ENVIRONMENTAL WORKING GROUP

1436 U Street NW, Suite 100
Washington, DC 20009 USA

t: 202.667.6982
f: 202.232.2592
w: www.ewg.org

PETITION TO THE UNITED STATES CONSUMER PRODUCT SAFETY COMISSION TO REQUIRE WARNING LABELS ON COOKWARE AND HEATED APPLIANCES BEARING NON-STICK COATINGS

May 15, 2003

Hal Stratton, Chairperson
U.S. Consumer Product Safety Commission
Washington, DC 20207-0001

Dear Chairperson Stratton:

As a result of new data showing that non-stick cookware surfaces reach toxic temperatures in a matter of minutes, the Environmental Working Group (EWG), a non-profit research organization, hereby petitions the Consumer Product Safety Commission (CPSC) to require that cookware and heated appliances bearing polytetrafluoroethylene (PTFE) non-stick coatings, including Teflon coatings, carry a label warning of the acute hazard the coating poses to pet birds and potential health risks to humans. The sale of these items without a proper warning label violates the Consumer Product Safety Act, 15 U.S.C. § 2051 et seq., and the Federal Hazardous Substances Act, 15 U.S.C. § 1261 et seq. Non-stick coating material is found in, but not limited to, the following products that are regulated by the CPSC: cookware, irons, pans, skillets, waffle makers, woks, ovens, bread makers, electric heaters, heat lamps, computer printers, and light bulbs. EWG urges the CPSC to review our latest report, *Canaries in the Kitchen? "Teflon Toxicosis" is deadly to pet birds. Are we at risk?* and consider the following research:

- **DuPont has known for decades that Teflon and other non-stick PTFE coatings, if heated to normal cooking temperatures, are acutely toxic to birds.** The peer-reviewed literature contains numerous reports of bird deaths linked to the use of Teflon and other non-stick pans and appliances in the home, beginning about 30 years ago.

- **DuPont has also acknowledged that these fumes can sicken people, a condition called "polymer fume fever."** This illness is marked by flu-like symptoms, including fever, chills, tightness of the chest, malaise, shortness of breath, headache, cough, chills, sore throat, and temperatures between 100 and 104°F. According to DuPont's own studies, humans may experience "polymer fume fever" when Teflon is heated to 662°F, a temperature easily exceeded when a pan is preheated on a burner or placed beneath a broiler, or in a self-cleaning oven. There have been no studies of the effects of these fumes on children, but children may be more susceptible to polymer fume fever than adults, given that on a body weight basis they breathe a higher volume of air than adults.

- **New experiments by EWG** show that pans reach offgasing temperatures within two minutes on a conventional stovetop burner set on high, a temperature at which the scientific literature documents that Teflon breaks apart to offgas particulate matter and at least six toxic gases.

- **Fifteen toxic Teflon offgas products have been documented in the literature altogether, including two carcinogens, two chemical warfare agents, and a chemical analog of WWII nerve gas phosgene, at high, but routinely achieved, cooking temperatures.** These toxic Teflon offgases are harmful to pet birds, adults, children, and the environment.

- **Most non-stick cookware and heated appliances manufacturers fail to adequately warn customers of the dangers of toxic offgases.** DuPont publicly acknowledges that PTFE can harm birds, but the company-produced public service brochure on bird safety discusses the hazards of ceiling fans, mirrors, toilets, and cats before mentioning the dangers of Teflon fumes. Yet, of the 6.9 million bird-owning households in the US that claim an estimated 19 million pet birds, many do not know that Teflon poses an acute hazard to birds.

In 1987, in an article in the *Chicago Tribune*, a CPSC official, Dr. Rita Orzel, admitted that in the area of combustion toxicity, "Teflon is one of the more toxic plastics, compared to polyester and polyester foam." Yet, CPSC failed to investigate the matter after a highly publicized bird poisoning event and an announcement by a major manufacturer that it would no longer produce non-stick drip pans because of Teflon toxicosis. Sixteen years later, the problem is still rampant and the CPSC has not investigated or addressed the issue. As the evidence presented in this petition demonstrates, the CPSC must take immediate action to warn consumers of the hazards that non-stick coatings pose to pet birds and to humans.

