



Testimony: SB 158: Pesticide Registration – PFAS Testing – Requirements

Submitted to: The Senate Committee on Education, Energy, and the Environment (EEE)

Submitted by: The Smart on Pesticides Coalition of 112 organizations and businesses

Position: In Support

February 2, 2023

Dear Chair Feldman, Vice Chair Kagan and Members of the Committee,

The Maryland Pesticide Education Network and its **Smart on Pesticides Coalition** comprised [of 112 organizations and businesses](#), support passage of SB 158 banning all sales and uses of PFAS-containing pesticides in Maryland. We are a non-profit organization dedicated to protecting the public and the environment from toxic pesticides and promoting healthy alternatives.

- **PFAS exposures (*per and polyfluoroalkyl substances*) are linked to serious long-term health impacts for all life, even at [low levels of exposure](#).**
- **PFAS are called the “forever chemicals” because like DDT, lead, and ozone they continue to be alarmingly harmful for extremely prolonged periods and pose serious harm for generations to come — unless PFAS are addressed with long-term strategies to overcome their harmful impacts. PFAS is a class of chemicals and while only 1,000 are used commercially, there over 12,000 that have been identified.**
- **Recently, there has been welcome good news regarding the Earth’s fragile ozone layer: [Phasing out harmful ozone-depleting chemicals](#) has led to the partial recovery of the ozone hole. And we have reduced lead levels in Maryland, thanks to needed state laws and policies. Problems that once seemed insurmountable are now, due to wise leaders acting, are increasingly becoming success stories. Decades of hard work curbing these harmful chemicals has led to improvements in our environment and hope for better public health.**
 - ❖ **We need to tackle PFAS in pesticides with a similar strategy.**

“If the intent was to spread PFAS contamination across the globe there would be few more effective methods than lacing pesticides with PFAS,” [PEER Science Policy Director Kyla Bennett](#), and former EPA attorney

Maryland annually registers about 14,000 pesticides for sales and use in our state. To date, we have little knowledge regarding the number of these pesticides which contain PFAS, however increasing scientific evidence suggests that many do.

Consider this:

- **EPA’s lifetime safe level for the most notorious PFAS, PFOS, in drinking water is 0.02 parts per trillion (ppt). [New research found extraordinary high levels](#) of this PFAS in common pesticides used on food crops, in the millions parts per trillion; **the crops grown in these fields tested ten thousand times higher than EPA’s lifetime drinking water limit of 0.02 parts per trillion.****
- ❖ This **recent study** in the Journal of Hazardous Materials Letters, found PFAS in 6 out of 10 **tested pesticides at levels ranging from 4 million to 19 million ppt**. Based on the 6 PFAS-contaminated pesticides tested, Maryland registers 346 pesticides products containing these active ingredients, amplifying concern similar products registered in Maryland may also contain PFAS.

- **Other recent research shows dangerous levels of toxic PFAS in freshwater fish:** Eating just one Maryland rockfish could be equivalent to drinking PFAS-tainted water for a month. Keep in mind, these numbers are for a single exposure; we may be eating tainted food every day and it accumulates in our bodies.
- **PFAS are considered “forever chemicals” because they remain in our bodies for years.** Given our ongoing cumulative exposures to PFAS they remain present in our bodies.
- **To date, there is no research on the synergistic effects of combining PFAS with pesticides.** Pesticides and PFAS each are already known to have long-term adverse health impacts which raises serious alarm bell for public health experts.
- **Pesticides do not require PFAS to be effective** as noted by two mosquito control product samples tested by EPA used by the Maryland Dept. of Agriculture (MDA) in Maryland. There are alternative additives to PFAS for increasing delivery impacts of pesticides.

Encouraging news

3M a global chemical manufacturer of PFAS recently announced its plans to terminate production of PFAS by 2025. Market shifts like this are welcome and crucial but must be accompanied by state-level policy changes to protect all life from further harm. While eliminating exposure to PFAS appears to be a daunting task, we can make a difference by eliminating a significant unnecessary source of PFAS exposure in our state and fill the void left by federal regulators who have so far failed to address this crucial issue.

Last year, Maryland legislators wisely took a crucial first step to do so by banning PFAS in firefighting foam, food packaging, carpets, and rugs.

