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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**WASHINGTON, D.C. 20460**

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

**MEMORANDUM**

DATE: January 18, 2006

SUBJECT: Sulfuryl Fluoride and Fluoride Chronic Dietary Exposure Assessments for the  
Section 3 Registration of Sulfuryl Fluoride as a Fumigant for Various Foods and  
Food Processing Facilities.

PC Code: 078003  
DP Code: 317731

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## Executive Summary

Chronic dietary risk assessments were conducted using the Dietary Exposure Evaluation Model (DEEM-FCID, Version 2.03), which uses food consumption data from the USDA's Continuing Surveys of Food Intakes by Individuals (CSFII) from 1994-1996 and 1998. The analyses were performed to support the requested registration of sulfuryl fluoride as a fumigant for pest management in foods and food processing facilities.

Assessments were conducted for food-borne residues of sulfuryl fluoride and fluoride anion, both of which may result from fumigation of foods and food processing facilities. For clarity, HED has conducted two sets of analyses. The first addresses all registered and proposed food fumigation uses for sulfuryl fluoride. These uses represent intentional, direct treatment of foods and include dried fruits, stored cereal grains, herbs and spices, dried peas and beans, tree nuts, cocoa beans, coconut, coffee beans, cottonseed, ginger, powdered milk, cheese, peanut, pine nut, and ham. The second analysis addresses inadvertent residues that may occur during space fumigations of grain milling facilities and food processing facilities. Because of the possibility of a food being intentionally fumigated (e.g., post-harvest fumigation of cocoa beans) and subsequently inadvertently fumigated (e.g., the same cocoa beans in a cocoa processing facility), the results of these two sets of analyses should be added together to get total dietary exposure estimates for sulfuryl fluoride and fluoride anion resulting from the two different intended uses.

A chronic population-adjusted dose (cPAD) of 0.003 mg/kg/day was used to assess dietary risk resulting from the consumption of sulfuryl fluoride. A separate analysis, using the toxicological findings of the Office of Water, was made for fluoride residues resulting from the use of sulfuryl fluoride. The RfD of 8 mg/day used in the fluoride risk assessments was selected to be protective of crippling skeletal fluorosis. The residue values used in the assessments are average values obtained from fumigation trials conducted with cereal grain commodities, tree nuts, dried fruits, finished foods (e.g., snack chips, cookies, etc.), and ingredient foods (powdered milk, powdered eggs, baking soda, etc.). The assessment incorporates estimates of the percentage of crops treated for the food fumigations and percentage of facilities and throughput treated (i.e., proportion of material that might be exposed during fumigation relative to the total annual production) for the space fumigations. As such, these assessments should be considered to be moderately refined. For fluoride, there are other potential sources of exposure that may be estimated using DEEM. These are background levels of fluoride that naturally occur in foods, fluoride in drinking water, and fluoride that results from the use of cryolite. Exposures from those sources were previously estimated (M. Doherty, D309014, 10/12/04) and will be combined with these food- and space-fumigation estimates in the forthcoming aggregate human health risk assessment.

Based on the available residue and use data, combined (food and space fumigation) chronic dietary exposure estimates for sulfuryl fluoride range from 0.000056 to 0.000225 mg/kg/day, depending on the population subgroup. Similarly, exposure estimates for fluoride anion range from 0.0829 to 0.6665 mg/day (note that in order to match the units of the RfD, exposure estimates for fluoride have been converted from mg/kg/day to mg/day). The estimates for

sulfuryl fluoride are less than or equal to 8% of the cPAD; those for fluoride are less than or equal to 8% of the RfD. Generally, HED is concerned when risk estimates exceed 100% of the dietary risk metric.

HED notes that this assessment is predicated upon the removal of dried eggs from the list of "Commodities That Can Be Fumigated" on the ProFume Label. Dow AgroSciences recently submitted a proposed label with that deletion.

## **I. Introduction**

Dietary risk assessment incorporates both exposure and toxicity of a given pesticide. For acute and chronic assessments, the risk is expressed as a percentage of a maximum acceptable dose (i.e., the dose which HED has concluded will result in no unreasonable adverse health effects). For most instances, this dose is referred to as the population adjusted dose (PAD). The PAD is equivalent to the Reference Dose (RfD) divided by the special FQPA Safety Factor. In the case of fluoride, HED has relied on the analysis of the Office of Water.

For non-cancer chronic exposures, HED is concerned when estimated dietary risk exceeds 100% of the PAD (sulfuryl fluoride) or 100% of the maximum contaminant level (MCL) (fluoride anion). References which discuss chronic risk assessments in more detail are available on the EPA/pesticides web site: "Available Information on Assessing Exposure from Pesticides, A User's Guide," 6/21/2000, web link: <http://www.epa.gov/fedrgstr/EPA-PEST/2000/July/Day-12/6061.pdf>; or see SOP 99.6 (8/20/99).

The most recent dietary risk assessments for sulfuryl fluoride and fluoride anion were conducted in October of 2004 (M. Doherty, D309014, 10/12/2004). Those analyses include estimates of fluoride exposure from the use of sulfuryl fluoride and cryolite, as well as exposure through drinking water and background residues of fluoride in foods. Those exposure estimates should be combined with estimates from the current assessment to obtain total dietary exposure estimates.

## **II. Residue Information**

Sulfuryl fluoride is a fumigant and has been registered for post-harvest control of pests in foods (stored cereal grains, tree nuts, dried fruits) and in grain milling facilities. The current request would expand the list of foods intended for direct fumigation and would expand uses to all food processing facilities. The residues of concern for sulfuryl fluoride are the parent compound and the fluoride anion, and separate assessments have been conducted for each. Tolerances for sulfuryl fluoride are listed in 40 CFR 180.575; those for fluoride anion are in 40 CFR 180.145.

Residue estimates for sulfuryl fluoride and fluoride are from trials conducted in fumigation chambers and grain milling facilities. Detailed information for chamber-fumigated commodities may be found in the Residue and Analytical Chemistry Summary Documents for Sulfuryl Fluoride (M. Doherty, D317730, 7/13/05; M. Doherty, D283007, 1/13/04). The available data

were translated to DEEM food entries as shown in Table 1. The Biological and Economic Analysis Division has provided HED with estimates of the percentage of food that is likely to be intentionally fumigated (see Attachment 12 to the 12/12/04 assessment referenced above) as well as the percentage of processing facilities that will likely be fumigated, the frequency of fumigation, as well as the extent of a given facility's production that would be exposed during fumigation (e-mail from C. Cook to C. Swartz dated 5/5/05; Attachment 9). The estimates of percent of commodity treated for the food fumigations are presented in Table 2 and range from 2% for stored cereal grains to 100% for commodities such as dried peas/beans and powdered milk. For the fumigation of food processing facilities, it is estimated that approximately 40% of the processing facilities would receive sulfuryl fluoride fumigation with, on average, 2.5 fumigations per year. Approximately one day's worth of production could be stored on-site and the facilities typically operate over 300 days per year. Combining these estimates gives a fraction of commodity treated estimate of  $0.4 \times 2.5 \div 300 = 0.003$ . This estimate was rounded up to 0.004 for the space fumigation analyses. For grain mills, HED assumed that 40% of the facilities would be treated, that there could be 3 fumigations per year, and 2 days worth of production exposed, giving a fraction of commodity treated estimate of  $0.4 \times 6 \div 300 = 0.008$ . Since cereal grain commodities could be exposed to sulfuryl fluoride at the mill and at the food processing facility, these two percent-commodity-treated estimates were added together for an overall inadvertent cereal grain commodity treated estimate of 1.1%  $[(0.003 + 0.008) \times 100]$ .

Since commodities would be exposed in their "final" form, processing factors are not used in this assessment. In the case of egg, only dried food forms are included in the analysis since that is the form that would be present in the processing facility. For milk, entries are restricted to the dried food form and the cured form; the latter to represent cheese. Ham is represented as cured pork.

The previous dietary risk assessment included a 0.1X processing factor for flour commodities to account for the practice of drawing down grain in the mills prior to fumigation and then flushing any residual grain/flour out of the mill with fresh material during startup and mill equilibration. The present assessment has removed that 0.1X factor to account for the ProFume label having been revised in 2005 to eliminate blending of fumigated flour with untreated flour.

This assessment addresses only the uses requested under PP#3F6573. The results of these analyses will be added to those of the previous analyses when HED conducts its aggregate human health risk assessments for sulfuryl fluoride and fluoride.

Table 1. Translation of Available Residue Data into DEEM Food Forms			
DEEM Food	Fumigated Food or Commodity	Average Residue, ppm	
		Sulfuryl Fluoride	Fluoride Anion
Alfalfa, seed	Wheat Grain	0.090	4.00
Almond	Almond	0.030	4.70
Almond, oil	Corn Oil	6.800	1.20
Amaranth, grain	Wheat Grain	0.090	4.00
Apple, dried	Fig	0.037	1.20
Apricot, dried	Fig	0.037	1.20

Table 1. Translation of Available Residue Data into DEEM Food Forms

DEEM Food	Fumigated Food or Commodity	Average Residue, ppm	
		Sulfuryl Fluoride	Fluoride Anion
Arrowroot, flour	Wheat Flour	0.008	32.57
Banana, dried	Fig	0.037	1.20
Barley, bran	Corn Bran	0.020	24.00
Barley, flour	Corn Flour	0.020	17.10
Barley, pearled barley	Corn Grain	0.020	4.00
Basil, dried leaves	Basil	0.010	51.18
Bean, great northern, seed	Cocoa Beans	0.117	13.16
Bean, black, seed	Cocoa Beans	0.117	13.16
Bean, broad, seed	Cocoa Beans	0.117	13.16
Bean, cowpea, seed	Cocoa Beans	0.117	13.16
Bean, kidney, seed	Cocoa Beans	0.117	13.16
Bean, lima, seed	Cocoa Beans	0.117	13.16
Bean, mung, seed	Cocoa Beans	0.117	13.16
Bean, navy, seed	Cocoa Beans	0.117	13.16
Bean, pink, seed	Cocoa Beans	0.117	13.16
Bean, pinto, seed	Cocoa Beans	0.117	13.16
Beef, meat, dried	Beef Jerky	0.005	31.32
Beet, sugar, molasses	Sugar	0.002	0.77
Brazil nut	Pecan	2.400	8.60
Buckwheat, flour	Wheat Flour	0.008	32.57
Butternut	Cocoa Beans	0.117	13.16
Cashew	Pecan	2.400	8.60
Chestnut	Pecan	2.400	8.60
Chickpea, flour	Wheat Flour	0.008	32.57
Chickpea, seed	Cocoa Beans	0.117	13.16
Chicory, roots	Ground Coffee	0.816	10.79
Chive	Parsley	0.162	52.20
Chrysanthemum, garland	Parsley	0.162	52.20
Cinnamon	Peppercorns	0.015	5.96
Cinnamon-babyfood	Peppercorns	0.015	5.96
Cocoa bean, chocolate	Cocoa Beans	0.117	13.16
Cocoa bean, powder	Cocoa Beans	0.117	13.16
Coconut, dried	Coconut	0.900	35.18
Coconut, meat	Coconut	0.900	35.18
Coconut, milk	Coconut	0.900	35.18
Coconut, oil	Corn Oil	6.800	1.20
Coffee, instant	Ground Coffee	0.816	10.79
Coffee, roasted bean	Coffee Beans	0.011	7.15
Coriander, seed	Peppercorns	0.015	5.96
Corn, field, bran	Corn Bran	0.020	24.00
Corn, field, flour	Corn Flour	0.020	17.10
Corn, field, meal	Corn Meal	0.020	24.00
Corn, field, oil	Corn Oil	6.800	1.20
Corn, field, starch	Corn Starch	0.020	4.60
Corn, field, syrup	Corn Syrup	0.020	1.20
Corn, pop	Corn Grain	0.020	4.00

Table 1. Translation of Available Residue Data into DEEM Food Forms

DEEM Food	Fumigated Food or Commodity	Average Residue, ppm	
		Sulfuryl Fluoride	Fluoride Anion
Cottonseed, oil	Corn Oil	6.800	1.20
Cranberry, dried	Raisin	0.001	1.20
Currant, dried	Raisin	0.001	1.20
Date	Fig	0.037	1.20
Dill, seed	Chili Peppers	0.247	26.35
Egg, white (dried)	Powdered Eggs	0.444	755.34
Egg, whole (dried)	Powdered Eggs	0.444	755.34
Fig, dried	Fig	0.037	1.20
Filbert	Pecan	2.400	8.60
Filbert, oil	Corn Oil	6.800	1.20
Flaxseed, oil	Corn Oil	6.800	1.20
Garlic, dried	Garlic Powder	0.002	15.80
Ginger, dried	Garlic Powder	0.002	15.80
Grape, raisin	Raisin	0.001	1.20
Guar, seed	Chili Peppers	0.247	26.35
Herbs, other	Basil	0.010	51.18
Hickory nut	Pecan	2.400	8.60
Lentil, seed	Cocoa Beans	0.117	13.16
Lychee, dried	Fig	0.037	1.20
Macadamia nut	Pecan	2.400	8.60
Mango, dried	Fig	0.037	1.20
Maple syrup	Sugar	0.002	0.77
Maple, sugar	Sugar	0.002	0.77
Marjoram	Basil	0.010	51.18
Milk, fat (dried)	Powdered Whole Milk	1.453	1.69
Milk, nonfat solids (dried)	Powdered Nonfat Milk	0.002	2.36
Milk, sugar (lactose, dried)	Powdered Nonfat Milk	0.002	2.36
Milk, water (dried)	Powdered Nonfat Milk	0.002	2.36
Milk, fat (cured)	Powdered Cheese	0.408	4.48
Milk, nonfat solids (cured)	Powdered Cheese	0.408	4.48
Milk, water (cured)	Powdered Cheese	0.408	4.48
Oat, bran	Wheat Bran	0.008	35.95
Oat, flour	Wheat Flour	0.008	32.57
Oat, groats/rolled oats	Wheat Grain	0.090	4.00
Olive, oil	Corn Oil	6.800	1.20
Onion, dry bulb, dried	Onion Powder	0.002	1.17
Palm, oil	Corn Oil	6.800	1.20
Papaya, dried	Fig	0.037	1.20
Parsley, dried leaves	Parsley	0.162	52.20
Pea, dry	Cocoa Beans	0.117	13.16
Pea, pigeon, seed	Cocoa Beans	0.117	13.16
Peach, dried	Fig	0.037	1.20
Peanut	Peanuts	0.145	11.30
Peanut, butter	Peanuts	0.145	11.30
Peanut, oil	Corn Oil	6.800	1.20
Pear, dried	Fig	0.037	1.20

