SAFETY GUIDE

Monsanto

MONSANTO CHOCOLATE BAYOU SAFETY
LIVE THINK LABOR WORK PLAY SAFE

MONSANTO CHEMICAL COMPANY
CHOCOLATE BAYOU PLANT
ALVIN, TEXAS

PLAINTIFF'S EXHIBIT
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Monsanto Safety Policy

It is the policy of the company that every employee is entitled to a safe and healthful place in which to work. To this end, every reasonable effort will be made in the interest of accident prevention, fire protection and health preservation.

H. Bible
Vice Pres.-Gen. Mgr.

S. Hunter
Plant Manager

Preface

This manual is your safety guide to accident prevention for the Chocolate Bayou Plant. The information in this booklet is general in nature, however, it represents a summary of practices derived over many years from the experience of people all over the world. Of course, each unit and department has detailed procedures and practices related to their operations which must be observed.

The real benefit of this experience is realized only if the practices become a vital part of your job. Failure to observe these rules and tips will result in the unnecessary exposure of you and your fellow workers to possible injury.

The Monsanto Safety Policy clearly reflects that management considers the safety of every employee of prime importance. However, each individual has the responsibility to observe safe practices and follow established procedures at all times.

This manual has been prepared to help you perform your job safely and to develop a constant safety awareness.

S. HUNTER
Plant Manager

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The Common Sense of Safety

"Common sense is the knack of seeing things as they are, and doing things as they ought to be done."

Webster defines common sense as "sound, ordinary sense, good judgment." Safety rules, safe practices and safety devices are products of common sense but are ineffective as tools of safety unless common sense is applied when using them.

Statistics show that most accidents are attributed to a few basic causes and in most cases the element of common sense was temporarily cast aside. The general rules that follow, if applied with common sense, will go a long way towards preventing accidents anywhere — at work, at home, or on the highways.

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General Rules

RECOGNIZE YOUR LIMITATIONS:

Do not attempt work which you are not qualified to do. A little knowledge can go a long way in causing accidents. Your body too has limitations; it can only reach so far and lift so much. Know your limitations and respect them.

GET COMPLETE AND PROPER INSTRUCTIONS:

Learn exactly what you must do, especially when starting work or starting a new job. If you don't understand your supervisor's instructions, ask questions. If something unusual arises in the course of the job, ask again.

USE THE PROPER TOOLS:



Each tool has a specific purpose and a limited use. Know the right tool to use and use it only as intended. Do not abuse them. Tools have a way of protesting misuse in violent and unexpected fashion. Inspect them regularly for damage and wear.

USE THE PROPER METHOD:

Do not take short-cuts; take time to do the job right — THE SAFE WAY.

PROTECTIVE DEVICES PROVIDED:

Someone else learned the hard way. Benefit from their experience.

OBSERVE RULES AND INSTRUCTIONS:

These are the safety devices on your actions. There is a reason for each of them based on considerable experience and thought. Consult your supervisor before you deviate from his instructions.

SEE THAT SAFETY DEVICES ARE PROVIDED:

We are continually trying to make our plant a safe place to work, but there is always room for improvement. Your suggestions are welcome and requested.

KEEP YOUR MIND ON YOUR JOB:

Whatever the job of the moment is, it is evidently worth doing and is important. Daydreaming, worry, and horseplay have no place on any job. Inattention is one of the most frequent causes of accidents.

KEEP IN GOOD PHYSICAL CONDITION:

Get enough sleep to be alert on the job. Consult with the nurse or your doctor if you are not feeling well.

KEEP THE OTHER FELLOW IN MIND:

Remember that your careless actions may endanger or hurt some other person. On the other hand, your observance of safe practices will win his respect and help him to become or remain a safe worker.

DON'T RUSH:

Haste makes waste. There is a difference between working efficiently and rushing. A steady consistent pace will get the job done sooner in the long run.

KNOW YOUR SURROUNDINGS:

Familiarize yourself with the location of safety and fire protection equipment in the

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area in which you are working. Know all the exits provided in the structures where you work. Understand the departmental safety ...les for the area in which you are working.

...ORKING AT YOUR DESK:

Close all desk and file drawers after use. Don't tilt back in your chair — keep all four chair legs on the floor. Be sure that office machine cords do not cross aisles and are in good repair. Carry pencils, pens, knives and scissors so that sharp points cannot harm either you or others. Be careful when opening the upper drawers of a filing cabinet. Have only one drawer open at a time.