Similar to other toxic chemicals that cause dangerous health impacts such as lead, asbestos, and the pesticide DDT, the first step is identifying the problem. As with these overwhelming issues we have conquered, once identified, the solutions were evasive, and the threat seemed insurmountable. This is where we are with PFAS. The issue and even the solutions have been scientifically clarified. The time is now for addressing the solutions.

Why more PFAS use guardrails are needed

PFAS exposure through pesticides presents a broader risk to Marylanders and our environment than common household items because pesticides are so pervasive. There are 14,000 of pesticides used in Maryland, and they are everywhere.

- Everyone is subjected to pesticides where we work and play – in public spaces, healthcare facilities, schools, and our neighborhoods.
- [Scientists in multiple labs](#) have found dangerous levels of PFAS in commonly used pesticides across the country. *A recent study in the [Journal of Hazardous Materials Letters](#), “Targeted Analysis and Total Oxidizable Precursor Assay of Several Pesticides for PFAS,” found extremely high levels of PFAS) in 6 out of 10 tested*

PFAS in pesticides is an Environmental Justice issue

Maryland’s overburdened and underserved communities are at even greater risk from PFAS in pesticides.

- Farmworkers and families in agricultural areas bear greater exposures from pesticides applied in farming.
- Those living in poverty are more likely to fish to supplement protein, yet USGS has reported Maryland fish are testing with PFAS at levels as high as 500,000 parts per trillion.
- People of color are more likely to be harmed; pesticide use against rodent and cockroaches is often higher in lower-income housing due to age of buildings, poor maintenance and often crowded living conditions.

Background on finding PFAS in pesticides used in Maryland

- **In 2021, PFAS were found at notably toxic levels in pesticides used** by the Maryland Department of Agriculture (MDA) **annually for mosquito control in over 2,000 Maryland communities.** One product MDA notes on its program webpage, Mavrik Perimeter, was found by the Massachusetts Dept. of the Environment to contain 16,703 ppt. Once again, compare this number to EPA’s *lifetime* exposure for PFAS in drinking water: 0.02 ppt.

- While there is research underway to extract PFAS from water, there is still no way to dispose of the extracted *forever* chemical.

These chemicals have made their way into our drinking [water](#), [the Chesapeake Bay and its tributaries](#), the soil, [our food](#), and consequently, our [bodies](#).

Scientists have provided notable evidence that both pesticides and PFAS runoff into Maryland waterways. PFAS-containing pesticides clearly add to this toxic mix from which we and our children swim, eat fish, and drink, as when communities draw their water from Maryland's Potomac and Patuxent rivers.

Human health impacts

- PFAS are linked to [serious health impacts](#) even at low levels of exposure. There is strong evidence linking PFAS to kidney, testicular, prostate, and breast cancer, birth defects and developmental damage in infants, childhood obesity, thyroid disease, high cholesterol, non-alcoholic fatty liver disease, and impaired immune function.
- Exposure to PFAS has been associated with increased [COVID-19 susceptibility](#) and with an [increased risk of more severe outcomes from the disease](#)
- Synthetic pyrethroid pesticides used in our state for mosquito control and PFAS chemicals can both act as [endocrine disruptors](#), meaning they can interfere with people's hormone systems—which can result in serious health complications. This presents a public health threat of serious magnitude. Furthermore, the effects of combining two endocrine disrupting chemicals have yet to be studied.

Other species health impacts

- Science has shown PFAS is causing harm to [fish and wildlife](#), including pollinating bees and birds.
- Maryland has found alarming levels of [PFAS in Bay waters, tributaries](#), and fish. These were so high that the Maryland Department of the Environment [issued a warning](#) against eating three fish species caught in Piscataway Creek in Prince Georges County.
 - [New research](#) shows dangerous levels of toxic PFAS in freshwater fish. “You’d have to drink an incredible amount of water — we estimate a month of contaminated water — to get the same exposure as you would from a single serving of freshwater fish,” – *study co-author David Andrews*

