https://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca/regulatory-determinations-made.

There is significant overlap between the ingredients used for inert/other chemicals used in registered pesticide products and spray adjuvant products. One state lead agency reported that during the process of registering spray adjuvant products they cross-check each product's ingredients against EPA's Inerts Finder tool. (Available at https://ordspub.epa.gov/ords/pesticides/f?p=INERTFINDER:1:0::NO:1::, the Inert Finder is EPA's clearinghouse for all inert/other ingredients used in registered pesticide products.) That state above does not allow registration of spray adjuvant products that include chemicals missing from the Inert Finder lists. EPA's Inert Finder can be sorted by food and non-food uses.

Appendix B contains the response provided by the Office of Pesticide Programs (OPP) at EPA to questions about adjuvants and required risk assessments. In the response, EPA indicates that during pesticide registration OPP includes all chemicals in the final product formulation and all chemicals mentioned on the product label into the registration risk assessment.

At present, the scope of the Board of Pesticides Control's regulatory authority is the distribution and use of pesticides.

B. Results from Survey of Other States

To better understand spray adjuvant regulation, BPC staff researched the regulatory authorities and processes in other states. States were contacted by direct email and asked a series of questions; additionally, states were queried with a survey distributed via the Association of American Pesticide Control Officials (AAPCO).

Several states responded and provided the following information. Arkansas provided an Excel spreadsheet of all adjuvants currently registered in the state of Arkansas. California was unable to provide any information due to a lack of resources to check the confidential statements of formula for all the adjuvant products to determine if the state had any adjuvants with PFAS, and additionally because the department is unsure if they would be able to provide this confidential business information. Idaho noted that their

new database program requires actives/principle functioning agents to be listed when registering products; however, this is confidential information. They also stated that they would reach out again once they have devised a list of adjuvants registered in Idaho. Utah provided a way for BPC staff to find a list of registered adjuvants in the state of Utah on their state website. Appendix C contains the complete lists of spray adjuvant products registered in Arkansas, Tennessee, and Washington (these are the only states providing lists by the survey deadline).

Washington provided resources to determine a list of adjuvants registered in the state that have been added to the Washington State University website, Pesticide Information Center OnLine (PICOL). This is the official repository of pesticide labels registered in both Washington and Oregon. The list is not currently updated with a full list, but the internal database for Washington indicates there are about 870 adjuvants registered. Full text of how to navigate Washington's adjuvant registration page is provided as an excerpt of an email in Appendix D.

Requirements of each state's program is available in Table 1. These details include requirements and details for spray adjuvant registration including: registration fee per product, registration period, copy of product label, copy of confidential statement of formula, and a safety data sheet.

Table 1. Requirements from the nine states that regulate spray adjuvants as pesticides. Note: States that require EPA confidential statement of formula (EPA Form #8570-4) for all pesticides (not spray adjuvants) are as follows: California, Colorado, Florida, Hawaii, and New York.

State	Application for Registered Pesticides	Registration Fee per product (\$)	Registratio n Period (years)	Copy of Product Label	Copy of Spray Adjuvant Confidential Statement Formula (CSF)	Safety Data Sheet (SDS)
Arkansas	Yes	250	1	Required only upon request	Required only upon request	Required only upon request
California	Yes	1,150 for initial registration and annual renewal fee	1	6 copies, and copy of EPA approved label and letter unless product is exempt		
Idaho	Yes	160	1	Yes	Yes, along with efficacy data	Yes
Kentucky	Yes	250	1			

Mississippi	Yes	200	1	Yes (active ingredients & percentage)		
Tennessee	Yes	200	1			
Utah	Yes	195	1	Yes		
Washington	Yes	650	2	Yes	Yes	Yes
Wyoming	Yes		1			

C. Methods for Identifying Specific Pesticide and Spray Adjuvant Ingredients as PFAS

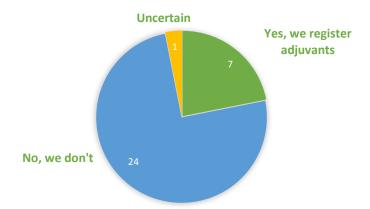
BPC has not identified any specific spray adjuvants as containing PFAS for several reasons. First, what chemicals fit the state's definition of PFAS have yet to be finalized by the Department of Environmental Protection (DEP), and secondly, BPC is waiting for the release of a software add-on on EPA's CompTox Dashboard that will allow us to easily compare the compounds listed as adjuvant ingredients to the chemical structure established by DEP. Once there is additional guidance from DEP and a webpage update from EPA, BPC will be able to use qualifying chemical structures established by DEP as search criteria in the CompTox Dashboard and cross reference those chemicals to the potential ingredients in spray adjuvants identified by searching the relevant state and federal adjuvant databases. EPA estimates the CompTox Dashboard add-on to be available to the public starting around December 2021-January 2022.

BPC has initiated the restructuring of the MEPRLS database to collect confidential statement of formula forms (CSF) for pesticides to be registered in the 2022 registration year. Should spray adjuvants become regulated by BPC, adding the functionality for collecting CSF information for spray adjuvants would not be a significant obstacle.

D. State Regulatory Agency Adjuvant Survey Results

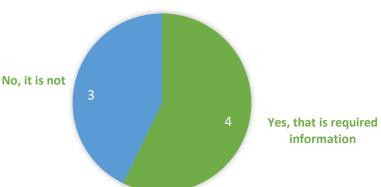
Through the American Association of Pesticide Control Officials (AAPCO), a national organization representing state lead agencies responsible for pesticide regulation, BPC asked other states a series of questions about spray adjuvant registration. The survey yielded results from 32 states. Most of the responses indicated that spray adjuvants are not included in pesticide programs' responsibilities - see pie chart below.

Survey Responses Asking State Pesticide Programs: Does Your State Regulate Adjuvants?



Survey responses provided contact information from the state lead agencies that regulate adjuvants and, in some cases, lists of registered spray adjuvant products were also provided. For the states registering spray adjuvants, most do not perform risk assessments on the products. Several states indicated that they review the labeling of the product. The labeling review simply matches the product to the types of claims that can be made for that type of product and ensures no misleading statements are present.





The survey additionally asked states if ingredient information was collected. There are two aspects to this: states can collect 1) only "active ingredient" information and require it to be present on the label or 2) all product constituents CSF. To avoid confusion during registration, some states use differing terminology to differentiate between pesticides and spray adjuvants. Some spray

adjuvant registrations use the term "primary functioning agents (PFA)" instead of "active ingredient." The PFAs are required to appear on labels in some states, similar to how active ingredients are required on pesticide labels. In some states, ingredients are reviewed for accuracy, and the ingredients are compared to EPA's Inert List. All compounds on EPA's Inert List have been assessed for risk enabling manufacturers to include the compounds in pesticide product formulations. The Inert List is publicly available, but the specific inert ingredients found in a pesticide product are not. Two of the four states appear to collect the CSF. None of the states indicated that they prohibit certain adjuvants.

The purpose of the survey was to gather from states as much information on regulating spray adjuvants as possible. While much of the information ended up being redundant with the information gathered by directly emailing state lead agencies, confirming that most states do not register spray adjuvants was helpful.

V. What is Needed to Regulate Fluorinated Spray Adjuvants?

A. Authority

To determine what is needed to regulate spray adjuvants, the BPC researched authorities necessary for adding spray adjuvants to regulated products. This required an investigation into if other states regulate spray adjuvants and if those states require adjuvants to be registered as pesticides. The following nine states regulate spray adjuvants as pesticides: Arkansas, California, Idaho, Kentucky, Mississippi, Tennessee, Utah, Washington, and Wyoming. To determine how these states regulate spray adjuvants as pesticides, the BPC looked at each state's statutory definitions (Table 2).

Table 2. State statutory definitions relating to pesticides and spray adjuvants.

State	Statute	Definition
Arkansas	2012 Arkansas Code Title 2 - Agriculture Subtitle 2 - Agronomy Chapter 16 - Plant Disease and Pest Control Subchapter 4 Pesticide Control 2-16-403 - Definitions	"Spray adjuvant" means any wetting agent, spreading agent, sticker, deposit builder, adhesive, emulsifying agent, deflocculating agent, water modifier, or similar agent intended to be used with any other pesticide as an aid to the application or to the effect thereof, and which is in a package or container separate from that of the pesticide with which it is to be used

	AR Code § 2-16-403 (2012)	"Active ingredient" means any ingredient which will prevent, destroy, repel, control, or mitigate pests or which will act as a plant regulator, defoliant, desiccant, or spray adjuvant "Pesticide" means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pests; any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant; and any substance or mixture of substances intended to be used as a spray adjuvant.
Kentucky	KRS 217.544(26)	"Pesticide" means any substance or mixture of substances intended to prevent, destroy, control, repel, attract, or mitigate any pest; any substance or mixture of substances intended to be used as a plant regulator, defoliant, or desiccant; and any substance or mixture of substances intended to be used as a spray adjuvant.
	KRS 217.544(31)	"Spray Adjuvant" means any wetting agent, spreading agent, sticker, deposit builder, adhesive, emulsifying agent, deflocculating agent, water modifier, or similar agent intended to be used with any other pesticide as an aid to the application or to the effect thereof, and which is in a package or container separate from that of the other pesticide with which it is to be used.
Wyoming	WY Stat § 35-7-354 (2018)	"Pesticide" means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pests; any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant; and any substance or mixture of substances intended to be used as a spray adjuvant.
Maine	Title 22. Health and Welfare Subtitle 2: Health Part 3: Public Health Chapter 258-A: Board of Pesticides Control 1471-C. Definitions	"Pesticide" means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant. "Pesticide dealer" means any person who distributes limited or restricted use pesticides.

B. Budget Considerations

In a third query, BPC staff sent an email to states that regulate adjuvants to inquire about the staffing demands of spray adjuvant registrations. There is considerable variation in staffing between the states that handle spray adjuvant registrations. These differences parallel the thoroughness of review the spray adjuvants are given. For example, in Washington, each ingredient is verified against EPA's list of reviewed inert ingredients. The spray adjuvant

program demands greater resources as compared to those states that simply collect registration fees and no other documentation. The state responses are summarized in Table 3.

Table 3. State programmatic costs for spray adjuvant registration administration from state programs registering spray adjuvants.

State	Program Cost Description Email Responses
Arkansas	The Arkansas Department of Agriculture, Pesticide Section has 2 employees that handle registration reviews for Adjuvants. 1 Program Manager and 1 Program Coordinator.
Kentucky	We have one staff member that works as our Product Registration Coordinator. Her supervisor is available for questions that may arise on label reviews and there are 3 of us that are involved in 24(c) and Section 18 requests.
Mississippi	Currently, I [Branch Director, Bureau of Plant Industry] am the only person who reviews adjuvants in Mississippi. I have an assistant who helps with registrations, but she does not review adjuvants.
Utah	We have one FTE in pesticide registration, which handles all that you mentioned in your email to me [adjuvant registration, regulation, review process, etc.]. Her job classification is Program Specialist. We don't review EPA registered products. Adjuvants and 25(b)'s get a review looking for key words/terms that I have given her. If she sees them, then I review the label. She also makes sure that 25(b)'s meet the EPA Label Review Manual's requirements.
Washington	Entire registration staff currently consists of 7 people 2 pre-registration/helpdesk, 4 registration specialists 1 registration supervisor that also performs registrations
	Review/Registration Process: We currently have 15,500 pesticides registered, and of these 895 (5.8%) are spray adjuvants. Washington state regulates spray adjuvants as pesticides. (This same staff also maintains and registers fertilizers—we have about 10,000 registered currently.) Spray adjuvants are our most difficult and most time-consuming registration type. There is no federal oversight, so all the review is done within our program. We also require
	the complete formula to be submitted, which can be challenging if a registrant is using a 100% repack of someone else's "proprietary" formula. We also have difficulties getting an acceptable label that meets WA state laws and rules. You probably also know that there are only a few states that register spray adjuvants—and that WA and CA do the most intensive review. California review is data focused, and Washington state review is label focused.
	We do not allow any adjuvant to be used aquatically unless data is submitted. In this case, everything gets sent to our agency toxicologist for his review and approval. I have heard that most spray adjuvant registrants will get their product approved in WA and CA, and then will submit them to other states. The other states (knowing that they passed the test in WA and CA) will register without much review.

Estimates of FTEs:

.10 FTE for Pre-registration/help desk: time spent making sure application is complete (confidential statement of formula, safety data sheet.) Staff are Customer Service Specialists

FTE for Registration: application review, proper labelling, verifying ingredients, chasing down the complete formula, corresponding with registrants, component suppliers, manufacturers. Staff are Senior Registration Specialists .05 FTE for Tox review. Staff is a Senior Toxicologist

Total is about 1.15 FTE for us. I think it gives you a good flavor that spray adjuvants at 3.5% of our total (pesticide and fertilizer) registrations requires over 16% of our staff resources.

Wyoming

Department only has one person designated to product registration.

In sum, as modeled by states, spray adjuvants may be regulated by: 1) creation of a statutory and regulatory rubric that allows for adjuvants to be regulated by the controlling pesticide agency, including key definitions and collection of fees equivalent to pesticide registrations; 2) collecting spray adjuvant information in a manner similar to the pesticide registration process; and 3) requirement (by some states) of copies of confidential statements of formula. The degree to which states review pesticide product registration and adjuvant registration applications is directly dependent upon the availability of dedicated staff. Maine has dedicated 0.75 FTE to pesticide product registration, and the BPC is currently in the process of hiring an additional full-time FTE to better address existing registration and water quality monitoring responsibilities. Any additional staff time required for adjuvant registration application review will be additive to existing responsibilities and it should be noted that some states dedicate staffing for this purpose.

Should Maine require registration for the approximately 870 spray adjuvants registered in Washington State, implementation would likely require at least one FTE to process new applications. The increased staff demand depends on the extent of the review required. Registration of adjuvants will add to the inspection workload, referrals to the registration specialist, and follow up with companies.

If adjuvants will be registered and defined as pesticides, then registration will be subject to registration requirements for pesticides such as label review unless the statute specifically exempts spray adjuvants from label review. Review will require time and likely follow up with companies regarding label and CSF deficiencies.

VI. A Feasible Definition of PFAS Adulteration

For BPC to enforce regulations specific to PFAS adulteration, there first needs to be an established definition of PFAS. Further, established and efficacious methods must also be available to detect the presence of PFAS for enforcement purposes.

