



June 29, 2011

Office of Pesticide Programs  
Regulatory Public Docket (7502P)  
Environmental Protection Agency  
1200 Pennsylvania Ave., NW  
Washington, DC 20460-0001

Re: Comments on Sulfuryl Fluoride: Proposed Order Granting Objections to Tolerances and Denying Request for Stay, 76 Fed. Reg. 3422 (Jan. 19, 2011), Dkt. No. EPA-HQ-OPP-2005-0174

Dear Sir/Madam:

The Natural Resources Defense Council (NRDC) submits these comments on the above-referenced proposal.

NRDC is a nonprofit organization of scientists, lawyers, and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 1.3 million members and online activists. NRDC has long worked to protect Americans from the risks of cancer and other disease and environmental damage due to destruction of the stratospheric ozone layer by ozone-depleting chemicals. NRDC has also long worked to protect Americans from direct exposure to dangerous chemicals, including pesticides.

NRDC has placed high priority for more than two decades on phasing out methyl bromide because that chemical is a potent, Class I ozone-depleting chemical and is also directly and acutely toxic to workers exposed during distribution and application. EPA has obligations to phase out methyl bromide under the Montreal Protocol on Substances that Deplete the Ozone Layer (an international treaty to which the U.S. and every other country is a party) and under the Clean Air Act. EPA first listed methyl bromide for phase-out under the Clean Air Act pursuant to a petition brought by NRDC and others in 1991. NRDC played a key role in obtaining subsequent amendments to the Montreal Protocol and the Clean Air Act that provide the current phase-out schedule. Indeed, under both the Protocol and the Act, the methyl bromide phase-out was supposed to have been completed more than six years ago, by January 1, 2005. As the proposal notes, sulfuryl fluoride currently plays a key role as a substitute for methyl bromide for important agricultural uses, including the fumigation of certain agricultural commodities and food processing structures.

In the January 19<sup>th</sup> notice, EPA denied a requested stay that would force the immediate withdrawal of tolerances for sulfuryl fluoride. EPA also proposes, however, to terminate sulfuryl fluoride tolerances on a schedule ranging from immediately to three years after the issuance of its final rule.

For reasons explained below, NRDC supports the denial of the stay. NRDC opposes, however, the proposed three-year termination of tolerances for sulfuryl fluoride uses that serve as important substitutes for methyl bromide. This proposed action will imperil EPA's ability to complete the long-overdue phase-out of methyl bromide, leading to prolonged and increased depletion of the ozone layer, higher levels of ultraviolet radiation, and higher risks of cancer, cataracts, and immunological disorders for the entire U.S. population – indeed, for the population of the entire world. The proposal acknowledges that terminating these tolerances will make no significant reduction in the risk of severe dental fluorosis for the population of children over-exposed to fluoride – especially those exposed to drinking water naturally high in fluoride – because sulfuryl fluoride accounts for only 2-3 percent of their fluoride exposure, which is dominated by drinking water, toothpaste, and other sources.

In our view, EPA has an obligation to reconcile all of its public health and environmental protection obligations under each of its applicable statutes, including the Clean Air Act as well as the Food Quality Protection Act. EPA's multiple statutory obligations permit – indeed, require – that EPA consider the full range of health consequences of its actions, at least in a factual situation like the present one where:

- Revocation of tolerances on the proposed schedule would not materially decrease the identified health effect (severe dental fluorosis) for the target subpopulation;
- Revocation would increase, not decrease, public health risk by exposing a larger (indeed, global) population to risks of even more serious health consequences (including cancer, cataracts, and immunological diseases);
- Revocation would imperil U.S. compliance with its treaty obligations under the Montreal Protocol.

NRDC has no objection to EPA's proposed revocation of sulfuryl fluoride tolerances where no such "risk blow-back" is at issue, i.e., for categories of food uses where there is no current use, or where safe alternatives are available with an appropriate leadtime (e.g., for concrete structures where enough time is allowed to adopt heat treatment). But we oppose the termination of sulfuryl fluoride tolerances where it would lead to prolonged or even increased use of methyl bromide, interfering with fulfillment of EPA's obligations under the Clean Air Act and U.S. obligations under the Montreal Protocol.