The solution

SB 158 ensures that independent lab testing, considered to be **valid methodologies for testing pesticides for PFAS, by EPA or MDE as is the case with the methods in the bill**, and **paid for by the manufacturer**, will identify pesticides that are PFAS-free for sales and use in Maryland. *All* pesticides, including those considered minimum risk (25B category), must be annually tested. **It is on both the lab and the manufacturer to provide truthful lab-tested evidence.** Scientists, including Drs. Peaslee and Lassee (see their written testimony) have used such tests in their research related to PFAS in pesticides. While in all lab testing, including blood testing done by labs for various health conditions, a result can be a false positive or false negative, we all have the option of redoing testing when findings are unclear. So too, can a manufacturer have a product retested if there is any doubt regarding the results. While we live in an imperfect world, **we must still do our very best to use the tools we have to protect our babies, bees, and the Bay.**

It's time to turn off the tap

- **SB 158 addresses the need to stop the use of pesticide-containing PFAS chemicals** in our communities and is a critical step for states in order to fill the void left by federal regulators. [Maine recently banned pesticides containing PFAS](#) and other states are proposing to do so.
- SB158 prohibits all sales and use of pesticides that contain PFAS by 2026 in Maryland.
- Maryland residents need this immediate protection from unnecessary PFAS exposures through pesticides and the food we consume.
- This bill would not cost Maryland—the multi-billion-dollar manufacturers would be responsible for paying for the testing.

We urge a positive report on SB 158.



Smart On Pesticides Coalition Members

The Smart on Pesticides Maryland Campaign is a coalition of 112 concerned Maryland citizens, organizations, groups, and businesses working for better protections and data to keep our families, our waterways, and our wildlife safe from toxic pesticides.

A.I.R. Lawncare & Landscaping Services	Crossroads Community Food Network	Maryland League of Conservation Voters
Alliance of Nurses for a Healthy Environment	Earth Coalition	Maryland Nurses Association
American Academy of Pediatrics – Md. Chapter	Earthjustice	Maryland Organic Food and Farming Association
American Bird Conservancy	Eastern Shore Food Hub	Maryland Ornithological Society
American Public Health Association – Md. Chapter	Environment Maryland	Maryland Pesticide Education Network
Anacostia Watershed Society	Fair Farms	Maryland Public Interest Research Group
Annapolis Green	F&D Apiaries	Maryland United for Peace and Justice
Anne Arundel Beekeepers Association	Farmworker Justice	Maryland Votes for Animals
Arundel Rivers Foundation	Food and Water Watch	McDaniel Honey Farm
Assateague Coastal Trust	Fox Haven Farm and Learning Center	Migrant Clinicians Network
Audubon Maryland – DC	Frederick County Beekeepers Association	Moms Clean Air Force
Audubon Naturalist Society	Friends of Briers Mill Run	MOM's Organic Market
Baltimore Backyard Beekeepers Network	Friends of Lower Beaverdam Creek	Montgomery Countryside Alliance
Baltimore Bird Club	Friends of Quincy Run	National Aquarium
Bee Friendly Apiary	Friends of the Earth	Natural Resources Defense Council
Beyond Pesticides	Greenbelt Forest Preserve Butterfly Brigade	Organic Consumers Association
Big City Farms	Heathcote – School of Living	Pearlstone Conference Center
Bowie-Upper Marlboro Beekeepers Association	Hampden Community Council	Perfect Earth Project
CATA, Farmworkers Support Committee	Hereford Bed & Biscuit	Pesticide Action Network – North America
Carroll County Beekeepers Association	HoneyFlower Foods	Potomac Riverkeeper
Cecil Bird Club	Howard County Beekeepers Association	Queen Anne's Conservation Association
Center for Biological Diversity	Howard County Bird Club	Rachel Carson Council
Center for Food Safety	Interfaith Partners of the Chesapeake	Really Raw Honey Company
Central Maryland Beekeepers Association	Interfaith Power and Light	Red Top Farm
Central Maryland Ecumenical Council/Ecumenical Leaders Group	Johns Hopkins Center for a Livable Future	Rodale Institute
Centro de los Derechos del Migrante	Karma.Farm	Rosedale Farm
Charm City Meadworks	KW Landscaping	Ruscombe Community Health Center
Charles Smith Apiaries	Latino Farmers & Ranchers Association – Md Chapter	SafeGrow Montgomery
Chesapeake Physicians for Social Responsibility	League of Women Voters of Maryland	Safe Minds
Children's Environmental Health Network	Learning Disabilities Association – Md Chapter	Safe Skies Maryland
Clean Bread and Cheese Creek	Lower Susquehanna Riverkeeper	Sierra Club – Maryland Chapter
Clean Water Action	Maryland Autism Project	Spa Creek Conservancy
Common Market Co-Op	Maryland Bass Nation	The Flower Factory
Conservation Community Consulting	Maryland Children's Environmental Health Coalition	Towson Estates Association
Cottingham Farm	Maryland Conservation Council	Trout Unlimited
	Maryland Environmental Health Network	Washington County Beekeepers Association
	Maryland Ethical Cannabis Association	Waterkeepers Chesapeake
		Westport Farmers Market
		Westport Neighborhood Association
		Wicomico Environmental Trust



