

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

HARMFUL EFFECTS OF CARBON TETRACHLORIDE ON THE HUMAN BODY

Headquarters, Department of the Army, Washington 25, D.C.

24 January 1961

1. General. *a. Purpose.* The purpose of this technical bulletin is to acquaint personnel with the harmful effects of carbon tetrachloride and to specify suitable substitute cleaners.

b. Comments. Forward comments on this publication directly to the Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS-PA2d, Fort Monmouth, N.J.

2. Harmful Effects. Prolonged or repeated inhalation of carbon tetrachloride vapor, prolonged or repeated contact of the liquid with the skin or mucous membranes, or taking it internally by drinking or absorption will cause acute or chronic poisoning that will result in damage to the central nervous system, the liver, and the kidneys. The effects of carbon tetrachloride are cumulative and damage may result as a consequence of repeated exposures.

3. Substitute Cleaners. Action has been taken to eliminate carbon tetrachloride from the Signal Corps supply system and to substitute two other cleaners, as follows:

a. Cleaning Compound.

- (1) Use Cleaning Compound for general cleaning purposes, including the cleaning of mechanical and electrical equipment and parts and electrical contacts. Cleaning Compound is available in quantities as follows:

<i>Quantity</i>	<i>Federal stock No.</i>
1 pint.....	7930-396-9642
1 gallon.....	7930-396-3420
5 gallons.....	7930-396-9541

- (2) Cleaning Compound is flammable and does not dry as quickly as some solvents. Do not use it near a flame. Provide adequate ventilation. When used to clean electrical contacts, Cleaning Compound may leave a slightly oily residue that would interfere with proper operation. After Cleaning Compound is used on electrical contacts, brush the contacts with a nonconductive abrasive and then dust them thoroughly.

b. Cleaner, Film, Freon 113. Use Cleaner, Film, Freon 113 to clean photographic film. This cleaner is available in quantities as follows:

<i>Quantity</i>	<i>Federal stock No.</i>
1 quart.....	6750-319-0633
1 gallon.....	6750-319-0634

4. General Safety Precautions. *a.* The use of carbon tetrachloride is extremely hazardous; it must not be used except under the most carefully controlled conditions. These conditions must include positive mechanical ventilation, respiratory protection, and positive protection against contact with the skin. The Surgeon General recommends that the use of carbon tetrachloride be discontinued wherever possible.

b. The substitute cleaners prescribed in paragraph 3 are less toxic than carbon tetrachloride; however, all petroleum solvents, particularly chlorinated hydrocarbons, must be handled and used with well-engineered environmental control and with good habits of personal hygiene. Observe the following precautions:

- (1) Provide adequate mechanical ventilation when solvents are used in large quantities or are used in smaller quantities for frequently recurrent or many separate operations.

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- (2) Wear appropriate protective clothing, such as Gloves, Rubber, Federal stock No. 8415-264-2033 (size 10).
- (3) Wear an organic vapor respirator where inadequate ventilation may exist. A recommended respirator is Respirator, Federal stock No. 4240-378-6150, with

Replacement Cartridge, Federal stock No. 4240-203-3887. Any other respirator approved by the Bureau of Mines for organic vapor protection may be used.

- (4) If solvents come into contact with the skin, wash the affected parts thoroughly.

By Order of the Secretary of the Army:

**G. H. DECKER,
General, United States Army,
Chief of Staff**

Official:

**R. V. LEE,
Major General, United States Army,
The Adjutant General**

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NG: State AG (3).

USAR: None.

For explanation of abbreviations used, see AR 320-50.

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