In this petition, EWG documents the following:

1. DuPont has known for decades that when heated at normal cooking temperatures (as low as 464°F), cookware with Teflon and other non-stick surfaces offgases toxic particles that can kill birds.
2. DuPont has known for decades that when heated at normal cooking temperatures, Teflon can cause a flu-like condition called polymer fume fever in humans.
3. Offgas temperatures are exceeded in routine cooking scenarios.
4. Fifteen toxic Teflon offgas products are released, including two carcinogens, two chemical warfare agents, and a chemical analog of WWII nerve gas phosgene, at high, but routinely achieved, cooking temperatures.
5. Scientific studies document PTFE-related bird deaths at temperatures as low as 396°F. We provide data from numerous sources, including scientific publications and consumer reports, documenting bird deaths from "Teflon toxicosis."
6. Teflon and other PTFE-coated consumer products are not labeled with respect to these risks.
7. The CPSC should create a warning label to advise consumers of the potential health risks to adults, children, and pet birds.

Background on Teflon

Non-stick coating material is found in, but not limited to, the following products that are regulated by the CPSC: cookware, irons, pans, skillets, waffle makers, woks, ovens, bread makers, electric heaters, heat lamps, computer printers, and light bulbs. The non-stick coating material, including Teflon, is consider a "perfluorochemical" (PFC), specifically polytetrafluoroethylene (PTFE). In the past five years, the multi-billion dollar PFC industry has emerged as a regulatory priority for scientists and officials at the U.S. Environmental Protection Agency (EPA). The PFC family is characterized by chains of carbon atoms of varying lengths, to which fluorine atoms are strongly bonded, yielding essentially indestructible chemicals that until recently were thought to be biologically inert. No one thinks so now.

A flood of disturbing scientific findings since the late 1990s has abruptly elevated PFCs to the rogues gallery of highly toxic, extraordinarily persistent chemicals that pervasively contaminate human blood and wildlife the world over. As more studies pour in, PFCs seem destined to supplant DDT, PCBs, dioxin and other chemicals as the most notorious, global chemical contaminants ever produced. Government scientists are especially concerned because unlike any other toxic chemicals, the most pervasive and toxic members of the PFC family never degrade in the environment.

The EPA forced one member of this family off the market in 2000: PFOS, the active ingredient used for decades in the original formulation of 3M's popular Scotchgard stain and water repellent. Shortly thereafter, 3M also stopped manufacture of a related perfluorochemical, called PFOA, that is now under intense regulatory pressure at EPA. 3M formerly sold PFOA to DuPont, which has used PFOA for half a century in the manufacture of Teflon. (DuPont now makes the chemical itself at a new facility in North Carolina.) Alarmed by findings from toxicity studies and by the presence of PFOA in the blood of more than 90 percent of the U.S. population, EPA is expected to announce initial steps to regulate the chemical this summer. Teflon itself is not PFOA (C8), but PFOA is used to manufacture Teflon and is released to the air, along with other PFCs, when Teflon cookware is heated (Ellis et al. 2001).

The government has never studied the risks of offgas byproducts released from cookware and heated appliances treated with Teflon or other non-stick PTFE coatings to adults, children, or to pet birds. Sixteen years ago, CPSC failed to investigate the Teflon-coated drip pans, which can reach 1000°F, even after well-publicized bird poisoning incidences.

1. DuPont has known for decades that when heated at normal cooking temperatures (as low as 464 °F), cookware with Teflon and other non-stick surfaces offgases toxic particles that can kill birds.

DuPont has studied the health effects and impacts of Teflon on birds for over 50 years, and DuPont has received complaints of bird deaths from consumers for decades, too. In 1987, for example, a drip pan manufacturer sued DuPont after it was reported that fumes from Teflon offgases resulted in the death of 14 birds. After this lawsuit, DuPont voluntarily stopped licensing its Teflon coating to drip pan industries (Daniels 1987).

In recent years, DuPont has produced a "bird safety" area on its website. The safety section underestimates the impact of offgases from non-stick cookware on birds, but highlights the dangers of mirrors, windows, and ceiling fans to birds. DuPont insists that bird deaths can only occur at abnormally high cooking temperatures. DuPont claims that its coating remains intact indefinitely at 500°F (DuPont 2003a). Experiences of consumers whose birds have died from fumes generated at lower temperatures show that this is not the case. In one case researchers at the University of Missouri documented the death of about 1,000 broiler chicks exposed to offgas products from coated heat lamps at 396°F (Boucher et al. 2000).