Table 1. Translation of Available Residue Data into DEEM Food Forms

DEEM Food	Fumigated Food or Commodity	Average Residue, ppm	
		Sulfuryl Fluoride	Fluoride Anion
Pecan	Pecan	2.400	8.60
Pepper, bell, dried	Chili Peppers	0.247	26.35
Pepper, black and white	Peppercorns	0.015	5.96
Pepper, nonbell, dried	Chili Peppers	0.247	26.35
Peppermint, oil	Corn Oil	6.800	1.20
Pine nut	Pecan	2.400	8.60
Pineapple, dried	Fig	0.037	1.20
Pistachio	Pecan	2.400	8.60
Plantain, dried	Fig	0.037	1.20
Plum, prune, dried	Prune	0.001	0.70
Pork (cured)	Ham	0.002	18.08
Potato, chips	Doritos	0.138	5.95
Potato, dry (granules/ flakes)	Egg Noodles	0.002	17.65
Potato, flour	Wheat Flour	0.008	32.57
Psyllium, seed	Chili Peppers	0.247	26.35
Pumpkin, seed	Almond	0.030	4.70
Quinoa, grain	Wheat Grain	0.090	4.00
Rapeseed, oil	Corn Oil	6.800	1.20
Rice, bran	Rice Brown	0.021	5.30
Rice, brown	Rice Brown	0.021	5.30
Rye, flour	Wheat Flour	0.008	32.57
Safflower, oil	Corn Oil	6.800	1.20
Sesame, oil	Corn Oil	6.800	1.20
Sesame, seed	Chili Peppers	0.247	26.35
Sorghum, syrup	Corn Syrup	0.020	1.20
Soybean, flour	Corn Flour	0.020	17.10
Soybean, oil	Corn Oil	6.800	1.20
Soybean, soy milk	Powdered Whole Milk	1.453	1.69
Spearmint, oil	Corn Oil	6.800	1.20
Spices, other	Chili Peppers	0.247	26.35
Sugarcane, molasses	Sugar	0.002	0.77
Sugarcane, sugar	Sugar	0.002	0.77
Sunflower, oil	Corn Oil	6.800	1.20
Sunflower, seed	Chili Peppers	0.247	26.35
Tea, dried	Basil	0.010	51.18
Tea, instant	Basil	0.010	51.18
Tomato, dried	Fig	0.037	1.20
Triticale, flour	Wheat Flour	0.008	32.57
Turmeric	Chili Peppers	0.247	26.35
Walnut	Walnut	0.600	5.60
Wheat, bran	Wheat Bran	0.008	35.95
Wheat, flour	Wheat Flour	0.008	32.57
Wheat, germ	Wheat Germ	0.020	58.00
Wild rice	Brown Rice	0.005	31.32



Table 2. Estimates of Percent of Commodities Treated with Sulfuryl Fluoride	
Food	% Treated Estimate
<b>Food Fumigations</b>	
Cheese	100
Cocoa bean	100
Coconut	100
Coffee bean	100
Cottonseed	100
Dried fruits	40
Dried peas and bean	100
Ginger	100
Ginseng	100
Ham	100
Herbs and spices	100
Peanut	100
Pine nut	100
Powdered milk	100
Stored cereal grain	2
Tree nuts	20
<b>Space Fumigations</b>	
Cereal grain commodities	1.1
All other commodities	0.4

### III. DEEM-FCID™ Program and Consumption Information

The sulfuryl fluoride and fluoride chronic dietary exposure assessments were conducted using the Dietary Exposure Evaluation Model software with the Food Commodity Intake Database (DEEM-FCID™, Version 2.03), which incorporates consumption data from USDA's Continuing Surveys of Food Intakes by Individuals (CSFII), 1994-1996 and 1998. The 1994-96, 98 data are based on the reported consumption of more than 20,000 individuals over two non-consecutive survey days. Foods "as consumed" (e.g., apple pie) are linked to EPA-defined food commodities (e.g. apples, peeled fruit - cooked; fresh or N/S; baked; or wheat flour - cooked; fresh or N/S, baked) using publicly available recipe translation files developed jointly by USDA/ARS and EPA. For chronic exposure assessment, consumption data are averaged for the entire U.S. population and within population subgroups, but for acute exposure assessment are retained as individual consumption events. Based on analysis of the 1994-96, 98 CSFII consumption data, which took into account dietary patterns and survey respondents, HED concluded that it is most appropriate to report risk for the following population subgroups: the general U.S. population, all infants (<1 year old), children 1-2, children 3-5, children 6-12, youth 13-19, adults 20-49, females 13-49, and adults 50+ years old.

For chronic dietary exposure assessment, an estimate of the residue level in each food or food-form (e.g., orange or orange juice) on the food commodity residue list is multiplied by the average daily consumption estimate for that food/food form. The resulting residue consumption estimate for each food/food form is summed with the residue consumption estimates for all other food/food forms on the commodity residue list to arrive at the total average estimated exposure.

Exposure is expressed in mg/kg body weight/day and as a percent of the cPAD. This procedure is performed for each population subgroup.

#### IV. Toxicological Information

**Sulfuryl Fluoride.** On October 21, 2003, HED's Hazard Identification Assessment Review Committee (HIARC) met to re-evaluate the potential for increased susceptibility of infants and children from exposure to sulfuryl fluoride, as required by the Food Quality Protection Act (FQPA) of 1996, according to the 2002 OPP 10X Guidance Document. This re-evaluation was conducted to update the decision which was reached on April 11, 2001 using previous OPP policy. The findings of those meetings, as related to dietary exposure, are summarized in Table 3. Sulfuryl fluoride is classified as a "not likely" human carcinogen according to the EPA Draft Guidelines for Carcinogen Risk Assessment dated July, 1999; therefore, a cancer assessment is not necessary.

Table 3. Summary of Dose and Endpoint Selection Relevant for use in Dietary Human Health Risk Assessments for Sulfuryl Fluoride. Kidwell, J. TXR No. 0052208. 10/31/03. Sulfuryl Fluoride - Second Report of the Hazard Identification Assessment Review Committee.			
Exposure Scenario	Dose Used in Risk Assessment, UF	Special FQPA SF and Level of Concern for Risk Assessment	Study and Toxicological Effects
Acute Dietary	None UF = N/A	Not applicable	No toxicological endpoint attributable to a single exposure was identified in the available toxicology studies on sulfuryl fluoride.
Chronic Dietary (All populations)	NOAEL = 8.5 mg/kg/day UF = 3000 <b>Chronic RfD = 0.003 mg/kg/day</b>	FQPA SF = 1X <b>cPAD = chronic RfD</b> FQPA SF = <b>0.003 mg/kg/day</b>	<b>90-Day Inhalation - Rabbit</b> LOAEL = 28 mg/kg/day based on vacuolation of white matter in the brain of females.
Cancer	Classified as "Not likely to be carcinogenic to humans"		

UF = uncertainty factor, FQPA SF = Special FQPA safety factor, NOAEL = no observed adverse effect level, LOAEL = lowest observed adverse effect level, PAD = population adjusted dose (a = acute, c = chronic) RfD = reference dose

**Fluoride.** HED is basing its fluoride risk assessments on the MCL for fluoride set by the Agency's Office of Water. In regulating fluoride levels in water, the Office of Water has determined that the MCL of 4 ppm provides adequate protection against skeletal fluorosis, which is the primary effect of concern (see Federal Register 50 FR 47142). The MCL was derived from a LOAEL of 20 mg/day and a safety factor of 2.5, giving a reference dose of 8 mg/day. In its assessment of the health effects of fluoride, the National Research Council came to the following conclusion concerning cancer risk posed to humans through exposure to fluoride:

*The subcommittee concludes that the available laboratory data are insufficient to demonstrate a carcinogenic effect of fluoride in animals. The subcommittee also concludes that the weight of the evidence from more than 50 epidemiological studies*

*does not support the hypothesis of an association between fluoride exposure and increased cancer risk in humans.* National Research Council, 1993.

The Agency for Toxic Substances and Disease Registry (ATSDR, 2001) and the World Health Organization (2002) have come to similar conclusions. Based on the findings of those bodies, HED believes that a cancer risk assessment for fluoride is not appropriate.

## V. Results/Discussion

Dietary exposure and risk estimates associated with the proposed use of sulfuryl fluoride as a fumigant for foods and food processing facilities are presented in Table 4 (sulfuryl fluoride) and Table 5 (fluoride), below. The combined-use risk estimates for all population subgroups are well below HED's level of concern for both sulfuryl fluoride and fluoride.

Table 4. Sulfuryl Fluoride Chronic Dietary Exposure and Risk Estimates for Fumigation of Food and Food Processing Facilities with Sulfuryl Fluoride. The cPAD for sulfuryl fluoride is 0.003 mg/kg/day for all population subgroups.

Population Subgroup	Food Fumigations		Space Fumigations		Food + Space	
	Exposure Estimate, mg/kg/day	% cPAD	Exposure Estimate, mg/kg/day	% cPAD	Exposure Estimate, mg/kg/day	% cPAD
U.S. Pop. (total)	0.000064	2	0.000018	1	0.000082	3
All infants (< 1 year)	0.000041	1	0.000097	3	0.000138	5
Children 1-2 yrs	0.000189	6	0.000036	1	0.000225	8
Children 3-5 yrs	0.000177	6	0.000036	1	0.000213	7
Children 6-12 yrs	0.000100	3	0.000026	1	0.000126	4
Youth 13-19 yrs	0.000058	2	0.000017	1	0.000075	3
Adults 20-49 yrs	0.000047	2	0.000014	<1	0.000061	2
Adults 50+ yrs	0.000045	2	0.000011	<1	0.000056	2
Females 13-49 yrs	0.000046	2	0.000013	<1	0.000059	2

Table 5. Fluoride Chronic Dietary Exposure and Risk Estimates for Fumigation of Food and Food Processing Facilities with Sulfuryl Fluoride. The RfD for fluoride is 8 mg/day for all population subgroups.

Population Subgroup	NHANES Estimated Body Weight, kg*	Food Fumigations			Space Fumigations			Food + Space	
		Exposure Estimate		% RfD	Exposure Estimate		% RfD	Exposure Estimate, mg/day	% RfD
		mg/kg/day	mg/day		mg/kg/day	mg/day			
U.S. Pop. (total)	70	0.008701	0.6091	8	0.000820	0.0574	1	0.6665	8
All infants (< 1 year)	7	0.010972	0.0768	1	0.000876	0.0061	<1	0.0829	1
Children 1-2 yrs	13	0.017980	0.2337	3	0.002052	0.0267	<1	0.2604	3
Children 3-5 yrs	22	0.019274	0.4240	5	0.002009	0.0442	1	0.4682	6
Children 6-12 yrs	40	0.012879	0.5152	6	0.001361	0.0544	1	0.5696	7
Youth 13-19 yrs	60	0.008014	0.4808	6	0.000795	0.0477	1	0.5285	7
Adults 20-49 yrs	70	0.007212	0.5048	6	0.000660	0.0462	1	0.5510	7
Adults 50+ yrs	70	0.006670	0.4669	6	0.000516	0.0361	<1	0.5030	6
Females 13-49 yrs	61	0.006398	0.3903	5	0.000603	0.0368	<1	0.4271	5

\* U.S. EPA. 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. Office of Science and Technology, Office of Water EPA-822-B-00-004. Washington, DC.

## VI. Characterization of Inputs/Outputs

All dietary assessments for both sulfuryl fluoride and fluoride anion presented in this document are based on average residues from trial fumigations and incorporate estimates of percentage of commodity treated. Since the residue values used in the assessment are based on maximum treatment rates and, in the case of sulfuryl fluoride, minimum aeration times, the residue values are expected to result in mid-to-high end estimates of dietary exposure to sulfuryl fluoride and fluoride anion.

## VII. Conclusions

Dietary risk estimates associated with the proposed use of sulfuryl fluoride as a fumigant for foods and food processing facilities are well below HED's level of concern. Additional dietary sources of fluoride exposure were previously estimated and will be integrated with the estimates discussed in this assessment in the forthcoming aggregate human health risk assessment for sulfuryl fluoride.

## VIII. List of Attachments

### 1. Sulfuryl Fluoride Food Fumigation Residue Inputs

2. Fluoride Food Fumigation Residue Inputs
3. Sulfuryl Fluoride Space Fumigation Residue Inputs
4. Fluoride Space Fumigation Residue Inputs
5. Sulfuryl Fluoride Food Fumigation Exposure and Risk Estimates
6. Fluoride Food Fumigation Exposure and Risk Estimates
7. Sulfuryl Fluoride Space Fumigation Exposure and Risk Estimates
8. Fluoride Space Fumigation Exposure and Risk Estimates
9. Percent of Processed Foods Treated (e-mail from C. Cook to C. Swartz)

# Attachment 1: Sulfuryl Fluoride Food Fumigation Residue Inputs

U.S. Environmental Protection Agency  
DEEM-FCID Chronic analysis for SULFURYL FLUORIDE  
Residue file: C:\Documents and Settings\MDOHERTY\My Documents\Chemistry Reviews\DEEM  
Runs\Sulfuryl Fluoride\SF Food Fumigation.R98

Ver. 2.00

1994-98 data

Adjust. #2 used

Analysis Date 01-05-2006 Residue file dated: 01-05-2006/13:17:50/8  
Reference dose (RfD) = 0.003 mg/kg bw/day  
Comment: RfD is cPAD

Food Crop EPA Code Grp Food Name	Residue (ppm)	Adj. Factors		Comment
		#1	#2	
14000030 14 Almond	0.030000	1.000	0.200	
14000031 14 Almond-babyfood	0.030000	1.000	0.200	
11000090 11 Apple, dried	0.037000	1.000	0.400	From Figs
11000091 11 Apple, dried-babyfood	0.037000	1.000	0.400	From Figs
12000130 12 Apricot, dried	0.037000	1.000	0.400	From Figs
95000240 O Banana, dried	0.037000	1.000	0.400	From Figs
95000241 O Banana, dried-babyfood	0.037000	1.000	0.400	From Figs
15000250 15 Barley, pearled barley	0.020000	1.000	0.020	
15000251 15 Barley, pearled barley-babyfood	0.020000	1.000	0.020	
15000260 15 Barley, flour	0.020000	1.000	0.020	
15000261 15 Barley, flour-babyfood	0.020000	1.000	0.020	
15000270 15 Barley, bran	0.020000	1.000	0.020	
19010290 19A Basil, dried leaves	0.010000	1.000	1.000	
19010291 19A Basil, dried leaves-babyfood	0.010000	1.000	1.000	
06030300 6C Bean, black, seed	0.117000	1.000	1.000	From Cocoa Beans
06030320 6C Bean, broad, seed	0.117000	1.000	1.000	From Cocoa Beans
06030340 6C Bean, cowpea, seed	0.117000	1.000	1.000	From Cocoa Beans
06030350 6C Bean, great northern, seed	0.117000	1.000	1.000	From Cocoa Beans
06030360 6C Bean, kidney, seed	0.117000	1.000	1.000	From Cocoa Beans
06030380 6C Bean, lima, seed	0.117000	1.000	1.000	From Cocoa Beans
06030390 6C Bean, mung, seed	0.117000	1.000	1.000	From Cocoa Beans
06030400 6C Bean, navy, seed	0.117000	1.000	1.000	From Cocoa Beans
06030410 6C Bean, pink, seed	0.117000	1.000	1.000	From Cocoa Beans
06030420 6C Bean, pinto, seed	0.117000	1.000	1.000	From Cocoa Beans
21000450 M Beef, meat, dried	0.005000	1.000	1.000	
14000590 14 Brazil nut	2.400000	1.000	0.200	From Pecan
14000680 14 Butternut	2.400000	1.000	0.200	From Pecan
14000810 14 Cashew	2.400000	1.000	0.200	From Pecan
14000920 14 Chestnut	2.400000	1.000	0.200	From Pecan
06030980 6C Chickpea, seed	0.117000	1.000	1.000	From Cocoa Beans
06030981 6C Chickpea, seed-babyfood	0.117000	1.000	1.000	From Cocoa Beans
06030990 6C Chickpea, flour	0.117000	1.000	1.000	From Cocoa Beans
19011030 19A Chive	0.162000	1.000	1.000	From Parsley
19021050 19B Cinnamon	0.015000	1.000	1.000	From Peppercorns
19021051 19B Cinnamon-babyfood	0.015000	1.000	1.000	From Peppercorns
95001090 O Cocoa bean, chocolate	0.117000	1.000	1.000	
95001100 O Cocoa bean, powder	0.117000	1.000	1.000	
95001110 O Coconut, meat	0.900000	1.000	1.000	
95001111 O Coconut- meat-babyfood	0.900000	1.000	1.000	
95001120 O Coconut, dried	0.900000	1.000	1.000	From Figs
95001130 O Coconut, milk	0.900000	1.000	1.000	
95001150 O Coffee, roasted bean	0.011000	1.000	1.000	
95001160 O Coffee, instant	0.816000	1.000	1.000	
19011180 19A Coriander, leaves	0.162000	1.000	1.000	From Parsley
19011181 19A Coriander, leaves-babyfood	0.162000	1.000	1.000	From Parsley
19021190 19B Coriander, seed	0.015000	1.000	1.000	From Peppercorns
19021191 19B Coriander, seed-babyfood	0.015000	1.000	1.000	From Peppercorns
15001200 15 Corn, field, flour	0.020000	1.000	0.020	
15001201 15 Corn, field, flour-babyfood	0.020000	1.000	0.020	
15001210 15 Corn, field, meal	0.020000	1.000	0.020	
15001211 15 Corn, field, meal-babyfood	0.020000	1.000	0.020	
15001220 15 Corn, field, bran	0.020000	1.000	0.020	
15001230 15 Corn, field, starch	0.020000	1.000	0.020	
15001231 15 Corn, field, starch-babyfood	0.020000	1.000	0.020	
15001240 15 Corn, field, syrup	0.020000	1.000	0.020	
15001241 15 Corn, field, syrup-babyfood	0.020000	1.000	0.020	
15001260 15 Corn, pop	0.023000	1.000	0.020	