A. Variety of Possible PFAS Definitions

BPC staff explored a variety of different PFAS definitions. Appendix E contains a list of alternative definitions for PFAS categorization that were discovered in this process. However, the BPC public policy board has moved to adopt the PFAS definition established with LD 1503 (http://www.mainelegislature.org/legis/bills/getPDF.asp?paper=HP1113&item=5 &snum=130), hereafter referred to as the "State's definition." The State defines PFAS as "one fully fluorinated carbon"; this definition is similar to several PFAS definitions from relevant authoritative bodies (e.g., EPA's Office of Pollution Prevention and Toxics and Organization for Economic Co-organization and Development (OECD), but it is not precisely the same. The state's definition includes a greater variety of compounds than the definition used by BPC's federal counterpart.

LD 1503 requires manufacturers of products with intentionally added PFAS to report the presence of those substances in those products to DEP beginning in 2023, and those products may not be sold after 2030, with limited exceptions. Adopting the definition established in LD 1503 will aid harmonization of State rules. In addition to being subject to LD 264, pesticide products are also subject to the reporting requirements of LD 1503. Given the broad reach of LD 1503, compliance will be aided by using a singular definition. To further assist compliance, BPC is communicating with pesticide registrants regarding their obligations under LD 1503.

i. Enforcement Limitations

Currently, there is not a suite of methods available that enables testing for all PFAS in pesticide products. The delegated enforcement authority granted by the cooperative agreement with EPA demands properly executed and repeatable sample testing methodologies. In the fall of 2021, EPA released approved test methodology suitable for PFAS in oily-based pesticide products. This new method, an adaptation of EPA method 537.1, identifies 28 unique PFAS and is available at:

https://www.epa.gov/system/files/documents/2021-09/epa-pfas-method-in-oil.pdf. Hence, while BPC can collect affidavits regarding PFAS during the registration process, there currently exists only limited testing capabilities to detect the presence of the compounds in actual pesticide products.

There are somewhere between three to 190 constituents currently in pesticide products and adjuvants that may become classified as PFAS under the new definition referenced in LD 1503. Their presence is currently legal, but should they be become State prohibited, enforcing against them may prove to be difficult. One approach to establishing their presence could be following up on CSF records submitted to the BPC. The other approach, analytical testing, is more difficult for several reasons. Current analytical capabilities could only identify 28 of the 12,039 PFAS known to exist. Furthermore, even if it was possible to analytically identify all known PFAS, enforcement would be prevented due to a lack of regulatory allowable limits for each of the compounds. Given the background concentrations of PFAS found in many media, allowable thresholds need to be set before adulteration could be defined for enforcement purposes.

ii. Regulating PFAS As a Class

One approach to accommodate the uncertainty associated with this large class of chemicals has been to treat all PFAS as one class. While this is a simpler and seemingly easier approach, it is not consistent with current chemical regulations which are based on risk. Lumping PFAS into a single group ignores that they are likely to have differing effects in the body as well as differing movement through the environment. In Vermont, this approach was assessed but not endorsed because of the lack of toxicological data and lack of test methods for all the potentially regulated compounds, among other factors (https://dec.vermont.gov/sites/dec/files/PFAS/20180814-PFAS-as-a-Class.pdf).

Pesticide active ingredients are described in published literature at a level of detail not seen for thousands of PFAS chemicals, and many of the concerns surrounding PFAS are addressed as part of the pesticide registration review process. For pesticide registrations, there is publicly available information that describes toxicity and environmental fate in a way not seen for most PFAS. For example, a concern with PFAS is persistence in the environment—the amount of time it takes a pesticide to break down in the environment is required information for every pesticide registration. Of the federal laws that regulate chemicals, the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) that regulates pesticides is more restrictive and transparent than the Toxic Substances Control Act (TSCA) that regulates general and industrial chemicals, like PFAS.

iii. Federal Approach to Adulteration in Pesticides

Currently, pesticide registrants are required (under FIFRA Section 6(a)(2)) to submit information to EPA when they discover or are made aware of PFAS in their products. This requirement under FIFRA stipulates manufacturers and registrants must report to EPA any known adulteration issues. PFAS are classified as adulterants because EPA has indicated 'any level of PFAS to be potentially toxicologically significant' in pesticide products. Therefore, when pesticides contain any amount of PFAS, reporting due to product adulteration is triggered under 40 CFR 159.179(b)(2). Adulteration by contaminants and impurities under FIFRA is set with the following criteria from 40 CFR 159.179(b):

- (1) Quantities greater than 0.1 percent by weight (1,000 parts per million).
- (2) Quantities that EPA considers, and so informs registrants, to be of toxicological significance.
- (3) Quantities that the registrant considers to be of toxicological significance.
- (4) Quantities above a level for which the registrant has information indicating that the presence of the contaminant or impurity may pose a risk to health or the environment.
- (5) Quantities that a person described in § 159.158(a) has informed the registrant is likely to be of toxicological significance.

VII. What Is Necessary to Prohibit Distribution and Application of Pesticides & Adjuvants Containing PFAS?

A. Current state and federal laws

i. Pesticides

Current Maine law allows the BPC to collect CSF information for pesticide products as part of the annual registration process. Assessing each product against a list of prohibited PFAS could occur once the MEPERLS development work is completed. The newly enacted affidavits, in combination with the new CSF submission requirements, provide a mechanism to identify all pesticide products with intentionally added PFAS.

ii. Spray adjuvants

Currently, Maine does not regulate spray adjuvants. Authority to the state to regulate spray adjuvants would need to be established by the Legislature. A mechanism used in other states is to re-define pesticides in a manner that specifically brings in spray adjuvants. A clear statement of prohibition of PFAS chemicals in spray adjuvant products would further be required to create a prohibition of PFAS intentionally added to spray adjuvant products.

iii. Containers

Current state and federal law allows the use of HDPE containers that have been fluorinated in many applications, including for pesticide and spray adjuvant packaging. EPA has asked pesticide companies to voluntarily stop this practice and to seek alternative packaging. Certain products have been pulled from shelves and none of the products associated with PFAS adulteration from containerization are available on the market. The newly enacted affidavits identify pesticide products contained in fluorinated HDPE containers. A clear statement prohibiting the use of fluorinated HDPE containers at any stage of pesticide product storage would be required to prohibit the use of these containers.

B. Related State Laws

LD 1503 will prohibit PFAS chemicals as intentionally added components in pesticides starting in 2030. However, DEP may allow for a product with intentionally added PFAS to be sold if such product's use of PFAS is designated as "unavoidable" by DEP.

For registered pesticides, the prohibition of distribution of items containing intentionally added PFAS, as detailed in LD 1503, would also effectively ban use of the same in Maine unless DEP were to find their use "unavoidable." If sale is prohibited, however, pesticide

registration could not occur, and under Maine State law, all pesticides must be registered in order to be lawfully used.

Helpful Resources:

Spray Adjuvants-

Winand Hock, PH.D., Pennsylvania State University https://extension.psu.edu/spray-adjuvants

PFAS Definitions-

Office of Pesticides Programs page on PFAS in pesticide packaging: https://www.epa.gov/pesticides/pfas-packaging

OECD recent publication: https://www.oecd.org/chemicalsafety/portal-perfluorinated-chemicals/terminology-per-and-polyfluoroalkyl-substances.pdf

PFAS General-

OECD Portal on Per- and Poly-fluorinated Chemicals https://www.oecd.org/chemicalsafety/portal-perfluorinated-chemicals/

Advance Notice On The Regulation Of Perfluoroalkyl, Polyfluoroalkyl Substances (Pfas) As A Class. Vermont Agency Of Natural Resources Department Of Environmental Conservation Drinking Water And Groundwater Protection Division. August 14, 2020. 11pp. https://dec.vermont.gov/sites/dec/files/PFAS/20180814-PFAS-as-a-Class.pdf

Bulk Pesticide Distribution-

EPA: A two-page brochure on refilling issues with the container and containment rule is available at: https://www.epa.gov/sites/default/files/2015-05/documents/ccrule-brochure.pdf

APPROVED CHAPTER
JUNE 21, 2021 83
BY GOVERNOR RESOLVES

STATE OF MAINE

IN THE YEAR OF OUR LORD TWO THOUSAND TWENTY-ONE

H.P. 185 - L.D. 264

Resolve, Directing the Board of Pesticides Control To Gather Information Relating to Perfluoroalkyl and Polyfluoroalkyl Substances in the State

- Sec. 1. Board of Pesticides Control to amend rules relating to registered pesticides. Resolved: That the Department of Agriculture, Conservation and Forestry, Board of Pesticides Control shall amend its rules governing the registration of pesticides in the State to require manufacturers and distributors to provide affidavits stating whether the registered pesticide has ever been stored, distributed or packaged in a fluorinated high-density polyethylene container and to require manufacturers to provide an affidavit stating whether a perfluoroalkyl or polyfluoroalkyl substance is in the formulation of the registered pesticide.
- Sec. 2. Board of Pesticides Control to gather information relating to perfluoroalkyl and polyfluoroalkyl substances. Resolved: The Department of Agriculture, Conservation and Forestry, Board of Pesticides Control shall conduct a study to determine if fluorinated adjuvants are being used or sold in the State. The board shall explore what is needed to regulate fluorinated adjuvants in the State and shall explore what is necessary to impose a prohibition on the distribution or application of pesticides or adjuvants containing perfluoroalkyl or polyfluoroalkyl substances in the State. The board shall develop a feasible definition of perfluoroalkyl or polyfluoroalkyl adulteration in a pesticide. The board shall submit a report based on the study with findings and recommendations to the Joint Standing Committee on Agriculture, Conservation and Forestry no later than January 15, 2022. The joint standing committee may submit a bill to the 130th Legislature relating to the subject matter of the report.

Appendix B EPA Email Response Clarifying Risk Assessments For Adjuvants and Spray Adjuvants

Email Response from EPA:

Spray adjuvants are not pesticides and not covered under FIFRA, right? Tolerances are set for those spray adjuvants to be used on ag commodities but that comes from FFDCA and FQPA, right?

When evaluating a pesticide product for registration under FIFRA, EPA considers the proposed directions for use as well as widespread and commonly recognized practice of how it is used. That consideration may include how an adjuvant affects the use of the pesticide. Although adjuvants are not registered as pesticides, they are still regulated because adjuvants are chemicals added to a pesticide by users to improve the pesticide's efficacy. Such agents are often included in pesticide formulations as "other ingredients," in which case the ingredient is reviewed during registration and any necessary tolerances or exemptions from the requirement of a tolerance are established. Where a product label directs the user to add a particular adjuvant before use, the registering division will treat that adjuvant as if it were an "other ingredient" in making the registration decision, and will assure that any necessary tolerances or exemptions from the requirement of a tolerance are established. It also would be within the Agency's authority to treat any tank-mixed substance as part of the pesticide (and thus needing an FFDCA tolerance) in that it met the FIFRA definition of pesticide — i.e., a "mixture" of substances intended to kill a pest. See Chapter 1 of the Pesticide Registration Manual.

<u>I feel like inert/other ingredients are covered under FIFRA but registration is not required, is that true? and if so, is the same true for spray adjuvants? How can I find the requirements for tolerance setting on spray adjuvants and inert/other ingredients?</u>

EPA registers pesticide products, i.e., a product that includes a pesticidal active ingredient and any inert or other ingredients that make up the whole formulation. The registration of pesticide products under FIFRA include a determination that the pesticide product formulation meets the registration standard under FIFRA section 3 (including the lack of unreasonable adverse effects on the environment). The entire formulation, including the inert ingredients, must meet this standard. Inert ingredients themselves are not registered under FIFRA; the same applies to adjuvants. In addition, the Federal Food, Drug, and Cosmetic Act (FFDCA) requires that pesticide chemical residues, including any active ingredient and inert ingredients in pesticide products, used on food and feed crops, agricultural commodities, or livestock must have a tolerance or tolerance exemption under 40 CFR Part 180. See Chapter 8 of the Pesticide Registration Manual. Approved inert ingredient tolerances and tolerance exemptions are found in the Code of Federal Regulations (CFR) under 40 CFR Part 180. Links to inert ingredients approved for nonfood uses are listed on the Inert Ingredients Web page.

If the use of an adjuvant may result in detectable residues on food, the applicant should contact the EPA product manager or registration ombudsman (Chapter 21) prior to submitting the application to discuss the potential need for a tolerance. See Chapter 11 of the Pesticide Registration Manual; and Code of Federal Regulation, Title 21 Part 178 –Indirect Food Additives: Adjuvants, Production Aids, and Sanitizers

Continued... Email Response from EPA:

For spray adjuvants not intended for ag commodities what authorization are they regulated under?