2. **DuPont has known for decades that when heated at normal cooking temperatures, Teflon can cause a flu-like condition called polymer fume fever in humans.**

Many of these studies were conducted by DuPont's own scientists, who began studying heated Teflon (PTFE) in the 1950s when DuPont workers were developing polymer fume fever that the company found could lead to a potentially fatal condition called pulmonary edema (Clayton 1967). DuPont scientists list the hallmark human symptoms of polymer fume fever as tightness of chest, malaise, shortness of breath, headache, cough, chills, temperatures between 100 and 104°F, and sore throat, based on a survey of complaints registered by workers who were struck by the illness (Clayton 1967). Based on this suite of symptoms, cases of polymer fume fever from home exposures could easily be mistaken for the common flu. DuPont also claims that human illness will be produced only in cases involving gross overheating, or burning the food to an inedible state (DuPont 2003a). Yet DuPont's own scientists have concluded that polymer fume fever in humans is possible at 662°F, a temperature easily exceeded when a pan is preheated on a burner or placed beneath a broiler, or in a self-cleaning oven (Waritz 1975).

In one case of human polymer fume fever in the literature, the author reports a case in which a person developed polymer fume fever about one hour after a non-stick pan overheated. Five cockatiels in the house died within 30 minutes (Blandford et al. 1975). In another case, a healthy 26-year-old woman went to the hospital complaining of difficulty in breathing, chest tightness and cough after being exposed to toxic fumes coming from a defective microwave oven part: a melted and scorched Teflon block used as an axle for a rotating platform in the oven. At the hospital, doctors noted that her heart was racing, and she had high blood pressure, increased white blood cell count (leukocytosis) and was breathing heavily. An X-ray showed she had "diffuse pulmonary infiltrate." Her lung function was still abnormal a month later. This woman's two pet parakeets died within minutes of being exposed to the Teflon fumes (Zanen & Rietveld 1993).

3. Offgas temperatures are exceeded in routine cooking scenarios.

DuPont maintains that offgas temperatures can only be exceeded in abnormal cooking situations. Yet, bird deaths have been documented during or immediately after the following normal cooking scenarios:

* New Teflon-lined Amana oven was used to bake biscuits at 325°F; all the owner's baby parrots died (Stewart 2002).

* Four stovetop burners, underlined with Teflon-coated drip pans, were preheated in preparation for Thanksgiving dinner; 14 birds died within 15 minutes (Daniels 1987); (Daniels 1986).

* Non-stick cookie sheet was placed under oven broiler to catch the drippings; 107 chicks died (Daniels 1987).

* Self-cleaning feature on the oven was used; a $2,000 bird died (Daniels 1986).

* Set of Teflon pans, including egg poaching pan, were attributed to seven bird deaths over seven years (Hopkins 2001).

* Water burned off a hot pan; more than 55 birds died (Kroger 2003).

* Electric skillet at 300°F and space heater were used simultaneously; pet bird died (Shirley 2003).

* Toaster oven with a non-stick coating was used to prepare food at a normal temperature; bird survived but suffered respiratory distress (Grahme 2003).

* Water being heated for hot cocoa boiled off completely; pet bird died (Anonymous 2003).

* Grill plate on gas stove used to prepare food at normal temperatures; two birds died on two separate occasions (Anonymous 2003).

4. Fifteen toxic Teflon offgas products are released, including two carcinogens, two chemical warfare agents, and a chemical analog of WWII nerve gas phosgene, at high, but routinely achieved, cooking temperatures.

Teflon pans get very hot, very fast. New experiments by EWG show that Teflon and other PTFE-treated pans can reach temperatures above 700°F in 3-5 minutes. Teflon offgasing studies show that at the design temperatures of conventional kitchen appliances, Teflon chemicals break apart to form the following particulates and gases:

* Two chemicals linked to cancer or tumors in laboratory studies (PFOA and TFE);

* Two chemicals that are potent global warming gases (PFB and CF4);

* Two chemical warfare agents (PFIB and MFA) and a chemical analog of WWII nerve gas phosgene (COF2);

* At least two chemicals that have widely contaminated the world (PFOA and TFA), one currently undergoing a rigorous safety review at the EPA (PFOA);

* Four gaseous chemicals and some components of the particulate matter that are highly persistent environmental pollutants, that likely never break down in the environment (TFA, PFOA, CF4, PFB, and the perfluorinated particulate alkanes); and

* Four chemicals that are considered highly toxic relative to most other industrial chemicals (PFIB, MFA, COF2, HF).

The toxic particles and gases identified as Teflon offgas products, and the temperature at which they are first identified in the studies reviewed, are shown below, with toxicity information that is drawn primarily from high dose animal studies, the only source of information available for most of the chemicals:

1. 464 °F - Ultrafine particulate matter (Siedel et al. 1991): Teflon produces very small (ultrafine) particles which are very toxic, causing extreme lung damage to rats within 10 minutes of exposure. Longer exposures cause death. At higher temperatures, Teflon also produces toxic gases. Some scientists have found that the particles and gases together are responsible for Teflon's toxicity, perhaps because the gases adsorb to the particles, which because of their small size can lodge deep in the lower respiratory tract (Johnston et al. 2000).