15001270	15	Corn, sweet	0.023000	1.000	0.020	
15001271	15	Corn, sweet-babyfood	0.023000	1.000	0.020	
95001310	O	Cranberry, dried	0.037000	1.000	0.400	From Figs
95001410	O	Date				
		130-Uncooked; Dried; Cook Meth N/S				
		0.037000	1.000	0.400		
		210-Cooked; Fresh or N/S; Cook Meth N/S				
		0.000000	1.000	0.000		
		211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.000	
		212-Cooked; Fresh or N/S; Boiled				
		0.000000	1.000	0.000		
		230-Cooked; Dried; Cook Meth N/S				
		0.037000	1.000	0.400		
19021430	19B	Dill, seed	0.015000	1.000	1.000	From Peppercorns
19011440	19A	Dillweed	0.162000	1.000	1.000	From Parsley
95001540	O	Fig, dried	0.037000	1.000	0.400	
14001550	14	Filbert	2.400000	1.000	0.200	From Pecan
01031660	1CD	Ginger	0.002000	1.000	1.000	From Garlic Powder
01031661	1CD	Ginger-babyfood	0.002000	1.000	1.000	From Garlic Powder
01031670	1CD	Ginger, dried	0.002000	1.000	1.000	From Garlic Powder
95001780	O	Grape, raisin	0.001000	1.000	0.400	
06031820	6C	Guar, seed	0.117000	1.000	1.000	From Cocoa Beans
06031821	6C	Guar, seed-babyfood	0.117000	1.000	1.000	From Cocoa Beans
19011840	19A	Herbs, other	0.162000	1.000	1.000	From Parsley
19011841	19A	Herbs, other-babyfood	0.162000	1.000	1.000	From Parsley
14001850	14	Hickory nut	2.400000	1.000	0.200	From Pecan
19012020	19A	Lemongrass	0.162000	1.000	1.000	From Parsley
06032030	6C	Lentil, seed	0.117000	1.000	1.000	From Cocoa Beans
95002120	O	Lychee, dried	0.037000	1.000	0.400	From Figs
14002130	14	Macadamia nut	2.400000	1.000	0.200	From Pecan
95002160	O	Mango, dried	0.037000	1.000	0.400	From Figs
19012200	19A	Marjoram	0.010000	1.000	1.000	From Basil
19012201	19A	Marjoram-babyfood	0.010000	1.000	1.000	From Basil
27002220	D	Milk, fat				
		110-Uncooked; Fresh or N/S; Cook Meth N/S				
		0.000000	1.000	1.000		
		120-Uncooked; Frozen; Cook Meth N/S				
		0.000000	1.000	1.000		
		130-Uncooked; Dried; Cook Meth N/S				
		1.453000	1.000	1.000		
		150-Uncooked; Cured etc; Cook Meth N/S				
		0.408000	1.000	1.000		
		210-Cooked; Fresh or N/S; Cook Meth N/S				
		0.000000	1.000	1.000		
		211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000	
		212-Cooked; Fresh or N/S; Boiled				
		0.000000	1.000	1.000		
		213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000	
		214-Cooked; Fresh or N/S; Fried/baked				
		0.000000	1.000	1.000		
		215-Cooked; Fresh or N/S; Boiled/baked				
		0.000000	1.000	1.000		
		220-Cooked; Frozen; Cook Meth N/S				
		0.000000	1.000	1.000		
		221-Cooked; Frozen; Baked	0.000000	1.000	1.000	
		222-Cooked; Frozen; Boiled	0.000000	1.000	1.000	
		223-Cooked; Frozen; Fried	0.000000	1.000	1.000	
		224-Cooked; Frozen; Fried/baked	0.000000	1.000	1.000	
		230-Cooked; Dried; Cook Meth N/S				
		1.453000	1.000	1.000		
		231-Cooked; Dried; Baked	1.453000	1.000	1.000	
		232-Cooked; Dried; Boiled	1.453000	1.000	1.000	
		233-Cooked; Dried; Fried	1.453000	1.000	1.000	
		240-Cooked; Canned; Cook Meth N/S				
		0.000000	1.000	1.000		
		242-Cooked; Canned; Boiled	0.000000	1.000	1.000	
		250-Cooked; Cured etc; Cook Meth N/S				
		0.408000	1.000	1.000		
		253-Cooked; Cured etc; Fried	0.408000	1.000	1.000	
		255-Cooked; Cured etc; Boiled/baked				
		0.408000	1.000	1.000		
27012230	D	Milk, nonfat solids				
		110-Uncooked; Fresh or N/S; Cook Meth N/S				

		0.000000	1.000	1.000
	120-Uncooked; Frozen; Cook Meth N/S			
		0.000000	1.000	1.000
	130-Uncooked; Dried; Cook Meth N/S			
		0.002000	1.000	1.000
	150-Uncooked; Cured etc; Cook Meth N/S			
		0.408000	1.000	1.000
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked			
		0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked			
		0.000000	1.000	1.000
	220-Cooked; Frozen; Cook Meth N/S			
		0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	223-Cooked; Frozen; Fried	0.000000	1.000	1.000
	224-Cooked; Frozen; Fried/baked	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S			
		0.002000	1.000	1.000
	231-Cooked; Dried; Baked	0.002000	1.000	1.000
	232-Cooked; Dried; Boiled	0.002000	1.000	1.000
	233-Cooked; Dried; Fried	0.002000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	1.000
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000
	245-Cooked; Canned; Boiled/baked			
		0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S			
		0.408000	1.000	1.000
	253-Cooked; Cured etc; Fried	0.408000	1.000	1.000
	255-Cooked; Cured etc; Boiled/baked			
		0.408000	1.000	1.000
27012231 D	Milk, nonfat solids-baby food/infant			
	110-Uncooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	130-Uncooked; Dried; Cook Meth N/S			
		0.002000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	1.000
27022240 D	Milk, water			
	110-Uncooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	120-Uncooked; Frozen; Cook Meth N/S			
		0.000000	1.000	1.000
	130-Uncooked; Dried; Cook Meth N/S			
		0.002000	1.000	1.000
	150-Uncooked; Cured etc; Cook Meth N/S			
		0.408000	1.000	1.000
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked			
		0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked			
		0.000000	1.000	1.000
	220-Cooked; Frozen; Cook Meth N/S			
		0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	223-Cooked; Frozen; Fried	0.000000	1.000	1.000
	224-Cooked; Frozen; Fried/baked	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S			
		0.002000	1.000	1.000



	231-Cooked; Dried; Baked	0.002000	1.000	1.000	
	232-Cooked; Dried; Boiled	0.002000	1.000	1.000	
	233-Cooked; Dried; Fried	0.002000	1.000	1.000	
	240-Cooked; Canned; Cook Meth N/S				
		0.000000	1.000	1.000	
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000	
	250-Cooked; Cured etc; Cook Meth N/S				
		0.408000	1.000	1.000	
	253-Cooked; Cured etc; Fried	0.408000	1.000	1.000	
	255-Cooked; Cured etc; Boiled/baked				
		0.408000	1.000	1.000	
27032251 D	Milk, sugar (lactose)-baby food/inf				
	110-Uncooked; Fresh or N/S; Cook Meth N/S				
		0.000000	1.000	1.000	
	130-Uncooked; Dried; Cook Meth N/S				
		0.002000	1.000	1.000	
	210-Cooked; Fresh or N/S; Cook Meth N/S				
		0.000000	1.000	1.000	
	212-Cooked; Fresh or N/S; Boiled				
		0.000000	1.000	1.000	
	230-Cooked; Dried; Cook Meth N/S				
		0.002000	1.000	1.000	
	240-Cooked; Canned; Cook Meth N/S				
		0.000000	1.000	1.000	
15002260 15	Millet, grain	0.033000	1.000	0.020	From Wheat Grain
15002310 15	Oat, bran	0.008000	1.000	0.020	
15002320 15	Oat, flour	0.008000	1.000	0.020	
15002321 15	Oat, flour-babyfood	0.008000	1.000	0.020	
15002330 15	Oat, groats/rolled oats	0.008000	1.000	0.020	
15002331 15	Oat, groats/rolled oats-babyfood	0.008000	1.000	0.020	
95002460 O	Papaya, dried	0.037000	1.000	0.400	From Figs
19012490 19A	Parsley, dried leaves	0.162000	1.000	1.000	
19012491 19A	Parsley, dried leaves-babyfood	0.162000	1.000	1.000	
06032560 6C	Pea, dry	0.117000	1.000	1.000	From Cocoa Beans
06032561 6C	Pea, dry-babyfood	0.117000	1.000	1.000	From Cocoa Beans
06032580 6C	Pea, pigeon, seed	0.117000	1.000	1.000	From Cocoa Beans
12002610 12	Peach, dried	0.037000	1.000	0.400	From Figs
12002611 12	Peach, dried-babyfood	0.037000	1.000	0.400	From Figs
95002630 O	Peanut	0.145000	1.000	1.000	
95002640 O	Peanut, butter	0.145000	1.000	1.000	
11002670 11	Pear, dried	0.037000	1.000	0.400	From Figs
14002690 14	Pecan	2.400000	1.000	0.200	
19022740 19B	Pepper, black and white	0.015000	1.000	1.000	
19022741 19B	Pepper, black and white-babyfood	0.015000	1.000	1.000	
95002780 O	Pine nut	2.400000	1.000	1.000	From Pecan
95002800 O	Pineapple, dried	0.037000	1.000	0.400	From Figs
14002820 14	Pistachio	2.400000	1.000	0.200	From Pecan
95002840 O	Plantain, dried	0.037000	1.000	0.400	From Figs
12002870 12	Plum, prune, dried	0.001000	1.000	0.400	
12002871 12	Plum, prune, dried-babyfood	0.001000	1.000	0.400	
25002900 M	Pork, meat				
	210-Cooked; Fresh or N/S; Cook Meth N/S				
		0.000000	1.000	1.000	
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000	
	212-Cooked; Fresh or N/S; Boiled				
		0.000000	1.000	1.000	
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000	
	214-Cooked; Fresh or N/S; Fried/baked				
		0.000000	1.000	1.000	
	215-Cooked; Fresh or N/S; Boiled/baked				
		0.000000	1.000	1.000	
	220-Cooked; Frozen; Cook Meth N/S				
		0.000000	1.000	1.000	
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000	
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000	
	230-Cooked; Dried; Cook Meth N/S				
		0.000000	1.000	1.000	
	232-Cooked; Dried; Boiled	0.000000	1.000	1.000	
	240-Cooked; Canned; Cook Meth N/S				
		0.000000	1.000	1.000	
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000	
	250-Cooked; Cured etc; Cook Meth N/S				
		0.002000	1.000	1.000	

	251-Cooked; Cured etc; Baked	0.002000	1.000	1.000
	252-Cooked; Cured etc; Boiled	0.002000	1.000	1.000
	253-Cooked; Cured etc; Fried	0.002000	1.000	1.000
	255-Cooked; Cured etc; Boiled/baked			
		0.002000	1.000	1.000
25002910 M	Pork, skin			
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S			
		0.002000	1.000	1.000
25002920 M	Pork, meat byproducts			
	110-Uncooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	120-Uncooked; Frozen; Cook Meth N/S			
		0.000000	1.000	1.000
	130-Uncooked; Dried; Cook Meth N/S			
		0.000000	1.000	1.000
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked			
		0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked			
		0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S			
		0.000000	1.000	1.000
	231-Cooked; Dried; Baked	0.000000	1.000	1.000
	232-Cooked; Dried; Boiled	0.000000	1.000	1.000
	233-Cooked; Dried; Fried	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	1.000
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S			
		0.002000	1.000	1.000
	252-Cooked; Cured etc; Boiled	0.002000	1.000	1.000
25002930 M	Pork, fat			
	110-Uncooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked			
		0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked			
		0.000000	1.000	1.000
	220-Cooked; Frozen; Cook Meth N/S			
		0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S			
		0.000000	1.000	1.000
	232-Cooked; Dried; Boiled	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	1.000
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S			

			0.002000	1.000	1.000	
		251-Cooked; Cured etc; Baked	0.002000	1.000	1.000	
		252-Cooked; Cured etc; Boiled	0.002000	1.000	1.000	
		253-Cooked; Cured etc; Fried	0.002000	1.000	1.000	
		255-Cooked; Cured etc; Boiled/baked				
			0.002000	1.000	1.000	
15003230	15	Rice, white	0.021000	1.000	0.020	From Rice Grain
15003231	15	Rice, white-babyfood	0.021000	1.000	0.020	From Rice Grain
15003240	15	Rice, brown	0.021000	1.000	0.020	From Rice Grain
15003241	15	Rice, brown-babyfood	0.021000	1.000	0.020	From Rice Grain
15003250	15	Rice, flour	0.021000	1.000	0.020	
15003251	15	Rice, flour-babyfood	0.021000	1.000	0.020	
15003260	15	Rice, bran	0.021000	1.000	0.020	
15003261	15	Rice, bran-babyfood	0.021000	1.000	0.020	
19013340	19A	Savory	0.162000	1.000	1.000	From Parsley
15003440	15	Sorghum, grain	0.023000	1.000	0.020	From Corn Grain
19023540	19B	Spices, other	0.015000	1.000	1.000	From Peppercorns
19023541	19B	Spices, other-babyfood	0.015000	1.000	1.000	From Peppercorns
14003910	14	Walnut	0.600000	1.000	0.200	
15004010	15	Wheat, grain	0.033000	1.000	0.020	
15004011	15	Wheat, grain-babyfood	0.033000	1.000	0.020	
15004020	15	Wheat, flour	0.008000	1.000	0.020	
15004021	15	Wheat, flour-babyfood	0.008000	1.000	0.020	
15004030	15	Wheat, germ	0.020000	1.000	0.020	
15004040	15	Wheat, bran	0.008000	1.000	0.020	
15004050	15	Wild rice	0.021000	1.000	0.020	

## Attachment 2: Fluoride Food Fumigation Residue Inputs

U.S. Environmental Protection Agency Ver. 2.00  
DEEM-FCID Chronic analysis for FLUORIDE 1994-98 data  
Residue file: C:\Documents and Settings\MDOHERTY\My Documents\Chemistry Reviews\DEEM  
Runs\Sulfuryl Fluoride\F Food Fumigation.R98

Analysis Date 01-05-2006 Residue file dated: 01-05-2006/13:19:46/8  
Reference dose (RfD) = 0.114 mg/kg bw/day  
Comment: RfD is converted Fluoride MCL and for adult pops only.

