

International Hazard Datasheets on Occupation



Baker

What is a Hazard Datasheet on Occupation?

This datasheet is one of the International Datasheets on Occupations. It is intended for those professionally concerned with health and safety at work: occupational physicians and nurses, safety engineers, hygienists, education and Information specialists, inspectors, employers' representatives, workers' representatives, safety officers and other competent persons.

This datasheet lists, in a standard format, different hazards to which bakers may be exposed in the course of their normal work. This datasheet is a source of information rather than advice. With the knowledge of what causes injuries and diseases, it is easier to design and implement suitable measures towards prevention.

This datasheet consists of four pages:

- Page 1: Information on the most relevant hazards related to the occupation.
- Page 2: A more detailed and systematized presentation on the **different hazards** related to the job with indicators for preventive measures (marked as numbered shields and explained on the third page).
- Page 3: Suggestions for **preventive measures** for selected hazards.
- Page 4: **Specialized information**, relevant primarily to occupational safety and health professionals and including information such as a brief job description, a list of tasks, notes and references.

This information has been compiled by the Israel Institute for Occupational Safety and Hygiene jointly with the BIA (Germany).





Who is a baker?

A worker who mixes flour, salt, yeasts, spices, sugar, and other ingredients to prepare dough, batter, fillings, etc., which are then formed into bread, cakes, rolls, etc., and baked in ovens.

What is dangerous about this job?

- Bakers may suffer from allergies (mainly of the respiratory system and of the skin) caused by substances used in their work.
- Bakers work with hot equipment and sharp tools, which may cause such accidents as burns, cuts, etc.
- Bakers often handle heavy loads (e.g., flour bags). This may cause back pains and trauma.
- Bakers work in heat and, sometimes, at night or other irregular hours. This may cause fatigue, overexertion, and other harmful effects.

Hazards related to this job

Accident hazards 	• Cuts and punctures, esp. while working with sharp tools	
	• Falls of workers because of incorrect use of ladders, wet and slippery floors and unguarded scaffolds	
	• Falls of bags of flour and sugar during transportation	
	• Danger of falls while carrying heavy loads	
	• Mechanical and electrical injuries during work with conveyors, mechanized equipment used for mixing ingredients to make dough, and baking processes	
	• Defective electrical equipment and installations, esp. hand-held tools which may cause electric shock	
	• Extensive use of liquid and/or gaseous fuels for baking creates increased fire and explosion hazard	
	• Dry flour presents a constant hazard of fire and dust explosion (cigarette lighting in such an environment may be extremely hazardous)	1
Physical hazards 	• The high temperatures and the high levels of relative humidity may cause fatigue and thermal exhaustion in bakers	2
	• Exposure to infrared radiation; cataracts may be produced by prolonged exposure	
	• Radiation leakage from defective microwave ovens	3
Chemical hazards 	• Exposure to flour: may cause respiratory system disorders and skin diseases [See Note 1]	
	• Exposure to spices: many bakers working with some spices suffer from chronic conjunctivitis and chronic rhinitis; allergic skin diseases are sometimes found; after prolonged exposure, respiratory infections, particularly chronic bronchitis and sometimes even bronchial asthma, may develop	
	• Exposure to sugar dust: may cause dental caries	
	• Exposure to carbon dioxide: in mechanized bakeries, dough which is in an active state of fermentation may give off dangerous amounts of carbon dioxide	
	• Exposure to carbon monoxide, combustion products and fuel vapors: firing equipment which is badly adjusted or has insufficient draw, or defective chimneys, may lead to the accumulation of unburned fuel vapors or gases or of combustion products, including carbon monoxide, which may cause intoxication or asphyxia	4
Biological hazards 	• Exposure to fungi and yeast: hypersensitivity reactions and skin infections may be caused due to fungal antigens inhaled with dusts during the work time; these usually involve pneumonitis with asthmatic symptoms	5
	• Exposure to parasites: vanilla flour and coconut flour may be infested with cereal parasites, which cause lesions and "grain itch"	8
	• Exposure to molds: bakers may suffer from allergic skin conditions caused by molds such as <i>Aspergillus glaucus</i> and <i>Penicillium glaucum</i> that develop in stored flour	8
	• Presence of rodents and insects may result in bites and infectious diseases	6
Ergonomic, psychosocial and organizational factors 	• Continuous repetitive movements, awkward postures (e.g., sitting or standing for long hours), and excessive efforts (esp. during lifting and moving of sacks and heavy loads) may result in cumulative trauma disorders	7
	• Handling of heavy loads may cause acute disorders, esp. back pain and lesions of intervertebral discs	
	• Exposure to certain spices may cause specific positive or negative sensitivity to their odors, and/or addiction or distaste	8
	• Regular work at odd hours, esp. in night shifts, may cause psychological stress	