If an adjuvant is listed on the product formulation, it would be evaluated by EPA as part of the overall formulation. If it is not listed as part of the product formulation, and there is no expectation of residues in or on food as a result of the use of the pesticide (e.g., because it is not intended to be used on food crops), then EPA would not regulate its use. Generally, it is likely that the adjuvant would be identified on the label, and so there might be some consideration of the adjuvant as part of the reviewing the label. This <u>guidance</u> on inert ingredient for non-food use may be helpful insight for an example of a process that could apply to an adjuvant. <u>Inert ingredients guidance for new nonfood use (pdf)</u>

Appendix C List of Registered Adjuvant Products in Other States (Arkansas, Tennessee, & Washington)

Arkansas

3M 6000 Copper Granules 3M 7000 Series Copper Granules Water Bath Additive c-series Water Bath Additive

Ultima Total Control Shock and

Algaecide Ultima Nix

Ultima Platinum Plus Aqua Silk Algaecide

Ultima TKO

Ultima Swamp to Swim I Ultima Yello-Free Algaecide

Salt Solutions by Ultima Algaecide

Aqua Silk Alage Control Ultima Swamp To Swim (Kit) AEM 5772 Antimicrobial

Bug Out Sticks Stabrom 909 Biocide

Clarifect

Clor Mor Calcium Hypochlorite 3

Inch Tablets

Clor Mor Cal-Shock Cal Hypo

Granules

E-Z Clor Quick Dissolve E-Z Clor Mustard Algae Plus

Super Shockwave Shock Treatment Re-Fresh+

Re-Fresh+

E-Z Clor Algaecide Plus

Pool Logic Think Clear Solution 60 Regal Pool Care System Brom-A-

Gard

Regal Pool Care System Algaezone

Plus

Poolstyle Pool Products 3" Triple

Action Tabs

Poolstyle Pool Products Bright

Shock

Pool Season Brominating Tablets

Re-Fresh

Re-Fresh Dry Chlorinating Granular

Super Shock-It 73

Regal Pool Care System Algaecide

60

Regal Pool Care System Poly-

Algaecide 30

Regal Pool Care System Algaecide

50

Regal Pool Care System Granular 90

Pool Season Algae Control 60

E-Z Clor Algaecide

Pool Season Algae Control 30 Pool Season Super Algae Destroyer Pool Logic Think Clear Brominating

Tablets

Pool Season Concentrated Algae Kill

II

Alligare 8% Copper

Argos

AB Brand Copper Sulfate Crystals

Algimycin-PWF

Algaecide/Cyanobacteriocide

Black Algaetrine Cutrine Ultra

CutrinePlus Algaecide/Herbicide CutrinePlus Granular Algaecide

Algaetrine Pooltrine 60 Swimtrine 7.4 Wintertrine

Applied Biochemists Phycomycin SCP Algaecide/Cyanobacteriocide

Super Algi-Gon Clearigate EC9 Swintrine 90

Applied Biochemist Power Blast 70 Applied Biochemist Power Blast II

Cutrine Plus Algaecide

Silvertrine

Applied Biochemists 3" Tablets Applied Biochemist Granular Applied Biochemists Chlorinating

Capsules

Applied Biochemists Triple Action

Tablets

Phycomycin-SCP Algaecide &

Oxidizer

Stocktrine II Algaecide

Swimtrine Plus Algi-Cure Algaecide YELLOWTRINE

Clearigate

Aquamira Water Treatment Aquashade Aquatic Plant Growth

Control

Baquacil Algicide

Baquacil Performance Algicide Chlorine-Free Care Free Baquacil

AD Auto Dosing System

Chlorine-free Care Free Baquacil AD Automated Dosing System

Com Chlor 3" Stabilized Chlorinating Tablets

Constant Chlor Plus Calcium Hypochlorite Briquettes

HTH Pool Care Liquid Chlorine HTH Pool Care Algae Guard

Advanced

HTH Pool Care Algae Guard 10

HTH 3" Chlor Tabs

HTH Pool Care Algae Guard 30 HTH Pool Care Algae Guard

HTH Pool Care Algae Guard Ultra Poolife Exclusive Pool Care

Collection Complete Control Shock

and Algaecide

Granules

90 Years of HTH Perfect Pools Ultimate 3" Chlorinating Tablets 90 Years of HTH Perfect Pools

Ultimate Algae Guard

90 Years of HTH Perfect Pools

Algae Guard 30

90 Years of HTH Perfect Pools 1"

Chlorinating Tablets

Constant Chlor Plus Marathon

Tablets

90 Years of HTH Perfect Pools

Liquid Chlorinator

Chlorine-Free BaquaSpa Start-Up

Kit

Poolife Exclusive Pool Care Collection NST Patrol Poolife Exclusive Pool Care

Collection NST Purge

Poolife Exclusive Pool Care Collective NST Prime

90 Years of HTH Perfect Pools

Floater

90 Years of HTH Perfect Pools

Shock! Treatment

90 Years of HTH Perfect Pools 3

Inch Chlorinating Tablets

90 Years of HTH Perfect Pools Premeasured Water Soluble Pods Algae

Guard

90 Years of HTH Perfect Pools Water Soluble Pods Shock!

Poolife Exclusive Pool Care 90 Years of HTH Perfect Pools Pool Breeze Pool Care System Algae Pool Breeze PCS Shock Treatment Ultimate Shock! Treatment Clear Collection Instant Clear Cleaning & Superchlorinator 90 Years of HTH Perfect Pools Pool Pace 3" Chlor-Tabs DryTec Calcium Hypochlorite Granules Care Kit for Opening/Closing HTH Algae Guard Granules Poolife Exclusive Poolife Rapid **Briquettes** 90 Years of HTH Perfect Pools Baquacil Select Algicide **Shock Shock Treatment** Dry Tec Calcium Hypochlorite Super Green to Blue Shock System Reputain D20 Preservative Poolife Exclusive Pool Care Granular 90 Years of HTH Perfect Pools Pond Oasis Algaecide Collection Super AlgaeBomb 60 HTH Liquid Chlorinator Algae Guard Granules Poolife Exclusive Pool Care Algaecide HTH Shock 'N Swim 90 Years of HTH Perfect Pools Collection Back to Blue 1 Poolife Exclusive Pool Care **HTH Spa Brominating Tablets** Super Algae Guard Pool Breeze Pool Care System Collection Turboshock Shock HTH Spa Non-Foaming Algaecide 90 Years of HTH Perfect Pools Omni Algae Terminator Yellow Eliminate Treatment Super 3" Chlorinating Tablets HTH Super Algae Free Poolife Exclusive Pool Care Omni Multi-Purpose Algaecide 60 90 Years of HTH Perfect Pools Densil ZOD Antimicrobial Collection Super Shock 'N Swim Synergy Tabs Super Green to Blue I Dry Tec Extra Shock Shock Treatment Omni Algae Preventative 40 Winter Care Winter Algaecide 40 90 Years of HTH Perfect Pools HTH Green to Blue Super Shock I Pulsar Plus Calcium Hypochlorite Super Shock! Treatment Poolife Exclusive Pool Care Briquettes for Commercial Swim Omni Breakout 60 90 Years of HTH Perfect Pools Collection Defend + Pool Use Myacide AS Plus Ultimate Mineral Brilliance Reputain K50 Preservative Myacide AS Technical HTH Pool Shock Myacide GA 50 Chlorinating Granules Reputain D20 Antimicrobial HTH Spa Shock HTH Salt Pool Care Algaecide HTH Clear Shock HTH Super Algae Guard Myacide GA 25 Pool Breeze Pool Care System HTH Super Shock Treatment Poolife Exclusive Pool Care MasterLife AMA 100 Defender Reputain B30 Preservative Collection Active Cleaning Granules Admiral WSP Pool Breeze Pool Care System Extra Poolife Exclusive Pool Care Chlorinator Admiral Liquid Pool Breeze Pool Care System Collection AlgaePhos Algaecide Green-Shield II Disinfectant & Poolife Exclusive Pool Care Opticide Baquacil Algidefense Collection AlgaeBomb 30 Algaecide Algicide 90 Years of HTH Perfect Pools Open/Close Algistat Poolife Exclusive Pool Care Bellacide 350 HTH Super 3" Chlorinating Tablets Algae Guard 10 Collection Cleaning Sticks Stabilized Bellacide 355 90 Years of HTH Perfect Pools Outlast Mold-Buster Additive Chlorinator Bellacide 325 Chlorine Granules Poolife Exclusive Pool Care Poolbreeze Pool Care System Bellacide 301 HTH Super Green to Blue I Collection Brite Stix Algicide 60 Bellacide 300 HTH Super Shock Treatment Proxel BD 20 Industrial Microbiostat Pool Breeze Pool Care System Start-Bellacide 355W HTH Ultimate Shock Treatment up & Winterizing Algicide Proxel GXL Industrial Microbiostat Bellacide 364 HTH Ultimate Algae Guard HTH Algaeguard 3x Concentrate Pulsar Power Shock Bellacide 337 Poolife Exclusive Pool Care Pace Premier Shock Treatment Pool Breeze Pool Care System LiquiBrom 4300 Collection AlgaeBan II **Granular Shock Treatment** LiquiBrom 4000 Poolife Exclusive Pool Care Collection Algaecide 90 Poolife Exclusive Pool Care Proxel AO Preservative LiquiBrom 4600 HTH Pool Care Kit Collection Mustard Algae Treatment Pool Breeze PCS 3" Chlorinating Bellacide 300W HTH Algae Guard 10 Pool Breeze Pool Care System Super Bellacide 150 HTH Algae Guard 30 AlgiKill Pool Breeze PCS Algicide Bellacide 311 Poolife Exclusive Pool Care Pool Breeze PCS Chlorinating **HTH Shock Treatment** Magnacide B Microbiocide HTH Super 60 Shock Treatment Collection AlgaeKill II Granules X-Cide 102 HTH Super Algae Guard 60 Pool Breeze PCS Chlorinating Sticks X-Cide 137 X-Cide 302 Pool Breeze PCS Granular 68

ChemTreat CL 2250 X-Cide 105 Industrial Bactericide GreenClean Granular Algaecide Boost 3000 X-Cide 120 Industrial Bactericide GreenClean FX Liquid Algaecide ChemTreat CL497 Oxxium 203 GreenClean Pro ChemTreat CL-2206 Surpass 100 Bayer Advanced 2-in-1 Moss & Algae Killer Ready-To-Spray ZeroTol 2.0 ChemTreat CL-25 Tsunami 100 Algaecure Algaecide for Ponds and SaniDate 12.0 ChemTreat CL2155 WCS 102 Fountains GreenClean Liquid 5.0 ChemTreat C-2183T Algaway 60 Algaecure ZeroTol HC Chemtreat CL-4907 Microbe-lift Algaway 5.4 Pro Guard 60% Algicide Microbe-Lift Algaway 5.4 (For Spa Selections Algaecide ChemTreat CL-2030 Pro Guard Algae Predator Spa Selections Maintenance Kit ChemTreat C-206T Ponds) ProGuard Copper Algicide Bonide MossMax RTS ChemTreat CL-2427 Microbe-Lift Algaway 5.4 (For SoftSwim Algicide A Brandt T.A.C. Chemtreat C2063T Aquariums) SpaGuard Oxidizer Enhance Shock Liquid Copper Sulfate BioTreat 8405 BromMax 7.1 BioGuard Inhibit Algae All 60 KTND CDB Clearon Granular Industrial ENVIROBROM G BioGuard Arctic Blue Winter Kit 12 WSCP Water Biocide **BromMax** BioGuard Arctic Blue Winter Kit 24 Busan 1215 ClearGold Tablets **Enviro-Brom Tabs** Bulab 8861 Easy Pool Care Technology Peragreen 22 Pro Series Algaecide **BCDMH Tabs** Pro Series Dual-Action Algaecide Busan 1202 Bio-Clear 1000 BioGuard Inhibit Back Up 2 Busan 77 Bio-Clear 2000 Bromide-Plus Busan 85 Peragreen 22WW **BioGuard Maintain Brominating** Bioclear 2500 Antimicrobial Tabs BioClear 2250 Antimicrobial Perasan OG **Bulab** 6004 BioLab T-0041 Coolacide BioClear 1430 Antimicrobial Peragreen WW SoftSwim A MB-1000 BioClear 2256 Antimicrobial EnviroChlorite 15 ChlorCide BioGuard Algae Complete MB-60B Granules Bio Clear 5000 BioGuard Arctic Blue Algae Bacticide-45B CYPHOS 3453W Phosphonium Salt Peragreen 15% Essick Air Humidifier Bacterostatic Protector MB-1563B Plexcide P5S Algae makes me mad! Angry Egg MB-215 TOLCIDE TP5 Treatment Algaecide Check-Mark 40224 **TOLCIDE TP50** B-Cap 35 Antimicrobial Agent BioGuard Burnout 73 B-Cap 27 Antimicrobial Agent Copper Sulfate Crystals Decco Ag PAA BioGuard CLC Classic SCI-62 Algicide/Bactericide Formula F-30 Algae Control B-Cap 34 Antimicrobial Agent ProGuard Calcium Hypochlorite CB-3939 B.I.O. Blast 500 Vigorox SP-15 Antimicrobial Agent VigorOx Oil & Gas Granular Chem-Aqua 42171 GAX-26 BioGuard Salt Scapes Saltwater Pool Chem-Aqua 40215 AquaVet Algae Control VigorOx 15/23 Antimicrobial Agent Care Algae Remover Chem-Aqua 42100 AquaVet Copper Sulfate Algae VigorOx Oil & Gas1 Chem-Aqua 40420 BioGuard Remedy Banish Control VigorOx Oil & Gas Plus1 BioGuard Maintain Smart Shock Chemical Treatment CL-2150 **Ouimag Ouimicos Aguila Copper** Ercopure 25 Chemical Treatment C-2185 Sulfate Crystal BioGuard Inhibit Algicide 28-40 Ercocide CP BioGuard Off Season Winter ChemTreat C-2188 Ercopure 31 FOS 1.5 Microbicide Algicide Chemical Treatment CL-206 Pristine Blue Spec-Aid 8O704 (Stick) BioGuard Remedy Spot Kill ChemTreat CL-49 Agritec Spectrus CT1300 BioGuard Maintain Power Chlor Chemical Treatment CL-215 Algae Shield Spectrus NX102 BioGuard Maintain Super Soluble Chemtreat CL2490 Cleanwater Blue Spectrus NX1100 BioGuard Off Season Artic Blue Chemtreat CL-2062 Earthtec Spectrus NX1103 ChemTreat CL2065 Spectrus NX1104 Algae Protector Aqua Balance Poly 60