Food Crop			Residue (ppm)	Adj. Factors		Comment
EPA Code	Grp	Food Name		#1	#2	
14000030	14	Almond	4.700000	1.000	0.200	
14000031	14	Almond-babyfood	4.700000	1.000	0.200	
11000090	11	Apple, dried	1.200000	1.000	0.400	From Figs
11000091	11	Apple, dried-babyfood	1.200000	1.000	0.400	From Figs
12000130	12	Apricot, dried	1.200000	1.000	0.400	From Figs
95000240	0	Banana, dried	1.200000	1.000	0.400	From Figs
95000241	0	Banana, dried-babyfood	1.200000	1.000	0.400	From Figs
15000250	15	Barley, pearled barley	6.270000	1.000	0.020	
15000251	15	Barley, pearled barley-babyfood	6.270000	1.000	0.020	
15000260	15	Barley, flour	32.570000	1.000	0.020	
15000261	15	Barley, flour-babyfood	32.570000	1.000	0.020	
15000270	15	Barley, bran	35.950000	1.000	0.020	
19010290	19A	Basil, dried leaves	51.180000	1.000	1.000	
19010291	19A	Basil, dried leaves-babyfood	51.180000	1.000	1.000	
06030300	6C	Bean, black, seed	13.160000	1.000	1.000	From Cocoa Beans
06030320	6C	Bean, broad, seed	13.160000	1.000	1.000	From Cocoa Beans
06030340	6C	Bean, cowpea, seed	13.160000	1.000	1.000	From Cocoa Beans
06030350	6C	Bean, great northern, seed	13.160000	1.000	1.000	From Cocoa Beans
06030360	6C	Bean, kidney, seed	13.160000	1.000	1.000	From Cocoa Beans
06030380	6C	Bean, lima, seed	13.160000	1.000	1.000	From Cocoa Beans
06030390	6C	Bean, mung, seed	13.160000	1.000	1.000	From Cocoa Beans
06030400	6C	Bean, navy, seed	13.160000	1.000	1.000	From Cocoa Beans
06030410	6C	Bean, pink, seed	13.160000	1.000	1.000	From Cocoa Beans
06030420	6C	Bean, pinto, seed	13.160000	1.000	1.000	From Cocoa Beans
21000450	M	Beef, meat, dried	31.320000	1.000	1.000	
14000590	14	Brazil nut	8.600000	1.000	0.200	From Pecan
14000680	14	Butternut	8.600000	1.000	0.200	From Pecan
14000810	14	Cashew	8.600000	1.000	0.200	From Pecan
14000920	14	Chestnut	8.600000	1.000	0.200	From Pecan
06030980	6C	Chickpea, seed	13.160000	1.000	1.000	From Cocoa Beans
06030981	6C	Chickpea, seed-babyfood	13.160000	1.000	1.000	From Cocoa Beans
06030990	6C	Chickpea, flour	13.160000	1.000	1.000	From Cocoa Beans
19011030	19A	Chive	52.200000	1.000	1.000	From Parsley
19021050	19B	Cinnamon	5.960000	1.000	1.000	From Peppercorns
19021051	19B	Cinnamon-babyfood	5.960000	1.000	1.000	From Peppercorns
95001090	0	Cocoa bean, chocolate	13.160000	1.000	1.000	
95001100	0	Cocoa bean, powder	13.160000	1.000	1.000	
95001110	0	Coconut, meat	35.180000	1.000	1.000	
95001111	0	Coconut- meat-babyfood	35.180000	1.000	1.000	
95001120	0	Coconut, dried	35.180000	1.000	1.000	From Figs
95001130	0	Coconut, milk	35.180000	1.000	1.000	
95001150	0	Coffee, roasted bean	7.150000	1.000	1.000	
95001160	0	Coffee, instant	10.790000	1.000	1.000	
19011180	19A	Coriander, leaves	52.200000	1.000	1.000	From Parsley
19011181	19A	Coriander, leaves-babyfood	52.200000	1.000	1.000	From Parsley
19021190	19B	Coriander, seed	5.960000	1.000	1.000	From Peppercorns
19021191	19B	Coriander, seed-babyfood	5.960000	1.000	1.000	From Peppercorns
15001200	15	Corn, field, flour	17.100000	1.000	0.020	
15001201	15	Corn, field, flour-babyfood	17.100000	1.000	0.020	
15001210	15	Corn, field, meal	24.000000	1.000	0.020	
15001211	15	Corn, field, meal-babyfood	24.000000	1.000	0.020	
15001220	15	Corn, field, bran	24.000000	1.000	0.020	
15001230	15	Corn, field, starch	17.100000	1.000	0.020	
15001231	15	Corn, field, starch-babyfood	17.100000	1.000	0.020	
15001240	15	Corn, field, syrup	1.200000	1.000	0.020	
15001241	15	Corn, field, syrup-babyfood	1.200000	1.000	0.020	
15001260	15	Corn, pop	4.000000	1.000	0.020	

15001270	15	Corn, sweet	4.000000	1.000	0.020	
15001271	15	Corn, sweet-babyfood	4.000000	1.000	0.020	
95001310	O	Cranberry, dried	1.200000	1.000	0.400	From Figs
95001410	O	Date				
		130-Uncooked; Dried; Cook Meth N/S	1.200000	1.000	0.400	
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.000	
		211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.000	
		212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	0.000	
		230-Cooked; Dried; Cook Meth N/S	1.200000	1.000	0.400	
19021430	19B	Dill, seed	5.960000	1.000	1.000	From Peppercorns
19011440	19A	Dillweed	52.200000	1.000	1.000	From Parsley
95001540	O	Fig, dried	1.200000	1.000	0.400	
14001550	14	Filbert	8.600000	1.000	0.200	From Pecan
01031660	1CD	Ginger	15.800000	1.000	1.000	From Garlic Powder
01031661	1CD	Ginger-babyfood	15.800000	1.000	1.000	From Garlic Powder
01031670	1CD	Ginger, dried	15.800000	1.000	1.000	From Garlic Powder
95001780	O	Grape, raisin	1.200000	1.000	0.400	
06031820	6C	Guar, seed	13.160000	1.000	1.000	From Cocoa Beans
06031821	6C	Guar, seed-babyfood	13.160000	1.000	1.000	From Cocoa Beans
19011840	19A	Herbs, other	52.200000	1.000	1.000	From Parsley
19011841	19A	Herbs, other-babyfood	52.200000	1.000	1.000	From Parsley
14001850	14	Hickory nut	8.600000	1.000	0.200	From Pecan
19012020	19A	Lemongrass	52.200000	1.000	1.000	From Parsley
06032030	6C	Lentil, seed	13.160000	1.000	1.000	From Cocoa Beans
95002120	O	Lychee, dried	1.200000	1.000	0.400	From Figs
14002130	14	Macadamia nut	8.600000	1.000	0.200	From Pecan
95002160	O	Mango, dried	1.200000	1.000	0.400	From Figs
19012200	19A	Marjoram	51.180000	1.000	1.000	From Basil
19012201	19A	Marjoram-babyfood	51.180000	1.000	1.000	From Basil
27002220	D	Milk, fat				
		110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	1.000	
		120-Uncooked; Frozen; Cook Meth N/S	0.000000	1.000	1.000	
		130-Uncooked; Dried; Cook Meth N/S	1.690000	1.000	1.000	
		150-Uncooked; Cured etc; Cook Meth N/S	4.480000	1.000	1.000	
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	1.000	
		211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000	
		212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	1.000	
		213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000	
		214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	1.000	
		215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	1.000	
		220-Cooked; Frozen; Cook Meth N/S	0.000000	1.000	1.000	
		221-Cooked; Frozen; Baked	0.000000	1.000	1.000	
		222-Cooked; Frozen; Boiled	0.000000	1.000	1.000	
		223-Cooked; Frozen; Fried	0.000000	1.000	1.000	
		224-Cooked; Frozen; Fried/baked	0.000000	1.000	1.000	
		230-Cooked; Dried; Cook Meth N/S	1.690000	1.000	1.000	
		231-Cooked; Dried; Baked	1.690000	1.000	1.000	
		232-Cooked; Dried; Boiled	1.690000	1.000	1.000	
		233-Cooked; Dried; Fried	1.690000	1.000	1.000	
		240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	1.000	
		242-Cooked; Canned; Boiled	0.000000	1.000	1.000	
		250-Cooked; Cured etc; Cook Meth N/S	4.480000	1.000	1.000	
		253-Cooked; Cured etc; Fried	4.480000	1.000	1.000	
		255-Cooked; Cured etc; Boiled/baked	4.480000	1.000	1.000	
27012230	D	Milk, nonfat solids				
		110-Uncooked; Fresh or N/S; Cook Meth N/S				

		0.000000	1.000	1.000
	120-Uncooked; Frozen; Cook Meth N/S	0.000000	1.000	1.000
	130-Uncooked; Dried; Cook Meth N/S	2.360000	1.000	1.000
	150-Uncooked; Cured etc; Cook Meth N/S	4.480000	1.000	1.000
	210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	1.000
	220-Cooked; Frozen; Cook Meth N/S	0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	223-Cooked; Frozen; Fried	0.000000	1.000	1.000
	224-Cooked; Frozen; Fried/baked	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S	2.360000	1.000	1.000
	231-Cooked; Dried; Baked	2.360000	1.000	1.000
	232-Cooked; Dried; Boiled	2.360000	1.000	1.000
	233-Cooked; Dried; Fried	2.360000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	1.000
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000
	245-Cooked; Canned; Boiled/baked	0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S	4.480000	1.000	1.000
	253-Cooked; Cured etc; Fried	4.480000	1.000	1.000
	255-Cooked; Cured etc; Boiled/baked	4.480000	1.000	1.000
27012231 D	Milk, nonfat solids-baby food/infant			
	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	1.000
	130-Uncooked; Dried; Cook Meth N/S	2.360000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	1.000
27022240 D	Milk, water			
	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	1.000
	120-Uncooked; Frozen; Cook Meth N/S	0.000000	1.000	1.000
	130-Uncooked; Dried; Cook Meth N/S	2.360000	1.000	1.000
	150-Uncooked; Cured etc; Cook Meth N/S	4.480000	1.000	1.000
	210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	1.000
	220-Cooked; Frozen; Cook Meth N/S	0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	223-Cooked; Frozen; Fried	0.000000	1.000	1.000
	224-Cooked; Frozen; Fried/baked	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S	2.360000	1.000	1.000

	231-Cooked; Dried; Baked	2.360000	1.000	1.000	
	232-Cooked; Dried; Boiled	2.360000	1.000	1.000	
	233-Cooked; Dried; Fried	2.360000	1.000	1.000	
	240-Cooked; Canned; Cook Meth N/S				
		0.000000	1.000	1.000	
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000	
	250-Cooked; Cured etc; Cook Meth N/S				
		4.480000	1.000	1.000	
	253-Cooked; Cured etc; Fried	4.480000	1.000	1.000	
	255-Cooked; Cured etc; Boiled/baked				
		4.480000	1.000	1.000	
27032251 D	Milk, sugar (lactose)-baby food/infa				
	110-Uncooked; Fresh or N/S; Cook Meth N/S				
		0.000000	1.000	1.000	
	130-Uncooked; Dried; Cook Meth N/S				
		2.360000	1.000	1.000	
	210-Cooked; Fresh or N/S; Cook Meth N/S				
		0.000000	1.000	1.000	
	212-Cooked; Fresh or N/S; Boiled				
		0.000000	1.000	1.000	
	230-Cooked; Dried; Cook Meth N/S				
		2.360000	1.000	1.000	
	240-Cooked; Canned; Cook Meth N/S				
		0.000000	1.000	1.000	
15002260 15	Millet, grain	4.990000	1.000	0.020	From Wheat Grain
15002310 15	Oat, bran	35.950000	1.000	0.020	
15002320 15	Oat, flour	32.570000	1.000	0.020	
15002321 15	Oat, flour-babyfood	32.570000	1.000	0.020	
15002330 15	Oat, groats/rolled oats	50.000000	1.000	0.020	
15002331 15	Oat, groats/rolled oats-babyfood	50.000000	1.000	0.020	
95002460 O	Papaya, dried	1.200000	1.000	0.400	From Figs
19012490 19A	Parsley, dried leaves	52.200000	1.000	1.000	
19012491 19A	Parsley, dried leaves-babyfood	52.200000	1.000	1.000	
06032560 6C	Pea, dry	13.160000	1.000	1.000	From Cocoa Beans
06032561 6C	Pea, dry-babyfood	13.160000	1.000	1.000	From Cocoa Beans
06032580 6C	Pea, pigeon, seed	13.160000	1.000	1.000	From Cocoa Beans
12002610 12	Peach, dried	1.200000	1.000	0.400	From Figs
12002611 12	Peach, dried-babyfood	1.200000	1.000	0.400	From Figs
95002630 O	Peanut	11.300000	1.000	1.000	
95002640 O	Peanut, butter	11.300000	1.000	1.000	
11002670 11	Pear, dried	1.200000	1.000	0.400	From Figs
14002690 14	Pecan	8.600000	1.000	0.200	
19022740 19B	Pepper, black and white	5.960000	1.000	1.000	
19022741 19B	Pepper, black and white-babyfood	5.960000	1.000	1.000	
95002780 O	Pine nut	8.600000	1.000	1.000	From Pecan
95002800 O	Pineapple, dried	1.200000	1.000	0.400	From Figs
14002820 14	Pistachio	8.600000	1.000	0.200	
95002840 O	Plantain, dried	1.200000	1.000	0.400	From Figs
12002870 12	Plum, prune, dried	0.700000	1.000	0.400	
12002871 12	Plum, prune, dried-babyfood	0.700000	1.000	0.400	
25002900 M	Pork, meat				
	210-Cooked; Fresh or N/S; Cook Meth N/S				
		0.000000	1.000	1.000	
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000	
	212-Cooked; Fresh or N/S; Boiled				
		0.000000	1.000	1.000	
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000	
	214-Cooked; Fresh or N/S; Fried/baked				
		0.000000	1.000	1.000	
	215-Cooked; Fresh or N/S; Boiled/baked				
		0.000000	1.000	1.000	
	220-Cooked; Frozen; Cook Meth N/S				
		0.000000	1.000	1.000	
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000	
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000	
	230-Cooked; Dried; Cook Meth N/S				
		0.000000	1.000	1.000	
	232-Cooked; Dried; Boiled	0.000000	1.000	1.000	
	240-Cooked; Canned; Cook Meth N/S				
		0.000000	1.000	1.000	
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000	
	250-Cooked; Cured etc; Cook Meth N/S				
		18.080000	1.000	1.000	

	251-Cooked; Cured etc; Baked	18.080000	1.000	1.000
	252-Cooked; Cured etc; Boiled	18.080000	1.000	1.000
	253-Cooked; Cured etc; Fried	18.080000	1.000	1.000
	255-Cooked; Cured etc; Boiled/baked			
		18.080000	1.000	1.000
25002910 M	Pork, skin			
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S			
		18.080000	1.000	1.000
25002920 M	Pork, meat byproducts			
	110-Uncooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	120-Uncooked; Frozen; Cook Meth N/S			
		0.000000	1.000	1.000
	130-Uncooked; Dried; Cook Meth N/S			
		0.000000	1.000	1.000
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked			
		0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked			
		0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S			
		0.000000	1.000	1.000
	231-Cooked; Dried; Baked	0.000000	1.000	1.000
	232-Cooked; Dried; Boiled	0.000000	1.000	1.000
	233-Cooked; Dried; Fried	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	1.000
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S			
		18.080000	1.000	1.000
	252-Cooked; Cured etc; Boiled	18.080000	1.000	1.000
25002930 M	Pork, fat			
	110-Uncooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked			
		0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked			
		0.000000	1.000	1.000
	220-Cooked; Frozen; Cook Meth N/S			
		0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S			
		0.000000	1.000	1.000
	232-Cooked; Dried; Boiled	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	1.000
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S			
		18.080000	1.000	1.000
	251-Cooked; Cured etc; Baked	18.080000	1.000	1.000