PROTECT MARYLANDERS FROM DANGEROUS PFAS-CONTAINING PESTICIDES

Pass the **Pesticide Registration – PFAS Testing – Requirements Bill (SB 158/ HB 319)** to keep Maryland safe from these dangerous forever chemicals.

Scientists in multiple labs have found dangerous levels of PFAS in several pesticides commonly used throughout the country.⁶

New research⁷ found extraordinarily high levels of PFAS in common pesticides used on food crops; the crops grown in these fields tested at 100 times the EPA's lifetime drinking water limit.

Decades ago, when we learned the dangers of lead and asbestos, we took action. Now that we are understanding the dangers of PFAS, we can turn the tide and protect our health by enacting smart, common-sense regulations.

What are PFAS? PFAS are known as “forever chemicals”—and do not break down in the environment. There is also no known way to destroy or safely dispose of PFAS. As a result, these toxic products have already made their way into our water systems, including the Chesapeake Bay¹ and our drinking water, our soil, our food,² and consequently, into our bodies.³

EVEN LOW EXPOSURE TO PFAS IS LINKED TO A MULTITUDE OF LONG-TERM SERIOUS HEALTH⁴ IMPACTS⁵, INCLUDING:



**KIDNEY, TESTICULAR,
AND BREAST CANCER**



**MORE SERIOUS COVID-19
INFECTION OUTCOMES**



HIGH CHOLESTEROL



**IMPAIRED FUNCTIONING
OF THE LIVER, KIDNEYS,
AND IMMUNE SYSTEM**



**DEVELOPMENTAL
DAMAGE TO
INFANTS**



CHILDHOOD OBESITY



BIRTH DEFECTS



THYROID DISEASE



**LESS EFFECTIVE
RESPONSES TO
VACCINES**



Why do we need this legislation?

Millions of pounds of pesticides are applied annually in Maryland—that end up in our air, soil, and the Bay—and we do not know if they contain PFAS. Unfortunately, action to protect public health at the EPA has been blocked by the chemical industry. As a result, the EPA has allowed **more than 12,000 PFAS**⁸ on the market with **little oversight**, despite a growing body of data on their hazards. There is no research on the synergistic effects of combining these “forever chemicals” with pesticides that are already known to have acute and long-term adverse health impacts. The PFAS contamination crisis exists across the U.S.—and we must take action at the state level.

What will the bill DO?

Pesticide Registration—PFAS Testing—Requirements Bill (SB 158/HB 319) requires all manufacturers of mosquito control products in the state provide annual independent lab testing and certification to prove the pesticide product is PFAS-free, beginning January 1, 2024. Then by January 1, 2026, manufacturers of all pesticides must provide this same test.

Who will the bill HELP?

Reducing PFAS contaminants in our air, water and soil will make all Marylanders—children and adults, especially pregnant women—safer.

“If the intent was to spread PFAS contamination across the globe there would be few more effective methods than lacing pesticides with PFAS,”

stated PEER Science Policy Director Kyla Bennett, a scientist and attorney formerly with EPA.

» **TAKE ACTION TODAY!**

SmartOnPesticides.org

FOR MORE INFORMATION, PLEASE EMAIL
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**SMART on
PESTICIDES
maryland**

*For Safe Water
& Healthy Kids*

¹ <https://www.ewg.org/research/national-pfas-testing/>

² <https://www.fda.gov/food/chemical-contaminants-food/testing-food-pfas-and-assessing-dietary-exposure>

³ https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html

⁴ https://www.atsdr.cdc.gov/pfas/health-effects/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.atsdr.cdc.gov%2Fpfas%2Fhealth-effects.html