Spectrum XD1878 Chlorine Spectrus OX103 Super Charge **Quick Shock** Spectrus TD1100 GLB Endura Spa Pure Brominating Tabs Stabilizer iSolv Bio 2000 Sirona Spa Care Spa Minerals Haviland Algae Kil 50 Biosperse CN2150 microbiocide iSolv BIO1010 GLB Algimycin 3000 Haviland Algae Kil CB 7 Biosperse CN4200 microbiocide Spec-Aid 8Q704 (Stick) Rendezvous Spa Specialties Deluxe Haviland Mustard Eliminator Biosperse CN5500 Microbiocide Spectrus NX102 Chlorinating Spa Care Kit Biosperse CN8059 microbiocide ProTeam Poly Magic Spectrus OX101 GLB Sonic Blue Multipurpose Aqua Hawk CU Biosperse CN8109 microbiocide Spectrus OX9200 Shock Spectrum RX9800 Biosperse CX9969 Microbiocide Spectrus TD 1000 Biosperse 250 Rendezvous Spa Specialties Deluxe Biobrom C-103L Biomate MBC 781 Brominating Spa Care Kit Spectrum XD8800 Microbiocide **Fuzzicide Solution** Algimycin 1000 Biomate MBC 2881 Agent Sodium Bromide-comp Spec-Aid 8O5700ULS Algimycin 2000 Spectrum RX3500 microbiocide Biobrom C-103 Spec-Aid 8Q703ULS Formula 315 AR900 Series Algae Resistant Roof agent Spectrus NX1107 Formula 325 Biosperse 271 microbiocide Granules Spectrus OX103 Formula 3051 Biosperse XD9400 microbiocide Copper Color Guard Algae-Resistant Spectrum RX9600 Microbiocide **Roofing Granules** Spectrus NX 1101 Formula 318 In The Swim Calcium Hypochlorite Spectrus NX 1102 Formula 3340 Agent Spectrus OX 1202 Formula 3230 Biosperse CX1150 Microbiocide In The Swim Algaecide Spectrus OX101 Spectrum RX3101 Microbiocide In The Swim Super Algaecide BARDAC 2210 Spectrus OX105 BE-6 Industrial Bactericide In The Swim Algae Clear Agent Spectrus OX1200 Aldacide G Spectrum RX6800 Microbiocide In The Swim Super Pool Shock Spectrus OX909 BE-9 Agent In The Swim Pool Shock BE-9W Spectrus NX1106 Biosperse CX9071 Microbiocide In The Swim 1-Inch Tablets Spectrus OX1201 Biosperse 515 Microbiocide Biobor JF In The Swim Sticks SHOXIDIZER Sodium Hypochlorite Solution 10% Biosperse CN8109-NA Microbiocide In The Swim Algaecide 50 Algimycin Winter Sodium Hypochlorite 12.5% Spectrum RX3510 Microbiocide In The Swim Black Algaecide Freestyle Calcium Hypochlorite 65 In The Swim Winter Algaecide Super Charge II GLB Triple Tab ProTeam Supreme Biosperse CX9989 Microbiocide In the Swim Di-Zap Algae-X Proteam Mustard & Black Magic Spectrum RX9500 Microbiocide Predator 5000 Sirona Spa Care Bromine Start-Up Proteam Ouick Shock Agent Ercopure BCD-25 Biosperse CX3400 Chlorine Ercopure BCD-7.5 ProTeam Prevent GLB Dual Control Shock and ProTeam Severest Algae Treatment Stabilizer Micron CSC (Various Colors) ProTeam Polyquat 60 Spectrum RX7845-NA Microbiocide Interspeed 640 (Various Colors) Algaecide GLB Nix Swim Clear Black Algaecide Regatta Baltoplace Racing Finish GLB Yello-Free Algaecide Swim Clear Super Algaecide Biosperse XD9411 Microbiocide VC-Offshore (Various Colors) GLB Aqua Silk Algaecide Spectrum RX6805 Microbiocide Fiberglass Bottomkote Racing Swim Clear Jumbo Tabs GLB Swamp to Swim I ProTeam Power Magic AC+ Agent Bronze Y999 GLB Swamp to Swim Shock System Superoxidizer Biosperse CN6500 Microbiocide Interspeed 340NA BOA357 Red Bromine-Free Chlorine-Free Sirona Aqua-One (Various Colors) Proteam Power 73 Biosperse CN7539 Microbiocide Micron WA (Various Colors) Spa Care Simply Start-Up Kit Proteam Polyquat 30 Biosperse CX7250 Microbiocide Algimycin 600 Aquamate Algaecide 30 Biosperse CN8450 Microbiocide Micron Navigator (Various Colors) GLB 3 Part System Pool Closing kit Aquamate Algae Control Biosperse CX3195 Chlorine Micron Extra SPC (Various Colors) Spot Gone II Proteam Mustard & Black Magic Stabilizer Ultra (Various Colors)

Inerlux Micron CSC HS (Various Valvtet Marine Premium Diesel Leisure Time Spa Algaecide MC B-8614A Colors) Additive with BioGuard Dantochlor RW MC B-8625A Super ProGuard (Various Colors) Dantobrom RW MC B-8626A Microbiocide ProGuard Ablative (Various Colors) Valvtect Bioguard PLUS 6 **Dantogard Preservatives** MC B-8642A MicronCF (Various Colors) Ultima SR-40 Ablative A/F Bottom Dantogard XL-1000 MC B-8650A Dantogard Plus Industrial MICRON OPTIMA (Various Paint (various colors) MC B-8910 Colors) Pettit Hydrocoat Ablative Preservative MC B-8901 Interspeed 5640 (Various Colors) Isocil Antifouling Paint (various colors) MC B-8626 Trilux 33 (Various Colors) Pettit Pontoon Pro Copper-Free Densil FZ Antimicrobial BC-40 Pacifica Plus (Various Colors) Antifouling Paint-Black Triadine 20 - Lonza Industrial BC-118 Pettit Hydrocoat ECO Copper Fee ACT with SLIME FIGHTER Microbiostat BC-215 (Various Colors) Multi-Season Ablative (various Lonza Reputain D20 Bactericide NAVA Quick Dissolving Shock Fiberglass Bottomkote NT (Various colors) Lonza Reputain B30 Preservative NAVA Yellow Algae Remover Colors) Pettit Neptune 5 Hard Hybrid Isocil IG-C Member's Mark Quality Guaranteed Interspeed 6400NA (Various Colors) Ablative Antifouling Paint (various Dantoin BCDMH RW Tablets Algaecide 40 Micro Extra (Various Colors) Bardac 2250M Member's Mark Quality Guaranteed Copper Powder V901 Pettit HRT Hybrid Reactive Lonza Microbiocide 50 **Chlorinating Granules** Copper Powder V900 Technology ECO Antifouling Paint -Member's Mark Quality Guaranteed Barquat Low Foam Additive VC17m Extra (YBA405 & 406) Bardac 2250 Microbiocide Chlorinating Tablets Black VC17m Extra YBA407 Red KR-153-SL Isocil RW Star Plus 3" Jumbo Tabs Trilux 33 (Various Colors) KR-148NL Dantogard Plus Liquid Poolbrand Quick Dissolving Shock Jack's Magic The Yellow Stuff Leslie's Swimming Pool Supplies Bardac LF 18-50 WT Star Plus 8-Ounce Sticks Jungle No More Algae Tank Buddies Algae Control Bardac LF 1880 Star Plus Dichlor Granular Jungle Pond Algae Relief Poolfresh 3" Tablets Bardac LF 1850 Star Plus Yellow Algaecide Micropur MP 1 Leslie's Swimming Pool Supplies Barquat Low Foam Algaecide Great Value Pool Shock AMA-3725 Power Powder Plus 73 Direx 4L 24(c) Great Value 3" Chlorinating Pool Leslie's Swimming Pool Supplies AMA-424 Algae Destroyer Advanced AMA-350 Copper Algaecide AlgaeFix Poolbrand 3" Chlorinating Tablets Fennosurf 586 Leslie's Swimming Pool Supplies Pond Care Algae Destroyed NALCO 60510 FennoSan O-10 Black Algae Killer Advanced Acti-Brom 1318 Leslie's Swimming Pool Supplies AMA-1750 Pond Care Algae Fix Nalco 2838 New Water Cycler Pac Power Powder Granular 70 Microbial Algae Clean Nalco 2877 Frog Bam In the Swim 3-Inch Tablets Top Fin AlgaeGone EC5114A API Pond Algaefix Aqua Smarte Chamber In The Swim Algaecide 60 Plus Nalco EC6110A Frog Leap ALL-OUT In The Swim Chlorinating Granules API Marine Algaefix EC5122A Aqua Smarte Plus Cannonball! Leslie's Pool Supplies Service & AquaTrol 12601 Purate DW Oxi-King Brom Pac Repair Power Powder Pro 73 MC B-8802 NALCO 73002 FROG Pool Tender Chlorine Tektamer 38 A.D. MC B-8805 **NALCO 7639S** Chamber N-2000 Antimicrobial MC B-8807 NALCO 73650S FROG Pool Tender Algaecide Antimicrobial N20 MC B-8520 Stabrex ST70CAN FROG Pool Tender Mineral Veriguard 3003 LegionGuard LG25 MC B-8501 Chamber N-922 Antimicrobial MC B-8904 NALCON 7614 N-5033 Antimicrobial BC-2545 Nalco 2840

Solid Bionox Seaklear Yellow Klear Algaecide Aqua Chem keeps water clean Safer Brand Moss & Algae Killer & **Optimum Chlorinating Granules** H150M Seaklear Problem Klear Algaecide Surface Cleaner RTU II CoilClear SeaKlear Pool Opening & Pool Essentials Shock Pond Champs Algae X **NALCO 60505S** Winterizing Kit Aqua Chem Algae Eliminator Algaecide/Herbicide **EVAC** Biocide No. 85 Algaecide Pool Time MaxBlue Algicide Crystal Plex Algae Control Pan Pads Pool Time All-in-One MaxBlue Crystal Blue Copper Sulfate Smart HYG-25 NALCON 60505 Towerbrom 60M Granules **Chlorinating Granules** Crystals Towerbrom 90M Tablets Pool Essentials Chlorinating Tablets Stock Plex Stock Tank Algae NALCON 7637 NALCO 60615 Technical Sodium Chlorite Pool Time Shock MaxBlue2 Control NALCON 240 Technical Sodium Chlorite 31.25 Pool Time MaxBlue Pre-Filled Decorative Fountain Algae Control Green X Concentrated Granular Nalco 7634 31% Active Sodium Chlorite Chlorinating Floater Nalco 77352 Solution T-0034 Algaecide Towerchlor 56 Granules Pool Time Algicide + Clarifier Captain Liquid Copper Algaecide B015 Nalcon 7639 Old Bridge Copper Sulfate Fine Pool Time Chlorinating Tabs K-Tea Aquatic Algaecide Pool Time MaxBlue All-In-One PermaCare PC-12 Olin Chlorine Liquified Gas Under Captain XTR Chlorinating Granules SeClear Algaecide VeliGon TL-M Pressure Pool Time Algicide 50 Nalco 77352NA Gordon's Pondmaster Copper Sulfate PAK 27 Aqua Chem Algae Eliminator Max SeClear Algaecide & Water Quality ControlBrom CB70 Crystals Gordon's PondMaster SeClear Pool Time Algicide 50% Enhancer Ready-to-Use NALCO 7341 Algaecide & Water Quality Pool Time MaxBlue 3" Tablets SeClear G Nalcon 7649 Nalco EC6110A Enhancer Ready-To-Use Pool Time Shock MaxBlue SePRO Total Pond-Clear NALCO 60620 Mildew Check Pool Time Algicide MaxBlue SePRO Total Pond- Clear G Pool Time MaxBlue 1" Tablets H-130 Microbiocide HP AM27 Proxitane WW-12 Microbiocide STABREX ST70 PPG MZD 7330 Tolcide PS75LT Pak 27 Algaecide BIO/TEC 15 **TOWERBROM 960** PPG MZD 7340 Pool Specialties BLACK **TOWERBROM 991** PPG MZD 7360J **ROBACIDE** Bio/Tec 081 PermaClean PC-11 PPG MZD 7340A Robarb Pool Specialties Power Blast Bio/Tec 14 Ultra-Kleen Solution 1 Nalcon 10WB PPG MZD 7330US Nalco 7320 X3 Kathon 886 MW Biocide Pool Mate Jumbo Tabs Nalco 7330 EZPool PRO Kathon 893 MW Pool Mate Black Algaecide Premium 60 Algaecide Pool Mate Non-Foaming Algae Rid Nalcon 7647 Kathon FP 1.5 Biocide Nalcon 7648 Ouash! Kathon WT 1.5% Biocide Pool Mate All-In-1 Swimming Pool Quantum Algigon 30 Algaecide Agucar DC 4P25 Water Treatment 3" Chlorinating Tabs Nalcon 7678 Quantum Algigon C Pool Mate Algaecide 50 Nalco 90005 Microbicide Kathon CF 150 Biocide Pool Mate Algaecide 50 MBC 211-P Terminator II Marineland Algae Eliminator MBC 215-P Ouantum O-Shock II Kathon 725 BF Antimicrobial **MBC 214** Aqua Chem keeps water clean 1" Klarix 4000 Microbicide Tetra Algae Control Tetra Pond Algae Control **MBC 175** chlorinating tabs Kathon Fuel 15 Biocide Aqua Chem keeps water clean 3" Spa Bromine Tablets Rust-Oleum Marine Coatings Boat Tetra Pond Pond Block One Step Brominating Concentrate Chlorinating Tabs Bottom Antifouling Paint (Various Tetra Pond Fountain Block Algae Break 90 Aqua Chem shocks water clear Colors) Tetra No More Algae-Tablets Sump Buddy MWF Antimicrobial Seaklear 90 Day Algae Prevention & Shock Plus Safer Brand Moss & Algae Killer & Remover for Pools Surface Cleaner RTS II Time Release Tablets