Responsibilities

"If one member suffer, all suffer together, If one member is honored, all rejoice together."

I Corinthians 12-16

The job assigned to you is simply a group of responsible acts that you must perform safely to fulfill the requirements of the job. It is the manner in which you perform these acts that determine whether or not you perform the job safely. For this reason, safe performance lies not in the job alone, but in you who are RESPONSIBLE for performing that job.

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Your Responsibility

YOUR JOB:

Your job has four basic requirements. Your performance in meeting these requirements determine whether or not you are a safe worker and whether or not your fellow workers are safe in working with you. You are responsible for these four requirements:

KNOWLEDGE:

Know the safe way to perform your work. You can accomplish this only by having a thorough knowledge of the work you are performing. Learn to do your job well — THE SAFE WAY.

THOUGHT:

Knowing is not enough. Apply your knowledge of the job while performing your work. Always use common sense — THINK BEFORE YOU ACT.

AWARENESS:

Be aware of conditions surrounding your work area. You must be constantly alert of potential dangers of unsafe conditions that accompany your work — TAKE NOTHING FOR GRANTED.



APPLICATION:

Use the safety tools (devices and rules) that apply to your work. You can accomplish this only by proper safety attitude and planning — WHEN IN DOUBT — CONSULT YOUR SUPERVISOR.

Responsibility of Supervision

Because of your control of men, machines and working conditions, you are responsible for making safety a practice of good management. You are, within the limits of your control, responsible for:

SAFETY of your employees during their work period.

EDUCATION and training concerning hazards, equipment use and personal conduct of your employees.

ENFORCEMENT of all safety rules and practices.

INITIATION of corrective action to eliminate or reduce hazards.



INVESTIGATION of incidents and injuries to determine and correct causes.

PRESERVATION and protection of plant facilities assigned to you.

DEMONSTRATION of good safety performance at all times as an example for the men under your direction.

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Responsibility of Senior Processors

YOU ARE RESPONSIBLE:

You are, within the limits of your control, responsible for the safety and welfare of the men working under your jurisdiction. Your immediate contact and control of the men assigned to you makes you responsible in seeing that they perform their work the safe way. You are, within the limits of your control, responsible for:

COMPLIANCE:

You shall insist upon compliance with safe practices and safety rules that pertain to the work under your control. You must at all times set a good example.

TRAINING:

You are responsible for training new personnel in the safe way to perform their work.

UNSAFE PRACTICE:

You have the authority to stop an unsafe practice in any department and you are required to refer it to the proper level of supervision immediately.

INVESTIGATION:

You are expected to participate upon request in investigation of minor accidents, major accidents or near-misses.

Plant Safety Rules

"Every measure undertaken with contempt of danger is liable to be involved with error and punished by injury."

All accidents do not result in injuries, but all injuries are a result of accidents. The primary purpose of the safety rules provided in this section is to help you PREVENT ACCIDENTS, rather than provide a basis for after-the-fact correction.

IT IS YOUR RESPONSIBILITY to place utmost emphasis on eliminating all accidents by using common sense and by applying the rules that apply to your work. In this manner you will be able to materially aid the accident prevention effort.

Included in this section are the general plant safety rules that govern your performance at all times. Some methods for complying with these rules are provided in the Practices and Guides section. Your supervisor, by instructions for a specific job assignment, may require the use of any practice as a rule to improve your safety.

SAFETY RULES are only part of the rules that govern your job performance. An infraction of any rule constitutes poor job performance and is subject to disciplinary action. Thus, it follows that an infraction of a safety rule can result in disciplinary action.

Exceptions to these rules, except where noted in this guide, are permissible on a temporary basis only by obtaining permission from your supervisor who then becomes fully responsible for the result.

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Personal Conduct

ALL INJURIES, no matter how small, must be reported immediately for treatment.

NEVER start work on lines or equipment without specific approval from the person in charge.

HORSEPLAY and running are forbidden.

NEVER POINT compressed air hoses towards anyone or use compressed air to clean clothing or person.

DO NOT CLEAN clothing or person with flammable or toxic solvents.

SPECTATORS are not permitted to attend any emergency.

DO NOT ENTER roped off or barricaded areas unless authorized to do so.