NRDC urges EPA to work with stakeholders on innovative strategies to effectively reduce the fluoride exposure of young children located in areas with naturally high fluoride levels in their drinking water. For instance, a program could be developed to supply un-fluoridated toothpaste to families in such areas. As another example, a program could be developed to supply un-fluoridated bottled water to such families. In

contrast to the ineffective actions proposed in this rulemaking, this kind of public-private partnership could effectively reduce the fluoride exposure of highly exposed youngsters. NRDC would be happy to cooperate in development of such programs.

**A. Eliminating Sulfuryl Fluoride Will Not Effectively Address the Dental Health of Children In High-Fluoride Drinking Water Areas**

The data summarized in the proposal demonstrate that sulfuryl fluoride accounts for only 2-3 percent of the fluoride exposure of young children living in areas with high natural levels of fluoride in drinking water. For instance, amalgamating data from Tables 1-4 and 6 (76 Fed. Reg. 3438-40) yields the following estimates of average exposure:

Age range, years	Average estimate exposure (mg/kg/day)				
	Sulfuryl fluoride	Food & beverages	Municipal water (highest concentration)	Toothpaste (2 brushings/day)	Soil & dust
0.5-<1	0.0027	0.029	0.11	0.016	0.0022
1-<4	0.0030	0.037	0.059	0.049	0.0029
4-<7	0.0029	0.042	0.049	0.021	0.0019
7-<11	0.0022	0.032	0.035	0.011	0.0013
11-<14	0.0018	0.017	0.027	0.0078	0.00078
14+	0.0011	0.014	0.038	0.0029	0.00029

It can be seen that drinking water, food and beverages, and toothpaste vastly dominate fluoride exposure and are sufficient by themselves (in areas with high natural drinking water levels) to exceed the level of 0.08 mg/kg/day recommended to avoid severe dental fluorosis. Eliminating sulfuryl fluoride tolerances is the *only* fluoride exposure reduction measure that EPA is proposing be taken. Yet completely eliminating sulfuryl fluoride exposure is an ineffective strategy for reducing these children’s exposure below the 0.08 mg/kg/day level.

For these reasons, NRDC agrees with EPA’s statement that:

[T]he threat that fluoride poses to teeth and bones is due to aggregate exposure to fluoride not the fluoride in food resulting from use of sulfuryl fluoride when viewed in isolation. Use of sulfuryl fluoride is responsible for a tiny fraction of aggregate fluoride exposure. For example, for the most highly exposed age groups in the populations examined in the revised risk assessment, fluoride from sulfuryl fluoride accounts for about 2 to 3% of aggregate fluoride exposure. Given the aggregate level of fluoride exposure, termination of the use of sulfuryl fluoride would not change the fact that aggregate fluoride levels would still exceed the safe level for highly-exposed subpopulations.

76 Fed. Reg. at 3443. We also agree with EPA’s statement that:

Use of sulfuranyl fluoride results in a minimal contribution to fluoride exposure. Elimination of sulfuranyl fluoride does not solve, or even significantly decrease, the fluoride aggregate exposure problems identified earlier.

*Id.* at 3446.

## **B. Eliminating Sulfuranyl Fluoride Would Endanger Health by Imperiling the Phase-Out of Methyl Bromide**

As discussed above, EPA has the responsibility to phase out methyl bromide under the Montreal Protocol ozone treaty, and under Title VI of the Clean Air Act. Methyl bromide production was supposed to terminate January 1, 2005, except for uses that receive “critical use exemptions” by consensus decision of the Parties to the Protocol and through EPA rulemaking under the Act. The availability of sulfuranyl fluoride as an alternative in certain food commodity and structural fumigation uses has been critical to the success so far in reducing methyl bromide critical use exemptions.

The notice does not adequately acknowledge the health and environmental risks of prolonging or even increasing use of methyl bromide as a result of eliminating sulfuranyl fluoride. We attach the June 16, 2006, declaration of Dr. Reva Rubenstein, filed by EPA in litigation over methyl bromide critical use exemptions. Dr. Rubenstein was formerly a health scientist with the ozone layer protection program in the EPA Office of Air and Radiation and was, at the time of the declaration, a health specialist in the climate change science group of ICF International, which served as a contractor to EPA’s ozone protection program. Her declaration explains the health risks associated with emissions of methyl bromide and the Atmospheric and Health Effects Framework (AHEF) model that EPA uses to assess the number of cases of cancer and other illnesses to result from quantities of methyl bromide production and use. These materials document the increased risks of cancer, both fatal and non-fatal, and of other illnesses to persons exposed to greater ultraviolet (UV) radiation as a result of depletion of the stratospheric ozone layer due to production, use, and emission of methyl bromide.

