Health and environmental impact of tear gas

The Government fully understands the public’s concern on the impact of tear gas on the environment, health, food safety and drinking water.

On the health effects of tear gas, in general, post-exposure symptoms to tear gas may include stinging and burning sensation to eyes and other mucous membranes, tearing, salivation, runny nose, tight chest, headache, nausea, burning sensation of skin, and erythema of skin. These symptoms will usually disappear within a short time after exposure to tear gas. According to the Hospital Authority (HA), amongst those who were exposed to tear gas and attended the accident and emergency (A&E) departments of HA, they generally experienced mild respiratory and skin irritation, and there was no serious health impact reported. Most of them could be immediately discharged after rinsing and receiving treatment at the A&E departments. The Department of Health and Hong Kong Poison Information Centre of the HA have reviewed relevant medical literature and scientific evidence but have found no literature or scientific evidence on dioxin poisoning cases caused by the use of tear gas.

In respect of food safety, the Centre for Food Safety (CFS) has provided advice on its website to the general public on how to prevent contamination of food and handle contaminated food.

Regarding the situation at the Yau Ma Tei Fruit Market, the CFS staff have visited the market to provide food safety information to traders and advised them to take appropriate preventive measures. Insofar as the general public is concerned, generally speaking, contaminants on the surface of some kinds of food, such as fruits or vegetables, can be reduced by washing with running water. For the sake of prudence, food suspected to be contaminated or showing abnormality should not be consumed.

In respect of drinking water, the drinking water in Hong Kong are sourced from imported water from Dongjiang and rainwater from local catchments. Since the sources are located at country parks or remote areas, the drinking water would not be contaminated by chemicals. In addition, the drinking water in Hong Kong undergoes rigorous treatment processes in water treatment works and is supplied through concealed pipes to consumers whose internal plumbing systems are generally enclosed as well. Therefore, the risk of contaminating drinking water by chemicals is very low.
On the environmental aspects, tear gas is basically a substance in the form of particulates and would disperse within localised areas. The Environmental Protection Department (EPD) considered that it would not have significant impact on the overall air quality. From June to mid-November 2019, the EPD has not detected any abnormality in the air quality and water quality monitoring stations.

Cleansing should be carried out should a household is suspected of effects from tear gas residue. Disposable cleaning items are preferable. Suitable personal protective equipment such as masks, rubber gloves and rubber aprons should be worn. In general, surface with residual materials could be wiped by cloth soaked with soapy water but hot water should not be used in order to avoid evaporating the materials. Also, residual materials should not be stirred up and therefore tools such as high pressure water jet and brooms, as well as electric fans, should not be used. The disposable cleaning items should be properly packed (such as in a sealed plastic bag) after cleaning and then disposed.

Individuals who had been exposed to tear gas with persistent symptoms should promptly consult healthcare professionals.

For health information on tear gas, please visit the website of the Centre for Health Protection of the Department of Health (www.chp.gov.hk/en/healthtopics/content/460/102308.html).

For advice on contaminants and food safety, please visit the website of the Centre for Food Safety of the Food and Environmental Hygiene Department (www.cfs.gov.hk/english/whatsnew/whatsnew_fstr/files/Advice_on_tear_gas_for%20public_e.pdf).

**Source of dioxin**

In the past few months of social events, various protestors hurled thousands of petrol bombs and committed arson activities, opening burning of refuse, sundries, shops and vehicles at various locations. These arson attacks generated large amount of smoke and toxic chemicals (including dioxins). According to the analysis, the Environment Bureau did not find any anomalies in the particulate matter (PM) levels recorded at the monitoring stations near the areas where tear gas was launched. On the other hand, there were instances showing that when arson activities took place near a monitoring station, the PM concentrations recorded at the station increased to high level for several hours which was
almost double the normal levels for that day. This reflects that arson activities will significantly affect the air quality in the vicinity.

The Environmental Protection Department (EPD) regularly monitors dioxin concentrations in the air. The dioxin level has been relatively low for many years and has gradually declined in recent years. The air sampling work for dioxin measurement in November is being conducted by EPD and the chemical analysis is expected to take several weeks.

Throughout the world, the major sources of dioxins are open burning of garbage, burning of trees and hill fires. Recently, many shops in Hong Kong have been set on fire, and there are cases of burning cars and garbage on the streets. Considering the burning areas, duration and temperature of the combustion, this may also be the source of dioxin generation.

To know more about the Dioxin Level 2019, please visit the website of EPD (www.aqhi.gov.hk/en/sub-download/sub-air-quality-reports/dioxin2019.html)

Ends (November 2019)