LOITERING around or taking short-cuts through processing areas or shops is prohibited.

DO NOT WALK under suspended loads.

WHEN WORKING OVERHEAD and danger of dropping materials or tools exists, make certain that area underneath the work is properly guarded.

MATERIALS and/or tools are not to be thrown from or up to platforms, structures or scaffolds.

CARRYING of matches and cigarette lighters within the plant is prohibited. Smoking except within approved locations and times is prohibited.

DO NOT CLIMB over railroad cars, crawl or sit under them. Do not attempt to pass between cars that are close together on the same track except at loading docks or where properly guarded.

NEVER JUMP from platforms, scaffolds, loading docks or other high places.

DO NOT STAND on or pull on small piping such as instrument piping.

REPORT ALL UNSAFE CONDITIONS TO YOUR SUPERVISOR.

Personal Protective Equipment and Clothing

(See Practices & Guides—Page 30)

SAFETY HATS shall be worn in the plant at all times. Exceptions to this are...

...Going to or from work. (Walking through operating areas without hard hats is not permitted.)

...When walking between the Administration, Operations, and Safety, Warehouse and Instrument Buildings.

...While in the office buildings, laboratories, maintenance, instrument, and distribution shops, control houses, personnel facilities, distribution area shelters, fire station, and warehouses.



AUTHORIZED EYE PROTECTION must be worn in the plant at all times. Exceptions to this are...

...Going to or from work (walking through operating areas without eye protection is not permitted.)

...In offices, control houses, smoking areas, and eating facilities.

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...Passing between the Administration, Operations, Safety, Warehouse and Instrument Buildings.

PROPER PERSONAL PROTECTIVE clothing and equipment shall be specified and worn when required to perform hazardous work. The user shall carefully inspect all clothing and equipment for critical defects. Do not use if defective.

SAFETY SHOES will be worn in shops, operating areas, and laboratories.

SAFETY SHOWERS and eye baths shall be checked by operating personnel according to established schedules.

LIFE BELTS shall be worn when specified by supervision.

Housekeeping

(See Practices & Guides—Page 37)

EVERY EMPLOYEE shall maintain good housekeeping standards at all times as an integral part of his normal work duties in the area and/or on equipment and property assigned to him, or provided him for his convenience.

Permits

(See Practices & Guides—Page 38)

FIRE-ENTRY PERMITS:

All operations which could provide a source of ignition are controlled by a combined Fire-Entry permit procedure, Procedure Bulletin D-0540. Refer to this policy for details

A fire permit is required for ALL welding open flame operations except in the following areas:

1. Four area maintenance shops
2. Instrument shop
3. Laboratory
4. Fire training ground
5. Approved "open" areas

These exceptions do not apply to work on a closed vessel or pipe, contaminated equipment, or near flammable liquids or gases.

A fire permit is required for ALL other sparking sources, except vehicles within the battery limits or operating, utility and distribution departments.

Exceptions include:

1. The open area NORTH of "G" street and at least 100' from the flare pipeway, and EAST of 1st.
2. The area bounded by "E" (east-west pipeway), 6th (north-south pipeway) and "C" (east-west pipeway) extended.
3. The area bounded by 15th extended, "C" extended, 100' east of Dock road pipeway, and 100' south of "F" St. pipeway.
4. Area Maintenance Shops
5. Inside Operating Control Rooms
6. Other approved Smoking Areas

Refer to Procedure Bulletin D-0540 outlining the above.

AN ENTRY PERMIT:

An Entry Permit is required before any person may enter a closed vessel or an open vessel deeper than five feet. Exceptions to Entry Permit requirements are:

1. Operating personnel performing their

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normal operating duties in pump pits, on floating roof tanks, in tower skirts, pipeways, or within other open vessels.

2. Maintenance personnel performing routine maintenance such as lubricating pumps, tightening packing, etc., in pump pits or within other open vessels.
3. Fire wall enclosures.

A "closed vessel" is defined as any piece of equipment which must be entered through a manhole or constricted opening.

A SPECIAL PERMIT:

A Special Permit is required for especially hazardous work. The following are the general classes of work requiring such a permit.

1. Fire permit work to be done on the outside shell of a closed vessel.
2. Fire permit work on piping that is not decontaminated and depressured or that is not isolated by blinds or disconnections.
3. Entry of vessels which cannot be done without making exceptions of certain precautions as stated in the section entitled "Necessary Preparations of Work" later in this bulletin.

