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Hazardous Chemicals

Till sometime back firemen had no way of knowing what medium of extinguishing unknown chemicals in a fire, spillage or any emergency should be used. Incorrect actions resulted in disasters.

Availability of information on the hazardous nature of substance and required control measure helps the emergency management personnel to take quick and correct decisions.

The HAZCHEM code (also called Emergency Action Code) gives vital information to fire brigade and other emergency services on the action to be taken to combat spillage, leakage or fire in an emergency involving a hazardous substance.

The HAZCHEM code consists of a number from 1 to 4 and any one of the letters, P, R, S, T, W, X, Y, Z followed at times by the letter E.

1	JETS
2	FOG
3	FOAM
4	DRY AGENT

The numbers signify the extinguishing medium to be employed as given in table 3 on the left

The letters signify 4 aspects viz.

1. Method of controlling spillage a) by diluting or b) by containing
2. Personal protective equipment to be worn by fire fighters
3. Reactive nature of Chemical, and
4. Need for evacuation.

The fire services personnel should carry the HAZCHEM code, scale and notes for guidance as given in Table 4.

Table 4

HAZCHEM CODE			
1. JETS			
2. FOG			
3. FOAM			
4. DRY AGENT			
P	V	FULL	DILUTE
S	V	BA	
S		BA for FIRE only	
T		BA	
T		BA for FIRE only	CONTAIN
W	V	FULL	
X	V	BA	
Y	V	BA for FIRE only	
Z		BA	E CONSIDER EVACUATION
Z		BA for FIRE only	
Notes for Guidance FOG : In the absence of fog equipment a fire spray may be used. DRY AGENT : Water must not be allowed to come into contact with the substances at risk. V : Can be violently or even explosively reactive FULL : Full body protective clothing with BA. BA : Breathing apparatus plus protective gloves. DILUTE : May be washed to drain with large quantities of water CONTAIN : Prevent by any means available, the spillage from entering drains or water course.			

HAZCHEM Code of some important and popular chemicals transported on Indian roads are given in table 5:

Table 5

SUBSTANCE	HAZCHEM CODE
1) PETROL	3 Y E
2) METHYL	2 P E
3) L.P.G.	2 W E
4) AMMONIA LIQUEFIED	2 P E
5) SULPHUR	2 Z
6) KEROSENE	3 Z

It is important to note here that the objective of the HAZCHEM code is not to identify the chemical carried in the vehicle. The purpose of HAZCHEM code is only to provide guidance on the basic approach to dealing with an emergency.

In interpreting the HAZCHEM code, the following points will be useful:

1. If necessary, a fire fighting medium represented by a higher number than that shown may be used, but not represented by a lower number.
2. Where the letter appears as white on black, police and other non-fire service personnel need to wear breathing apparatus only for a fire and not for a spillage, but firemen are required to wear it in both cases.
3. Letter E indicates that the officer in charge should consider civil evacuation of the area

The Indian Chemical Manufacturers Association (ICMA), in their publication "Code for Safe Transportation of Hazardous Substances by Road" recommends that at least the area within a radius of 300m should be considered for evacuation wherever 'E' appears in HAZCHEM code.

For example for ethylene oxide with UN number 1040 and HAZCHEM code is 2PE and would be decoded as:

2- Fog equipment is recommended (through extinguishing agents corresponding to higher number may also be used).

P- Can be violently (V) reactive. Full body clothing with breathing apparatus is necessary. The substance may be diluted and washed to drain.

E- Consider evacuation as first priority.

For motor spirit with UN number 1203, the HAZCHEM code is 3YE, and this would mean:

For motor spirit with UN number 1203, the HAZCHEM code is 3YE, and this would mean:



3- Use Foam only.

Y- Can be violently (V) reactive or explosive. Breathing apparatus plus protective gloves to be used in case of fire. The personal protective equipment is not a requirement in case of spillage. Any spillage of the substance should be contained.

E- Consider evacuation as a first priority.



Photo-2

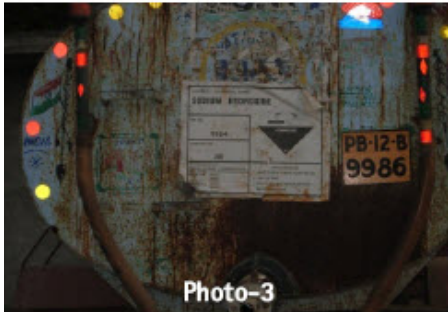


Photo-3



Photo-4

Bad Practices

- With reference to UN class label, instead of correct fire symbol in red, a flower or some vague picture is painted (Photo-2).
- Drivers keep many TREM cards belonging to chemicals transported earlier, in the vehicle cabin. This specially leads to confusion when the driver/cleaner runs away after an accident and emergency action is to be taken.
- The size of EIP, inside boxes and letters / numbers does not match the specifications given in CMVR, 1989 (Photo-3).
- The EIP which gets obliterated in course of time is not repainted and remains unclear or invisible (Photo-4).
- Some tankers do not carry any hazardous chemical, but display EIP of a hazardous chemical which the tanker transported earlier.