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Head Office:
405, LEXINGTON AVENUE,

April 21st, 1939.

Dr. R.A. Kehoe,
Department of Applied Physiology,
College of Medicine,
University of Cincinnati,
CINCINNATI, Ohio.
U. S. A.

Dear Dr. Kehoe,

I wish to refer to my letter of the 23rd February, together with your reply dated 6th March regarding the possibility of amplifying the general safety regulations of the S.F.P. as regards those instructions applicable to the cleaning of rail tank cars and barges.

I am sending you herewith an extract of the S.F.P.'s general safety regulations for your observations. Article No.249 covers the point in question, but as I would read it, I would take it that in the case of tank cars and barges containing Ethyl gasoline Article No.241 must also be applied. If you would be prepared to issue an authoritative amendment on this subject I am sure the S.F.P. will be very grateful.

Yours very truly,

H. Fossett
H. FOSSETT.

Enclosure: Extract from S.F.P. Regulations.

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S . F . P . REGULATIONS.

ART.238. Storage tanks cleaning should be done according to the following regulations :

The tank shall be emptied as far as possible with pumps and draining valves before opening. After this operation, the tank is full of a mixture of air and inflammable and toxic vapours. The mixture being heavier than air tends to flow out when opening inferior manholes; the maximum of care shall be taken during this operation.

ART.239. Generally it is possible to enter and work without mask in a tank having contained light products, without any tetraethyl lead, after a through drying and a 5 days period in which bottom and top manholes are both opened. In any case, the tank atmosphere shall be checked by gas indicators of usual type before starting the job.

The cleaning will be done by a shift of two men, one of the men staying outside close to the manhole for permanent survey. It is good for the man inside to talk or sing continuously.

In case of accident the man staying outside calls immediately for the personal of the Refinery before entering the tank.

The cleaning is done by brushing and scraping the walls and evacuating sludge outside, the works being done with wood or brass tools. During these operations the personal shall wear goggles No 1 type.

Remember that scraping and sludge agitation can develop the production of gases, so it shall be good to check frequently the tank atmosphere.

If a water flushing hose is used for cleaning the inside of the tank, the jet will be electrically connected to the tank.

ART.240 It shall be obligatory to wear insulating masks (taking air from outside of tank) in each case where the tank ventilation is insufficient or doubtful.

ART.241. In addition to the foregoing regulations the personal entering tanks having contained leaded gasoline (Esso, Stanavo, etc..) shall wear special clothing : cap, underclothing, washed at the end of each day. They shall wear also mask, rubber gloves and boots. If during the job the clothes are soiled with sludge, they shall be changed immediately. At the end of the day, the personal doing cleaning shall take a shower bath or equivalent safety measures.

During cleaning of tanks having contained leaded products, skin contacts with tank walls and sludge of the bottom shall be avoided.

During brushing of walls those are kept always in a wet state, at least on the spot where the work is done. Dry work is to be absolutely avoided.

Scraping and sweeping of the bottom shall be always done under water. The sludge from the tank shall be kept in open air, as little as possible to avoid to be transformed in dust and scattered by wind, if allowed to dry.

Before the cleaning a pit should be dug in which some kilogs of CaOCl_2 would be poured in. After sludge had been poured, an extra quantity of CaOCl_2 should be added to cover it, and the pit should be filled up with earth.

A stick with a permanent panel :
Sludge from tank No.... date"

ART.249.

Other tanks. Tank cars, barges, rail tank cars, underground tanks (back from customers), are to be treated in a general way like storage tanks. Due to the small dimensions of the holes these tanks cannot be treated like storage tanks from the point of view of ventilation. This operation will be done either with water or steam and opening all the holes and different pipes.

When men are working inside these tanks, take a particular care of the ventilation which is not as easy as for ordinary storage tanks.

ART.281.

Tetraethyl lead - Ethyl Fluid is poisonour when it gets into the body. It may get into the body through your skin, or by way of dirty hands into your mouth, or may be breathed into your lungs.

Every hazards is avoided when keeping everything clean and following the regulations below :

a) The personal selected for handling Ethyl Fluid shall do the works only after having taken special clothes : cap, boots, rubber gloves, canvas gloves.

b) Do not wear dirty clothes having been in contact with Ethyl Fluid.

c) At the end of the work of handling Ethyl take off all clothes, put them in a special locker and wash carefully yourself with water and soap

d) Do not touch pieces stained by Ethyl with your bare hand.

e) Take care of leaks of spillage of Ethyl Fluid.

f) If accidentally your skin is in contact with Ethyl stop immediately your work, wash the area stained with Ethyl Fluid with Kerosene, then hot water and soap.

g) If your fingers are in contact with a piece stained with Ethyl put rubber gloves and canvas gloves. Insure yourself that rubber gloves are in perfect conditions. If not, it is more dangerous to wear bad gloves than no gloves at all.

h) If your clothes are splashed or wet with Ethyl take them off, for the liquid can get through them and come on your skin.

i) If you are wet with a great quantity of Ethyl, take off your clothes immediately in any place you are and clean yourself as indicated above.