	252-Cooked; Cured etc; Boiled	18.080000	1.000	1.000	
	253-Cooked; Cured etc; Fried	18.080000	1.000	1.000	
	255-Cooked; Cured etc; Boiled/baked				
		18.080000	1.000	1.000	
15003230 15	Rice, white	5.300000	1.000	0.020	From Rice Grain
15003231 15	Rice, white-babyfood	5.300000	1.000	0.020	From Rice Grain
15003240 15	Rice, brown	5.300000	1.000	0.020	From Rice Grain
15003241 15	Rice, brown-babyfood	5.300000	1.000	0.020	From Rice Grain
15003250 15	Rice, flour	32.570000	1.000	0.020	
15003251 15	Rice, flour-babyfood	32.570000	1.000	0.020	
15003260 15	Rice, bran	25.900000	1.000	0.020	
15003261 15	Rice, bran-babyfood	25.900000	1.000	0.020	
19013340 19A	Savory	52.200000	1.000	1.000	From Parsley
15003440 15	Sorghum, grain	4.000000	1.000	0.020	From Corn Grain
19023540 19B	Spices, other	51.180000	1.000	1.000	From Basil
19023541 19B	Spices, other-babyfood	51.180000	1.000	1.000	From Basil
15003810 15	Triticale, flour	32.570000	1.000	0.020	
15003811 15	Triticale, flour-babyfood	32.570000	1.000	0.020	
14003910 14	Walnut	5.600000	1.000	0.200	
15004010 15	Wheat, grain	4.990000	1.000	0.020	
15004011 15	Wheat, grain-babyfood	4.990000	1.000	0.020	
15004020 15	Wheat, flour	32.570000	1.000	0.020	
15004021 15	Wheat, flour-babyfood	32.570000	1.000	0.020	
15004030 15	Wheat, germ	58.000000	1.000	0.020	
15004040 15	Wheat, bran	35.950000	1.000	0.020	
15004050 15	Wild rice	5.300000	1.000	0.020	

## Attachment 3: Sulfuryl Fluoride Space Fumigation Residue Inputs

U.S. Environmental Protection Agency Ver. 2.00  
DEEM-FCID Chronic analysis for SULFURYL FLUORIDE 1994-98 data  
Residue file: C:\Documents and Settings\MDOHERTY\My Documents\Chemistry Reviews\DEEM  
Runs\Sulfuryl Fluoride\SF Space Fumigation.R98

Analysis Date 01-05-2006 Adjust. #2 used  
Residue file dated: 01-05-2006/13:16:35/8  
Reference dose (RfD) = 0.003 mg/kg bw/day

Food Crop EPA Code	Grp	Food Name	Residue (ppm)	Adj. Factors		Comment
				#1	#2	
18000020	18	Alfalfa, seed	0.090000	1.000	0.004	
14000030	14	Almond	0.030000	1.000	0.004	
14000031	14	Almond-babyfood	0.030000	1.000	0.004	
14000040	14	Almond, oil	6.800000	1.000	0.004	
14000041	14	Almond, oil-babyfood	6.800000	1.000	0.004	
95000060	O	Amaranth, grain	0.090000	1.000	0.004	
11000090	11	Apple, dried	0.037000	1.000	0.004	
11000091	11	Apple, dried-babyfood	0.037000	1.000	0.004	
12000130	12	Apricot, dried	0.037000	1.000	0.004	
01030150	1CD	Arrowroot, flour	0.008000	1.000	0.004	
01030151	1CD	Arrowroot, flour-babyfood	0.008000	1.000	0.004	
95000240	O	Banana, dried	0.037000	1.000	0.004	
95000241	O	Banana, dried-babyfood	0.037000	1.000	0.004	
15000250	15	Barley, pearled barley	0.020000	1.000	0.011	
15000251	15	Barley, pearled barley-babyfood	0.020000	1.000	0.011	
15000260	15	Barley, flour	0.020000	1.000	0.011	
15000261	15	Barley, flour-babyfood	0.020000	1.000	0.011	
15000270	15	Barley, bran	0.020000	1.000	0.011	
19010280	19A	Basil, fresh leaves	0.016200	1.000	0.004	
19010281	19A	Basil, fresh leaves-babyfood	0.016200	1.000	0.004	
19010290	19A	Basil, dried leaves	0.010000	1.000	0.004	
19010291	19A	Basil, dried leaves-babyfood	0.010000	1.000	0.004	
06030300	6C	Bean, black, seed	0.117000	1.000	0.004	
06030320	6C	Bean, broad, seed	0.117000	1.000	0.004	
06030340	6C	Bean, cowpea, seed	0.117000	1.000	0.004	
06030350	6C	Bean, great northern, seed	0.117000	1.000	0.004	
06030360	6C	Bean, kidney, seed	0.117000	1.000	0.004	
06030380	6C	Bean, lima, seed	0.117000	1.000	0.004	
06030390	6C	Bean, mung, seed	0.117000	1.000	0.004	
06030400	6C	Bean, navy, seed	0.117000	1.000	0.004	
06030410	6C	Bean, pink, seed	0.117000	1.000	0.004	
06030420	6C	Bean, pinto, seed	0.117000	1.000	0.004	
21000450	M	Beef, meat, dried	0.005000	1.000	0.004	
01010530	1A	Beet, sugar, molasses	0.002000	1.000	0.004	
01010531	1A	Beet, sugar, molasses-babyfood	0.002000	1.000	0.004	
14000590	14	Brazil nut	2.400000	1.000	0.004	
15000660	15	Buckwheat, flour	0.008000	1.000	0.011	
14000680	14	Butternut	2.400000	1.000	0.004	
14000810	14	Cashew	2.400000	1.000	0.004	
14000920	14	Chestnut	2.400000	1.000	0.004	
06030980	6C	Chickpea, seed	0.117000	1.000	0.004	
06030981	6C	Chickpea, seed-babyfood	0.117000	1.000	0.004	
06030990	6C	Chickpea, flour	0.117000	1.000	0.004	
01011000	1AB	Chicory, roots	0.816000	1.000	0.004	
19011030	19A	Chive	0.162000	1.000	0.004	
04011040	4A	Chrysanthemum, garland	0.162000	1.000	0.004	
19021050	19B	Cinnamon	0.015000	1.000	0.004	
19021051	19B	Cinnamon-babyfood	0.015000	1.000	0.004	
95001090	O	Cocoa bean, chocolate	0.117000	1.000	0.004	
95001100	O	Cocoa bean, powder	0.117000	1.000	0.004	
95001110	O	Coconut, meat	0.900000	1.000	0.004	
95001111	O	Coconut- meat-babyfood	0.900000	1.000	0.004	
95001120	O	Coconut, dried	0.900000	1.000	0.004	
95001130	O	Coconut, milk	0.900000	1.000	0.004	
95001140	O	Coconut, oil	6.800000	1.000	0.004	
95001141	O	Coconut, oil-babyfood	6.800000	1.000	0.004	
95001150	O	Coffee, roasted bean	0.011000	1.000	0.004	

95001160	O	Coffee, instant	0.816000	1.000	0.004
19011180	19A	Coriander, leaves	0.162000	1.000	0.004
19011181	19A	Coriander, leaves-babyfood	0.162000	1.000	0.004
19021190	19B	Coriander, seed	0.015000	1.000	0.004
19021191	19B	Coriander, seed-babyfood	0.015000	1.000	0.004
15001200	15	Corn, field, flour	0.020000	1.000	0.011
15001201	15	Corn, field, flour-babyfood	0.020000	1.000	0.011
15001210	15	Corn, field, meal	0.020000	1.000	0.011
15001211	15	Corn, field, meal-babyfood	0.020000	1.000	0.011
15001220	15	Corn, field, bran	0.020000	1.000	0.011
15001230	15	Corn, field, starch	0.020000	1.000	0.011
15001231	15	Corn, field, starch-babyfood	0.020000	1.000	0.011
15001240	15	Corn, field, syrup	0.020000	1.000	0.011
15001241	15	Corn, field, syrup-babyfood	0.020000	1.000	0.011
15001250	15	Corn, field, oil	6.800000	1.000	0.011
15001251	15	Corn, field, oil-babyfood	6.800000	1.000	0.011
15001260	15	Corn, pop	0.023000	1.000	0.011
95001280	O	Cottonseed, oil	6.800000	1.000	0.004
95001281	O	Cottonseed, oil-babyfood	6.800000	1.000	0.004
95001310	O	Cranberry, dried	0.037000	1.000	0.004
13021370	13B	Currant, dried	0.037000	1.000	0.004
95001410	O	Date	0.037000	1.000	0.004
19021430	19B	Dill, seed	0.015000	1.000	0.004
19011440	19A	Dillweed	0.162000	1.000	0.004
70001450	P	Egg, whole			
		110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
		120-Uncooked; Frozen; Cook Meth N/S	0.000000	1.000	0.004
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
		211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
		212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	0.004
		213-Cooked; Fresh or N/S; Fried	0.000000	1.000	0.004
		214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	0.004
		215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	0.004
		221-Cooked; Frozen; Baked	0.000000	1.000	0.004
		223-Cooked; Frozen; Fried	0.000000	1.000	0.004
		224-Cooked; Frozen; Fried/baked	0.000000	1.000	0.004
		230-Cooked; Dried; Cook Meth N/S	0.444000	1.000	0.004
		232-Cooked; Dried; Boiled	0.444000	1.000	0.004
		233-Cooked; Dried; Fried	0.444000	1.000	0.004
		240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	0.004
		242-Cooked; Canned; Boiled	0.000000	1.000	0.004
		252-Cooked; Cured etc; Boiled	0.000000	1.000	0.004
		253-Cooked; Cured etc; Fried	0.000000	1.000	0.004
70001460	P	Egg, white			
		110-Uncooked; Fresh or N/S; Cook Meth N/S	0.444000	1.000	0.004
		120-Uncooked; Frozen; Cook Meth N/S	0.000000	1.000	0.004
		130-Uncooked; Dried; Cook Meth N/S	0.444000	1.000	0.004
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
		211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
		212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	0.004
		213-Cooked; Fresh or N/S; Fried	0.000000	1.000	0.004
		214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	0.004
		221-Cooked; Frozen; Baked	0.000000	1.000	0.004
		223-Cooked; Frozen; Fried	0.000000	1.000	0.004
		230-Cooked; Dried; Cook Meth N/S	0.444000	1.000	0.004
		232-Cooked; Dried; Boiled	0.444000	1.000	0.004
		233-Cooked; Dried; Fried	0.444000	1.000	0.004

		240-Cooked; Canned; Cook Meth N/S			
			0.000000	1.000	0.004
		242-Cooked; Canned; Boiled	0.000000	1.000	0.004
		250-Cooked; Cured etc; Cook Meth N/S			
			0.000000	1.000	0.004
70001461	P	Egg, white (solids)-babyfood	0.444000	1.000	0.004
95001540	O	Fig, dried	0.037000	1.000	0.004
14001550	14	Filbert	2.400000	1.000	0.004
14001560	14	Filbert, oil	6.800000	1.000	0.004
20001630	20	Flaxseed, oil	6.800000	1.000	0.004
03001650	3	Garlic, dried	0.002000	1.000	0.004
03001651	3	Garlic, dried-babyfood	0.002000	1.000	0.004
01031670	1CD	Ginger, dried	0.002000	1.000	0.004
01011680	1AB	Ginseng, dried	0.002000	1.000	0.004
95001780	O	Grape, raisin	0.001000	1.000	0.004
06031820	6C	Guar, seed	0.117000	1.000	0.004
06031821	6C	Guar, seed-babyfood	0.117000	1.000	0.004
19011840	19A	Herbs, other	0.162000	1.000	0.004
19011841	19A	Herbs, other-babyfood	0.162000	1.000	0.004
14001850	14	Hickory nut	2.400000	1.000	0.004
19012020	19A	Lemongrass	0.162000	1.000	0.004
06032030	6C	Lentil, seed	0.117000	1.000	0.004
95002120	O	Lychee, dried	0.037000	1.000	0.004
14002130	14	Macadamia nut	2.400000	1.000	0.004
95002160	O	Mango, dried	0.037000	1.000	0.004
95002180	O	Maple, sugar	0.002000	1.000	0.004
95002190	O	Maple syrup	0.002000	1.000	0.004
19012200	19A	Marjoram	0.010000	1.000	0.004
19012201	19A	Marjoram-babyfood	0.010000	1.000	0.004
27002220	D	Milk, fat			
		110-Uncooked; Fresh or N/S; Cook Meth N/S			
			0.000000	1.000	0.004
		120-Uncooked; Frozen; Cook Meth N/S			
			0.000000	1.000	0.004
		130-Uncooked; Dried; Cook Meth N/S			
			1.453000	1.000	0.004
		150-Uncooked; Cured etc; Cook Meth N/S			
			0.408000	1.000	0.004
		210-Cooked; Fresh or N/S; Cook Meth N/S			
			0.000000	1.000	0.004
		211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
		212-Cooked; Fresh or N/S; Boiled			
			0.000000	1.000	0.004
		213-Cooked; Fresh or N/S; Fried	0.000000	1.000	0.004
		214-Cooked; Fresh or N/S; Fried/baked			
			0.000000	1.000	0.004
		215-Cooked; Fresh or N/S; Boiled/baked			
			0.000000	1.000	0.004
		220-Cooked; Frozen; Cook Meth N/S			
			0.000000	1.000	0.004
		221-Cooked; Frozen; Baked	0.000000	1.000	0.004
		222-Cooked; Frozen; Boiled	0.000000	1.000	0.004
		223-Cooked; Frozen; Fried	0.000000	1.000	0.004
		224-Cooked; Frozen; Fried/baked	0.000000	1.000	0.004
		230-Cooked; Dried; Cook Meth N/S			
			1.453000	1.000	0.004
		231-Cooked; Dried; Baked	1.453000	1.000	0.004
		232-Cooked; Dried; Boiled	1.453000	1.000	0.004
		233-Cooked; Dried; Fried	1.453000	1.000	0.004
		240-Cooked; Canned; Cook Meth N/S			
			0.000000	1.000	0.004
		242-Cooked; Canned; Boiled	0.000000	1.000	0.004
		250-Cooked; Cured etc; Cook Meth N/S			
			0.408000	1.000	0.004
		253-Cooked; Cured etc; Fried	0.408000	1.000	0.004
		255-Cooked; Cured etc; Boiled/baked			
			0.408000	1.000	0.004
27012230	D	Milk, nonfat solids			
		110-Uncooked; Fresh or N/S; Cook Meth N/S			
			0.000000	1.000	0.004
		120-Uncooked; Frozen; Cook Meth N/S			
			0.000000	1.000	0.004