Amical 48 **AQUCAR 720 Water Treatment** Acticide RS Swim Best Black Out Granular 90 Bioban BP-Plus Preservative Microbiocide Acticide L 30 O-ACE-sis Multishock Bioban BP-10 Preservative AQUCAR DB100 Water Treatment **ACTICIDE DBU 20** PacifiClear Multishock Ucarcide 25 Antimicrobial Microbiocide **ACTICIDE IPW 40** PacifiClear Algaecide 10 Ucarcide 50 Antimicrobial AOUCAR DB20 Water Treatment Acticide M10S PacifiClear Algaecide 30 PacifiClear Algaecide 60 Plus AQUCAR 7140 LT Water Treatment Microbiocide Acticide LA Microbiocide **AQUCAR DB 5 Water Treatment** Acticide LA 1206 Swim Best Cal-Shock Cal Hypo Aquear GA 50 MUP Water Granules Microbiocide Acticide LA 1209 Treatment Microbiocide AOUCAR DB100 MUP Water Acticide IMS FreshWater Spa Care Kit Agucar PS 20 Water Treatment Treatment Microbiocide Acticide MBS 2550 FreshWater Spa Care Kit (Free-Microbiocide Bioban BP-M Preservative Acticide MV 14 Oxidizer) Agucar TA 64 Water Treatment Agucar GA 50 Water Treatment Acticide 45 Wet & Forget Microbiocide Microbiocide Biocide 10 Acticide PA AOUCAR BP 40 Water Treatment AOUCAR GA 25 Water Treatment Acticide GA Zep Biofilm Drain Purge A Jandy TruGuard Microbiocide Microbiocide Acticide OTW Kathon 7G Antimicrobial AOUCAR GA 30 LT Water Jandy TruGuard Cartridge Acticide MBL Aqua Pure Algaecide AOUCAR TN 250 LT Water Treatment Microbiocide Aquamate DB20 SKILL-IT Swimming Pool **AOUCAR GA 45 Water Treatment** Pink Treat Algicide Treatment Microbiocide Yellow Treat Algicide Algaecide AOUCAR GA 4PO Water Treatment Microbiocide AOUCAR GA 15 Water Treatment Green Treat Algicide Aquamate Shock Microbiocide **AQUCAR PS 75 Water Treatment** Microbiocde No Mor Problems Prevent Algicide Divergard 42960 Microbiocide Algae Defense Swamp Treat MicroClear AOUCAR PS 75 MUP Water Yellow Treat 2 Algae-Off Pro-Treat 151 Pro-Treat-151 Pan Treatment Treatment Microbiocide Algae D-Solv Hydrothol 191 Aquatic Tris Nitro Scotts 3-In-1 Moss Control Ready-Hydrothol Granular Asurity Pro-Treat-151 Agucar Sump Buddy DB 40 TL Symmetry NXG AquaPrime NeoKlor Water Treatment Microbiocide Mold Armor Concrete Driveway and AquaPrime Peraside 15 Scotts Moss EX 3-In-1 Ready-Spray Agucar TN 25 Water Treatment S-W Seaguard Copper Bottom AF Sidewalk Cleaner Algea Clean Out Microbiocide #45-Various Colors Protech Algaecide 60 Plus TopFin Algae Remover Algicide **AOUCAR A 78 Water Treatment** Acticide CT Protech Copper Algaecide Clearview Ouat Power Microbiocide Protech Maintenance Algaecide Clearview Algaecure Acticide B20 ClearView Poly Power 60 AOUCAR TN 50 Water Treatment Acticide BW20 Protech ProShock Cal Hypo Microbiocide Granules ClearView Copper Strike Acticide 14-CF JT-1 Starch Preservative ClearView Poly Power 30 AOUCAR BP 10 Water Treatment Acticide 45-CF Clearview Shimmer N'Shock Microbiocide Acticide WP PacifiClear 3 Month Algaecide AOUCAR BP 30 Water Treatment Focus Algaecide 10 Clearview Insta-Chlor Super 73 **ACTICIDE OTW 45** Microbiocide ACTICIDE SPX Focus 3 Month Algaecide Zinc Pyrion 48% Aqueous **AQUCAR 714 Water Treatment** Acticide LA 1205M Focus Algaecide 60 Plus Dispersion Industrial Microbiostat Zinc Pyrion 48% MPF O-ACE-sis 3 Month Algaecide Microbiocide Acticide MKS 1U **AQUCAR 742 Water Treatment** Acticide OTW O-ACE-sis Algaecide 60 Plus Irgarol 1051 Microbiocide Acticide LA 1016 Swim Best Maintenance Algaecide Irgaguard D 1071 ConBlock MIC AOUCAR BP 100 Water Treatment Acticide MKW2 Swim Best Alagecide 60 Microbiocide Acticides MBS Swim Best Copper Algaecide

Smartpond Green Stop Liquid Algaecide Pond Boss Algaesolv Pond Boss Pro RoCide IS-2 Bell Performance-Bellicide Durobrom DuroCide C100-G	EcoBlast Contact Granular Algaecide Aqueon Algae Remover K-Bac 1020 K-Brom 40 K-Brom-T K-BAC 1005 K-BROM G	Americhlor Calcium Hypochlorite Granules Power Pro Tabs VersaChlor System Chlorinating Tablets Clorox Pool&Spa Algaecide + Clarifier Clorox Pool & Spa Active 99 3"	Biotrol BT Biotrol 102 Biotrol 250 Biotrol 114 Biotrol 150 Biotrol 407 Biotrol 509 Biotrol 515
DuroKlor 56	K-BAC 1000	Chlorinating Tablets	Super Shock- Rx Clear
KEM-TEK Pool & Spa Care Power	K-BAC 7015	Clorox Pool & Spa Algaecide Xtra Blue	50% Algaecide- Rx Clear
99 3" Chlorinating Tablets KEM-TEK Pool & Spa Care All-In-	K-BAC 4020 K-BAC 4075	Clorox Pool & Spa Green Algae	Mega Shock-Rx Clear Rx Clear 7% Copper Algaecide
One Algaecide	CMB-6	Eliminator	Rx Clear Chlorinating Tablets
KEM-TEK Pool & Spa Care Spa	K-BAC 2050	Clorox Pool & Spa Shock Xtra Blue	Rx Clear 60% Poly Algaecide
Brominator Tablets	Mizzen Algaecide	Clorox Pool & Spa Xtra Blue 3"	BioRCK 2512W
KEM-TEK Pool & Spa Care 60%	Cape Furl	Long-Lasting Chlorinating Tablets	BioRCK 1036W
Algaecide Concentrate	PoolRx	Clorox Pool & Spa All-In-One Xtra	BioRCK 1036
KEM-TEK Pool & Spa Care Shock	PoolRx+	Blue Chlorinating Granules	BioRCK 1037
Quick 10	5-in-1 Multi-Purpose Tabs	XtraBlue Chlorinating Tablets	BioRCK 1038
Aqua Guard Green Algaecide	Avancid 75	Chlorinating Tablets	BioRCK 1029
Pro Side 3" Chlorinating Tablets	Avancid DB20	Clorox Pool & Spa Shock XtraBlue2	BioRCK 1032
HDX Chlorinating Liquid	Avancid DB98	Clorox Pool & Spa Awesome	BioRCK 1015
Aqua Guard 5-Step Pool Care	AVANCID GL 15	Alagecide	BioRCK 1016A
System Pool Start Up Kit	AVANCID GL 25	Clorox Pool & Spa Active 99 1"	BioRCK 1017A
Aqua Guard All-In-One Chorinating	AVANCID GL 45	Tablets	BioRCK 1018A
Granules	AVANCID GL 45M	Clorox Pool & Spa Green Algae End	BioRCK 1021
Aqua Guard Black Algae Treatment	AVANCID GL 50	for Small Pools	Tolcide 4Frac 20A
Aqua Guard Chlorinating Sticks	AVANCID GL 50M	Clorox Pool & Spa Texas Blue 3"	Plexcide T20
Aqua Guard Power 99 3"	Algaecide	Chlorinating Tablets	Tolcide PS50AS Industrial
Chlorinating Tablets Pro Guard Chlorinating Liquid	Power Powder Plus Induclor 70	Clorox Pool & Spa Goodbye Green Algaecide	Antimicrobial Plexcide 15G
Pool Essentials Chlorinating Liquid	Zappit	Clorox Pool & Spa Green Algae	Plexcide 24L
Aqua Guard Swimming Pool	Accu-Tab Blue Calcium	Eliminator2	Plexcide P5
Winterizing Kit	Hypochlorite Tablets	Clorox Pool & Spa XtraBlue	Tolcide TP5W
Aqua Guard Mustard Algaecide	Inductor	Algaecide	Plexcide P5W
Aqua Guard Algaecide 60%	Super Zappit	Borax 10 Mol FG	Plexcide G15
Concentrated	Power Powder Pro	Justeq07	Plexcide 20BR
Aqua Guard 1" Chlorinating Tablets	Incredipool	TMB-471C	Plexcide 5BR
Aqua Guard 3" Chlorinating Tablets	Zappit 73	TBM-25 - Sodium Chlorite	AS-521
Aqua Guard Algaecide & Clarifier	Accu-Tab Wastewater Tablets	Champion Pool Shock	AS-592
IonGen Probe	Indutabs Induclor Calcium	The Bug Bomb	AS-790
Algaecide	Hypochlorite Tablets	Biotrol 536	AS-521
		Biotrol 550	CWT-Cooling Water Treatment

Coastal Long-Lasting 3" Payzone 8102BCD Ablative Plus Premium Antifouling POWER-LINE SURF-90 [3 **Chlorinating Tablets** Pavzone 814BCD Paint (Various Colors) POWER-LINE METHOIL [2] Payzone 815GLUT **Guardian Chlorinating Tablets** Main Stream 635 POWER-LINE CROP OIL [1 Payzone 820THPS Algae X-Tra 90-Day Algaeacide Algaecide/Bactericide AD-SPRAY 90 NONIONIC Payzone 865BCD-W Algae X-Tra 90-Day Liquid Bionix BP10 SURFACTANT [53 Payzone 802BCD Algaecide Bionix ISO2A CLIMB ALKALINITY AGENT [91 Payzone 875THPS-A Dry Chlorinator Granular 30 SECONDS Spray & Walk Away PRO AMS PLUS [10 Payzone 8102BCD BioAdvanced Science-Based PAACT 22 PRO 90 SPREADER-ACTIVATOR Payzone 825GLUT Solutions 2-in-1 Moss & Algae MAV AquaDoc Chlorinating [11 Payzone 845BCD Killer & Cleaner Ready-To-Spray Granules **BRANDT SUPER 7 [29** Payzone 845BCD-W MossBuster RTU Lake Guard Blue DRIFT CONTROL [5 Payzone 850THPS Chlor No More Orb Imagitarium Algae Reducer REVERSE [3 Payzone 855GLUT Blue Micro-B-Gone Old Man Winter Orb MSO CONC W/ LECI-TECH [180] Payzone 865BCD **Bromiguard Tablets** Grotamar 71 (CNA) WEATHER GARD COMPLETE **Dutrion Tablet** Hot Tub Serum Total Maintenance [179 BIOC16779A Algae Guard ALLIGARE WATER BIOC12031A Austin's Pool Tech Algaecide CONDITIONER [62 Pondmaster Algaecide BIOC16388A WL 83-17 [13 Washington BIOC11139W IGL 25 Antimicrobial 80/20 SURFACTANT NON-IONIC BIOC16779A AlgaeBlaster SURFACTANT [117 Aquatabs InLine **BCS 3024CF** SPREADER 90 [116 **BIO-909** Kuriverter IK-110 POWER-LINE FAST TRAK [5 **BIO-909** Promex CMT1.5 APSA-80 ALL PURPOSE SPRAY FOAM OUT [10 Compass THPS Promex CM14 ADJUVANT CONCENTRATE [11 PHT LOAD UP [33 Compass THPS 50 Hydrex 7958 SB-56 [15 PHT FASTSTRIKE [15 Compass THPS 35 Hydrex 7611 MO WETCIT [2 PHT OUARK [14 Biocide 3725 Chem Copp HP III CONQUER [2 AGRISOLUTIONS N-PAK AMS Purple Copp Biocide 1410 LIQUID [81 DIAMULSE C EMULSIFIER [8 Biocide 1400 LoLo Tint **BUFFER PROTECT [1** BUFFER P.S. [35 Brom Tabs No. 2500 Aqua Clear Pool Products 1" **BRANDT ORGANICS** INDUCE [46] **Br-Plus Chlorinating Tablets** R-56 SPREADER STICKER /AG DEFOAMER [38] CRBiocide 15 Agua Clear Pool Products 3" FOAMINATOR DRY [87 SPRAYS [39 pHin Mineral Purifier for Pools & **Chlorinating Tablets** SILICONE DEFOAMER 10% [8 REGULAID [1 Hot Tubs Aqua Clear Pool Products Pool ACTAMASTER SOLUBLE PHT KICKERPLUS DRY [20 Coastal Cal Jet Algaecide Algaecide CRYSTAL SPRAY ADJUVANT DIAMULSE CX [11 Aqua Clear Pool Products Pool Shock X-Tra DIAMULSE D [12 Chlorine X-Tra Stabilized Shock ANTIFOAM C [13 **GUNSMOKE WATER COND Chlorinating Granules** BioBrom BT FERROBRITE B [16 AGENT ACIDIFIER/ACTIVATOR Coastal Long-Lasting 1" Ultimate Defense High Copper FERROBRITE AQ [14 **Chlorinating Tablets** AntiFouling Paint (Various Colors) FERROBRITE D [17 BRONC PLUS DRY-EDT [56 Utikem Mini Slow Dissolving Yacht Shield Premium Multi Season ANTIFOAM D [19 TRI-FOL ACIDIFIER & **Chlorinating Tablets** Ablative (Various Colors) BRUSH & BASAL OIL [125 **BUFFERING AGENT [40** Coastal Concentrate 50 Algaecide POWER-LINE ACIDIFIER P [4 WATER-RITE [19-1