2. 680 °F - Tetrafluoroethylene (TFE) (Ellis et al. 2001): The National Toxicology Program considers tetrafluoroethylene (TFE) to be a "reasonably anticipated" human carcinogen because it is known to cause cancer in laboratory animals, but has not been adequately studied in people (NTP 2002).

3. 680 °F - Hexafluoropropene (HFP) (Ellis et al. 2001): In people, air exposure to fluorocarbons like HFP can lead to eye, nose and throat irritation; heart palpitations, irregular heart rate, headaches, light-handedness, fluid accumulation in the lung (edema) and possibly death. Long-term exposure in workers is associated with decreased motor speed, memory and learning (HSDB 2003).

4. 680 °F - Trifluoroacetic acid (TFA) (Ellis et al. 2001): Very few studies have looked at the toxicity of trifluoroacetic acid (TFA), but those that have found decreased growth of fetal rat bone-forming cells (osteoblast) and cartilage cells (chondrocytes) (Cornish et al. 1999), and neural tube defects in rat embryos at high concentrations (Hunter et al. 1996). TFA is also a breakdown product of many hydrochlorofluorocarbon (HCFCs) and hydrofluorocarbons (HFCs) used as replacement for chlorofluorocarbons (CFCs), which are potent ozone depleters used in refrigeration systems, aerosols and other products. Recently, scientists has suggested that high levels of TFA in the environment could be due partly due to heated Teflon and other fluoropolymers because measured environmental levels are higher than prediction based on breakdown of HCFCs and HFCs alone (Ellis et al. 2001).

5. 680 °F - Difluoroacetic acid (DFA) (Ellis et al. 2001): Very little is known about the toxicity of difluoroacetic acid (DFA), although kidney toxicity has been reported in rats (Lantum et al. 2002).

6. 680 °F - Monofluoroacetic acid (MFA, fluoroacetic acid or compound 1080) (Ellis et al. 2001): Monofluoroacetic acid is extremely toxic, doses as low as 0.7 to 2.1 mg/kg can kill people (Key et al. 1997). Initially, people report nausea, vomiting, numbness, tingling, anxiety, muscle twitching, low blood pressure and blurred vision. If exposure is high enough, people can have irregular heart rate (ventricular fibrillation), heart attacks, and severe convulsions leading to respiratory failure (HSDB 2003).

7. 680 °F - Perfluorooctanoic acid (PFOA) (Ellis et al. 2001): Perfluorooctanoic acid (PFOA) has recently come under significant EPA scrutiny. EPA is concerned about PFOA because it never breaks down in the environment, is found in the blood of over 92 percent of Americans, and is very toxic to rats and monkeys. PFOA causes four types of tumors in rats: liver, pancreas, mammary gland (breast) and testes. PFOA also decreases thyroid hormone levels, a known risk factor for impaired brain development, and delays sexual maturation in laboratory animals. PFOA is especially toxic to the young because it kills young rats at doses that do not kill parental animals. Industry scientists estimate it takes 4.4 years for people to eliminate just half the amount of PFOA found in their bodies. EPA is taking a close look at PFOA because levels found in the blood of people are too close to levels in rat blood that harm the animals (EPA 2003); (EPA 2002).

8. 878 °F - Silicon tetrafluoride (SiF4) (Waritz 1975): Silicon tetrafluoride is a highly toxic, corrosive gas. In the lungs, moisture causes the silicon particles to separate, releasing toxic hydrofluoric acid and also coating the lung with silicon particles. Inhaling hydrofluoric acid can cause eye and throat irritation, cough, difficult breathing, bluish skin color caused by lack of oxygen, lung damage and fluid accumulation in the lung (edema). Long term exposure can cause weight loss, decreased numbers of red and white blood cells (anemia and leukopenia), discoloration of the teeth and abnormal thickening of the bone (osteosclerosis) (HSDB 2003).

9. 887 °F - Perfluoroisobutene (PFIB) (Arito & Soda 1977): Perfluoroisobutene (PFIB) is extremely toxic and inhalation can lead to fluid build up in the lung (edema), a condition that can lead to death. PFIB is listed in the Chemical Weapons Convention as a Schedule 2 compound (US Dept. of State 2003). PFIB is about ten times more toxic than phosgene, a highly toxic corrosive gas also listed as a chemical weapon. Short-term symptoms of PFIB exposure in people include bad taste in mouth, nausea and weakness. Lung edema occurs about one to four hours after exposure, which is life-threatening in some cases, but in most people clears up in about 3 days (Patocka & Bajgar 1998).