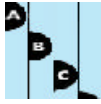
Preventive measures

- 1 Regularly wet-scrub or vacuum-clean (as applicable) floors and other surfaces, and install effective exhaust ventilation to prevent formation of dust (dry flour) clouds
 - 2 Install effective exhaust ventilation and air conditioning to prevent air contamination and heat stress
 - 3 Check microwave ovens for radiation leakage, and repair if needed
 - 4 Adjust burners for clean burning, to reduce CO formation; install monitors to sound an alarm if CO level exceeds a hazard limit
 - 5 Wear a respirator to avoid inhalation of dust or aerosols
 - 6 Arrange periodic visits by professional pest exterminator, to control pest population, and special visits in the case of heavy infestation
 - 7 Learn and use safe lifting and moving techniques for heavy or awkward loads; use mechanical aids to assist in lifting
 - 8 Maintain a high level of personal hygiene; shower and change clothes at the end of work; do not take work-soiled clothing home
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Specialized information

Synonyms Bread maker; cake-maker; pastry-cook

Definitions and/or description Mixes and bakes ingredients according to recipes to produce breads, pastries, and other baked goods; measures flour, sugar, shortening, and other ingredients to prepare batters, dough, fillings, and icings, using scale and graduated containers; dumps ingredients into mixing-machine bowl or steam kettle to mix or cook ingredients according to specifications; rolls, cuts, and shapes dough to form sweet rolls, pie-crust, tarts, cookies, and related products preparatory to baking; places dough in pans, molds, or on sheets and bakes in oven or on grill; observes color of products being baked and turns thermostat or other controls to adjust oven temperature; applies glaze, icing, or other topping to baked goods, using spatula or brush; may specialize in baking one type of product, such as breads, rolls, pies, or cakes; may decorate cakes; may develop new recipes for cakes and icings



Related and specific occupations Baker apprentice; baker helper; baker, laboratory; bakery supervisor; bakery worker; bakery worker, conveyor line; batter mixer; batter scaler; bench-hand; blender; broth mixer; cake decorator; cake-tester; chocolate temperer; cracker-and-cookie-machine operator; cracker sprayer; decorator; dessert-cup-machine-feeder; depositing-machine operator; dividing-machine operator; dough-brake-machine operator; dough mixer; dough-mixer operator; doughnut-maker; doughnut-machine operator; enrobing-machine operator; filling-machine-tender; grain-wafer-machine-operator; icer, hand; icer, machine; icing mixer; ingredient-scaler; laborer, pie bakery; oven operator, automatic; oven tender; pan greaser, machine; pie maker, machine; pretzel cooker; pretzel-twisting-machine operator; pretzel twister quality-control inspector; racker; slicing-machine operator; sweet-goods-machine operator; trolley operator; unleavened-dough mixer; wafer-machine, operator

Tasks Baking; cooking; cooling; contacting (customers); cutting; decorating; developing; dividing; dumping; fermenting; handling (cash); measuring; mixing and remixing; observing; preparing; proofing; rolling; shaping; slicing; wrapping

Primary equipment used Automatic flour hopper; baking pans; bowls; broth feeder; broth fermentation tank; broth heat exchanger; broth reservoir tank; brushes; cutting knives; dough pump; flour feeder; flour sifter; graduate container; grills; mixing-machine; molds; oven; oxidation solution feeder; oxidation solution tank; panner; pans; premixer; roller; rounder; scales; shaper; sheeter molder; shortening-blending kettle; shortening feeder; shortening-holding kettle; spatula; steam kettle

Workplaces where the occupation is common Biscuit making; bread producing; cake making; confectionery; cracker making; pastry making; sweet-goods making; wafer making

Notes

1. The respiratory effects include: chronic bronchial asthma; chronic rhinitis; chronic spastic bronchitis; eosinophilic pulmonary infiltration; and flour allergies. These manifestations are due partly to the allergic action of airborne dusts and partly to the mechanical action of dust particles that are deposited on the mucous membranes or enter the respiratory tract. Relatively severe bronchial affections have been observed.



Eosinophilic pulmonary infiltration (infiltration of certain white blood cells into the lungs) is caused by a reaction of the pulmonary tissue to flour dust that has entered the lung. Exposure to flour dust is associated with lower pulmonary functions and a higher prevalence of respiratory symptoms and airway obstruction. Because of flour dust and allergens, one baker in ten suffers from chronic colds and one in twenty has asthma as a result of his work. Asthma is two to three times more common among bakers than in the general population and colds occur at twice the normal rate.

2. Most of the allergies observed were provoked by wheat flour or rye flour. The next most frequent type of allergy was caused by remains of pests.
 3. Endotoxins were detected in the occupational environment of bakers.
 4. It is known of baker`s allergic eczema due to chromium.
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References Encyclopaedia of Occupational Health and Safety, 4th Ed., ILO, Geneva, 1998, Vol.3, p. 67.25 - 67.28.



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