Signatures required for Fire-Entry Permits:

	Fire Permit	Entry Permit	Special Permit
Processor	Yes	Yes	Yes
S. Processor	Yes	Yes	Yes
Shift Foreman	Yes	Yes	Yes
Day Foreman	*	Yes	Yes
Maint Foreman	*	Yes	Yes
General Supv.	No.	No	Verbal Approval
General Supt.	No	No	Verbal Approval
Night Supv.	May substitute for above supervisory personnel		
Fire Safety Insp.	Signs whenever vapor tests required		

*required on all welding or open flame work; also on any sparking work on or in process or utility equipment.

Fire Prevention

(See Practices & Guides—Page 42)

WHEN THE FIRE OR SPILL ALARM SOUNDS...

...All permits throughout the plant are automatically cancelled and may be re-issued by supervision during the emergency in areas not affected by the emergency.

...All smoking shall be discontinued until the all-clear signal has been given, however, in areas not affected by the fire or spill, smoking may be resumed at the discretion of the supervisor.

...All cars, trucks, or other vehicles not involved in the emergency must be driven to the side of the road and the motor shut off. Do not proceed until the all-clear signal has been given.

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Engines on all portable welding machines, compressors and other portable gasoline or diesel driven machinery must be stopped

AISLES AND WALKWAYS leading to fire or safety equipment shall be kept open. Do not park vehicles or store equipment or materials adjacent to fire hydrants or fire equipment.

NOTIFY SAFETY DEPARTMENT IMMEDIATELY after using fire extinguishers.

DO NOT CLOSE block valves for sprinkler systems under any circumstances unless authorized to do so. If such systems are inoperable, the safety department must be informed immediately.

MAINTAIN CLEARANCE of at least 18 inches between sprinkler heads and material or equipment to be protected.

FIRE EQUIPMENT and fire protection water are to be used for fire protection only unless permission for other uses is obtained from the plant manager.

PORTABLE PUMPING EQUIPMENT and air movers in flammable material service must be bonded and grounded.

NEVER USE OIL or grease on oxygen valves, fittings or oxygen side of equipment.

PLACE OIL WASTE, rags or clothing in closed metal containers.

ALL SAFETY AND FIRE PROTECTION equipment shall be checked at designated intervals.

GAS TORCHES and hoses must be removed from enclosures while not in use.

Machinery

(See Practices & Guides—Page 44)

MECHANICAL OR ELECTRICAL EQUIPMENT must be locked out, or otherwise protected against accidental or inadvertent movement, when such movement could cause injury to personnel or damage to equipment. (Refer to Practices Section and Procedure Bulletin D-0525).

ALL PERSONNEL responsible for operating or maintaining mechanical or electrical equipment shall be thoroughly familiar with the lockout procedure. Each of you must insist on strict compliance with the procedure on the part of your fellow workers. (Practices Section).

ALL MOVING PARTS on equipment must be properly guarded so that only deliberate action can result in an employee being caught in the equipment.

REMOVAL OF GUARDS from machinery during operation is prohibited except for inspection purposes.

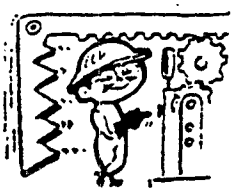
DO NOT OPERATE machinery or power tools that are not properly guarded.

LOOSE CLOTHING shall not be worn while operating or working close to moving machinery.

ONLY AUTHORIZED PERSONNEL shall start any driven machinery. You must conform to departmental rules covering the starting of such equipment.

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GASOLINE DRIVEN EQUIPMENT shall not be refueled while operating.



CRANE BOOMS not in use shall be lowered to ground level or tied down to main structural columns.

Electrical Equipment

(See Practices & Guides—Page 45)

METALLIC HARD HATS shall not be worn in sub-station enclosures or in any other confined area containing exposed wiring.

32 VOLT (or less) extension lamps shall be used for lighting when working in enclosed vessels or in places that are wet.

ONLY AUTHORIZED PERSONNEL are permitted to open and repair electrical equipment.

ALL ELECTRICAL EQUIPMENT must be properly grounded.

MECHANICAL OR ELECTRICAL equipment shall be locked out, or otherwise protected, against accidental or inadvertent movement, when such movement could cause injury to personnel or damage to equipment.