	130-Uncooked; Dried; Cook Meth N/S	0.002000	1.000	0.004
	150-Uncooked; Cured etc; Cook Meth N/S	0.408000	1.000	0.004
	210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
	212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	0.004
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	0.004
	214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	0.004
	215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	0.004
	220-Cooked; Frozen; Cook Meth N/S	0.000000	1.000	0.004
	221-Cooked; Frozen; Baked	0.000000	1.000	0.004
	222-Cooked; Frozen; Boiled	0.000000	1.000	0.004
	223-Cooked; Frozen; Fried	0.000000	1.000	0.004
	224-Cooked; Frozen; Fried/baked	0.000000	1.000	0.004
	230-Cooked; Dried; Cook Meth N/S	0.002000	1.000	0.004
	231-Cooked; Dried; Baked	0.002000	1.000	0.004
	232-Cooked; Dried; Boiled	0.002000	1.000	0.004
	233-Cooked; Dried; Fried	0.002000	1.000	0.004
	240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	0.004
	242-Cooked; Canned; Boiled	0.000000	1.000	0.004
	245-Cooked; Canned; Boiled/baked	0.000000	1.000	0.004
	250-Cooked; Cured etc; Cook Meth N/S	0.408000	1.000	0.004
	253-Cooked; Cured etc; Fried	0.408000	1.000	0.004
	255-Cooked; Cured etc; Boiled/baked	0.408000	1.000	0.004
27012231 D	Milk, nonfat solids-baby food/infant			
	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
	130-Uncooked; Dried; Cook Meth N/S	0.002000	1.000	0.004
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
	240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	0.004
27022240 D	Milk, water			
	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
	120-Uncooked; Frozen; Cook Meth N/S	0.000000	1.000	0.004
	130-Uncooked; Dried; Cook Meth N/S	0.002000	1.000	0.004
	150-Uncooked; Cured etc; Cook Meth N/S	0.408000	1.000	0.004
	210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
	212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	0.004
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	0.004
	214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	0.004
	215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	0.004
	220-Cooked; Frozen; Cook Meth N/S	0.000000	1.000	0.004
	221-Cooked; Frozen; Baked	0.000000	1.000	0.004
	222-Cooked; Frozen; Boiled	0.000000	1.000	0.004
	223-Cooked; Frozen; Fried	0.000000	1.000	0.004
	224-Cooked; Frozen; Fried/baked	0.000000	1.000	0.004
	230-Cooked; Dried; Cook Meth N/S	0.002000	1.000	0.004
	231-Cooked; Dried; Baked	0.002000	1.000	0.004
	232-Cooked; Dried; Boiled	0.002000	1.000	0.004

	233-Cooked; Dried; Fried	0.002000	1.000	0.004
	240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	0.004
	242-Cooked; Canned; Boiled	0.000000	1.000	0.004
	250-Cooked; Cured etc; Cook Meth N/S	0.408000	1.000	0.004
	253-Cooked; Cured etc; Fried	0.408000	1.000	0.004
	255-Cooked; Cured etc; Boiled/baked	0.408000	1.000	0.004
27032251 D	Milk, sugar (lactose)-baby food/infa	0.000000	1.000	0.004
	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
	130-Uncooked; Dried; Cook Meth N/S	0.002000	1.000	0.004
	210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
	212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	0.004
	230-Cooked; Dried; Cook Meth N/S	0.002000	1.000	0.004
	240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	0.004
15002260 15	Millet, grain	0.033000	1.000	0.011
15002310 15	Oat, bran	0.008000	1.000	0.011
15002320 15	Oat, flour	0.008000	1.000	0.011
15002321 15	Oat, flour-babyfood	0.008000	1.000	0.011
15002330 15	Oat, groats/rolled oats	0.008000	1.000	0.011
15002331 15	Oat, groats/rolled oats-babyfood	0.008000	1.000	0.011
95002360 0	Olive, oil	6.800000	1.000	0.004
03002380 3	Onion, dry bulb, dried	0.002000	1.000	0.004
03002381 3	Onion, dry bulb, dried-babyfood	0.002000	1.000	0.004
95002440 0	Palm, oil	6.800000	1.000	0.004
95002441 0	Palm, oil-babyfood	6.800000	1.000	0.004
95002460 0	Papaya, dried	0.037000	1.000	0.004
19012490 19A	Parsley, dried leaves	0.162000	1.000	0.004
19012491 19A	Parsley, dried leaves-babyfood	0.162000	1.000	0.004
06032560 6C	Pea, dry	0.117000	1.000	0.004
06032561 6C	Pea, dry-babyfood	0.117000	1.000	0.004
06032580 6C	Pea, pigeon, seed	0.117000	1.000	0.004
12002610 12	Peach, dried	0.037000	1.000	0.004
12002611 12	Peach, dried-babyfood	0.037000	1.000	0.004
95002630 0	Peanut	0.145000	1.000	0.004
95002640 0	Peanut, butter	0.145000	1.000	0.004
95002650 0	Peanut, oil	6.800000	1.000	0.004
11002670 11	Pear, dried	0.037000	1.000	0.004
14002690 14	Pecan	2.400000	1.000	0.004
08002710 8	Pepper, bell, dried	0.247000	1.000	0.004
08002711 8	Pepper, bell, dried-babyfood	0.247000	1.000	0.004
08002730 8	Pepper, nonbell, dried	0.247000	1.000	0.004
19022740 19B	Pepper, black and white	0.015000	1.000	0.004
19022741 19B	Pepper, black and white-babyfood	0.015000	1.000	0.004
95002760 0	Peppermint, oil	6.800000	1.000	0.004
95002780 0	Pine nut	2.400000	1.000	0.004
95002800 0	Pineapple, dried	0.037000	1.000	0.004
14002820 14	Pistachio	2.400000	1.000	0.004
95002840 0	Plantain, dried	0.037000	1.000	0.004
12002870 12	Plum, prune, dried	0.001000	1.000	0.004
12002871 12	Plum, prune, dried-babyfood	0.001000	1.000	0.004
25002900 M	Pork, meat			
	210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	1.000
	220-Cooked; Frozen; Cook Meth N/S	0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000

	230-Cooked; Dried; Cook Meth N/S	0.000000	1.000	1.000
	232-Cooked; Dried; Boiled	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	1.000
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S	0.002000	1.000	0.004
	251-Cooked; Cured etc; Baked	0.002000	1.000	0.004
	252-Cooked; Cured etc; Boiled	0.002000	1.000	0.004
	253-Cooked; Cured etc; Fried	0.002000	1.000	0.004
	255-Cooked; Cured etc; Boiled/baked	0.002000	1.000	0.004
25002901 M	Pork, meat-babyfood	0.002000	1.000	0.004
25002930 M	Pork, fat			
	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	1.000
	210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	1.000
	220-Cooked; Frozen; Cook Meth N/S	0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S	0.000000	1.000	1.000
	232-Cooked; Dried; Boiled	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	1.000
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S	0.002000	1.000	0.004
	251-Cooked; Cured etc; Baked	0.002000	1.000	0.004
	252-Cooked; Cured etc; Boiled	0.002000	1.000	0.004
	253-Cooked; Cured etc; Fried	0.002000	1.000	0.004
	255-Cooked; Cured etc; Boiled/baked	0.002000	1.000	0.004
01032960 1C	Potato, chips	0.138000	1.000	0.004
01032970 1C	Potato, dry (granules/ flakes)	0.002000	1.000	0.004
01032971 1C	Potato, dry (granules/ flakes)-b	0.002000	1.000	0.004
01032980 1C	Potato, flour	0.008000	1.000	0.004
01032981 1C	Potato, flour-babyfood	0.008000	1.000	0.004
95003060 O	Psyllium, seed	0.247000	1.000	0.004
09023090 9B	Pumpkin, seed	0.030000	1.000	0.004
95003110 O	Quinoa, grain	0.090000	1.000	0.004
20003190 20	Rapeseed, oil	6.800000	1.000	0.004
20003191 20	Rapeseed, oil-babyfood	6.800000	1.000	0.004
15003230 15	Rice, white	0.021000	1.000	0.011
15003231 15	Rice, white-babyfood	0.021000	1.000	0.011
15003240 15	Rice, brown	0.021000	1.000	0.011
15003241 15	Rice, brown-babyfood	0.021000	1.000	0.011
15003250 15	Rice, flour	0.021000	1.000	0.011
15003251 15	Rice, flour-babyfood	0.021000	1.000	0.011
15003260 15	Rice, bran	0.021000	1.000	0.011
15003261 15	Rice, bran-babyfood	0.021000	1.000	0.011
15003290 15	Rye, flour	0.008000	1.000	0.011
20003300 20	Safflower, oil	6.800000	1.000	0.004
20003301 20	Safflower, oil-babyfood	6.800000	1.000	0.004
19013340 19A	Savory	0.162000	1.000	0.004
95003360 O	Sesame, seed	0.247000	1.000	0.004
95003361 O	Sesame, seed-babyfood	0.247000	1.000	0.004
95003370 O	Sesame, oil	6.800000	1.000	0.004
95003371 O	Sesame, oil-babyfood	6.800000	1.000	0.004
15003440 15	Sorghum, grain	0.023000	1.000	0.011
15003450 15	Sorghum, syrup	0.020000	1.000	0.011
06003480 6	Soybean, flour	0.020000	1.000	0.004

06003481	6	Soybean, flour-babyfood	0.020000	1.000	0.004
06003490	6	Soybean, soy milk	1.453000	1.000	0.004
06003491	6	Soybean, soy milk-babyfood or in	1.453000	1.000	0.004
06003500	6	Soybean, oil	6.800000	1.000	0.004
06003501	6	Soybean, oil-babyfood	6.800000	1.000	0.004
95003530	0	Spearmint, oil	6.800000	1.000	0.004
19023540	19B	Spices, other	0.015000	1.000	0.004
19023541	19B	Spices, other-babyfood	0.015000	1.000	0.004
95003620	0	Sugarcane, sugar	0.002000	1.000	0.004
95003621	0	Sugarcane, sugar-babyfood	0.002000	1.000	0.004
95003630	0	Sugarcane, molasses	0.002000	1.000	0.004
95003631	0	Sugarcane, molasses-babyfood	0.002000	1.000	0.004
20003640	20	Sunflower, seed	0.247000	1.000	0.004
20003650	20	Sunflower, oil	6.800000	1.000	0.004
20003651	20	Sunflower, oil-babyfood	6.800000	1.000	0.004
95003720	0	Tea, dried	0.010000	1.000	0.004
95003730	0	Tea, instant	0.010000	1.000	0.004
08003780	8	Tomato, dried	0.037000	1.000	0.004
08003781	8	Tomato, dried-babyfood	0.037000	1.000	0.004
15003810	15	Triticale, flour	0.008000	1.000	0.011
15003811	15	Triticale, flour-babyfood	0.008000	1.000	0.011
01033870	1CD	Turmeric	0.247000	1.000	0.004
14003910	14	Walnut	0.600000	1.000	0.004
15004010	15	Wheat, grain	0.033000	1.000	0.011
15004011	15	Wheat, grain-babyfood	0.033000	1.000	0.011
15004020	15	Wheat, flour	0.008000	1.000	0.011
15004021	15	Wheat, flour-babyfood	0.008000	1.000	0.011
15004030	15	Wheat, germ	0.020000	1.000	0.011
15004040	15	Wheat, bran	0.008000	1.000	0.011
15004050	15	Wild rice	0.021000	1.000	0.011



## Attachment 4: Fluoride Space Fumigation Residue Inputs

U.S. Environmental Protection Agency  
DEEM-PCID Chronic analysis for FLUORIDE  
Residue file: C:\Documents and Settings\MDOHERTY\My Documents\Chemistry Reviews\DEEM  
Runs\Sulfuryl Fluoride\F Space Fumigation.R98

Ver. 2.00  
1994-98 data

Analysis Date 01-05-2006 Residue file dated: 01-05-2006/13:18:31/8  
Reference dose (RfD) = 0.114 mg/kg bw/day  
Comment: RfD is converted Fluoride MCL and is valid for adult pops. only

Food Crop			Residue (ppm)	Adj. Factors		Comment
EPA Code	Grp	Food Name		#1	#2	
18000020	18	Alfalfa, seed	4.000000	1.000	0.004	
14000030	14	Almond	4.700000	1.000	0.004	
14000031	14	Almond-babyfood	4.700000	1.000	0.004	
14000040	14	Almond, oil	1.200000	1.000	0.004	
14000041	14	Almond, oil-babyfood	1.200000	1.000	0.004	
95000060	O	Amaranth, grain	4.000000	1.000	0.004	
11000090	11	Apple, dried	1.200000	1.000	0.004	
11000091	11	Apple, dried-babyfood	1.200000	1.000	0.004	
12000130	12	Apricot, dried	1.200000	1.000	0.004	
01030150	1CD	Arrowroot, flour	4.990000	1.000	0.004	
01030151	1CD	Arrowroot, flour-babyfood	4.990000	1.000	0.004	
95000240	O	Banana, dried	1.200000	1.000	0.004	
95000241	O	Banana, dried-babyfood	1.200000	1.000	0.004	
15000250	15	Barley, pearled barley	50.000000	1.000	0.011	
15000251	15	Barley, pearled barley-babyfood	50.000000	1.000	0.011	
15000260	15	Barley, flour	32.570000	1.000	0.011	
15000261	15	Barley, flour-babyfood	32.570000	1.000	0.011	
15000270	15	Barley, bran	50.000000	1.000	0.011	
19010280	19A	Basil, fresh leaves	51.180000	1.000	0.004	
19010281	19A	Basil, fresh leaves-babyfood	51.180000	1.000	0.004	
19010290	19A	Basil, dried leaves	51.180000	1.000	0.004	
19010291	19A	Basil, dried leaves-babyfood	51.180000	1.000	0.004	
06030300	6C	Bean, black, seed	13.160000	1.000	0.004	
06030320	6C	Bean, broad, seed	13.160000	1.000	0.004	
06030340	6C	Bean, cowpea, seed	13.160000	1.000	0.004	
06030350	6C	Bean, great northern, seed	13.160000	1.000	0.004	
06030360	6C	Bean, kidney, seed	13.160000	1.000	0.004	
06030380	6C	Bean, lima, seed	13.160000	1.000	0.004	
06030390	6C	Bean, mung, seed	13.160000	1.000	0.004	
06030400	6C	Bean, navy, seed	13.160000	1.000	0.004	
06030410	6C	Bean, pink, seed	13.160000	1.000	0.004	
06030420	6C	Bean, pinto, seed	13.160000	1.000	0.004	
21000450	M	Beef, meat, dried	31.320000	1.000	0.004	
01010530	1A	Beet, sugar, molasses	0.770000	1.000	0.004	
01010531	1A	Beet, sugar, molasses-babyfood	0.770000	1.000	0.004	
14000590	14	Brazil nut	8.600000	1.000	0.004	
15000660	15	Buckwheat, flour	32.570000	1.000	0.011	
14000680	14	Butternut	8.600000	1.000	0.004	
14000810	14	Cashew	8.600000	1.000	0.004	
14000920	14	Chestnut	8.600000	1.000	0.004	
06030980	6C	Chickpea, seed	13.160000	1.000	0.004	
06030981	6C	Chickpea, seed-babyfood	13.160000	1.000	0.004	
06030990	6C	Chickpea, flour	13.160000	1.000	0.004	
01011000	1AB	Chicory, roots	10.790000	1.000	0.004	
19011030	19A	Chive	52.200000	1.000	0.004	
04011040	4A	Chrysanthemum, garland	52.200000	1.000	0.004	
19021050	19B	Cinnamon	5.960000	1.000	0.004	
19021051	19B	Cinnamon-babyfood	5.960000	1.000	0.004	
95001090	O	Cocoa bean, chocolate	13.160000	1.000	0.004	
95001100	O	Cocoa bean, powder	13.160000	1.000	0.004	
95001110	O	Coconut, meat	35.180000	1.000	0.004	
95001111	O	Coconut- meat-babyfood	35.180000	1.000	0.004	
95001120	O	Coconut, dried	35.180000	1.000	0.004	
95001130	O	Coconut, milk	35.180000	1.000	0.004	
95001140	O	Coconut, oil	1.200000	1.000	0.004	
95001141	O	Coconut, oil-babyfood	1.200000	1.000	0.004	