10. 932 °F - Carbonyl fluoride (COF2) (Scheel 1968): Breakdown of Teflon (PTFE) in air is the major source of carbonyl fluoride exposure (HSDB 2003). Carbonyl fluoride is the fluorine version of phosgene, a chlorinated chemical warfare agent. Carbonyl fluoride fumes can irritate eyes, ears and nose. More serious symptoms of exposure include chest pains, breathing difficulty, fluid accumulation in the lungs, weakness, liver damage and increased glucose levels. (see below) (HSDB 2003).

11. 932 °F - Hydrogen fluoride (HF) (Scheel 1968): Hydrogen fluoride (HF) is a toxic corrosive gas, and can cause death to any tissue it comes into contact with, including the lungs. The toxicity of HF is due to the fluoride ion and not the hydrogen

ion. Breathing HF can cause severe lung damage, such as fluid buildup in the lungs (edema) and inflammation of lung passages (pneumonia) (IPCS 1995).

12. 1112 °F - Trifluoroacetic acid fluoride (CF3COF) (Arito & Soda 1977):
Trifluoroacetic acid fluoride is toxic, mostly because it breaks down into hydrogen fluoride, which is very toxic, and trifluoroacetic acid. The few studies that have looked at the toxicity of TFA found decreased growth of fetal rat bone-forming cells (osteoblast) and cartilage cells (chondrocytes) (Cornish et al. 1999), and neural tube defects in rat embryos at high concentrations (Hunter et al. 1996).

13. 1112 °F - Octafluorocyclobutane (OFCB) (Arito & Soda 1977):
Octaflurocyclobutane is fluorine containing gas that is used in the semiconductor industry, sold as Zyron 8020 by DuPont. According to DuPont, inhaling high levels of octafluorocyclobutane can cause heart beat irregularities, unconsciousness and death. People with pre-existing heart conditions may be extra vulnerable.

14. 1112 °F - Perfluorobutane (PFB, Trade Name CEA-410) (Arito & Soda 1977):
As a global warming chemical, perfluorbutane has a long half-life in the upper atmosphere and has over 8,000 times the global warming potential of carbon dioxide (EPA 2003). Perfluorobutane is not as acutely toxic as other PTFE off-gases, but has not been tested for long-term effects.

15. 1202 °F - Carbon tetrafluoride (CF4, perfluoromethane) (Arito & Soda 1977):
In addition to being a long-lived fluorinated Teflon "off-gas", perflоromethane is used in the semiconductor industry, is a refrigerant and propellant and a byproduct of aluminum production. Inhaling fluorinated hydrocarbons like carbon tetrafluoride can cause eye, ear and nose irritation; heat palpitations; irregular heart rate; headaches; confusion; lung irritation, tremors and occasionally coma (HSDB 2003).

5. Scientific studies document PTFE-related bird deaths at temperatures as low as 396 °F.

The lowest temperature at which Teflon has been reported to kill birds in a peer-reviewed study is 396 °F (202 °C) (Boucher et al. 2000). In May 1998, poultry researchers at the University of Missouri recorded 52 percent mortality in 2400 chicks within three days of the birds being placed into floor pens with new PTFE-coated heat lamp bulbs. After ruling out bacterial infections like E. Coli and Salmonella, or toxic gases such as sulfur dioxide, carbon monoxide and carbon dioxide, the scientists finally linked the chick deaths to offgas products from the PTFE-coated bulbs. All of the chicks examined after death had lung lesions and moderate to severe pulmonary edema consistent with "PTFE toxicosis."

6. Teflon and other PTFE-coated consumer products are not labeled with respect to these risks.

Teflon and other PTFE-coated consumer products are not labeled with respect to these risk, despite widespread knowledge in the PTFE industry about these effects. In 1987, a drip pan manufacturer sued DuPont after a highly publicized incident where 14 birds died as a customer was preparing her Thanksgiving dinner. After this lawsuit, DuPont

voluntarily stopped licensing its Teflon coating to drip pan industries. In an article describing the problem with PTFE products, including the dangers of polymer fume fever, Dr. Rita Orzel, a toxicologist with CPSC admitted that in the area of combustion toxicity, "Teflon is one of the more toxic plastics, compared to polyester and polyester foam." (Daniels 1987).

