Monsanto

Chocolate Bayou Plant

PLAINTIFF'S EXHIBIT
MON-486

October 6, 1972

Chemical Inhalation Hazards

Attached Distribution

The Third Quarter Safety Committee has, after considerable study, devised a safety program to emphasize potential health hazards from chemical inhalation. As usual, you and your peers will be prime movers in this program. Here are the pieces:

1. A safety slogan emphasizing chemical inhalation hazards will be placed on the Safety Bulletin Board each week for the remainder of the year.

2. A safety poster for each unit bulletin board will be supplied each of the next three months.

3. A "Chemical of the Month" writeup will be in a Bayou Brief issue for the next 12 months.

4. Each plant department should conduct one or more safety programs, which stress chemical health hazards, in the remainder of the year. A sample safety program is attached for your people to use as they see fit. The members of the committee also stand ready to suggest data sources as you require.

The committee also recommends that each unit purchase, and keep handy, a copy of The Manufacturing Chemists Association, "Laboratory Waste Disposal Manual" as a data source.

This program has met the approval of your superintendents and the plant manager. But, it cannot move from plan to effective action without you.

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Attachment

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CHEMICAL INHALATION HAZARDS

The subject of this presentation is difficult because of the narrow separation between informing people and frightening them. It is necessary to present enough information with sufficient impact to catch people's attention and make them aware. However, it is highly undesirable to place them in a position where they feel their health is in constant danger.

Modern man is besieged on all sides by chemical exposure. The smoke from cigarettes, from charcoaling meat, and from auto exhausts contains substances known to be health hazards when inhaled in high enough concentrations over long enough periods of time. Likewise, many preparations used in the home for cleaning, and as cosmetics, are health hazards if breathed over prolonged periods. Of course, since our business is making chemicals, we expect even more chances for exposure. How then can we hope to keep health problems in our people at or below averages of all people. The answer is in two parts:

1. Recognition of the hazards.

2. Training in avoidance of hazards.

As our first move, let's consider definitions of some terms commonly associated with chemical exposures.

Toxic - The principal action of the substance is damage to some essential function, usually chronic effects produced by repeated exposures in excess of TLV concentrations.

Irritant - Principal action is irritation of tissue with which the substance comes into contact. This includes the entire respiratory system, or skin or eyes.

Nuisance - At concentration several times the TLV no known systematic effects or irritation is produced. Most substances are considered physiologically inert.

Carcinogenic - Usual definition, substance is definitely known to produce cancer.

Fume Fever - The principal action of the substance is the production of a fever following initial or interrupted exposure which ordinarily clears up within 24 hours.

Narcosis - Depression of the central nervous system tending to produce sleep or unconsciousness.

Threshold Limit Value (TLV) - Airborne concentration of substances to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.

Cumulative - A condition where incremental effects are additive.

[The program presenter should add any definitions he feels his people need to increase their understanding. See list of references following for definitions.]

Now that we have a basis for understanding each other, let's discuss some plant chemicals and their relative hazards.

[At this point we suggest the presenter discuss two lists of chemicals.

1. Those chemicals of particular hazard wherever found in the plant.

2. Those chemicals in his unit which represent a potential hazard.

See list of references following for data on chemicals.]

Some example chemicals and their tolerance levels are:

Chemical	TLV PPM Vol.	Chemical	TLV PPM Vol.
Acetonitrile	40	Acetone	1000
Acrylonitrile	20	Ammonia	50
Propane	1000	Nitric Acid	2
Cyclopentadiene	75	Acetic Acid	10
Benzene	25	Cumene	50
Toluene	200	Formaldehyde	5
Ethylbenzene	100	Methanol	200
Xylene	100	Ethyl Alcohol	1000
Naphthalene	10	Phenol	5
Furfural	5		
MEA	10		
DMF	10		

Since this discussion revolves around very low concentrations, a demonstration may be helpful. The laboratory has five milliliter bottles. One of these half full of benzene shows the volume of that chemical necessary to reach the TLV of 25 ppm when evaporated in a room of 1900 cubic feet (20' x 12' x 8'). During this discussion of the chemical hazards, we are potentially subject to, you should touch on:

(a) High toxicity versus low toxicity.
(b) High concentration - short time exposure.
(c) Low concentration - long time exposure.
(d) Cumulative effects.
(e) Specific work situations where exposure can occur.

It might be helpful to list and discuss some reference material where data on all chemicals, including some found in the home, are listed.

1. Laboratory Waste Disposal Manual, Manufacturing Chemists Association.

2. Handbook of Laboratory Safety, Steere, Chemical Rubber Company.

3. Toxicity and Hazards of Materials Handled in the Chocolate Bayou Plant, Safety Department.

4. Chocolate Bayou Safety Guide Book

[There are many other equally fine reference works with good data tables and consistent definitions. They can be found, along with those listed in our library. The presenter should have copies of these and should spend time demonstrating use of the tables of data.]

We have established a common language to be used to discuss chemical hazards, we have discussed examples of chemicals we might be exposed to, and we have discussed literature sources of data which might help us define potential hazards. Now let's wind up by discussing some things we can do individually, and as part of a working team, to reduce chemical exposure. Some anti-exposure moves are:

1. Maintain vessels, piping, etc., in good tight-no leak-condition.

2. Be ever alert to avert spills.

3. Don't be satisfied with less than an outstanding job of decontamination of equipment to be opened.

4. Assure good ventilation - use air movers and fans where vapors will be present.

5. If in doubt, test the area for hydrocarbon vapors and get supervision's opinion.

6. Wear appropriate safety equipment such as dust masks, fume hoods, fresh air units, etc.

[The presenter should get in good licks here to reinforce plant and unit safety practices.

Then close discussion with any appropriate remarks.]