

B. F. GOODRICH CHEMICAL COMPANY

Pedricktown, New Jersey

EMERGENCY ALARMS AND PROCEDURES
FOR VAPOR RELEASES, FIRES, AND PLANT EVACUATION

Hazards involved in the handling and processing of flammable liquids and gases require a standard procedure be established as a guide in case of emergency.

Types of Alarms

There are three basic types of emergency alarm systems:

Building emergency whistles
Gas alarm sirens
Fire alarm/evacuation horns

I. Emergency Whistles

A. Locations and type of alarm.

1. Poly Building (513), second floor, steam whistle.
2. Latex Building (502), 4th floor, steam whistle.
3. Tank Farm (511), air whistle.
4. Mass Resin (512), steam whistle.

B. Any person may sound the steam or air whistle if necessary.

1. It should be sounded if an unusual circumstance is present such as:
 - a. A poly or tank must be vented.
 - b. A relief valve or rupture disc vents.

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- C. The whistles are not to be used to summon help for routine or relatively minor problems. Their function is to summon the responsible Lead Technician and alert personnel in the area.
- D. If an immediate hazardous situation exists, the whistle should be operated continuously until the responsible Lead Technician arrives, but not less than 30 seconds.
 - 1. All hot work and smoking must stop immediately.
 - 2. All trucks, autos, and gasoline-driven equipment in the plant are to be stopped and the motors switched off immediately.
 - 3. Anyone in a vessel must be called out.
 - 4. The Lead Technician responsible for the area sounding the whistle will direct the handling of the emergency and will authorize an all clear when emergency is over.

II. Fire Alarm

A. Locations

- 1. All operating buildings
- 2. Waste and water treatment area
- 3. Tank Farm
- 4. Buildings 545 and 546, Administration and Personnel
- 5. Building 547, Distribution Center

B. Any of the following will activate the plant fire alarm, which will sound a code indicating the area in which the alarm originates.

- 1. Pulling the inner handle on a master or an auxiliary fire alarm box.

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2. When a 1½" fire hose is used in any of the buildings.
 3. When a sprinkler system is activated in any area.
- Items 2 and 3 activate a flow switch device mounted on firewater headers.

C. Fire Alarm Code:

1. Latex Building (502)		2 Blasts
2. Catalyst Building (503)		3 Blasts
3. Waste Treatment (508)		8 Blasts
4. Water Treatment (509)		9 Blasts
5. Tank Farm (511)	1 Blast	1 Blast
6. Mass Resin Building (512)	1 Blast	2 Blast
7. Polymerization Building (513)	1 Blast	3 Blasts
8. Control House (514)	1 Blast	4 Blasts
9. Dryer Building (515)	1 Blast	5 Blasts
10. Boiler House (521)	2 Blasts	1 Blast
11. Cooling Tower (522)	2 Blasts	2 Blasts
12. Laboratory (523)	2 Blasts	3 Blasts
13. Maintenance Shop (524)	2 Blasts	4 Blasts
14. Compound & Warehouse (541)	4 Blasts	1 Blast
15. Administration Building (545)	4 Blasts	5 Blasts
16. Personnel Building (546)	4 Blasts	6 Blasts
17. Distribution (547)	4 Blasts	7 Blasts

1 (one) 10 second on the fire alarm----All Clear

2 (two) long blasts on the fire alarm--PLANT EVACUATION

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- D. Anyone detecting a fire shall immediately activate the nearest alarm box in involved area before attempting extinguishment. Never rely on Items (B) 2 or 3 listed above to activate alarm.

E. Fire Alarm Procedure

A fire alarm will immediately activate fire alarm assignments as listed on emergency assignment cards.

Personnel not listed on emergency assignment cards shall report to your assigned area. Stay clear of involved area and possible toxic fumes and smoke.

1. All hot work and smoking must stop immediately.
2. All trucks, autos, and gasoline-driven equipment in plant are to be stopped and their motors switched off immediately.
3. Anyone in a vessel must be called out.
4. All non-operating personnel must report to your assigned area.
5. The Lead Technician responsible for the area sounding the fire alarm will direct the handling of the emergency, and will authorize an all clear when the emergency is over.
6. Lead Technicians will account for personnel in their respective areas. Area Managers will account for their professional personnel.

Phone communications shall be made between the areas as necessary to assure safety of all personnel.

