The Little-Known Poi

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Chron

sons in S.F. Highrise

By David Perlman
Science Editor

They carry a long and difficult chemical name, and research into their health effects has been meager at best. But the little-known contaminants that spewed into the air from last Sunday's explosion and fire in the downtown highrise on Steuart Street are a potentially serious group of poisons.

The substances are a class of compounds collectively called tetrachlorinated dibenzofurans (TCDF), which are closely related to PCB. A recent scientific report by researchers at the California Air Resources Board warns that "extremely serious health effects" may result from exposure to them.

PCB itself, used most often as a thick, oily insulator and coolant in electrical equipment such as transformers and capacitors, is known chemically as a polychlorinated biphenyl.

When PCB burns at high temperature, or when the substance remains hot over long periods, its chemical molecules break down, and many are transformed into the dibenzofurans.

Closely related to the notorious dioxins that contaminate some commercial weed-killers, the dibenzofurans have been known to cause the disfiguring skin disease called chloracne as well as disorders of the central nervous system, symptoms similar to chronic bronchitis, and enlargement of the liver. All those symptoms are also seen in patients exposed to the dioxin compounds.

But there is no clear evidence that any of the dibenzofurans, or PCB, can cause cancer or birth defects in humans.

Like PCB, the dibenzofurans are extremely long-lasting. In 1968 nearly 1700 Japanese residents were made ill after eating food prepared with rice oil that was badly contaminated by PCB, and researchers later estimated that the blood of the victims contained levels of dibenzofurans at about five parts per million. Traces of the compounds were detected in the liver and fatty tissue of those Japanese nine years later.

Since then, however, Japanese researchers have been unable to determine how much of the illness reported after the rice oil incident was due to PCB and how much to the dibenzofuran contaminants.

The Japanese occurrence is the only one where human exposure to dibenzofurans has been documented. There have been few animal studies of the effects of the compounds on health. At very high doses, one Japanese study indicated, the dibenzofurans were lethal to mice, attacked their livers and spleens, and were five to 10 times more toxic than PCB.

Medical Tests Planned in PCB Scare

By Bill Soiffer

Firefighters, cleanup crews and passers-by who may have been exposed to toxic chemicals released by an underground transformer fire May 15 at One Market Plaza will undergo medical tests today at San Francisco General Hospital.

The Poison Control Center, which is based at the hospital, was inundated by more than 300 phone calls during the weekend from people who were concerned about toxic contamination from the fire.

City health officials said yesterday that they did not know how long the 28-story Steuart Street tower at the One Market Plaza complex would remain closed.

Officials said Friday the office building at Steuart and Mission streets, where almost 3000 people work, would be closed for at least another week.

Richard Wade, the city's manager for hazardous materials, said the building's ventilation system from the basement to the sixth floor was still being tested for toxic contamination. He added that the cleanup would continue until there were not even trace amounts of the chemicals PCB (polychlorinated biphenyls) or TCDF (tetrachlorodibenzofurans).

"The building has been closed as a precaution," he said. "Our posi-

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PCB SCARE

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tion has been one of concern, not alarm."

A Pacific Gas & Electric Co. spokesman said yesterday the explosion and fire were caused by a "failed cable" and that the utility would restore power to the building when health officials declared it safe for occupancy.

The Del Monte Corp., which occupies 10 floors of the closed building, said that several hundred of the firm's 1200 employees would be recalled to work today in temporary office space. But the others would continue to enjoy paid days off until the office tower reopened.

Meanwhile, city health officials said more than 100 workers and bystanders categorized as "severely exposed" first would undergo urine tests.

The test will measure, over a 24-hour period, the amount of organic compounds known as porphyrins that are released by the body after exposure to the toxic chemicals.

"We anticipate these tests will be negative," said Dr. Charles Becker, director of the Bay Area Poison Control Center. "We don't have anyone who is acutely ill."

If the tests are positive, Becker said blood tests would then be administered to check liver function. However, he noted that there is no medical treatment for exposure to PCB or TCDF — substances that permanently remain in the body — and that the tests would simply be used to monitor future medical problems.

On Friday, tests from the residue of the fire revealed that TCDF was detected in PG&E's underground transformer vault and on the sidewalk grating.

The TCDF was produced when the PCB burned.

Becker said passers-by w
merely smelled smoke or came
brief contact with soot from t
electrical transformer explosi
should not be alarmed about t
toxics released by the blast.

Becker said the first sympt
of TCDF exposure is severe ac
High levels of the chemical in t
body may cause liver, reproducti
and neurological disorders. PCB,
industrial insulator used in c
transformers and capacitors, is s
pected of causing cancer and bir
defects.

A special telephone line (6
5222) was installed at the Pois
Control Center last week to answ
public inquiries about the effects
TCDF and PCB.

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