COMPADRE [178 ACCELERATOR SPRAY WA-100 PLUS PENETRATING **REIGN** [143 ATTACH SPREADER-STICKER ADJUVANT 1 SURFACTANT ADJUVANT [1 HOOK [1 DECCO 312 BUFFER RUNABOUT 90 [2 [135 ORGANIC BIOLINK ACIDIFIER CHOICE WEATHER MASTER CONCENTRATE [15 & PENETRANT [3 DEFUSER [10 **[133** MAINSTAY [27 PHT ASCENT 90 [44 SOFTNESS [7 SHUR-STIK STICKER [3 PHASE [142 PHT AD-BUFF [27 SPHERE 7 [3 COMPLEX [49 COMPEX EXTRA [12 PHT GUIDE-IT [28 ECOLAB EXSPOR ACTIVATOR CHEMURGICS OR-100 SUPER **VADER** [244 FLAME SPRAY ADJUVANT [222 CONC. [228 **BOND MAX SPREADER BUPHER MG ACIDIFIER [6** SPREADER [4 HEL-FIRE [119 STICKER DEPOSITION AID [243 SIMULAID SPREADER-R-AGENT DL [1-1 CHS LIQUID AMS [11 BREAK THRU S-321 [2 ACTIVATOR [7] OROBOOST [5 TERMINATOR II [52 SUPERB HC [88 BRANDT ORGANICS AG AIDE AGRISOLUTIONS COMPLETE CYGNET PLUS [2 PENETRATOR WA [9 COMPATABILITY [62-1 CRYOFLUX P -ANTIFREEZE [22 ANTIFOAM K [26 ULTRA PRO [307 DROPLEX XTRA [210 ORGANIC BIOLINK FRACTION [9 TACTIC [131 AIRCOVER [211 SURFACTANT & PENETRANT [8 HY-STOP SPRAY BUFFER [100 SPRAY GUARD [7 AGRISOLUTIONS FOAMINATOR SUPER SPREAD MSO [55 CROP OIL M [3 SCANNER NON-IONIC DRY [87-1 COMPLETE COMPATIBILITY [62 ACTAMASTER SPRAY SURFACTANT & ANTI-FOAM LEVEL 7 [80 **EQUALIZER** [8 AGRISOLUTIONS INTERLOCK **VEGETABLE OIL CONC [69** ADJUVANT [101 [249] MODIFIED VEGETABLE OIL [5 COMBAT PLUS ANTIFOAMING UNFOAMER [96 TRONIC [10 ANTIFOAMING/DEFOAMING AGRISOLUTIONS ALLIANCE [70 & DEFOAMING AGENT [79 S-SUL SPRAYABLE AGENT [250 WHEELHOUSE PRO [14 COVERALL [11 AMMONIUM SULFATE 21-0-0 [1 WIDESPREAD MAX SILICONE MSO CONC [98 SAP 17 [12 MARVEL [9 CROCKERS FISH OIL STICKER-SURFACTANT [246 LIBERATE [97 SPREADER [1 AGRI-DEX [34 LI 700 [96 TOUCH-N-GO [14 NATUR-L OIL SPRAY POWER-LINE SPRAY MASTER [1 HERBIMAX [95 SPRAY-WET [43 ADJUVANT [6 CLASS ACT NG [53 FREEWAY [94 PHT ENTRY [49 SPA SELECTIONS BROM-START TURFGRO SPREADER-STICKER CORRAL POLY [136 BOND [92 [75 PROFOAM PLATINUM [1 RESTORE [13 [365 DECCOSOL 408 SOLVENT [17 FROG LEAP DEPTH CHARGE [16 PRO CROP OIL [12 SYNURGIZE [1 IN-PLACE DEPOSITION AID & SLITHER [237 NALCO STA-PUT PLUS FOAM BUSTER [77 DRIFT MANAGEMENT AGENT MAXIMIZER CROP OIL CONC. **DEPOSITION AID [87** SPRAY-START [7 DREXEL PEPTOIL CROP OIL **BIOLINK SPREADER - STICKER** [238] TRANSFIX [52 TRI-AD 86 [13 CONC 124 MSO+ CONC [20 DREXEL SURF-AC 820 NON-**GULFSTREAM** [185 ANTI-FOAM [14 OUEST [39 SPRAY-PUT [89 **IONIC SURFACTANT [25** FAST BREAK [61 SILCHEM SAF-1107 [1 **BORDER MAX [84** AMIGO [91 PRIME OIL [47 PREMIUM MSO METHYLATED BORDER XTRA 8L [85 ACTIVATOR 90 [90 SILKIN [45 SPRAY OIL [56 SPRAY 007 [87 W.E.B. OIL [69 **ACTIVATE PLUS [48 BIOENHANCER INSECT** VINTRE [4 CAYUSE PLUS AMMONIUM POWERLINE SLAMMER [6 FEEDING STIMULANT -TANK-DYNE-AMIC [50 **SULFATE & SURFACTANT [45** BREAK THRU [3 MIX- [5 **DEFOAMER XP [34** COMPETITOR [65 MOR-ACT CROP OIL CONC [61 **DEFOAMING AGENT [14** R-900 [60

BRONC MAX [59 BRONC AMMONIUM SULFATE CROP OIL CONC [128 JACUZZI pH ALKALINITY PHT AD-SORB RST [54 SOLUTION [70] BRONC PLUS DRY [121 DOWN [6 JACUZZI SPA SHOCK OXIDIZER PHT PIERCE [56 DROPLEX [168 TRAPLINE PRO [13 AGRISOLUTIONS NOBLE [161 BONIDE TURBO SPREADER FIXATE PRO [12 BREAK THRU SP 131 [2 STICKER CONC [223 MODIFY MG NUTRIENT JACUZZI pH UP [5 HYDRATE PLUS NF [1 BLITZ 1 [37 CIDE-KICK II M [3 BUFFER 0-10-0 [1 INTACT XTRA [24 PHT CROP OIL CONC. [72 G-MAX [1 X-CELERATE [1 FULL LOAD COMPLETE [7 PHT NUTRIENT BUFFER 10-12-0 No. 233 WET-SOL CONC [1 OROMAX [6 ADURO [159 SPROUT NIP ACTIVATOR [17 No. 235 WET-SOL 99 [2 POWERLOCK [162 PHT ULTRA DEFOAM-IT [45 HDX STABILIZER CHEMURGICS MVO CONC [3 SYL-COAT SILICONE SIMPLOT SPRAY-RITE [47] **CONDITIONER [40** CHEMURGICS DEFOAMER OR-SURFACTANT [119 CHEM SPRAY CROP OIL CONC HI-WETT [309 10 [2 **OUANTUM BIOCHEMICAL** CENSE DIVINE SECRETS [14 N-TER SURFACTANT / Γ12 ADJUVANT [120 IVC DEFOAMER [14 ACTIVATOR -USE W/ENHANCE CENSE ISLAND PLEASURES [15 SPRAY-FAST [40 INVADE MSO [15 **BROMIDE SALT SOLN [23** CENSE QUIET ESCAPE [16 CENSE SIMPLE RITUALS [13 SPRAY-SLICK [41 VERIMAX AMS [20 POOLPROOF [38] DREXEL HAF-PYNT [53 DRIFT-FIANT [8 VOYAGER 90/10 [22 BRANDT TORPEDO [21] ECOLAB BOOST 3201 [271 CHOICE TRIO WATER COND VIXEN AC-L [21 VERTEX [19 ANTI-FOAM [21] DESTINY HC [128] AGENT [339 DENALI-EA [136 **DREXEL MES-100 [37** STERILIX ULTRA ACTIVATOR PURE & SIMPLE 90% NONIONIC CROSSHAIR DEPOSITION AID & SURFACTANT & ANTIFOAMING MIX-IT [79 DRIFT MANAGEMENT AGENT **SOLUTION -PART 2 - USE ONLY** AGENT [11 ELIMINO [78 Γ110 W/SOLUTION 1 [11 WATER-RITE NONIONIC AQUA GUARD STABILIZER JUSTIFIED [149 STERILIX ULTRA-KLEEN SURFACTANT [19 CONDITIONER [53 **ROAD RUNNER 77 [5** SOLUTION 2 [12 WATER-RITE FC NONIONIC FTF DEFOAMER [123 ORO-RZ[8 BAQUACIL pH DECREASER [350 SURFACTANT [18 RUSH [170 FRANCHISE -USE HTH SPA pH INCREASER [376 APHOIL [297 ATMOS [182 W/STROBILURIN FUNGICIDES **CUT-RATE WATER** LEAF LIFE WIDESPREAD BREEZE [183 [256 **CONDITIONING AGENT [80** ORGANIC SURFACTANT [300 TURBULENCE [184 SIL-100 ORGANOSILICONE MSO COMPLETE PENETRANT [6 SCRIMMAGE [2 GENESIS 90 [12 SURFACTANT [17 FIXATE WATER CONDITIONING AUDIBLE 90 [1 HOT-UP ULTRA [2] DIAMULSE T EMULSIFIER [44 AGENT [2 HAND OFF ACTIVATOR [6 KOPPERS ANTIFOAM 1410 [58 MEMBERS MARK QUALITY EMULATE [6 MOTION [5 DECCO 239 CAUSTIC SODA **GUARANTEED ALKALINITY** HYPERTONIC [7 BACK FIELD [4 SOLUTION [25] BOOSTER [37 WHEELHOUSE [1 **BRANDT MAGNIFY [22** AGRISOLUTIONS FAST BREAK COMPLETION [8 CLARION [24 OFFSIDE 19 KINETIC [44 **BRANDT SUPER WETTER [23** [61-1 DECCO 314 BUFFER CONC -RE-DUCE [131 PHT COMP-AD ES [34 WINFIELD SOLUTIONS INERGY ACIDIFIER- [19 **GROUNDED-W DEPOSITION** FOAM ARREST [80 [163 CADENCE [20] AID [135 SILWET L-77 SURFACTANT [37 TURF FUEL HELIX [1 M-90 ADVANCED FORMULA [5 CLASP DRIFT RET & DEP AID SPRAY MIX [81 WL MSO [11 PHT GRIP [57 AMS 4XL [11 **OUTLAST PRO FOAMING** [136 PHT LATRON B-1956 [61 CONTINGENT [141 PACIFIC PREMIUM COC [6 AGENT [16 CONFORM DP [10 BREAK THRU SP 133 [1 POINTBLANK [33 JACUZZI ALKALINITY UP [1

SURE UP [2 KEM-TEK POOL & SPA CARE ADJUVANT FA -FARM GENERAL DEFOAMER GLYLOAD [3 STABILIZER CONDITIONER [17 HORTICULTURAL TREATMENT [16 LOAD OUT [4 CADO MAX [13 FARMWORKS DEFOAMER [15 FULLOAD HWP [5 ALLIGARE MSO WEST [58 ADJUVANT HW ACID KEM-TEK POOL & SPA CARE PRELOAD [12 ALLIGARE ANTI-FOAMER [57 ACTIVATOR [66 STABILIZER CONDITIONER [24 LOAD OUT-CA [9 **AVANT XTRA [23 ALLIGARE PATTERN [59** CROP OIL CONC PLUS [25 PHT AD-HERE SP [63 BIO-WET [1 FORTIFY [22 DILIGENCE-EA NW W/ PHT KICKER [55 BROADSPRED [8 LEEWAY [26 ACCUSTRIKE TECHNOLOGY SYNBIONT CROP ENHANCER [1 MONTEREY HERBICIDE PLANT HEALTH [141 E-Z MIX COMPATABILITY HELPER CROP OIL CONC [115 TECHNOLOGIES LOAD-UP [71 EFFICAX [150 ADJUVANT [337 F.S 18 [8 PLANT HEALTH CHEMSURF 90 [240 PENETRON PENETRANT [315 **OVS CONTAINMENT [6** TECHNOLOGIES AD-SORB RST HIGH LOAD MSO [1 BORDER XTRA 8L [11 SORBYX [18] [77 RESILIENCE [3 SYNC FUNGICIDE ACTIVATOR TRANSPORT PLUS [14 PLANT HEALTH FBN AMS PRO [1 [13 IMPORT [17 TECHNOLOGIES PERSIST FBN AMS 34L [2 **GUNDOWN MAX [15 COLUMBIA RIVER B-52** ULTRA [74 HTH (+) ALKALINITY **BIOLINK ACIDIFIER [11 BUFFER-ACIDIFIER** [8 PLANT HEALTH **INCREASER** [337 INTACT [23 COLUMBIA RIVER C-90 [9 TECHNOLOGIES VESTIS [75 HTH STABILIZER [338 HTH STABILIZER [338-1 DERIVA [20] COLUMBIA RIVER SILCOTE PLANT HEALTH TECHNOLOGIES VOLARE DC HTH (-) pH DECREASER [339 ADJUVANT CH - ACID 2000 [10 ACTIVATOR /CHLORINE PROSOLUTIONS DEFOAMER [1 HTH (+) pH INCREASER [340 DIOXIDE 159 WAI INVADE [3 AD-SPRAY 90 NIS [156 BLAZE [15 ADJUVANT H - ACID AERO DYNE-AMIC [52 SPECTRA MAX TANK MIX [16 HOLD-FAST [14 ACTIVATOR /CHLORINE VALKYRIE [10 DIRECT HIT [1 FUMA-PRO [20] DIOXIDE [58 PHT AD-MAX 90 [68 MOBILIZE [3 **HOLLOW POINT [16** WILCO CROP OIL 98-2 [1 PHT VESTIS [69 PH BREAKER [6 WAI 90-10 [4 YARDAGE 17 PHT VOLARE DC [70] AMS/NIS [9 WAI INFERNO [5 DE-pHEAT2 0-16-10 [310 PLANT HEALTH DYNAMIZE 90 [4 WAI MSO [6 LOVELAND BARK OIL CARRIER TECHNOLOGIES VESTIS [99 TRAIL BLAZER [2 WAI INFIX [7 & DILUENT [319 PACIFIC PREMIUM MSO [8 R-AGENT DL [1 WAI CROP OIL [8 DEFOAMER [9] PACIFIC PREMIUM DRA [7] HASTEN-EA [132] MILLER NU-FILM 17 [4 FLASHPOINT [8 PACIFIC PREMIUM NIS [9 RAINIER-EA [134 DREXEL HOT MES [56 GLB pH UP [42 POINTBLANK WM [145 800 PLUS [2 RENEGADE-EA [135 FOAMBUSTER 10 [146 GLACIER-EA [138 SYL-TAC-EA [131 GLB pH DOWN [41 SUPER SPREAD MSO [55-1 ANTERO-EA [143 CLASS ACT FLEX [190 GLB ALKALINITY UP [32 NALCO 60625 [99 PUREAG FOLIAR FEEDER [2] SPRAY-PREP [25 GLB STABILIZER [33 PENTRA-BARK [1 CLIDOX-S ACTIVATOR [8 JACUZZI BROMINE BOOSTER [7 RENDEZVOUS SPA WL HILOAD 60-40 [10 BRANDT ONSITE [17 PENETRATOR 2-0-0 [1 SPECIALTIES ALKALINITY UP BRIMSTONE [105 **EQUINOX STABILIZER-15 [54** DREXEL SURF-AC 910 NON-[35 CoACT+ [186.2 COLOR GUARD -ORGANIC PH **IONIC SURFACTANT [26** RENDEZVOUS SPA MELT [16 ADJUSTER [60 FARMWORKS 80/20 SPECIALTIES pH DOWN [39 WOODSIDE [9 SURFACTANT [14 RENDEZVOUS SPA JET+SURF [6 SPECIALTIES pH UP [40]