The AHEF model assesses risks to the U.S. population. The effects of U.S. methyl bromide usage are global, however, causing increased ozone depletion and increased UV exposure worldwide. As a result, the AHEF model underestimates the global health effects of any given quantity of methyl bromide usage.

Nonetheless, NRDC insists that EPA use the AHEF methodology to assess the magnitude of the risk of cancer and other illnesses to U.S. residents that would come if the proposed termination of sulfuranyl fluoride tolerances leads to prolonging or increasing total U.S. usage of methyl bromide – i.e., assuming the termination of tolerances leads to prolonging or increasing the quantity of methyl bromide critical use exemptions. EPA should also make an appropriate extrapolation of the AHEF results to represent the global health consequences of such scenarios.

These health risks should be compared to the risks of dental fluorosis avoided by the termination of the tolerances. NRDC is confident that considering the gravity and global extent of the risks of cancer and other health associated with methyl bromide, and the

nature and extent of the risks of severe dental fluorosis, the balance of public health protection will weigh heavily against any action with respect to sulfuryl fluoride that leads to prolonged or increase methyl bromide use.

The proposal notes the legal, diplomatic, and practical challenges that attend any effort to gain the agreement of the Montreal Protocol Parties to increasing or prolonging U.S. critical use exemptions. It would also be necessary to gain approval for such exemptions under the Clean Air Act. EPA states:

Thus, in the short-term, production and import of methyl bromide is restricted with no opportunities for immediate change. In the longer term, given the historical trajectory of the critical use exemption under the Montreal Protocol, there likely will be less, not more, methyl bromide available.

76 Fed. Reg. at 3445.

We add that NRDC has a long history of opposing methyl bromide critical use exemptions and would strongly oppose further exemptions in both the international and domestic fora.

Thus the proposal appropriately identifies the health effects that may occur if sulfuryl fluoride is eliminated *without* the ability to increase methyl bromide critical use exemptions. In that event:

There is a real potential for adverse human health impacts if sulfuryl fluoride is not available for treatment of food commodities, food mills, and other food processing facilities where sulfuryl fluoride is used. Without sulfuryl fluoride, there would be re-infestation of those commodities or facilities if facilities are not able to find suitable alternatives and thus more contamination of food products by the pests controlled by sulfuryl fluoride. Contamination would include whole insects, insect body parts, and insect waste, mainly from various flour beetles, moths, and cockroaches. Some of these contaminants (*e.g.*, from cockroaches) have been identified as allergens. (Ref. 31). Other beetles have been associated with gastrointestinal illness and discomfort. (Ref. 32 and 33). Contamination also could include foodborne pathogens that cause disease, such as *E. coli* or *Salmonella*, introduced by flies that would no longer be controlled by sulfuryl fluoride. (*Id.*)

*Id.* at 3445.

While these are reasons EPA cites for denying a stay, they are equally applicable to the proposed three-year termination of sulfuryl fluoride tolerances for uses where EPA cannot currently identify effective, safe alternatives. For these uses, the proposal appears to envision using the three-year period to pursue further methyl bromide exemptions – an unacceptable path as just discussed.

While EPA may have a legitimate basis for projecting that concrete structures, for example, can adopt heat treatment within the proposed three-year post-promulgation


period, there is no record basis for projecting that other uses – e.g., fumigation of certain commodities, fumigation of wooden mills and other structures where heat treatment is unsuitable – can manage a transition in this period.

Thus the proposed rule would put the public between an unacceptable rock and an unacceptable hard place – forced to endure increased health risks from increased methyl bromide usage, or increased health risks from untreated commodities and structures. All when EPA itself admits that “[e]limination of sulfuryl fluoride does not solve, or even significantly decrease, the fluoride aggregate exposure problems identified earlier.” *Id.* at 3446.

### **Conclusion**

For the foregoing reasons, NRDC supports the denial of the stay of sulfuryl fluoride tolerances, but opposes the proposed termination of tolerances three years after promulgation for uses where EPA has not identified a safe and effective alternative to the unacceptable option of further reliance on methyl bromide.

Sincerely,



David D. Doniger  
Senior Attorney and Policy Director  
Climate Center  
Natural Resources Defense Council

Encl: Declaration of Dr. Reva Rubenstein, June 16, 2006

Please note that on July 5, 2011, our  
postal address will change to:  
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