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### **The hazardous materials could be weapons in hand of terrorists.**

A veszélyes anyagok jelenlétében végzett beavatkozás mindig is kiemelt figyelmet és felkészültséget várt el a tűzoltóktól. Az esemény önmagában veszélyes, nem beszélve arról, ha az esemény nem a véletlen baleset eredménye, hanem terror akció fegyvereként jelenik meg.

Safety factors have been used to protect the public health since the advent of modern safety assessment. Originally based on very little experimental data, the concept of safety factors was based on the premise that humans are more sensitive to chemicals and environmental agents than the most sensitive laboratory animal. By the time of World War I, experimental evidence with laboratory animals was being directly compared with findings in humans. It was evident that the original premise had little basis in fact, but was still a prudent approach for public health. [1]

### **Factors that influence the safety of Hungary**

- international terrorism and crime
- international drug-trade
- illegal gun-trade
- religious fanaticism
- spread of racial discrimination
- industrial and technological catastrophes that endanger the safety of many countries
- migration

The Fire Service is the only organization in Hungary - enabled by its on-call system, well-trained staff, 24-48 standby pattern, and technical resources - to dispatch firefighters to the scene of hazardous material incidents making the first move, and in many cases, to clean up at the scene on their own, going far beyond their daily duties. Basic actions taken by firefighters at chemical incidents are of great importance as the outcome of these events may depend on them. As the production, storage, handling, use, and transportation of dangerous materials seriously threaten everyone, developed societies have tried to set the limits by making strict rules and regulations.

Civilization and rapid technological advances endanger our natural environment threatening the living. Green issues and protection against reckless transportation, storage, use and production of hazardous materials have become part of everyday life

It is common for materials dangerous to the population and the personnel on duty to be present at the initial stage of most industrial disasters, chemical incidents, and other factory-related accidents. To put this in another way, we can say that most industrial disasters are caused by a previous hazardous-material mishap.

### **The major risk is hazardous materials**

The major risk when storing hazardous materials is that usually there are various substances in large quantity which are fraught with unpredictable danger for everyone working on the premises. When dangerous materials are being transported, they are removed from safe factories, competent care, and are beyond the reach of experts who have the necessary knowledge and equipment. Instead, they are located in a much more unprotected environment.

First and foremost, the problem of hazardous materials concerns environmental health: it mainly affects the environment, and in an indirect way, it also affects the health of the public. **The Sarin gas attack on the Tokyo subway** refers to the 1995 incident when members of a terrorist group released sarin gas on several lines of the Tokyo Subway in an act of domestic terrorism. 12 people died and some 6000 were injured as a result of the attack. [2] Depending on different environmental patterns, and the length of occurrences, danger usually arises as a long-term process of environmental pollution.

A considerable part of plant-protecting agents and industrial chemical agents when getting into the soil become relatively fast ineffective (for example as a result of hydrolysis, oxidation, photochemical or thermal decay). Some soil containing organic materials sets plant-protecting agents more than the sanded or clayey soil. The hazardous material (plant-protecting agent) got into the soil attacks the microbiological environment, and a part of it appears in food-products.

# Avoiding hazardous materials

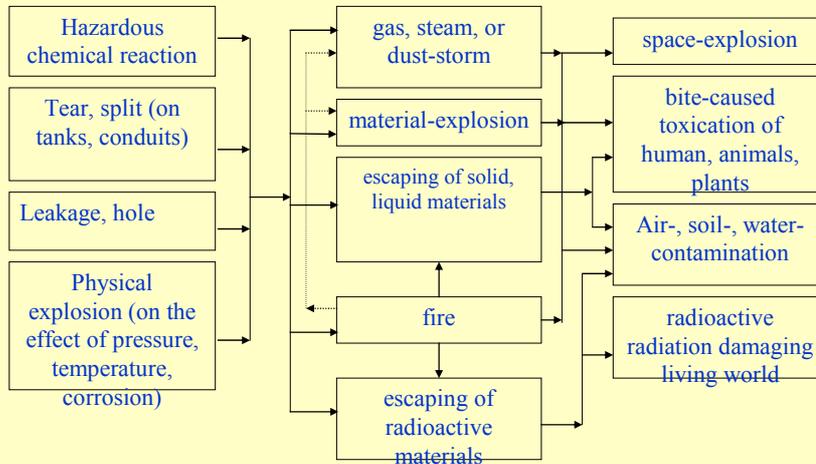


Figure: avoiding hazardous materials [3]