RENDEZVOUS SPA PRO MULTI-SPRED [5 BAQUASPA TOTAL VOLARE DC [2 SPECIALTIES SPA DECREASE MULTI-SPRED [4 ALKALINITY INCREASER [347] CONVERT [6 NEW CENTURY OIL SPREADER [37 POOLIFE EXCL POOL CARE EXCHANGE [12 RENDEZVOUS SPA COLL ALKALINITY PLUS OROMAX [6-1 SPECIALTIES SPA INCREASE [38 CROPSMART AIRLINK [4 BALANCER [360 OROBOOST [5-1 RENDEZVOUS SPA COLUMBIA RIVER PINENE S CHLORINE-FREE BAQUACIL ORO-RZ [8-1 SPECIALTIES pH MAGIC [34 SPREADER-STICKER [11 TOTAL ALKALINITY WETCIT [2-1 RENDEZVOUS SPA OVS 90 NIS [1 **INCREASER** [357 ORGANOMEX [5 SPECIALTIES BROMA-START OVS PENETRANT [3 BRILLIANCE FOR SPAS START E-Z WET SA [3 [36 OVS BUFFER [5 UP [352 OVS MSO [8 ENHANCED SULFATE [5 OVS CREMATE [2 POOLIFE EPPC STABILIZER & OVS CROP OIL CONC [7 SURFACT 50 [7 OVS DEFOAMER [4 CONDITIONER BALANCER [361 DREXEL PAS-800 [82 ORO-HSMOC [9 DREXEL PINENE II EXTENDER POOLIFE EXCLUS POOL CARE FROG MAINTAIN [31 BUFFER PROTECT NT [4 & STICKER [23] COLL pH PLUS BALANCER [363 NOVITA AMS-A PLUS [1 FALX [15 DREXEL FOME-KIL [57 POOLIFE EXCLUS POOL CARE NOVITA LIQUID AMS [4 PSYCHO SSP [4 NOVITA WATER CONDITIONER FALX [15-1 COLL pH MINUS BALANCER ORANGE GUARD SPRAY BRANDT BUFFER-TEN [36 [362 [7 FLAME SPRAY ADJUVANT [345 ADJUVANT [3 PULSAR SUNSCREEN 20 NOVITA MSO XTRA [5 SPA SELECTIONS PH DE-FOAMER FG [24] STABILIZER [364 STRIKELOCK [216 pH IN ORANGE PODS pH UP FOR DRENCH-PHOS POST-HARVEST DECREASER [8 HTH SALT POOL CARE CNI MSO [4 POOLS [6 STABILIZER [358 [19 MONTEREY MAGNIFY [116 pH IN YELLOW PODS pH DOWN HTH SALT POOL CARE pH HYPER-ACTIVE [40 KNOCKDOWN [36 FOR POOLS [7 DECREASER [359 TURFGR WATER DREXEL HUM-AC 820 [39] MINERAL TECH [1 DESCEND [3 CONDITIONING AGENT [70 TRIO-W [5 BRILLIANCE FOR SPAS pH CAPSIL [1 NOVITA DRIFT CONTROL [2 CNI 90-10 [1 TRUE [356 MILLER NU FILM P [7 NOVITA FOAMNOMORE [3 SS 100 NONIONIC SURFACTANT SPA SELECTIONS pH MILLER EXIT [3 AMS FREE [10 COC CROP OIL CONC [8 DECREASER [366 MILLER MIST-CONTROL [6 RENDEZVOUS SPA SPA SELECTIONS pH POOL BREEZE POOL CARE DuPONT TPQ89 ADJUVANT [193 SPECIALTIES pH DOWN [39-1 **INCREASER [367** SYSTEM pH DECREASER [416 PURE & SIMPLE 90% [30] ALKALINITY UP [24 BAOUA SPA pH DECREASER 90 YEARS OF HTH PERFECT OCTANE 90 [31 **QUANTUM STABILIZER [25** [348 **NEXY ADDITIVE [2** POOLS ALKALINITY UP [430] BAQUA SPA pH INCREASER 90 YEARS OF HTH PERFECT NOVITA MSO [9 pH DOWN [27 pH UP [26 POOLS STABILIZER [431 RAWWAR [24 BRILLIANCE FOR SPAS pH SILCHEM SAF-1327 [2 90 YEARS OF HTH PERFECT WARRAW [25 STAR PLUS OXIDIZING SHOCK DECREASER [354 POOLS pH DOWN [432] ALPHA-8 [23 & SWIM [52 BRILLIANCE FOR SPAS pH 90 YEARS OF HTH PERFECT SBC HELIX OA [1 ADMIT ALL APPLICATION inCREASER [355 POOLS pH UP [433 SPREAD COAT [5 ENHANCERS [2 HTH SPA pH DECREASER [375 NIS 90:10 [5 TANK MAX CA SPRAY TANK ACIDIFIER [2 HANG UP APPLICATION BAQUACIL pH INCREASER [351 PROTYX [10 ENHANCERS [4 BRILLIANCE FOR SPAS TOTAL PERSIST ULTRA [1 POLY MAX SPRAY TANK ADJUVANT [1 HARDWIRE ACTIVATOR [5 **ALKALINITY INCREASER [353** ELIMINO [7 AGPRO PHLAME [1 VESTIS [8 NOVITA 700 [6

RENDEZVOUS SPA HTH PRE-MEASURED WATER NUEVE [9 NEW CENTURY BUFFER [11 SPECIALTIES pH DOWN [39-2 SOL PODS STABILIZER [391 CROSSLOCK [10 BLEYHL CO-OP BUFF IT [12 RENDEZVOUS SPA EMULSE XT [3 90 YEARS OF HTH PERFECT FORTISOLVE 200 - ACTIVATOR SPECIALTIES pH UP [40-1 POOLS PRE-MEAS OPEN & EMULSE CX [4 FOR USE ONLY WITH PREFERENCE [63 POUR POUCH pH DOWN [398 DEFOAMER-D [5 FORTISOLVE 100 [20 CONSTANT BUPH-ER [4 WOODBRITE CO [6 90 YEARS OF HTH PERFECT STRIKE ZONE DF [42 STICK-IT [6 POOLS PRE-MEAS WS PODS CITRIX [32 ZAAR [198 HTH SPA BROM-START [379 SALT SOLUTIONS BY ULTIMA ALKALINITY UP [399 CRUZADO [34 POOLIFE PODS ALKALINITY 90 YEARS OF HTH PERFECT MONTEREY HERBICIDE STABILIZER [11 PLUS [384] POOLS PRE-MEAS WS PODS HELPER [37 SALT SOLUTIONS BY ULTIMA POOLIFE PODS STABILIZER & STABILIZER [400 AUDIBLE 80 [10 pH DOWN [12 CONDITIONER [385 **GULFSTREAM FREE [244** MCGREGOR CONFORM [13 PERADIGM [13 POOLIFE PODS pH MINUS [386 90 YEARS OF HTH PERFECT DROP pH [2 CROP OIL M [15 POOLIFE PODS pH PLUS [387 QUINTAIN [91 TEST LABEL 2 FOR UPDATES POOLS PRE-MEAS WS PODS pH SPA SELECTIONS PH BB5 NATURAL CONC [90 ADJUVANT HP [72 UP [401 90 YEARS OF HTH PERFECT **INCREASER** [9 KICKER PRO [94 ADJUVANT CHP [73 SPA SELECTIONS BROM START AGPRO SYSTEMS SS-9 [2 ORGANIC PH-D [67 POOLS PRE-MEAS WS PODS pH RENDEZVOUS SPA DRIFT-X [28 DOWN [402 KRISTOL [4 SPECIALTIES pH UP [40-2] MCGREGOR DOWNRIGGER [11] PLANT HEALTH PENTROL [2 LEISURE TIME ALKALINITY RENDEZVOUS SPA TECHNOLOGIES AD-MAX 90 [98 VINCERO 90 [5 SPECIALTIES BROMA-START INCREASER [11 MICROSOLVE ACTIVATOR **OBLITERATE** [15 [36-1] LEISURE TIME LIQUID SPA **SOLUTION -USE** AGRA LO-DRIFT 90 [16 LOCK-IT II [17 DOWN [12 W/MICROSOLVE DISI CLNR [114 LEISURE TIME LIOUID SPA UP AGRASYST 90 [14 BRONC TRIPLE [139] MICROSOLVE SOFT METAL HYPERACTIVE [40 INSIST 90 PLUS SURFACTANT **ACTIVATOR SOLUTION -USE** CHS AXON [15 [140] LEISURE TIME SODIUM W/MICROSOLVE DISI CLNR [115 SURFIX P STICKER [179 **GAUNTLET 195 BROMIDE [14** FBS HARMONY [6 OSO-WET SURFACTANT BLEND LOAD-UP [92 LEISURE TIME SPA DOWN [15 WL 90 [12 [10 DECIMATE [93 LEISURE TIME SPA DOWN [15-1 PHT PERSIST ULTRA [17 ONE-AP XL [2 **OUINTAIN XTRA 8L 196** LEISURE TIME SPA UP [16 PHT KICKER ULTRA DRY [19 PLANT HEALTH BIO-90 [3 LEISURE TIME SPA UP [16-1 FASTSTRIKE [82 BRANDT ULTRA 90 [24 TECHNOLOGIES BB5 NC [97 LEISURE TIME PH BALANCE [17 ACID-RITE TABLETS [38 LEAF LIFE SLINGSHOT [360 CHEMSTATION 35401 -KEYSAL 90 [2 LEAFLOCK SPREADER LEEWAY II [29 MAXSO [17 STICKER [231 ACTIVATOR FOR 35400 [10 BREAK THRU S-301 [3 DRI NONIONIC SURFACTANT [6 MAXSO CON [18 WL CP-50 [16 BREAK THRU S-301 [3-1 NAVA SHOCK OXIDIZER [44 FIGHTER-F 10 [161 MILLER FOAM FIGHTER [5 HTH PRE-MEASURED WATER LEISURE TIME pH BALANCE TURFGRO BOOSTER II [78 NAVA ALKALINITY BOOSTER SOL PODS ALKALINITY UP [388] PLUS [18 ULTRA SOFT METAL [45 HTH PRE-MEASURED WATER BRANDT UMBRELLA [26-1 ACTIVATOR - PART 2 OF 2 [16 NAVA STABILIZER & SOL PODS pH DOWN [389 BRANDT 719 SPREADER [55 CITRI-AMP [1 CONDITIONER [46 HTH PRE-MEASURED WATER BRANDT 719 SPREADER [55-1 FOAM-STOP [13 NAVA pH DECREASER [47 SOL PODS pH UP [390 PURELY HYDRO [1 BLEYHL CO-OP BUBBLE POP NAVA pH INCREASER [48 ACT360 [8 TURF FUEL THE WORKS [2 [14

MILLER SUSTAIN [9 MILLER SPRAY AIDE [10	BRANDT A+ [59 DELTA FORCE [373	PHT CROP OIL CONCENTRATE [25]	Kem-tek Pool & Spa Care Spa Ph Plus
AQUA CLEAR POOL PRODUCTS	QUAD 7 [372	EXCEL 70 [1	Lock-in
CHLORINE STABILIZER [1	FBN HIGH SURF MSO [6	ADIGOR ADJUVANT [207.2	Wes Crop Oil
AQUA CLEAR POOL PRODUCTS	FBN CROP OIL CONC [7	METHSOYOIL [7	Strikelock
PH DECREASER [2	FBN PUREBLEND MSO [5	ORO-NIS [14	Farm General Defoamer
AQUA CLEAR POOL PRODUCTS	STRIKE ZONE DF [42	RANGE MASTER [11	Hth Pre-measured Water Soluble
PH INCREASER [3	SURFACTANT FOR HERBICIDES	RANGE MASTER [11-1	Pods Stabilizer
AMPERSAND [1	[7	OVS REGULATOR [9	Nu-film-ir
ACCOMPLICE [3	LESCO 90/10 NONIONIC	OMNIX LDF [42	Frontpage
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DIRECT RS [28	COVERALL PLUS [15	TACHEON SPREAD [39	Salient 372 Fs Seed Treatment
VIGOR [30	COLLAPSE [16	CORN FOAM {4	Fungicide
NEXUM [32	INVADE RST [16	AGWET 41 [1	Exit
AVOR [31	DREXEL PRIMARY [72	Y-20079 [1	Accudrop
BORDER 2.0 [33	DREXEL AMS-ALL [71	GUNDOWN ELITE [35	Leaf Life Organic Water Conditioner
TACHEON DUO [38	TYRANT HSOC [5	TACHEON COMPLETE [37	Profoam Platinum
WL CP-35 [14	PHUSE [6	LV WATER CONDITIONING	Mso Concentrate
SBC OASIS [2	BROADSPRED GREEN [9	AGENT, SURFACTANT AND	Fast Break
pH IN ORANGE STRIPED PODS -	LIQUID AMS-D [10	HUMECTANT [40	Jacuzzi Spa Shock Oxidizer
pH UP /HOT TUBS [8	PHT NUTRIENT BUFFER 0-10-0	L	Sedate Max
pH IN YELLOW STRIPED PODS -	PLUS [26		Hth Alkalinity Increaser
pH DOWN /HOT TUBS [9	PHT ESCALATE WATER		Phase
STRONGSIDE [6	CONDITIONING AGENT [23		Phin Orange Striped Pods Ph Up For
AMS PREMIUM BLEND MAX [1	PHT KICKER PRO [48	Tennessee	Hot Tubs
SPECTRA PH [2	ECOLAB AQUA BALANCE	Telliessee	Pathfinder Blue
BRANDT M.S.O. [32	CHLORINE FREE OXIDIZER -		Brandt Super 7
BRANDT UMBRELLA [26	POOL [200		Contain Max
PERAFOAM [7	ECOLAB AQUA BALANCE	Actamaster Soluble Crystal Spray	Ps 804 Select (1 Gallon And 2.5
BRONC MAX [59-2	MURIATIC ACID /SWIMMING	Adjuvant	Gallon)
ANTERO-EA [143-1	POOLS [204	Lesco Rain-ject (091130)	90 Years Of Hth Perfect Pools Pre-
TRI-FOL ACIDIFIER &	ECOLAB AQUA BALANCE	Prefer 90	measured Open & Pour Pouch Ph
BUFFERING AGENT [40-1	DECHLOR REDUCING AGENT	Lescoflo Ultra Granular Superior	Down
EFFICAX [150-1	[197	Non-ionic Wetting Agent For T&o	Methsoyoil
BB5 NC ACIDIFIER-	ECOLAB AQUA BALANCE POOL	(088600)	Precinct
SURFACTANT [4	CONDITIONER [201	Pool Style Pool Products Ph	Amigo
WETCIT [16	ECOLAB AQUA BALANCE SPF-	Decreaser	Bioamp Aa
WETCIT [16-1	3050 -SWIMMING POOLS [202	Poolife Pods Ph Minus	Break Thru T & O
ATTITUDE [18	ECOLAB LIQUID K [195	Fieldgoal	Agrisolutions Level 7
ORO-4 [19	SALT SOLUTIONS BY ULTIMA	Surfix	Cohere
ULTRASIL 740 [325	WEEKLY SALT POOL REFRESH	Hth Pre-measured Water Soluble	Class Act Ridion
ECOLAB BOOST 3201 SM [326	[14	Pods Ph Down	Kristol
TEST LABEL FOR UPDATES			Foaminator Dry