95001150	O	Coffee, roasted bean	7.150000	1.000	0.004
95001160	O	Coffee, instant	10.790000	1.000	0.004
19011180	19A	Coriander, leaves	52.200000	1.000	0.004
19011181	19A	Coriander, leaves-babyfood	52.200000	1.000	0.004
19021190	19B	Coriander, seed	5.960000	1.000	0.004
19021191	19B	Coriander, seed-babyfood	5.960000	1.000	0.004
15001200	15	Corn, field, flour	17.100000	1.000	0.011
15001201	15	Corn, field, flour-babyfood	17.100000	1.000	0.011
15001210	15	Corn, field, meal	24.000000	1.000	0.011
15001211	15	Corn, field, meal-babyfood	24.000000	1.000	0.011
15001220	15	Corn, field, bran	24.000000	1.000	0.011
15001230	15	Corn, field, starch	17.100000	1.000	0.011
15001231	15	Corn, field, starch-babyfood	17.100000	1.000	0.011
15001240	15	Corn, field, syrup	1.200000	1.000	0.011
15001241	15	Corn, field, syrup-babyfood	1.200000	1.000	0.011
15001250	15	Corn, field, oil	1.200000	1.000	0.011
15001251	15	Corn, field, oil-babyfood	1.200000	1.000	0.011
15001260	15	Corn, pop	4.000000	1.000	0.011
95001280	O	Cottonseed, oil	1.200000	1.000	0.004
95001281	O	Cottonseed, oil-babyfood	1.200000	1.000	0.004
95001310	O	Cranberry, dried	1.200000	1.000	0.004
13021370	13B	Currant, dried	1.200000	1.000	0.004
95001410	O	Date	1.200000	1.000	0.004
19021430	19B	Dill, seed	26.350000	1.000	0.004
19011440	19A	Dillweed	52.200000	1.000	0.004
70001450	P	Egg, whole			
		110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
		120-Uncooked; Frozen; Cook Meth N/S	0.000000	1.000	0.004
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
		211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
		212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	0.004
		213-Cooked; Fresh or N/S; Fried	0.000000	1.000	0.004
		214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	0.004
		215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	0.004
		221-Cooked; Frozen; Baked	0.000000	1.000	0.004
		223-Cooked; Frozen; Fried	0.000000	1.000	0.004
		224-Cooked; Frozen; Fried/baked	0.000000	1.000	0.004
		230-Cooked; Dried; Cook Meth N/S	755.340000	1.000	0.004
		232-Cooked; Dried; Boiled	755.340000	1.000	0.004
		233-Cooked; Dried; Fried	755.340000	1.000	0.004
		240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	0.004
		242-Cooked; Canned; Boiled	0.000000	1.000	0.004
		252-Cooked; Cured etc; Boiled	0.000000	1.000	0.004
		253-Cooked; Cured etc; Fried	0.000000	1.000	0.004
70001460	P	Egg, white			
		110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
		120-Uncooked; Frozen; Cook Meth N/S	0.000000	1.000	0.004
		130-Uncooked; Dried; Cook Meth N/S	755.340000	1.000	0.004
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
		211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
		212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	0.004
		213-Cooked; Fresh or N/S; Fried	0.000000	1.000	0.004
		214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	0.004
		221-Cooked; Frozen; Baked	0.000000	1.000	0.004
		223-Cooked; Frozen; Fried	0.000000	1.000	0.004
		230-Cooked; Dried; Cook Meth N/S	755.340000	1.000	0.004
		232-Cooked; Dried; Boiled	755.340000	1.000	0.004
		233-Cooked; Dried; Fried	755.340000	1.000	0.004

		240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	0.004
		242-Cooked; Canned; Boiled	0.000000	1.000	0.004
		250-Cooked; Cured etc; Cook Meth N/S	0.000000	1.000	0.004
70001461	P	Egg, white (solids)-babyfood	755.340000	1.000	0.004
95001540	O	Fig, dried	1.200000	1.000	0.004
14001550	14	Filbert	8.600000	1.000	0.004
14001560	14	Filbert, oil	1.200000	1.000	0.004
20001630	20	Flaxseed, oil	1.200000	1.000	0.004
03001650	3	Garlic, dried	15.800000	1.000	0.004
03001651	3	Garlic, dried-babyfood	15.800000	1.000	0.004
01031670	1CD	Ginger, dried	15.800000	1.000	0.004
01011680	1AB	Ginseng, dried	15.800000	1.000	0.004
95001780	O	Grape, raisin	1.200000	1.000	0.004
06031820	6C	Guar, seed	13.160000	1.000	0.004
06031821	6C	Guar, seed-babyfood	13.160000	1.000	0.004
19011840	19A	Herbs, other	52.200000	1.000	0.004
19011841	19A	Herbs, other-babyfood	52.200000	1.000	0.004
14001850	14	Hickory nut	8.600000	1.000	0.004
19012020	19A	Lemongrass	52.200000	1.000	0.004
06032030	6C	Lentil, seed	13.160000	1.000	0.004
95002120	O	Lychee, dried	1.200000	1.000	0.004
14002130	14	Macadamia nut	8.600000	1.000	0.004
95002160	O	Mango, dried	1.200000	1.000	0.004
95002180	O	Maple, sugar	0.770000	1.000	0.004
95002190	O	Maple syrup	0.770000	1.000	0.004
19012200	19A	Marjoram	51.180000	1.000	0.004
19012201	19A	Marjoram-babyfood	51.180000	1.000	0.004
27002220	D	Milk, fat			
		110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
		120-Uncooked; Frozen; Cook Meth N/S	0.000000	1.000	0.004
		130-Uncooked; Dried; Cook Meth N/S	1.690000	1.000	0.004
		150-Uncooked; Cured etc; Cook Meth N/S	4.480000	1.000	0.004
		210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
		211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
		212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	0.004
		213-Cooked; Fresh or N/S; Fried	0.000000	1.000	0.004
		214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	0.004
		215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	0.004
		220-Cooked; Frozen; Cook Meth N/S	0.000000	1.000	0.004
		221-Cooked; Frozen; Baked	0.000000	1.000	0.004
		222-Cooked; Frozen; Boiled	0.000000	1.000	0.004
		223-Cooked; Frozen; Fried	0.000000	1.000	0.004
		224-Cooked; Frozen; Fried/baked	0.000000	1.000	0.004
		230-Cooked; Dried; Cook Meth N/S	1.690000	1.000	0.004
		231-Cooked; Dried; Baked	1.690000	1.000	0.004
		232-Cooked; Dried; Boiled	1.690000	1.000	0.004
		233-Cooked; Dried; Fried	1.690000	1.000	0.004
		240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	0.004
		242-Cooked; Canned; Boiled	0.000000	1.000	0.004
		250-Cooked; Cured etc; Cook Meth N/S	4.480000	1.000	0.004
		253-Cooked; Cured etc; Fried	4.480000	1.000	0.004
		255-Cooked; Cured etc; Boiled/baked	4.480000	1.000	0.004
27012230	D	Milk, nonfat solids			
		110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
		120-Uncooked; Frozen; Cook Meth N/S	0.000000	1.000	0.004
		130-Uncooked; Dried; Cook Meth N/S			

		2.360000	1.000	0.004
	150-Uncooked; Cured etc; Cook Meth N/S			
		4.480000	1.000	0.004
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	0.004
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	0.004
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	0.004
	214-Cooked; Fresh or N/S; Fried/baked			
		0.000000	1.000	0.004
	215-Cooked; Fresh or N/S; Boiled/baked			
		0.000000	1.000	0.004
	220-Cooked; Frozen; Cook Meth N/S			
		0.000000	1.000	0.004
	221-Cooked; Frozen; Baked	0.000000	1.000	0.004
	222-Cooked; Frozen; Boiled	0.000000	1.000	0.004
	223-Cooked; Frozen; Fried	0.000000	1.000	0.004
	224-Cooked; Frozen; Fried/baked	0.000000	1.000	0.004
	230-Cooked; Dried; Cook Meth N/S			
		2.360000	1.000	0.004
	231-Cooked; Dried; Baked	2.360000	1.000	0.004
	232-Cooked; Dried; Boiled	2.360000	1.000	0.004
	233-Cooked; Dried; Fried	2.360000	1.000	0.004
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	0.004
	242-Cooked; Canned; Boiled	0.000000	1.000	0.004
	245-Cooked; Canned; Boiled/baked			
		0.000000	1.000	0.004
	250-Cooked; Cured etc; Cook Meth N/S			
		4.480000	1.000	0.004
	253-Cooked; Cured etc; Fried	4.480000	1.000	0.004
	255-Cooked; Cured etc; Boiled/baked			
		4.480000	1.000	0.004
27012231 D	Milk, nonfat solids-baby food/infant			
	110-Uncooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	0.004
	130-Uncooked; Dried; Cook Meth N/S			
		2.360000	1.000	0.004
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	0.004
27022240 D	Milk, water			
	110-Uncooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	0.004
	120-Uncooked; Frozen; Cook Meth N/S			
		0.000000	1.000	0.004
	130-Uncooked; Dried; Cook Meth N/S			
		2.360000	1.000	0.004
	150-Uncooked; Cured etc; Cook Meth N/S			
		4.480000	1.000	0.004
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	0.004
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	0.004
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	0.004
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	0.004
	214-Cooked; Fresh or N/S; Fried/baked			
		0.000000	1.000	0.004
	215-Cooked; Fresh or N/S; Boiled/baked			
		0.000000	1.000	0.004
	220-Cooked; Frozen; Cook Meth N/S			
		0.000000	1.000	0.004
	221-Cooked; Frozen; Baked	0.000000	1.000	0.004
	222-Cooked; Frozen; Boiled	0.000000	1.000	0.004
	223-Cooked; Frozen; Fried	0.000000	1.000	0.004
	224-Cooked; Frozen; Fried/baked	0.000000	1.000	0.004
	230-Cooked; Dried; Cook Meth N/S			
		2.360000	1.000	0.004
	231-Cooked; Dried; Baked	2.360000	1.000	0.004
	232-Cooked; Dried; Boiled	2.360000	1.000	0.004
	233-Cooked; Dried; Fried	2.360000	1.000	0.004

	240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	0.004
	242-Cooked; Canned; Boiled	0.000000	1.000	0.004
	250-Cooked; Cured etc; Cook Meth N/S	4.480000	1.000	0.004
	253-Cooked; Cured etc; Fried	4.480000	1.000	0.004
	255-Cooked; Cured etc; Boiled/baked	4.480000	1.000	0.004
27032251 D	Milk, sugar (lactose)-baby food/infa			
	110-Uncooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
	130-Uncooked; Dried; Cook Meth N/S	2.360000	1.000	0.004
	210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	0.004
	212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	0.004
	230-Cooked; Dried; Cook Meth N/S	2.360000	1.000	0.004
	240-Cooked; Canned; Cook Meth N/S	0.000000	1.000	0.004
15002260 15	Millet, grain	4.990000	1.000	1.000
15002310 15	Oat, bran	35.950000	1.000	0.011
15002320 15	Oat, flour	32.570000	1.000	0.011
15002321 15	Oat, flour-babyfood	32.570000	1.000	0.011
15002330 15	Oat, groats/rolled oats	50.000000	1.000	0.011
15002331 15	Oat, groats/rolled oats-babyfood	50.000000	1.000	0.011
95002360 O	Olive, oil	1.200000	1.000	0.004
03002380 3	Onion, dry bulb, dried	1.170000	1.000	0.004
03002381 3	Onion, dry bulb, dried-babyfood	1.170000	1.000	0.004
95002440 O	Palm, oil	1.200000	1.000	0.004
95002441 O	Palm, oil-babyfood	1.200000	1.000	0.004
95002460 O	Papaya, dried	1.200000	1.000	0.004
19012490 19A	Parsley, dried leaves	52.200000	1.000	0.004
19012491 19A	Parsley, dried leaves-babyfood	52.200000	1.000	0.004
06032560 6C	Pea, dry	13.160000	1.000	0.004
06032561 6C	Pea, dry-babyfood	13.160000	1.000	0.004
06032580 6C	Pea, pigeon, seed	13.160000	1.000	0.004
12002610 12	Peach, dried	1.200000	1.000	0.004
12002611 12	Peach, dried-babyfood	1.200000	1.000	0.004
95002630 O	Peanut	11.300000	1.000	0.004
95002640 O	Peanut, butter	11.300000	1.000	0.004
95002650 O	Peanut, oil	1.200000	1.000	0.004
11002670 11	Pear, dried	1.200000	1.000	0.004
14002690 14	Pecan	8.600000	1.000	0.004
08002710 8	Pepper, bell, dried	26.350000	1.000	0.004
08002711 8	Pepper, bell, dried-babyfood	26.350000	1.000	0.004
08002730 8	Pepper, nonbell, dried	26.350000	1.000	0.004
19022740 19B	Pepper, black and white	5.960000	1.000	0.004
19022741 19B	Pepper, black and white-babyfood	5.960000	1.000	0.004
95002760 O	Peppermint, oil	1.200000	1.000	0.004
95002780 O	Pine nut	8.600000	1.000	0.004
95002800 O	Pineapple, dried	1.200000	1.000	0.004
14002820 14	Pistachio	8.600000	1.000	0.004
95002840 O	Plantain, dried	1.200000	1.000	0.004
12002870 12	Plum, prune, dried	0.700000	1.000	0.004
12002871 12	Plum, prune, dried-babyfood	0.700000	1.000	0.004
25002900 M	Pork, meat			
	210-Cooked; Fresh or N/S; Cook Meth N/S	0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled	0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked	0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked	0.000000	1.000	1.000
	220-Cooked; Frozen; Cook Meth N/S	0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S			