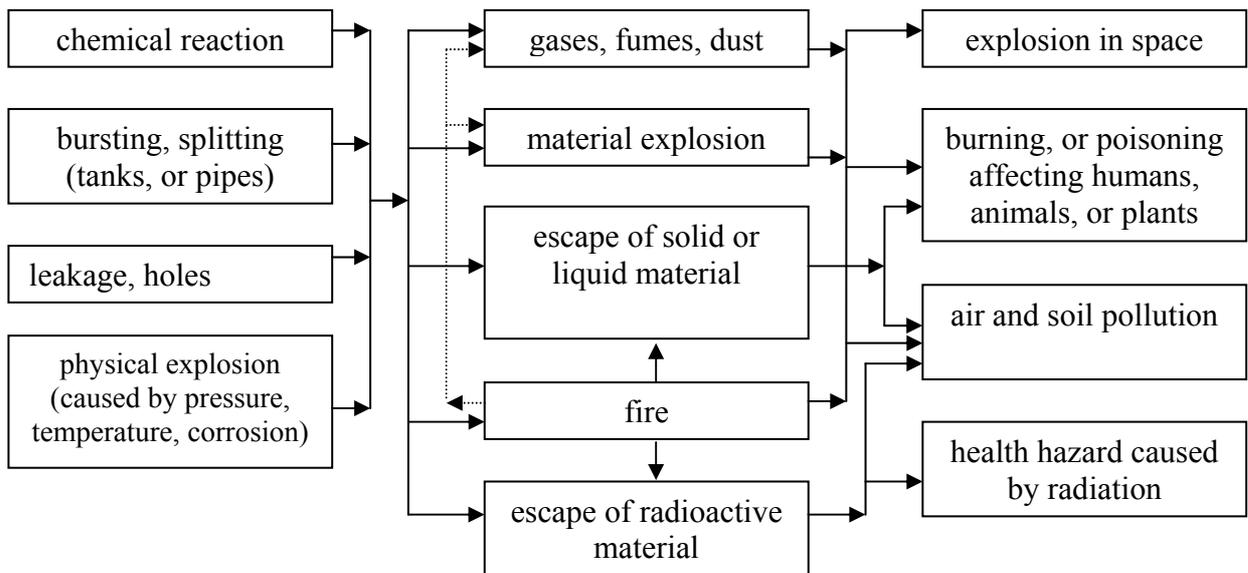


Figure 1 Consequences of the most frequent ways materials may escape

Dangerous situations and disasters may occur when flammable, explosive, toxic, hazardous, or radioactive materials get out of control and escape. In these cases, conditions of materials, such as pressure and temperature are caused to change, and they are no longer under control. The reaction of materials depends on many factors, and the outcome of such events can hardly ever be predicted.

### **Factors directly endangering units put into action:**

- **inhalation** ( through respiratory tracts, stomach, open wounds, skin)
  - protective measures: usage of respiration protective devices,
  - protection of the body
- **contamination, infection** (radiation, infection, toxicities through skin, bites, etc.)
  - protective measures: - protection of the body (chemical protective clothing), if needed, respiratory protection
- **effect of fire and heat** (burns, chilblain, etc.)
  - protective measures: - protection of the body (protective clothing against heat and cold), curtain of water
- **physical action of force** (breaking, bruise, etc.)
  - protective measures: - appropriate behavior,
  - there is no direct protection

The hazardous materials could be a weapons in hand of terrorists. In this case the hazard is not estimated. The defenses organizations must be prepared. The most important task is the training. Target of training to be have perfect professional, physical and mental preparedness. The task of giving first aid and rescuing people who suffered toxication or other injuries must be fulfilled by professionals who possess special skills, also in terms of toxication and burns. It is mean that the staff of the fire brigade must be trained with medical skills in order to intervene in urgent cases

Of course, positive results in such researches are not enough. If society paid more attention to this problem, the results would be more tangible.

[1] <http://www.encyclopedia.com/doc/1G2-3404000754.html> (2010-02-14)

[2] Sarin gas attack on the Tokyo subway:

[http://www.japan-101.com/culture/sarin\\_gas\\_attack\\_on\\_the\\_tokyo\\_su.htm](http://www.japan-101.com/culture/sarin_gas_attack_on_the_tokyo_su.htm) (2010-02-14)

[3] Cziva Oszkár tűzoltó alezredes: A fegyveres erők és a rendvédelmi szervek hazai együttműködésének lehetőségei természeti és ipari katasztrófák felszámolásakor, fejlesztési lehetőségek a „katasztrófavédelmi” törvény hatálybalépése előtt, Budapest (1999),

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