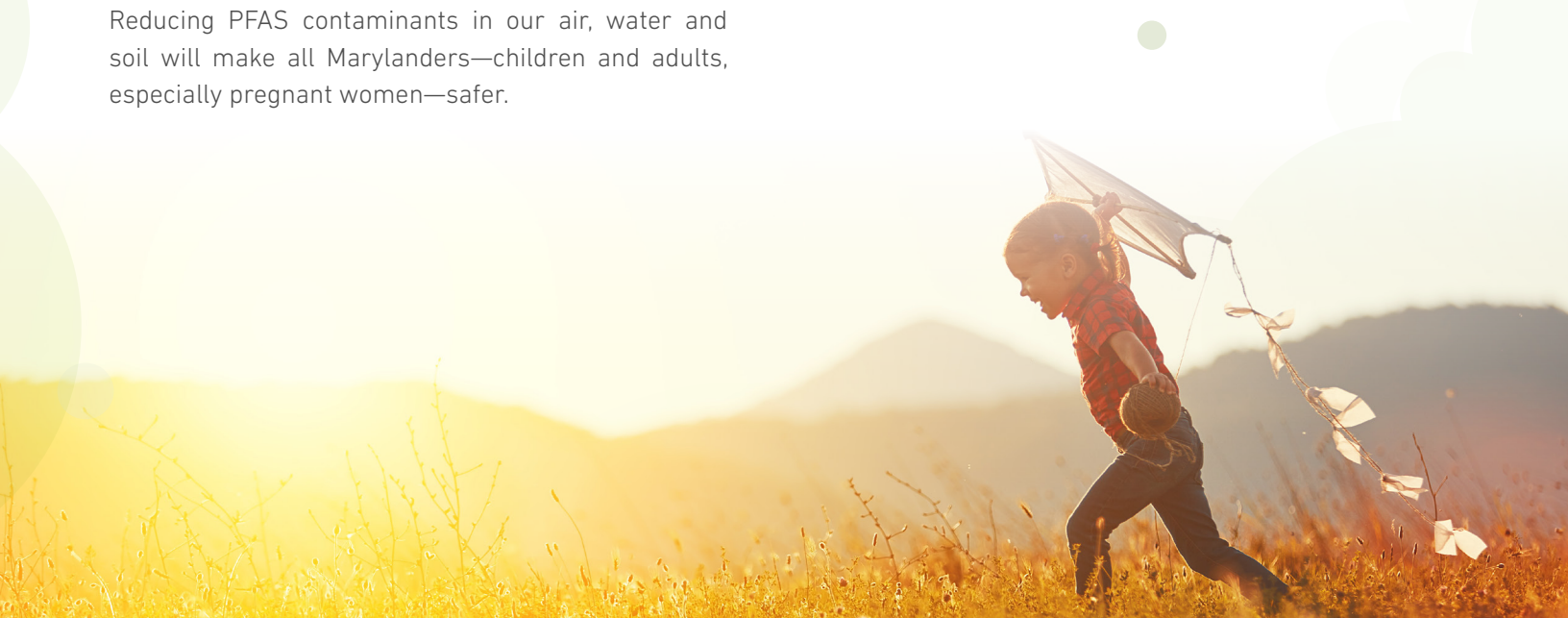
⁵ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/>

⁶ <https://civileats.com/2022/11/07/pfas-forever-chemicals-pesticides-pollution-farmland-mosquito-control-epa-inert-ingredients>

⁷ <https://www.sciencedirect.com/science/article/pii/S266691102200020X> “Journal of Hazardous Materials Letters,” “Targeted Analysis and Total Oxidizable Precursor Assay of Several Pesticides for PFAS”

⁸ <https://www.northcarolinahealthnews.org/2021/03/09/environmentalists-say-trumps-epa-fell-far-short-in-the-fight-against-pfas/>

⁹ <https://civileats.com/2022/11/07/pfas-forever-chemicals-pesticides-pollution-farmland-mosquito-control-epa-inert-ingredients>



EVALUATING HEALTH & ENVIRONMENTAL SCIENCE

A Guide for Legislators

Scientific evidence is the underpinning for policy decisions regarding health. This checklist offers guidance for legislators listening to and assessing scientific testimony and scientific arguments on these often difficult questions, as well as help in questioning witnesses during a hearing.

