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## **Do you cook with butter-flavored oils or butter substitutes?**

### **Information for restaurant owners and workers about diacetyl**

This sheet provides information to cooks and restaurant workers about possibly harmful exposures to diacetyl during cooking. You may breathe in diacetyl when using cooking oils and butter substitutes that contain artificial butter flavor. Until more is known about exposures to diacetyl in restaurants, we are providing the following information and strategies to help you reduce your potential exposure to diacetyl.

### **What is diacetyl?**

Diacetyl is a chemical used in flavorings and other food products to impart the characteristic taste and smell of butter. Manufacturers add diacetyl to a variety of products, including unsalted butter, cheese, flour mixes, shortening, food oils, margarines, and other butter substitutes.

### **What is important about diacetyl in restaurants?**

- In microwave popcorn production and the manufacture of food flavorings, airborne exposures to food flavorings containing diacetyl have been linked to a severe, life-threatening lung disease called *bronchiolitis obliterans*.
- A recent article in the *Seattle Post-Intelligencer*<sup>1</sup> suggests that cooks and other restaurant workers may be exposed to diacetyl vapor while cooking with butter-flavored oils or butter substitutes.
- More research is needed to determine how much diacetyl restaurant workers are exposed to and whether or not these exposures are harmful.
- The degree of potential harm to a person's health depends on many factors, including: 1) how long someone is exposed to diacetyl in the air; and 2) how much someone is exposed to.

### **How do I know if the products I use contain diacetyl?**

Most butter-flavored oils or butter substitutes contain diacetyl. However, product labels may or may not list diacetyl and it may be difficult to find out whether the products contain diacetyl.

1. Check product labels for mention of "diacetyl" or "artificial flavoring."
2. If diacetyl is not listed, ask the product manufacturer or your restaurant supplier about the amount of diacetyl in the product.

### **How can I reduce my exposure to diacetyl?**

You can reduce your exposure to diacetyl by reducing the amount you may breathe in.

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<sup>1</sup> Andrew Schneider, "Flavoring additive puts professional cooks at risk," *Seattle Post-Intelligencer*, December 27, 2007, [http://www.seattlepi.com/national/344552\\_diacetyl22.html](http://www.seattlepi.com/national/344552_diacetyl22.html).

- If possible, **substitute** butter-flavored oils with products that contain less diacetyl or no added diacetyl. The lower the product's diacetyl content, the lower the airborne diacetyl exposures will be during cooking.
- Maintain **adequate ventilation** over grills, fry pans, skillets, and other heated surfaces.
- **Seal** containers containing butter-flavored oils or butter substitutes when not in use.
- **Inform** workers about the potential hazards from exposure to diacetyl.

### What are the potential health effects of diacetyl?

**Lungs:** The most commonly discussed lung disease is *bronchiolitis obliterans*. However, workers exposed to flavorings have also reported other respiratory diseases.

- People who are affected may at first have no symptoms.
- Symptoms of bronchiolitis obliterans are dry cough, shortness of breath, and wheezing.
- Bronchiolitis obliterans is often mistaken for other lung diseases, such as asthma.
- Tell your health care provider that you may be exposed to diacetyl and flavorings in your workplace and that you are concerned.
- Currently we do not know of any restaurant worker in Washington State who has developed lung disease from breathing in diacetyl.

**Skin, eyes, nose and throat:** Diacetyl may irritate the skin, eyes, nose, and throat.

### Where to get help or more information in Washington State

- The **Safety and Health Assessment and Research for Prevention (SHARP)** program is a research program in the Washington State Department of Labor and Industries (L&I). Our activities are independent of Washington State's OSHA program. We are interested in:
  - Hearing about any potential cases of lung disease from diacetyl exposure; and
  - Investigating the amount of diacetyl exposure that occurs in restaurants.

If you have any information you want to share with us, please call 1-888-66-SHARP or e-mail us at [SHARP@LNI.wa.gov](mailto:SHARP@LNI.wa.gov). See our website at: [SHARP.LNI.wa.gov](http://SHARP.LNI.wa.gov).

- **Medical evaluation services** are available at the Washington State Center of Excellence for Chemically Related Illness at University of Washington's Environmental and Occupational Medicine Clinic, Harborview Medical Center. Call (206) 744-9382.
- **Washington State L&I Division of Occupational Safety and Health (DOSH).**
  - DOSH Compliance can investigate workers' complaints and make enforcement inspections. Complainants' identities are kept confidential. Information is available at [www.LNI.wa.gov/Safety/Basics/Complaint/](http://www.LNI.wa.gov/Safety/Basics/Complaint/).
  - DOSH Consultation can assist employers who want free, non-enforcement assistance to evaluate the workplace and improve safety conditions. Information is available at [www.LNI.wa.gov/Safety/Basics/Assistance/Consultation/About.asp](http://www.LNI.wa.gov/Safety/Basics/Assistance/Consultation/About.asp).
- The **National Institute for Occupational Safety and Health (NIOSH)** works to prevent work-related injury and illness. Information is available at <http://www.cdc.gov/niosh/topics/flavorings/>.
- The **US Department of Labor's Occupational Safety and Health Administration (OSHA)** provides guidance on hazard communication for diacetyl and food flavorings containing diacetyl at <http://www.osha.gov/dsg/guidance/diacetyl-guidance.html>.

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