In recent years, DuPont has produced a "bird safety" area on its website. The safety section underestimates the impact of offgases from non-stick cookware on birds, but highlights the dangers of mirrors, windows, and ceiling fans. Despite overwhelming evidence to the contrary, DuPont insists that bird deaths and polymer fume fever in humans can only occur abnormally high cooking temperatures.

At least some manufacturers voluntarily advise consumers to remove birds from kitchens when using Teflon and other PTFE coated cookware. None of these manufacturers, however, label their products to warn customers of the dangers of PTFE-related offgases to birds and adults. Since there is also no requirement to warn customers, there is no universal, consistent standard in the industry. Even more alarming than the lack of adequate warnings is the fact that no one knows what effects these offgases might have on children. Parents should be warned of the possibility of polymer fume fever in children after exposure to offgases.

7. The CPSC should institute a rulemaking to require a warning label that advises consumers, including adults, parents of small children, and bird owners, about the risks of Teflon and other PTFE non-stick coatings on cookware and heated appliances.

The CPSC should institute a rulemaking to create a consumer product safety standard requiring a warning label for Teflon and other PTFE non-stick-coated cookware and heated appliances. Under both the Consumer Products Safety Act and the Federal Hazardous Substances Act, CPSC has the authority to label products that are hazardous or pose an unreasonable risk of injury to consumers. *See* 15 U.S.C. § 2056(a)(2); *see also* 15 U.S.C. § 1261. Teflon and other PTFE-treated non-stick cookware and heated appliances are clearly "consumer products" as defined in the Consumer Product Safety Act. *See* 15 U.S.C. § 2052(a)(1). Teflon-coated products should also be considered a "hazardous substance" pursuant to of the Federal Hazardous Substances Act. *See* 15 U.S.C. § 1261(f)(1)(A). The evidence presented in this petition clearly shows that when heated at high, but routinely achievable, cooking temperatures, products with Teflon and other PTFE non-stick coatings emit toxic fumes. These offgas products are toxic, corrosive, and classify as "irritants." Although the health effects of these offgases on children have never been examined, exposure to these toxic fumes can result in substantial injury to adults, as evidenced by DuPont's internal human studies of "polymer fume fever." *See* 16 C.F.R. § 1500.3 (7)(ii)(defining "substantial injury" as "any injury or illness of a significant nature. It need not be severe or serious. What is excluded by the word "substantial" is wholly insignificant or negligible injury or illness.") The symptoms of polymer fume fever -- tightness of chest, malaise, shortness of breath, headache, cough, chills, temperatures between 100 and 104 °F – are significant when present in adults, and could be even more dangerous for children. Furthermore, polymer fume fever is potentially fatal; DuPont's own worker studies show that polymer fever can result in acute respiratory failure, called "pulmonary edema"

(Dale 1995). Therefore, under federal law, the CPSC can and should act to warn customers of the hazards of these products.

There is no current consumer safety product standard or rule requiring companies to warn consumers about the risks Teflon and other PTFE-coated cookware and heated appliances pose to adults, children, and pet birds. At least some manufacturers voluntarily advise consumers to remove birds from kitchens when using Teflon and other PTFE-coated cookware. None of these manufacturers, however, actually label their products to warn customers of the dangers of Teflon and PTFE-related offgases to adults, children, and birds. These toxic offgases, which can be emitted at routine heating temperatures, pose an unreasonable risk of injury to adults and children. In addition to the significant human illnesses caused by Teflon coatings, these offgases can result and have resulted in the deaths of hundreds, perhaps thousands, of pet birds across the United States. As such, the CPSC must institute a rulemaking to warn consumers, including adults, parents of small children, and the 6.9 million owners of pet birds, of the dangers posed by the offgases of these products.

EWG suggests that the proposed rule require that the all cookware and heated appliances with Teflon and other PTFE non-stick coatings bear a warning label regarding the risks of toxic offgases to adults, children, and pet birds. Such a label might include the following language:

> **WARNING: At normal heating temperatures, Teflon and other non-stick coatings emit toxic gases and particles that can result in severe lung damage and death in birds, and can result in "flu-like" symptoms in humans, including sore throat, fever, chills, shortness of breath, tightness of the chest, malaise, headache, and cough.**

The proposed rulemaking is necessary to reduce the risk of injury to adults and children from the toxic offgases of Teflon and PTFE-coated cookware and heated appliances.

Conclusion

This petition demonstrates the urgent need and clear legal authority of a CPSC-imposed warning labeling system for the sale of Teflon and non-stick coatings used in cookware and on other heated appliances.