How to keep Ethyl Fluid out of your mouth

Do not put your fingers into your mouth and do not handle anything that goes into your mouth without washing your hands carefully.

Wash the hands before meals. Use a brush and soap with particular care of nails which must be always kept short and clean.

How to keep from breathing fumes from Ethyl Fluid

Avoid spillage of liquid. Containers of Ethyl Fluid shall not be left open.

For any kind of handling, wear the suitable mask (canister with a blue band).

Care of General Health

a) Eat regularly of a well mixed diet. Do not go to work without breakfast and do not adopt unusual diets except as prescribed by a physician for some special reason.

b) When you are sick in any way whether from a bad cold or any other thing, do not work in the mixing plant. Report to the foreman and consult the refinery doctor. Sickness of any kind is reason enough for not working with Ethyl Fluid.

c) Your teeth should be kept clean and in good condition. Clean them twice daily, brushing them carefully. Do not keep old snags or roots of teeth in your mouth. Have them pulled for they are a menace to your health.

d) Keep the bowels regular.

e) Drink water freely and regularly.

MIXING ETHYL FLUID WITH GASOLINE

The Chief of Department in charge of Storage and mixes is strictly responsible for every operation.

a) Storage of Ethyl Fluid

Drums of concentrated Ethyl Fluid shall be stored in a well ventilated place to allow a free dissipation of possible emanations. Full and empty drums shall be put in a way to avoid confusion.

The storage platform shall be locked and the key given to the Chief of Department in charge of the mixing plant.

b) Mixing operation

The personal for handling and opening drums shall wear :

- Special white linen clothes.
- Rubber boots.
- Rubber gloves covered with white canvas gloves.
- A white linen cap.

Masks shall be well fitted and carefully checked by competent Services.

All precautions shall be taken to avoid spillage of Ethyl Fluid.

In case of a leak, Fluid shall be immediately cleaned up with kerosene. In case of a major leak or spillage the personal should have a thin paste of bleaching lime in ordinary water.

This solvent poured immediately on the spilled Fluid will destroy volatil compounds of lead and make them inoffensive. Then the area of spillage is to be hosed out with plenty of water.

REPAIR OF LEAKS AND OTHER 'DEFAULT' OF THE MIXING PLANT.

a) Before taking off or dismantling a mixing equipment, pipes should be rinsed carefully with clean gasoline.

b) In case of impossibility the repairmen should wear masks and also clothes, aprons, boots.

c) Discarded pipes or other apparatus should be burned to a red heat, in an isolated spot or should be buried.

d) Tools contaminated with Ethyl Fluid should be washed thoroughly with kerosene or gasoline.

FIRST CARE IN CASE OF CONTACT WITH ETHYL FLUID

In case of spillage of Fluid on the skin, the area stained must be washed at once with kerosene, then with hot water and soap.

If Fluid gets into the eyes, they should be washed with a 2% solution of boric acid and put some drops of paraffin.

These medical stores are kept in a small locker in the mixing plant.

HANDLING OF LEADED GASOLINE

a) Gasoline containing Ethyl Fluid can be handled with the ordinary precautions applicable to straight gasoline, it has just the same troubles as this last one. So it is advisable to avoid too long skin contacts.

b) Men concerned with loading ordinary gasoline or leaded gasoline shall systematically take care of dipping their hands in it, damping their clothes and important spilling on the ground.

c) Distillation of gasoline containing lead shall be done with ordinary precautions.

NOTE.- Vapours from tanks or cans of leaded gasoline do not contain an appreciable quantity of lead, In this case only gasoline vapours themselves are breathed, so it is sufficient to follow the necessary precautions against absorption of vapours of ordinary gasoline.

HANDLING OF ETHYL FLUID IN LABORATORY

The Laboratory is supplied with one litre cans of Ethyl Fluid. These cans must be kept in a place, the key of which is only given to the Chief of Department.

Mask and rubber gloves must be worn when preparing 1/10 solutions. Litre can of concentrated Fluid must be open only in a well ventilated hood. All equipment used for handling or measures must be rinsed with kerosene.

Empty cans must be destroyed immediately and burned if possible. Handling of concentrated Fluid shall be reduced to a minimum.