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III. Gas Alarm

A. Locations of Activating Switches

1. Latex Building (502)
2. Mass Resin Building (512)
3. Pearl/Paste Poly Building (513)

B. Locations of Gas Alarm Sirens

1. Latex Building (502) (Main)
2. Mass Resin Building (512) (Main)
3. Pearl/Paste Poly Building (513) (Main)
4. Boiler House (521) (Auxiliary to 513)
5. Laboratory (523) (Auxiliary to 513)
6. Compound (541) (Auxiliary to 512)
7. Changehouse (546) (Auxiliary to 513)
8. Waste Treatment (508) (Auxiliary to 513)

C. Operation of Gas Alarm System

The operating areas listed as "Main" (Latex, Mass, and Pearl/Paste) have activating switches to turn in a gas alarm. The sirens in the building turning in the alarm sound in a continuous manner and the red rotating beacon on the activating building roof lights up.

The buildings listed as "Auxiliary" have no means of sending in an alarm but receive the same siren signal as the building to which they are connected. Any building not initiating the Gas Alarm and all buildings not "Auxiliary" to the building initiating the alarm will have their sirens sounding in a pulsating manner. The sirens sound approximately two minutes then automatically silence. The main gas alarm siren located on the Pearl/Paste Poly Building (513) roof sounds in a continuous manner while the sirens inside the various buildings are sounding. This is to alert all personnel in yard and surrounding areas to the gas alarm condition. The red rotating beacon on the building activating the alarm continues to signal until the gas alarm is reset. This allows personnel to locate the involved building after the sirens are automatically silenced. To turn off the rotating beacon one of the buttons labeled "reset" must be lifted in the building sounding the alarm.

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D. Any person may activate the gas alarm.

1. It should be sounded if a major gas spill or leak is experienced.
2. The person sounding the alarm shall:
 - a. Activate gas alarm switch.
 - b. Switch ventilation fan selector to emergency setting.
 - c. Activate the fog system as necessary according to extent of emergency.
 - d. Contact the console operator (phone 272) and explain reason for alarm.

E. Gas Alarm Procedure

A gas alarm will immediately activate the gas alarm assignments as listed on emergency assignment cards.

Personnel not listed on emergency assignment cards shall report to your assigned area. Stay clear of involved area and possible toxic fumes and vapors.

1. All hot work and smoking must stop immediately.
2. All trucks, autos, and gasoline-driven equipment in the plant are to be stopped and their motors switched off immediately.
3. Anyone in a vessel must be called out.
4. All non-operating personnel report to your assigned area.
5. The Lead Technician responsible for the area sounding the gas alarm will direct the handling of the emergency and will authorize an all clear when the emergency is over.
6. Lead Technicians will account for personnel in their respective areas.

Area Managers will account for their professional personnel.

Phone communications shall be made between areas as necessary to assure safety of all personnel.

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IV. Evacuation Alarm

A. Location and type of alarm.

1. Boiler House (521)-Fire alarm activated manually by boiler operator. Evacuation signal is 2 (two) long blasts on the fire alarm.

B. Plant Evacuation

1. The Lead Technician in the area experiencing the emergency will determine the necessity of plant evacuation and be responsible for coordination.

If time permits he should contact his Area Manager, the Safety Department, or the Plant Manager before ordering plant evacuation.

2. Contact boiler operator (phone 232) to have the evacuation alarm sounded.
3. If evacuation alarm wasn't preceded by a gas alarm all requirements of gas alarm procedure will be in effect, no exceptions will be made for forklifts inside building. In addition, an orderly shutdown of selected equipment will be initiated as directed by respective area requirements.
4. All personnel will evacuate except the boiler operator and console technician, who will normally remain inside their respective areas. These two persons should be evacuated only if the responsible Lead Technician determines they are endangered.
5. To affect an orderly evacuation, routes of travel should be along roads if wind direction and emergency conditions permit. Foremost is the safety and health of all personnel. The extra moments necessary for an out of the way route in avoidance of personal hazard is advised.
6. Assembly area
 - a. Distribution Center-Distribution parking area.
 - b. Warehousing and Compound-Southwest area of Administration Building. (Stay on south side of walkway).