Sincerely,

Jane Houlihan / by permission by HBW

Jane Houlihan, Vice President for Research
Environmental Working Group

Heather White

Heather White, General Counsel
Environmental Working Group

References Cited

Anonymous 2003. Email correspondence to Environmental Working Group. April 2003.

Anonymous 2003. Email correspondence to Environmental Working Group. April 2003.

Arito, H and Soda, R. 1977. Pyrolysis products of polytetrafluoroethylene and polyfluoroethylenepropylene with reference to inhalation toxicity. Ann Occup Hyg 20(3): 247-55.

Blandford TB, Seamon PJ, Hughes R, Pattison M, Wilderspin MP. 1975. A case of polytetrafluoroethylene poisoning in cockatiels accompanied by polymer fume fever in the owner. Vet Rec 1975 Feb 22;96(8):175-8.

Boucher M, Ehmler TJ, Bermudez AJ. 2000. Polytetrafluoroethylene gas intoxication in broiler chickens. Avian Dis 2000 Apr-Jun;44(2):449-53.

Buschmann J, Bartsch W, Dasenbrock C, Fuhst R, Pohlmann G, Preiss A, Berger-Preiss E. 2001. Cross-fostering inhalation toxicity study with HCFC-123 in lactating Sprague-Dawley rats. Inhal Toxicol 13:671-87.

Cappon GD, Keller DA, Brock WJ, Slauter RW, Hurtt ME. 2002. Effects of HCFC-123 exposure to maternal and infant rhesus monkeys on hepatic biochemistry, lactational parameters and postnatal growth. Drug Chem Toxicol 25:481-96.

Clayton, JW. 1967. Fluorocarbon toxicity and biological activity. Fluorine Chemistry Reviews 1(2): 197-252.

Cornish J, Callon KE, Lin CQ, Xiao CL, Mulvey TB, Cooper GJ, Reid IR. 1999. Trifluoroacetate, a contaminant in purified proteins, inhibits proliferation of osteoblasts and chondrocytes. Am J Physiol 277:E779-83.

Dale, Steve. 1995. "Fatal fumes; while people may not be in danger, the kitchen is no place for pet birds." Chicago Tribune. March 26, 1995.

Daniels, Mary. 1987. "Health debate; non-stick drip pans catch heat." Chicago Tribune. March 29 1987.

Daniels, Mary. 1986. "Stove fumes killing cages birds; overheating coated pans can bring quick death," Chicago Tribune. March 9, 1986.

DuPont 2003a. "Consumer products help: Cookware safety. Will cooking fumes generated while cooking with non-stick cookware harm people or animals, especially pet birds?" Accessed online May 10 2003 from http:/www.teflon.com.

DuPont. 2002. Material Safety Data Sheet (MSDS) for Zyron (octafluorocyclobutane CASRN 115-25-3). Available online at msds.DuPont.com/msds/pdfs/EN/PEN_09004a2f800a5e88.pdf.

Ellis DA, Mabury SA, Martin JW, Muir DC. 2001. Thermolysis of fluoropolymers as a potential source of halogenated organic acids in the environment. Nature 2001 Jul 19;412(6844):321-4.

Environmental Protection Agency (EPA). Fluoroalkenes Test Results; Data submitted by DuPont on Hexafluoropropene (HFP). Office of Prevention, Pesticides & Toxic Substances Data Development (Testing) Policy Avialable online at http://www.epa.gov/oppt/chemtest/fluralke.htm.

Environmental Protection Agency (EPA). List of other (inert) pesticide ingredients. Available online at http://www.epa.gov/opprd001/inerts/lists.html.
Grahme 2003. "Teflon-related bird information." Email correspondence to Environmental Working Group. April 24 2003.

Environmental Protection Agency (EPA). 2003. Preliminary risk assessment of the developmental toxicity associated with exposure to perfluorooctanoic acid and its salts. March 17, 2003.

Environmental Protection Agency (EPA). 2002. Revised draft hazard assessment of perfluorooctanoic acid and its salts, November 4, 2002. U.S. EPA Administrative Record AR226-1136.

Environmental Protection Agency (EPA). Global Warming Potentials of ODS (Ozone Depleting Substances) Substitutes. Available online at http://www.epa.gov/ozone/geninfo/gwps.html.

Environmental Protection Agency (EPA). 1998. Inert ingredients no longer used in pesticide products. Federal Register (Volume 63, Number 121):Page 34384-34390 Available online at http://www.epa.gov/fedrgstr/EPA-PEST/1998/June/Day-24/p16571.htm.