		0.000000	1.000	1.000
	232-Cooked; Dried; Boiled	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	1.000
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S			
		18.080000	1.000	0.004
	251-Cooked; Cured etc; Baked	18.080000	1.000	0.004
	252-Cooked; Cured etc; Boiled	18.080000	1.000	0.004
	253-Cooked; Cured etc; Fried	18.080000	1.000	0.004
	255-Cooked; Cured etc; Boiled/baked			
		18.080000	1.000	0.004
25002901 M	Pork, meat-babyfood	18.080000	1.000	0.004
25002930 M	Pork, fat			
	110-Uncooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	210-Cooked; Fresh or N/S; Cook Meth N/S			
		0.000000	1.000	1.000
	211-Cooked; Fresh or N/S; Baked	0.000000	1.000	1.000
	212-Cooked; Fresh or N/S; Boiled			
		0.000000	1.000	1.000
	213-Cooked; Fresh or N/S; Fried	0.000000	1.000	1.000
	214-Cooked; Fresh or N/S; Fried/baked			
		0.000000	1.000	1.000
	215-Cooked; Fresh or N/S; Boiled/baked			
		0.000000	1.000	1.000
	220-Cooked; Frozen; Cook Meth N/S			
		0.000000	1.000	1.000
	221-Cooked; Frozen; Baked	0.000000	1.000	1.000
	222-Cooked; Frozen; Boiled	0.000000	1.000	1.000
	230-Cooked; Dried; Cook Meth N/S			
		0.000000	1.000	1.000
	232-Cooked; Dried; Boiled	0.000000	1.000	1.000
	240-Cooked; Canned; Cook Meth N/S			
		0.000000	1.000	1.000
	242-Cooked; Canned; Boiled	0.000000	1.000	1.000
	250-Cooked; Cured etc; Cook Meth N/S			
		18.080000	1.000	0.004
	251-Cooked; Cured etc; Baked	18.080000	1.000	0.004
	252-Cooked; Cured etc; Boiled	18.080000	1.000	0.004
	253-Cooked; Cured etc; Fried	18.080000	1.000	0.004
	255-Cooked; Cured etc; Boiled/baked			
		18.080000	1.000	0.004
01032960 1C	Potato, chips	5.950000	1.000	0.004
01032970 1C	Potato, dry (granules/ flakes)	17.650000	1.000	0.004
01032971 1C	Potato, dry (granules/ flakes)-b	17.650000	1.000	0.004
01032980 1C	Potato, flour	4.990000	1.000	0.004
01032981 1C	Potato, flour-babyfood	4.990000	1.000	0.004
95003060 O	Psyllium, seed	26.350000	1.000	0.004
09023090 9B	Pumpkin, seed	4.700000	1.000	0.004
95003110 O	Quinoa, grain	4.000000	1.000	0.004
20003190 20	Rapeseed, oil	1.200000	1.000	0.004
20003191 20	Rapeseed, oil-babyfood	1.200000	1.000	0.004
15003230 15	Rice, white	5.300000	1.000	0.011
15003231 15	Rice, white-babyfood	5.300000	1.000	0.011
15003240 15	Rice, brown	5.300000	1.000	0.011
15003241 15	Rice, brown-babyfood	5.300000	1.000	0.011
15003250 15	Rice, flour	32.570000	1.000	0.011
15003251 15	Rice, flour-babyfood	32.570000	1.000	0.011
15003260 15	Rice, bran	25.900000	1.000	0.011
15003261 15	Rice, bran-babyfood	25.900000	1.000	0.011
15003290 15	Rye, flour	32.570000	1.000	0.011
20003300 20	Safflower, oil	1.200000	1.000	0.004
20003301 20	Safflower, oil-babyfood	1.200000	1.000	0.004
19013340 19A	Savory	52.200000	1.000	0.004
95003360 O	Sesame, seed	26.350000	1.000	0.004
95003361 O	Sesame, seed-babyfood	26.350000	1.000	0.004
95003370 O	Sesame, oil	1.200000	1.000	0.004
95003371 O	Sesame, oil-babyfood	1.200000	1.000	0.004
15003440 15	Sorghum, grain	4.000000	1.000	0.011
15003450 15	Sorghum, syrup	1.200000	1.000	0.011
06003480 6	Soybean, flour	4.110000	1.000	0.004
06003481 6	Soybean, flour-babyfood	4.110000	1.000	0.004

06003490	6	Soybean, soy milk	1.690000	1.000	0.004
06003491	6	Soybean, soy milk-babyfood or in	1.690000	1.000	0.004
06003500	6	Soybean, oil	1.200000	1.000	0.004
06003501	6	Soybean, oil-babyfood	1.200000	1.000	0.004
95003530	0	Spearmint, oil	1.200000	1.000	0.004
19023540	19B	Spices, other	51.180000	1.000	0.004
19023541	19B	Spices, other-babyfood	51.180000	1.000	0.004
95003620	0	Sugarcane, sugar	0.770000	1.000	0.004
95003621	0	Sugarcane, sugar-babyfood	0.770000	1.000	0.004
95003630	0	Sugarcane, molasses	0.770000	1.000	0.004
95003631	0	Sugarcane, molasses-babyfood	0.770000	1.000	0.004
20003640	20	Sunflower, seed	13.160000	1.000	0.004
20003650	20	Sunflower, oil	1.200000	1.000	0.004
20003651	20	Sunflower, oil-babyfood	1.200000	1.000	0.004
95003720	0	Tea, dried	51.180000	1.000	0.004
95003730	0	Tea, instant	51.180000	1.000	0.004
08003780	8	Tomato, dried	1.200000	1.000	0.004
08003781	8	Tomato, dried-babyfood	1.200000	1.000	0.004
15003810	15	Triticale, flour	32.570000	1.000	0.011
15003811	15	Triticale, flour-babyfood	32.570000	1.000	0.011
01033870	1CD	Turmeric	26.350000	1.000	0.004
14003910	14	Walnut	5.600000	1.000	0.004
15004010	15	Wheat, grain	4.990000	1.000	0.011
15004011	15	Wheat, grain-babyfood	4.990000	1.000	0.011
15004020	15	Wheat, flour	32.570000	1.000	0.011
15004021	15	Wheat, flour-babyfood	32.570000	1.000	0.011
15004030	15	Wheat, germ	58.000000	1.000	0.011
15004040	15	Wheat, bran	35.950000	1.000	0.011
15004050	15	Wild rice	5.300000	1.000	0.011

## Attachment 5: Sulfuryl Fluoride Food Fumigation Exposure and Risk Estimates

U.S. Environmental Protection Agency  
DEEM-FCID Chronic analysis for SULFURYL FLUORIDE  
Residue file name: C:\Documents and Settings\MDOHERTY\My Documents\Chemistry Reviews\DEEM  
Runs\Sulfuryl Fluoride\SF Food Fumigation.R98

Ver. 2.00  
(1994-98 data)

Adjustment factor #2 used.  
Analysis Date 01-05-2006/13:21:25 Residue file dated: 01-05-2006/13:17:50/8  
Reference dose (RfD, Chronic) = .003 mg/kg bw/day  
COMMENT 1: RfD is cPAD

### ----- Total exposure by population subgroup -----

Population Subgroup	Total Exposure	
	mg/kg body wt/day	Percent of Rfd
U.S. Population (total)	0.000064	2.1%
U.S. Population (spring season)	0.000061	2.0%
U.S. Population (summer season)	0.000066	2.2%
U.S. Population (autumn season)	0.000061	2.0%
U.S. Population (winter season)	0.000068	2.3%
Northeast region	0.000074	2.5%
Midwest region	0.000061	2.0%
Southern region	0.000058	1.9%
Western region	0.000066	2.2%
Hispanics	0.000087	2.9%
Non-hispanic whites	0.000060	2.0%
Non-hispanic blacks	0.000068	2.3%
Non-hisp/non-white/non-black	0.000059	2.0%
All infants (< 1 year)	0.000041	1.4%
Nursing infants	0.000016	0.5%
Non-nursing infants	0.000051	1.7%
Children 1-6 yrs	0.000177	5.9%
Children 7-12 yrs	0.000091	3.0%
Females 13-19 (not preg or nursing)	0.000053	1.8%
Females 20+ (not preg or nursing)	0.000043	1.4%
Females 13-50 yrs	0.000051	1.7%
Females 13+ (preg/not nursing)	0.000058	1.9%
Females 13+ (nursing)	0.000070	2.3%
Males 13-19 yrs	0.000062	2.1%
Males 20+ yrs	0.000050	1.7%
Seniors 55+	0.000045	1.5%
Children 1-2 yrs	0.000189	6.3%
Children 3-5 yrs	0.000177	5.9%
Children 6-12 yrs	0.000100	3.3%
Youth 13-19 yrs	0.000058	1.9%
Adults 20-49 yrs	0.000047	1.6%
Adults 50+ yrs	0.000045	1.5%
Females 13-49 yrs	0.000046	1.5%



## Attachment 6: Fluoride Food Fumigation Exposure and Risk Estimates

U.S. Environmental Protection Agency  
DEEM-FCID Chronic analysis for FLUORIDE  
Residue file name: C:\Documents and Settings\MDOHERTY\My Documents\Chemistry Reviews\DEEM  
Runs\Sulfuryl Fluoride\F Food Fumigation.R98

Ver. 2.00  
(1994-98 data)

Adjustment factor #2 used.

Analysis Date 01-05-2006/13:20:32 Residue file dated: 01-05-2006/13:19:46/8  
Reference dose (RfD, Chronic) = .114 mg/kg bw/day

COMMENT 1: RfD is converted Fluoride MCL and for adult pops only.

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Total exposure by population subgroup

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Population Subgroup	Total Exposure	
	mg/kg body wt/day	Percent of Rfd
U.S. Population (total)	0.008701	7.6%
U.S. Population (spring season)	0.008769	7.7%
U.S. Population (summer season)	0.008445	7.4%
U.S. Population (autumn season)	0.008685	7.6%
U.S. Population (winter season)	0.008923	7.8%
Northeast region	0.008469	7.4%
Midwest region	0.009009	7.9%
Southern region	0.008685	7.6%
Western region	0.008603	7.5%
Hispanics	0.010609	9.3%
Non-hispanic whites	0.008472	7.4%
Non-hispanic blacks	0.008703	7.6%
Non-hisp/non-white/non-black	0.007875	6.9%
All infants (< 1 year)	0.010972	9.6%
Nursing infants	0.004778	4.2%
Non-nursing infants	0.013323	11.7%
Children 1-6 yrs	0.018456	16.2%
Children 7-12 yrs	0.012149	10.7%
Females 13-19 (not preg or nursing)	0.007135	6.3%
Females 20+ (not preg or nursing)	0.006114	5.4%
Females 13-50 yrs	0.007123	6.2%
Females 13+ (preg/not nursing)	0.007071	6.2%
Females 13+ (nursing)	0.008478	7.4%
Males 13-19 yrs	0.008855	7.8%
Males 20+ yrs	0.007950	7.0%
Seniors 55+	0.006556	5.8%
Children 1-2 yrs	0.017980	15.8%
Children 3-5 yrs	0.019274	16.9%
Children 6-12 yrs	0.012879	11.3%
Youth 13-19 yrs	0.008014	7.0%
Adults 20-49 yrs	0.007212	6.3%
Adults 50+ yrs	0.006670	5.9%
Females 13-49 yrs	0.006398	5.6%

## Attachment 7: Sulfuryl Fluoride Space Fumigation Exposure and Risk Estimates

U.S. Environmental Protection Agency  
DEEM-FCID Chronic analysis for SULFURYL FLUORIDE  
Residue file name: C:\Documents and Settings\MDOHERTY\My Documents\Chemistry Reviews\DEEM  
Runs\Sulfuryl Fluoride\SF Space Fumigation.R98

Ver. 2.00  
(1994-98 data)

Analysis Date 01-05-2006/13:21:54      Adjustment factor #2 used.  
Residue file dated: 01-05-2006/13:16:35/8  
Reference dose (RfD, Chronic) = .003 mg/kg bw/day

### ===== Total exposure by population subgroup =====

Population Subgroup	Total Exposure	
	mg/kg body wt/day	Percent of Rfd
U.S. Population (total)	0.000018	0.6%
U.S. Population (spring season)	0.000018	0.6%
U.S. Population (summer season)	0.000017	0.6%
U.S. Population (autumn season)	0.000017	0.6%
U.S. Population (winter season)	0.000018	0.6%
Northeast region	0.000017	0.6%
Midwest region	0.000018	0.6%
Southern region	0.000017	0.6%
Western region	0.000018	0.6%
Hispanics	0.000020	0.7%
Non-hispanic whites	0.000017	0.6%
Non-hispanic blacks	0.000019	0.6%
Non-hisp/non-white/non-black	0.000019	0.6%
All infants (< 1 year)	0.000097	3.2%
Nursing infants	0.000030	1.0%
Non-nursing infants	0.000123	4.1%
Children 1-6 yrs	0.000035	1.2%
Children 7-12 yrs	0.000025	0.8%
Females 13-19 (not preg or nursing)	0.000015	0.5%
Females 20+ (not preg or nursing)	0.000012	0.4%
Females 13-50 yrs	0.000014	0.5%
Females 13+ (preg/not nursing)	0.000015	0.5%
Females 13+ (nursing)	0.000016	0.5%
Males 13-19 yrs	0.000019	0.6%
Males 20+ yrs	0.000014	0.5%
Seniors 55+	0.000011	0.4%
Children 1-2 yrs	0.000036	1.2%
Children 3-5 yrs	0.000036	1.2%
Children 6-12 yrs	0.000026	0.9%
Youth 13-19 yrs	0.000017	0.6%
Adults 20-49 yrs	0.000014	0.5%
Adults 50+ yrs	0.000011	0.4%
Females 13-49 yrs	0.000013	0.4%

## Attachment 8: Fluoride Space Fumigation Exposure and Risk Estimates

U.S. Environmental Protection Agency  
DEEM-FCID Chronic analysis for FLUORIDE  
Residue file name: C:\Documents and Settings\MDOHERTY\My Documents\Chemistry Reviews\DEEM  
Runs\Sulfuryl Fluoride\F Space Fumigation.R98

Ver. 2.00  
(1994-98 data)

Adjustment factor #2 used.

Analysis Date 01-05-2006/13:21:00      Residue file dated: 01-05-2006/13:18:31/8  
Reference dose (RfD, Chronic) = .114 mg/kg bw/day

COMMENT 1: RfD is converted Fluoride MCL and is valid for adult pops. only

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Total exposure by population subgroup

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Population Subgroup	Total Exposure	
	mg/kg body wt/day	Percent of Rfd
U.S. Population (total)	0.000820	0.7%
U.S. Population (spring season)	0.000835	0.7%
U.S. Population (summer season)	0.000800	0.7%
U.S. Population (autumn season)	0.000817	0.7%
U.S. Population (winter season)	0.000828	0.7%
Northeast region	0.000862	0.8%
Midwest region	0.000853	0.7%
Southern region	0.000769	0.7%
Western region	0.000827	0.7%
Hispanics	0.000820	0.7%
Non-hispanic whites	0.000823	0.7%
Non-hispanic blacks	0.000790	0.7%
Non-hisp/non-white/non-black	0.000847	0.7%
All infants (< 1 year)	0.000876	0.8%
Nursing infants	0.000489	0.4%
Non-nursing infants	0.001023	0.9%
Children 1-6 yrs	0.001981	1.7%
Children 7-12 yrs	0.001291	1.1%
Females 13-19 (not preg or nursing)	0.000700	0.6%
Females 20+ (not preg or nursing)	0.000541	0.5%
Females 13-50 yrs	0.000642	0.6%
Females 13+ (preg/not nursing)	0.000606	0.5%
Females 13+ (nursing)	0.000739	0.6%
Males 13-19 yrs	0.000885	0.8%
Males 20+ yrs	0.000677	0.6%
Seniors 55+	0.000509	0.4%
Children 1-2 yrs	0.002052	1.8%
Children 3-5 yrs	0.002009	1.8%
Children 6-12 yrs	0.001361	1.2%
Youth 13-19 yrs	0.000795	0.7%
Adults 20-49 yrs	0.000660	0.6%
Adults 50+ yrs	0.000516	0.5%
Females 13-49 yrs	0.000603	0.5%

Attachment 9. Percent of Facilities/Throughput Treated

Colwell Cook/DC/USEPA/US

05/05/2005 03:32 PM

To

Christina Swartz/DC/USEPA/US@EPA

cc

Jonathan Becker/DC/USEPA/US@EPA, Michael Doherty/DC/USEPA/US@EPA, Richard Loranger/DC/USEPA/US@EPA, Bill Chism/DC/USEPA/US@EPA

Subject

Re: sulfuryl fluoride Update on % Processed Food Treated

Greetings,

I have some information relating to processed foods and storage time in warehouses. This information is from a University Professor and a couple of food industry folks.

Product is not likely to get retreated in the warehouse. Most of the millers (rice & flour) mill "to order" (i.e. they have an order that they are going to go ahead and ship out. They prefer not to have much stored in their warehouses. Several of their customers have set the maximum to 3 days from milling grain to receiving product, so very little time in storage at the mill.

The baked goods would not be fumigated with the structural fumigant. If a product of value has pest "issues" it will be sent to a trailer for fumigation with Al phosphide (product of choice). But again, these products are not stored for long at the processing plant, probably no more than 2-3 days.

So pet food is the only commodity stored for any length of time at a processing facility/warehouse.

It was estimated that less than 5% of the 1% Treated would likely get a second fumigation.

Let me know if this is not sufficient.

Colwell Cook