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- c. Computer Building, Catalyst, Pearl/Paste Poly and Dryer Building- Southwest area of Administration Building, stay on north side of walkway.
 - d. Mass Resin and Latex-Southeast area of Personnel Building, stay on south side of walkway.
 - e. Waste Treatment, Maintenance and Laboratory-Southeast area of Personnel Building, stay on north side of walkway.
 - f. Administration Building-Area of flagpole.
 - g. Outside contractors, vendors, suppliers, carriers and visitors-Inside fenced area immediately adjacent to safety sign board.
7. Upon arrival at the assembly area, Lead Technicians will account for all personnel in their respective areas.
- Lead Technicians will account for personnel in their respective areas.
- Area Managers will account for their professional personnel.
- Phone communications shall be made between areas as necessary to assure safety of all personnel.
- Missing personnel will be reported to the Lead Technician coordinating the evacuation, who will proceed to ascertain their location.
8. The dispensary will be manned by the Laboratory Lead Technician and his selected staff.
9. The Lead Technician responsible for evacuation will determine when the plant is safe for personnel to return. The 'All Clear' will be sounded at that time..
10. An emergency phone list is maintained in Guard Headquarters and in process buildings.

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V. Testing of Alarm Systems

A. Fire Alarm/Gas Alarm

1. A fire alarm or gas alarm will be tested for proper operation and drill each Friday at 12:30 p.m.
2. Testing of selected fire alarm pull stations will be performed by the Safety Department.
3. The fire alarm or gas alarm to be tested will be selected by the Safety Department.

B. Emergency Whistles

1. Emergency whistles will be tested for proper operation each Friday following fire alarm or gas alarm test.
2. Respective building personnel will perform the test.

C. Evacuation Alarm

1. The evacuation alarm will be tested for proper operation and drill as prescribed in advance by the Safety Department.
2. The boiler operator will perform the test.

The Safety Department

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MONITORING

In order to insure that adequate safeguards are maintained against vinyl chloride exposure, two systems will be used to monitor vinyl chloride concentrations in regulated areas of the plant. One system will monitor atmospheric concentrations in selected areas of the plant, while the other will monitor vinyl chloride concentrations in the air immediately surrounding individual employees.

CONTINUOUS AREA MONITORING SYSTEM

The Bendix Total Hydrocarbon Analyzer systems are installed in regulated areas throughout the plant. These monitors will measure the total hydrocarbon concentration, including vinyl chloride, in defined areas. Six to twelve sample points are tied to each analyzer, and one to two minute samples will be taken from each point. This will allow the entire area to be monitored once every twelve minutes, twenty-four hours per day.

Alarm systems are coupled to the Analyzers, and three warning signals are used to alert employees to take action when concentrations exceed the following levels.

YELLOW FLASHING LIGHT. When the atmospheric concentration of vinyl chloride reaches 10 parts per million, a yellow light will flash. Because Federal law requires respiratory protection only at concentrations of 25 ppm or greater, no action is required by employees when the yellow light flashes.

RED FLASHING LIGHT. When the atmospheric concentration of vinyl chloride reaches 25 parts per million, a red light will flash. All employees who are working in the area affected by the alarm will be required to wear the airline respirators provided.

AUDIBLE ALARM. When the concentration of vinyl chloride in the atmosphere reaches 1000 parts per million, a Scott Airpak rather than an airline respirator is required for adequate protection. In order to anticipate this need, the Bendix analyzer will sound an audible alarm when the concentration of vinyl chloride reaches 100 parts per million. When this alarm is activated, all employees who must remain in the work area will be required to wear Scott Airpaks. All other employees will leave the area immediately.

PERSONAL MONITORING SYSTEM

The portable personal monitoring systems are designed to sample the air immediately surrounding individual employees. They provide a measure of the vinyl chloride concentration employees would breathe if no respiratory protection

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were being used.

These systems are based on the use of a lightweight, battery-operated pump (Bendix Micronair II) which draws air through a tube. The air is passed through a sample cylinder containing special charcoal which absorbs organic materials like vinyl chloride. After a specified time, the sample cylinder is removed and taken to the laboratory where the amount of vinyl chloride absorbed is measured on a gas chromatograph. The rate of airflow through the pump and the length of time of the sample are used to determine the average vinyl chloride concentration to which the employee has been exposed over an eight-hour shift.

All employees working in a regulated area of the plant will be monitored on a monthly basis. Any employee whose exposure level, as determined on two successive monitorings, is between 0.5 and 1.0 ppm will be monitored on a quarterly basis.

Employees required to use the Bendix Micronair II will be scheduled by their foremen, in cooperation with the plant OSHA coordinator.

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