International Hazard Datasheets on Occupation

Operator, dough - mixer

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 operator, dough - mixers 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, 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 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.

Who is a dough - mixer operator?

A worker who operates mixing equipment for preparing dough for bakery products.

What is dangerous about this job?

- Dough - mixer operators may suffer from allergies (mainly of the respiratory system and of the skin) caused by flour and other substances used in their work.
- Dough - mixer operators work near hot equipment and use rotating machinery and sharp tools, which may result in being caught by rotating parts, burns, cuts, etc.
- Dough - mixer operators often handle heavy loads (e.g., flour bags) which may cause back pain and trauma.
- Dough - mixer operators work in heat and, sometimes irregular hours which may cause fatigue, overexertion, and other harmful effects.

Hazards related to this job

Specific preventive measures can be seen by clicking on the respective in the third column of the table.

Accident hazards	• The working environment and occupational hazards of dough - mixer operators are largely similar to those of bakers [See Note 1]	
	• Falls from ladders, unguarded elevated platforms, etc., on wet and slippery floors (esp. while carrying heavy or bulky loads).	
	• Hazard of being struck by falling bags of raw materials during handling and transportation	
	• Hazard of striking against, being struck by, or being caught in/between stationary or moving objects (incl. conveyors, mixing equipment, in-plant vehicles, etc.)	
	• Musculoskeletal injuries due to overexertion during handling, esp. lifting, heavy or bulky loads	
	• Burns caused by hot parts of equipment, vapors, etc.	
	• Electric trauma caused by defective equipment (esp. portable) and installations	
	• Cuts and punctures caused by sharp work tools	1

	• Explosions due to extensive use of liquid and gaseous fuel and high air concentrations of flour and other powders	2
Physical hazards	• Exposure to high noise levels	
	• Exposure to high temperatures and high levels of relative humidity, possibly causing fatigue and thermal exhaustion	2
Chemical hazards	• Exposure to flour may cause respiratory system disorders and skin diseases [see Note 2]	3
	• Exposure to carbon dioxide: in mechanized bakeries, dough which is in an active state of fermentation may give off dangerous amounts of carbon dioxide	2
	• 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 asphyxia	2 4
Biological hazards	• Exposure to fungi and yeast: hypersensitivity reactions may be caused due to fungal antigens inhaled with dusts during the work time; these usually involve pneumonitis with asthmatic symptoms	5
	• Exposure to mold: bakery workers may suffer from allergic skin conditions caused by mold such as Aspergillus glaucus and Penicillium glaucum that develop in stored flour	5
	• Presence of rodents and insects may result in bites and infectious diseases	6
Ergonomic, psychosocial and organizational factors	• Cumulative trauma disorders caused by continuous repetitive movements, awkward postures (e.g., sitting or standing for long hours), and excessive efforts (esp. during lifting and moving of heavy loads)	7
	• Psychological stress caused by regular work at odd hours, esp. in night shifts]	8

Preventive measures

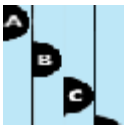
1. Wear metal-mesh gloves when working with sharp tools
2. Install effective exhaust ventilation and air conditioning to prevent air contamination and heat stress
3. Wear a respirator to avoid inhalation of dust or aerosols; if necessary, wear long-sleeved shirt and/or gloves
4. Install carbon monoxide monitors to sound an alarm if CO level exceeds a hazard limit
5. Maintain a high level of personal hygiene; shower and change clothes at the end of work; do not take work-soiled clothing home
6. Control pests through periodic visits of pest exterminator, or special visits in 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. Select a shiftwork schedule that would have the least harmful effect on the employee's health, family and personal life - consult employees and a specialist in shift scheduling

Specialized information

Synonyms

Control-panel operator; dough worker/operator

Definitions and/or description



Controls semiautomatic equipment, from control panel, to blend ingredients for bread and deposit specified quantity of dough in baking pans; notifies other workers to admit broth into feed-lines and to start loading specified size pans onto conveyor; turns hand-wheel to adjust conveyor guides to size of pans; starts flour sifter, pre-mixer that blends ingredients, and developer that kneads dough, working from remote control panel; observes dials and recording instruments to verify temperature of broth, viscosity of dough, and speed of mixing units; feels dough emerging from developer to ascertain that consistency meets plant standard; turns developer speed control to specified setting and starts divider blades that pinch off and drop dough into pans passing on conveyor; turns hand-wheel and control bar to adjust discharge aperture above divider blades so that dough is uniformly shaped and deposited in center of pan; weighs sample pieces of dough and turns divider speed handle to regulate amount of dough deposited in pans; records temperatures, viscosity, and feed rate from instrument readings (acc. to DOT)

Related and specific occupations

Baker; baker apprentice; baker helper; baker, test; bakery supervisor; bakery worker, conveyor line; batter mixer; batter scaler; bench hand; blender; broth mixer; cake decorator; chocolate temperer; cracker-and-cookie-machine operator; cracker sprayer; depositing- machine operator; decorator; dessert-cup-machine feeder; dividing-machine operator; dough mixer; dough-brake-machine operator; doughnut-machine operator; doughnut maker, 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 twister; pretzel-twisting-machine operator; quality-control inspector; racker; slicing- machine operator; sweet-goods-machine operator; trolley operator; unleavened-dough mixer; wafer-machine operator

Tasks

Adjusting; admitting; ascertaining (consistency); assuring (quality); blending; checking; controlling; depositing; dropping; feeling; kneading; loading; mixing and premixing; notifying; observing; operating; preparing; quantifying; reading (instruments); recording; regulating; shaping; sifting; starting (machines); supervising (machines); testing; turning; verifying; weighing

Primary equipment used

Automatic flour hopper; broth feeder; broth fermentation tank; broth heat exchanger; broth reservoir tank; control center; developer; divider; dough pump; flour feeder; flour sifter; oxidation solution feeder; oxidation solution tank; panner; pre-mixer; shortening-blending kettle; shortening feeder; shortening-holding kettle

Workplaces where the occupation is common

Bakeries; biscuit making; bread producing; cake making; conditories; confectioneries; cracker making; pastry making; sweet-goods making; wafer making

Notes

1. Additional information on occupational hazards datasheet addressing the occupation of baker.
2. 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.

References

The Workplace, CIS/ILO, Geneva, 1997, Vol. 2, p.402 - 415.

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