1. What is the purpose, and what is the source of the research being presented?

The goal of a study may influence the outcomes. For instance, studies that a manufacturer must undertake to submit a chemical or drug for federal registration are different from studies performed by independent scientists seeking to understand impacts of chemicals on humans, animals, or the ecosystem.

What you need to know: Are government findings based on industry-provided research? Are they based on a review of all available sources?

Example: In the debate of e-cigarette / vapor product regulation, research reports by the FDA's Division of Pharmaceutical Research was very credible because it reflected totally independent testing.

2. Have the studies been peer-reviewed?

Independent scientific research is subject to review by a panel of “peers”; these are other scientists with no stake in the findings and no conflicts of interest. Peer review ensures accuracy in methodology and statistical significance, as well as proper interpretation of the results. When a study passes peer review, it is usually published in a scientific journal, such as Environmental Health Perspectives or the Journal of the American Medical Association. This is a transparent process, ensuring that rigorous standards are upheld.

What you need to know: Are the studies being cited peer reviewed? If not, consider the source. Blogs and newspaper articles are not peer-reviewed materials, but may link back to a peer-reviewed source.

Peer Reviewed

A panel of independent experts in the same scientific field, who have no connection to the study and no conflicts of interest, have reviewed it and judged it to be valid and worthy of publication.

3. How certain is “certain enough” to act?

Scientists examine facts and complex information and then look for a preponderance of evidence. While scientists routinely disclose elements of uncertainty in their research, they form their conclusions based on the weight of the evidence.

What you need to know: Is there sufficient evidence regarding possible harms that warrants taking action? Is there sufficient evidence of safety to justify inaction?

Example: Based on the preponderance of evidence of likely harm, we passed seat belt laws and prevented children from drinking alcohol.

4. Are the scientists being too cautious?

Scientists are conservative regarding “certainty.” They use a “95% confidence test” in order to conclude that two observations that happen together are more than accidental and probably causal. When it comes to taking action,

however, public and environmental health experts recommend action based on sufficient scientific evidence to warrant concern and not on a specific percentage.

What you need to know: What are the risks and what could be the harm if we wait for more research to be conducted before taking action?

Example: Laws limiting human exposure to DDT, lead, tobacco and alcohol were all passed long before a 95% confidence test was met. These laws were based on a preponderance of evidence rather than 95% certainty.

5. Are the findings influenced by funding source, trade secrets, or suppression of data?

The design of a scientific study may be influenced by the source of its funding. This has been well documented by independent observers. It is therefore reasonable and prudent for legislators to ask all scientists and those who cite scientific research about their sources of funding.

What you need to know: What are the sources of funding for the work being cited? Were any data omitted due to trade secret protections or similar reasons?

Example: 1) The source of funding for a study can influence important findings or cause contrary results to be omitted from the study's report. 2) Important data that an industry provides to a federal agency before marketing will not be in the public domain and may not have been subjected to peer review.

6. Has anyone addressed the economic harm associated with inaction?

Policy-makers must weigh not only the cost of taking action but also the cost of inaction. Science offers insight into the costs of inaction.

What You Need to Know: What public and private costs may be incurred if we do not take action on this proposed policy?

Example: A 2015 peer reviewed study estimated the costs to the EU of human exposure to endocrine disruptors at \$209 billion annually in medical care and lost productivity. (*Trasande et al J Clin Endocrinol Metab.* 2015 Apr; 100(4): 1245–1255.)

Note: The fiscal note on a bill will not typically assess the costs of inaction. It addresses only the costs of adopting the policy, and usually only the costs to government.

7. Have long term effects been assessed?

Early life exposures can create high risks in later life. An example is the link between lead poisoning and long-term harms to children, or between tobacco and cancer. Over time, human exposures to multiple chemicals will have interactive effects that may be quite different from the effects of a single chemical.

What you need to know: Does the science presented also address the long-term effects of exposure? If not, is that because the research does not exist?

Note: Federal agency review does not establish absolute safety. The US EPA registers chemicals based on “reasonable certainty of no harm” and has yet to address the synergistic effects of chemicals in real life, such as interactions with other chemicals in the environment, medications, and illness.

Weight of the Evidence

This term refers to a judgment in the scientific community that most studies to date confirm a particular conclusion. Scientists are always open to new findings, so they may avoid using terms like “certainty”, “100%” or “we are sure.”