Seaklear Chlorine Free Shock **Topside** 41-a Dry-flowable Drift Control Oro-hsmoc Additive Kammo Plus Oxidizer Pool Style Pool Products Stabilizer Dyne-a-pak Spray Adjuvant And Polyan Desikote Kem-tek Pool & Spa Care Muriatic Deposition Aid Diligence-EA Farm General 80/20 Surfactant Acid Cni Defoamer Harrells Spraymax Herbicide Green To Clean Cense Simple Rituals Lescoflo Ultra Wetting Agent Tablet E-z Clor pH Up Airtech Activator E-z Clor O2 Shock Tactic Spa Ph Decreaser Pods (184900)Jacuzzi Alkalinity Up E-z Clor Alkalinity Up Cni Agri-oil Completion Pointblank Wm Trapline Pro Voyager 90/10 Spa Selections Brom Start Hth Pre-measured Water Soluble Emulate Nzone Alligare Mso 1 Farmworks Defoamer Fs Crop Oil Plus Sulfactant Pods Alkalinity Up Resilience Agua Guard Muriatic Acid 1 Purely Hydro Sustain Poly Film-r Maximizer Spa Ph Increaser Pods Drexel Hot Mes Phuse Aircover Agrisolutions Interlock Atmos Harrells Spraymax Defoamer 90 Years Of Hth Perfect Pools Pre-Liberate Kem-tek Pool & Spa Care Spa Non-Adigor Adjuvant measured Water Soluble Pods Ph Activator 90 chlorine Shock Oxidizer Bark Oil Blue Down Thatch Buster Pool Essentials Muriatic Acid Scoria X Dry Tuff Trax Drexel Pas-800 Fact-or Pro Side Muriatic Acid Venturi Drexel AMS-XTRA Lesco Hawkeve #069404 Seauel Cognitive 1 OnTarget GLB pH Up **Buckhorn Total** Accuquest Wm Vixen Ac-l Actamaster Spray Adjuvant Oroboost 90 Years Of Hth Perfect Pools Pre-Audible 80 Lesco Recade Liquid Antifoam #069386 Scrimmage measured Water Soluble Pods Hand Off Instant Pool Water Conditioner Spa Selections Ph Decreaser Stabilizer Anchor Choice Weather Master (lpi) KINETIC Drexel Sil-fact Surfactant Fireball Flame Shake Down Gulfstream Veracity Elite Ii Hth Pre-measured Water Soluble Instinct HL Promark 90 Years Of Hth Perfect Pools Premeasured Water Soluble Pods Pods Ph Up Herbicide Helper Spa Alkalinity Increaser Pods Wick Surfate Spray Adjuvant Yellow Gone Alkalinity Up Ag 14039 Amspread Invade Fire-zone Equinox Stabilizer-15 Drexel Fome-kil Alligare Buphr Clear Spa 104 Spa Solutions Ph Plus Drexel Mes-100 Modified Vegetable Microsolve Activator Solution Last Chance Compadre Oil Concentrate Harrells Spraymax Crop Oil Soiltrate Zaar Lesco Ecosential Moisture Manager Concentrate E-z Mix #084855 Hydrate Plus Nf Envelop Request Hook Zero Verimax Ams Jacuzzi Ph Up **Tvrant** Penetron Audible 90 Iconic Hydra-hume A Fast Rate Mso Surfactant Clidox-s Activator Harrells Spraymax Activator Oculus W-box Rawwar Pentrol Kem-tek Pool & Spa Care Stabilizer Conquer Spray Adjuvant Farmworks 80/20 Surfactant Hel-fire

Li 700

CIDE WINDER

Flame Spray Adjuvant

E-z Clor Ph Down

Smoke

Intact

Conditioner

For Hot Tubs

Phin Yellow Striped Pods Ph Down

Strike Zone LC

Upland Mso

Axon

Hth Ph Decreaser Levesol Defoamer Clearview Chlor Free Shock & Drexel Surf-ac 910 Non-ionic Swim 15 Mso Concentrate With Leci-tech Ams 4xl Surfactant Pool Season Non-chlorine Shock Pool Season Alkalinity Up H-45 Nzone Gl Pristiva Liquid Rapid Action Gundown Max Lesco Flo Ultra #084570 Agua Guard Non-chlorine Shock Stabilizer Harrells Siloxane Surfactant Navigator Hc Oxidizer Drop Ph Drexel Lox Spa Oxidizing Shock Pods Rendur Defoamer Alligare Drift Control Amp Activator Alligare Trace Airlink Verifact Warraw Phase Ii Nzone Max Protyx Fixate Pro Hth Stabilizer Sms 400 Soil Surfactant Poolife Pods Ph Plus Poolife Pods Stabilizer And Drexel Mix Woodside Weather Gard Complete Conditioner Emulsifier Blend Mediate Plus Alligare 7 Green Aid Mso Ultra Combust Kem-tek Pool & Spa Care Water Conditioner + Surfactant Silenergy 16098 Swimming Pool Muriatic Acid Blendex VHC Linkage Ad-spray 90 Nis Hi-yield Spreader Sticker Boost 3201 Sm Permeate Harrells Spraymax Nonionic Harrells Ph Buffer Drexel Vegetoil Emulsifier Stake Alligare Water Conditioner 1 Invade Rst Penetrant Velomax Plex Mate Surfactant Microsolve Soft Metal Activator Lesco Spreader-sticker #019255 Exuro Lesco 90/10 Nonionic Surfactant Gunsmoke Solution Oro-rz Clearsurf 90 Trio Spa Selections Non-chlorine Shock Drexel Ams-supreme Poolife Pods Alkalinity Plus Ag 13063 Oxidizer Aqua-king Plus Response Du Pont TPQ89 Adjuvant Jagge Attach Non-ionic Spreader Sticker Cense Island Pleasure Aqua Guard Stabilizer Conditioner Synurgize Vincero 90 Leaf Life Slingshot Phin Orange Pods Ph Up For Pools Infuse Yellow Out **Suffusion Tablets** Back Field Offside Jackhammer Reign Cense Divine Secrets Rendur Compatibility Agent Alligare Coc Crop Oil Concentrate Tpa89 Sure Fire Crop Oil Plus 800 Plus Aqua Chem Balanced For Clean Hth Salt Pool Care Ph Decreaser Pools Muriatic Acid Peradigm Alligare Forestry Oil Pool Style Pool Products Alkalinity Partition Increaser Cni 80-20 Pentra-bark Foliar Nutrient 3 Hth Spa Non-chlorine Shock Wheelhouse Pro Ex Plus Induce Ph Aqua Guard Alkalinity Booster Drexel Haf-pynt Oxidizer Purge Nanoboost Alligare Mvo Plus 1 Aqua Guard Ph Down Breeze Jackhammer Elite V-drift Control Triple Play Sms 200 Soil Surfactant Civitas Harmonizer Impel Red Fortify Pht Latron B-1956 Contain Soydex Plus Fixate Kem-tek Pool & Spa Care Ph Plus Seaklear Shock Oxidizer Pods For Raider Tg Reverse Bark Oil Lt Hy-stop Navigator Crop Oil Concentrate Hydro-pak Command 38-f Liquid Drift Control Additive Wheelhouse Chem-stik Drexel Pinene II Extender And Clear Spa 104 Spa Solutions Crystal Harrells Spraymax Nonionic Wetcit Sticker 90 Years Of Hth Perfect Pools Pre-Shock Oxidizer Spreader Sticker Clear Spa 104 Spa Solutions Ph measured Water Soluble Pods Ph Up Spa Selections Ph Increaser Ultra Pro

Minus

Dc-4

Nyincible

Mystic Hc Spray Pattern Indicator Hi-wett Mon-10 Ivc Defoamer Clasp Drexel Bean

Sms 700 Soil Surfactant Citrisan Efficax Voyager 80/20 Succeed Ultra Cynder Bioguard Muriatic Acid Contractor Persist® Ultra

Hth Salt Pool Care Stabilizer Strength

Hyper-Active Cense Quiet Escape

Blastoff **Brilliance For Spas Oxidizing**

Between **Tablets** Lesco Wet Plus #069383 Traverse D Aqua Guard Muriatic Acid Justified Yardage Nemasan Poolife Pods Non Chlorine Oxidizer Bark Oil Blue Lt

Choice Trio Valcheck Nvincible Plus Turbulence Coact+ Bark Oil Foambuster 10 Sitka

Harrells Spraymax Nonionic Seaklear Balanced Shock Oxidizer

Penetrant Plus For Spas Brewer Ta-39 Droplex Xtra Comp-aide Jette 80/20 Trapline Pro Ii Green Gone

Fbs Harmony Agrisolutions Powerlock

Hydro-pak Matador Spreader 90

Chemsurf 90 Turfvantage Nanoboost Brandt Indicate 5 Bark Oil Red Lt

Agri-dex Hook

Velomax Drt Agrisolutions Class Act Flex

Aquicare Mediate 90/10 Surfactant Velocity Elite Hypertonic Veracity Dyne Amic Savvy

Winfield Droplex Noble Kem-tek Pool & Spa Care Spa Ph Agrisolutions Superb Hc

Harrells Spraymax Methylated Seed Minus

Spredde 90/10

E-z Clor Clor Save High Load Mso

Ultra Soft Metal Activator Level Best Spread Coat Liquid Ams Herbimax Freeway

Aqua Guard Ph Up Lesco Methylated Seed Oil

Boost 3201 Aqufact

Appendix D Email From Washington State Registrar On Adjuvant Registration

Email excerpt from Washington state's pesticide registrar:

....You will note that the ingredients column for all the adjuvants contains "no active ingredients." This is because adjuvants technically contain only inert ingredients. We use the phrase are functioning like an active ingredient. State law requires that the top three PFAs be listed on the label in descending order of concentration, and the TOTAL percentage of all the PFAs be listed as well. If you click on one of the red WA hyperlinks you will be able to view that product's label. If you look at a label you will see that the ingredient statement uses "constituents ineffective as spray adjuvants" (CIASA) instead of "inert ingredients."

Unfortunately, I cannot share information on the composition of any of the spray adjuvants. We track the PFA ingredients that are listed on the label and are publicly accessible via PICOL. The CIASAs are not tracked or recorded by us; they appear on the Confidential Statement of Formula only. And as you mention below, we cannot share confidential information.

There is, however, a kind of work-around to getting this data. We use EPA's InertFinder website when we review an adjuvant. ALL spray adjuvant ingredients must be verified as being an inert. If we cannot find them on the website, we will contact the Inerts Branch to have them verify if it is an inert (I've been told they have an internal database that contains more inerts.) The EPA InertFinder website is located here:

https://ordspub.epa.gov/ords/pesticides/f?p=INERTFINDER:1:135638543692: :NO:1. You could enter the CAS numbers on the spreadsheet you sent me into the CAS reg. No. field and see if they come up as a recognized inert....

Appendix E Lists of PFAS Definitions

Table 4. List of PFAS definitions and validated test methods for PFAs substances

Origin of Definition	Number of Chemicals	Definition	Notes on the Used Definition
Buck et al. 2011	268	Detailed in Buck et al. 2011 Perfluoroalkyl and Polyfluoroalkyl Substances in theEnvironment: Terminology, Classification, and Origins. Integrated Environmental Assessment and Management Vol 7 Num 4pp 513-541.	This is the original modern understanding of PFAS structure.
EPA's PFAS Master List	9,252	A List of Lists: Per- and polyfluorinated alkyl substances (PFAS) represent a growing, increasingly diverse inventory of chemicals of interest to the general public, scientific researchers, and regulatory agencies world-wide.	US EPA "PFAS Master List of PFAS Substances (Version 2)"; serves as consolidated list of substances spanning and bounded by the lists, defining a practical boundary of PFAS chemical space (within DSSTox) of current interest to researchers and regulators worldwide.
EPA Drinking Water Test Method	18	Compounds positively identified by Method 537.1. Method 537.1 is one of the standard tests used for drinking water throughout the US.	Method 537.1: Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) (2018/2020)
EPA Oily Matrix Test Method	28	Compounds positively identified by methods detailed in 'Analysis of PFAS in Oily Matrix'. This method is a modification of 537.1.	Released Fall 2021, available at: https://www.epa.gov/system/files/documents/2021-09/epa-pfas-method-in-oil.pdf
EPA with National Toxicology Program	75	Individual chemicals prioritized for future toxicity testing based on underlying risk.	Per- and Polyfluoroalkyl Substances (PFAS) list corresponds to 75 samples (Set 1) submitted for the initial testing screens conducted by EPA researchers in collaboration with researchers at the National Toxicology Program.

Appendix E continued...

Origin of Definition	Number of Chemicals	Definition	Notes on the Used Definition
State of Maine: "Sum of 6 PFAS" / "regulated PFAS contaminants"	6	"Perfluoroalkyl and polyfluoroalkyl substances" or "PFAS" means a perfluoroalkyl substance or polyfluoroalkyl substance that is detectable in drinking water using standard analytical methods established by the United States Environmental Protection Agency, including regulated PFAS contaminants.	Resolve 2021, Ch.82 - LD129: To Protect Consumers of Public Drinking Water by Establishing Maximum Contaminant Levels for Certain Substances and Contaminants
State of Maine Definition per LD 1503	Unknown	"Perfluoroalkyl and polyfluoroalkyl substances" or "PFAS" means substances that include any member of the class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom.	H.P. 1113 - L.D. 1503 An Act To Stop Perfluoroalkyl and Polyfluoroalkyl Substances Pollution of 2021
OECD	4,730	PFASs are defined as fluorinated substances that contain at least one fully fluorinated methyl or ethylene carbon atom (without any H/Cl/Br/I atom attached to it), i.e. with a few noted exceptions, any chemical with at least a perfluorinated methyl group (– CF3) or a perfluorinated methylene group (–CF2–) is a PFAS.	Issued Fall 2021, OECD attempts to harmonize the chemical structures while explicitly stating that structures alone should not dictate policy.
EPA OPPT	Approximately two pesticide a.i.s	"a structure that contains the unit R-CF2-CF(R')(R"), where R, R', and R" do not equal "H" and the carboncarbon bond is saturated (note: branching, heteroatoms, and cyclic structures are included)"	EPA Office of Pollution Prevention and Toxics "working definition" for PFAS.
Found in Pesticide Container Testing	8 (clearly not a definition but it sets a potential expectation)	Testing done at EPA's Ft Mead in 2020 using a Modified Method 537.1	PFAS compounds detected on/in the containers