SM-32 (Rev. 9-57)

REFERENCE

SHELL OIL COMPANY

DATE FEBRUARY 18, 1972

TO ALL MANAGERS

FROM MANAGER SAFETY
HOUSTON REFINERY

SUBJECT RESPIRATORY PROTECTION

Many types of respiratory protective devices are provided for routine and emergency conditions throughout the refinery. Each department in the refinery has respiratory equipment available where the possibility exists for employees to be exposed to organic vapors, acid or toxic gases, dust and asphyxiants. Respiratory protection for maintenance work is available from the tool room.

In order to provide an additional training aid in the use of self-contained breathing apparatus - Scott air-pak - an operating instruction sheet is attached. These instructions should be placed in permanent order books, training manuals, bulletin boards, or some suitable place for ready reference by all concerned.

Each type of respiratory equipment has certain advantages and disadvantages, and these must be considered in relation to such consideration as the type of gas which will be encountered, degree of concentration, length of exposure, etc. When any question exists in regard to the best type of mask for a particular job, consult your supervisor or the Safety Department.

The self-contained air mask enables the wearer to work in virtually any situation in the refinery. A special face piece is required when used under a welding hood. Fresh air masks are provided with demand-type regulators and are idenical to those used with self-contained masks such as Scott air-pak.

A canister mask acts as an air filter and purifier. The canister element contains filters and special chemicals which absorb or neutralize harmful gases contained in the atmosphere as the wearer inhales and draws outside air through the canister.

The use of canister masks is restricted to conditions when the concentration of gas does not exceed 2% by volume in the atmosphere. Higher concentrations of gases will overload the absorbing rate of the chemicals, and some of the gas will pass on through the canister. A concentration as great as 2% is considered very high and will seldom be found in outdoor areas. A warning that the mask is being worn in too high a concentration will be manifest by the odor of gas coming through the mask. When any such odor is detected, or the canister begins to feel warm, the wearer should leave the gassy area immediately.

A canister gas mask must not be worn at any location where the percentage of air contained in the surrounding atmosphere is limited or questionable, such as an excavation which has been made to repair a gas leak or when an inert gas (nitrogen) has been used for purging. The wearer obtains his oxygen from the atmosphere in which he is working, and an adequate supply must be present in the atmosphere when a canister mask is used.



ABS-013883

Chemical cartridge respirators are small devices that cover the mouth and nose and are equipped with a cartridge or filter which is designed to remove harmful dusts or vapors from the atmosphere. In operation they are quite similar to a canister gas mask.

Dust respirators screen out particles of dust, sand, grit, asbestos, catalyst, and powdered chemicals, such as sulfur or lime. They shall be worn in atmospheres that contain these and other materials in harmful concentrations.

General Precautions in Use of Masks

1. Before using any gas mask, be certain you understand the correct way to use it.

2. Check all fittings of gas mask apparatus to make sure they are tight.

3. Always put on a gas mask in pure air before entering a hazardous atmosphere.

4. When putting on the face piece, first place one hand on each of the bottom straps and pull at the same time; next tighten the pair of middle straps and lastly the top straps. To test for tightness of the face piece, block or squeeze the inhalation hose and inhale. If the face piece then is drawn in on the face without admitting air, the fitting is satisfactory.

5. If, while using any gas mask, the odor of gas is detected, leave the gassy area immediately.

RLB/rg

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Attachment