Hazardous Substances Data Bank (HSDB). 2003. Full record for 1,1,2,3,3,3 - hexafluoro-1-propene (CASRN: 116-15-4). Available online at http://toxnet.nlm.nih.gov/.

Hazardous Substances Data Bank (HSDB). 2003. Full record for fluoroacetic acid (CASRN: 144-49-0). Available online at http://toxnet.nlm.nih.gov/.

Hazardous Substances Data Bank (HSDB). 2003. Full record for silicon tetrafluoride (CASRN: 7783-61-1). Available online at http://toxnet.nlm.nih.gov/.

Hazardous Substances Data Bank (HSDB). 2003. Full record for carbon difluoride (CASRN: 353-50-4). Available online at http://toxnet.nlm.nih.gov/.

Hazardous Substances Data Bank (HSDB). 2003. Full record for tetrafluoromethane (CASRN: 75-73-0). Available online at http://toxnet.nlm.nih.gov/.

Hopkins, Steve 2001. "Bird deaths linked to Teflon coating." Waikato Times. Hamilton, New Zealand. Independent Publishers Ltd. July 11, 2001. Copyright 2001 Independent Publishers Ltd.

Hunter ES, 3rd, Rogers EH, Schmid JE, Richard A. 1996. Comparative effects of haloacetic acids in whole embryo culture. Teratology 54:57-64.

Integrated Risk Information System (IRIS). 1991. Sodium Fluoroacetate (CASRN: 62-74-8). Available online at http://www.epa.gov/iris/subst/0469.htm.

International Programme on Chemical Safety (IPCS). 1995. Hydrogen Fluoride (CASRN: 7664-39-3). Available online at http://www.inchem.org/documents/pims/chemical/hydfluor.htm#PartTitle:1.%20%20%20%20NAME.

Johnston CJ, Finkelstein JN, Mercer P, Corson N, Gelein R, Oberdorster G. 2000. Pulmonary effects induced by ultrafine PTFE particles. Toxicol Appl Pharmacol 168:208-15.

Key BD, Howell RD, Criddle CS. 1997. Fluorinated organics in the biosphere. Environmental Science & Technology 31:2445-2454.

Kreger, Theresa 2003. "Teflon deaths." Email correspondence to EWG. April 2003.

Lantum HB, Baggs RB, Krenitsky DM, Anders MW. 2002. Nephrotoxicity of chlorofluoroacetic acid in rats. Toxicol Sci 70:261-8.

National Toxicology Program (NTP). 2002. 10th Report on Carcinogens. http://ehp.niehs.nih.gov/roc/toc10.html.

Patocka J, Bajgar J. 1998. Toxicology of perfluroisobutene. The Applied Science and Analysis (ASA) newsletter ISSN 1057-9419 Available online at http://www.asanltr.com/ASANews-98/pfib.html.

Seidel, WC., Scherer, KV, Jr.., Cline, D, Jr.., Olson, AH., Bonesteel, JK., Church, DF., Nuggehalli, S and Pryor, WA. 1991. Chemical, physical, and toxicological characterization of fumes produced by heating tetrafluoroethene homopolymer and its copolymers with hexafluoropropene and perfluoro(propyl vinyl ether). Chem Res Toxicol 4(2): 229-36.

Scheel, LD., Lane, WC and Coleman, WE. 1968. The toxicity of polytetrafluoroethylene pyrolysis products including carbonyl fluoride and a reaction product, silicon tetrafluoride. Am Ind Hyg Assoc J 29(1): 41-8.

Shively, Carol. 2003. "PTFE fumes kill family's pet birds!" Accessed online at www.quakerville.com/qic/ezine/96Issue5/qteflon.htm. April 2003.

State Department. Mitigating climate change: methane and other greenhouse gas programs. Available online at http://www.state.gov/www/global/oes/97climate_report/part4b.html.

Stewart, Bob. 2002. Personal communication with Dr. Jennifer Klein, Environmental Working Group. May 9, 2002.

Stewart, Bob. 2002. Personal email communication with Anne Morgan, Environmental Working Group. [date]

United States Department of State and Department of Commerce. 2003. U.S. Chemical Weapons Convention Web Site. Site sponsored by the United States Department of State (DOS), Bureau of Arms Control and the United States Department of Commerce, Bureau of Industry and Security (BIS) Available online at http://www.cwc.gov/.

Waritz, R.S. 1975. An industrial approach to evaluation of pyrolysis and combustion hazards. Environ Health Perspect 11:197-202.

Zanen, AL and Rietveld, AP. 1993. Inhalation trauma due to overheating in a microwave oven. Thorax 48(3): 300-2.