NEVER CLOSE A BREAKER without full knowledge of why it is open.

Hand Tools

(See Practices & Guides—Page 47)

IMPROPER USE OF HAND TOOLS or use of defective hand tools is prohibited.

PORTABLE ELECTRIC TOOLS must be inspected periodically by maintenance personnel.

Material Handling

(See Practices & Guides—Page 59)

WEAR GLOVES adequate for the job — chemical resistant gloves for handling chemicals, leather palm for rough handling.

LIFT WITH A STRAIGHT BACK and knees bent. Avoid awkward lifting positions.

GET HELP or mechanical aids for heavy objects beyond your physical capacity.

CHEMICAL HANDLING will require specialized protective clothing. Know the job requirements.

Barricades

(See Practices & Guides—Page 48)

ALL EXCAVATIONS or openings which normally require covering or guarding shall be adequately guarded by roping off, barricading or by posting personnel at the opening while the normal guarding or covering is not in place.

Scaffolds

(See Practices & Guides—Page 49)

SCAFFOLDING that does not conform to accepted standards is prohibited.

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Ladders

(See Practices & Guides—Page 51)

Use of defective ladders is prohibited.

ALL PURPOSE straight ladders must be equipped with safety shoes and, while in use, must either be securely fastened at the top or a man stationed at the bottom to hold the ladder in place.

Rigging and Hoisting

(See Practices & Guides—Page 53)

RIDING ON MATERIAL HOISTS, crane blocks or crane loads is prohibited.

USE OF CHAINS for slings is prohibited.

GUY LINES are not to be made fast to plant operating equipment, pipelines, tanks or their spports unless authorized by both maintenance and operating superintendents.

TIE OFF LOADS on crane booms or winch trucks when transporting.

Vehicle Operation

(See Practices & Guides—Page 58)

ALL DRIVERS of company vehicles must possess a valid state driver's license.

ALL PASSENGERS, driver included, must use safety belts when the vehicle is operated outside of plant.

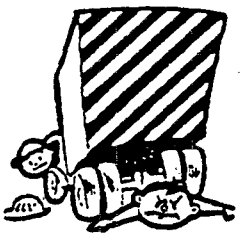
RIDING on any exterior part of vehicles, except truck beds, and standing or leaning out of windows is prohibited.

PICKING UP HITCHHIKERS or unauthorized personnel is prohibited.

JUMPING ON or off moving vehicles is prohibited.

MORE THAN three persons riding in the front seat is prohibited.

VEHICLE SPEED in excess of 20 mph within the plant is prohibited.



DO NOT PARK vehicles in roads or driveways where passage of normal or emergency vehicles would be blocked. In-plant parking areas, where provided, shall be used.

VEHICLES are not to enter operating areas without permission from the department.

RIDING OF BICYCLES on sidewalks, in shops and in operating areas is prohibited.

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Practices and Guides

"My men and I have lived to enjoy the hazards and thrills of adventure only by planning for safety . . ."

Adm. Richard Byrd

NO PROCEDURE or guide can be written to cover all precautions necessary to make all jobs safe. For this reason the practices and guides as outlined in this section cannot be firm, fast rules. However, they represent the best known practices for preparing and performing work the safe way.

THE INSTRUCTIONS issued by supervision to perform a specific job should conform to these practices and guides as closely as possible. They shall not contradict any rule in the Rules Section without proper authorization as covered on Page 9.

THE INSTRUCTIONS issued to perform a specific job become the rules that govern the performance of that particular job. They cannot be changed unless approval has been obtained from the supervisor issuing them.

First Aid

(See Rules—Page 10

FIRST AID TREATMENT

Weekdays, report to the Plant Nurse at the dispensary. At other times, notify the shift fire-safety inspector by calling the Main Guard Gate.

REPORTING SERIOUS INJURIES

Call the plant emergency number (222) and give the location of the injured person, the extent of injury and your name. The ambulance and shift fire-safety inspector will respond while the guards make necessary calls at the radio direction of the inspector.

FOR ALL SERIOUS INJURIES

BE CALM. It is important to maintain a deliberate, confident attitude. Impulsive actions may result in additional pain or injury to a victim.

DO NOT MOVE OR UNNECESSARILY HANDLE an injured person unless he is in immediate danger.

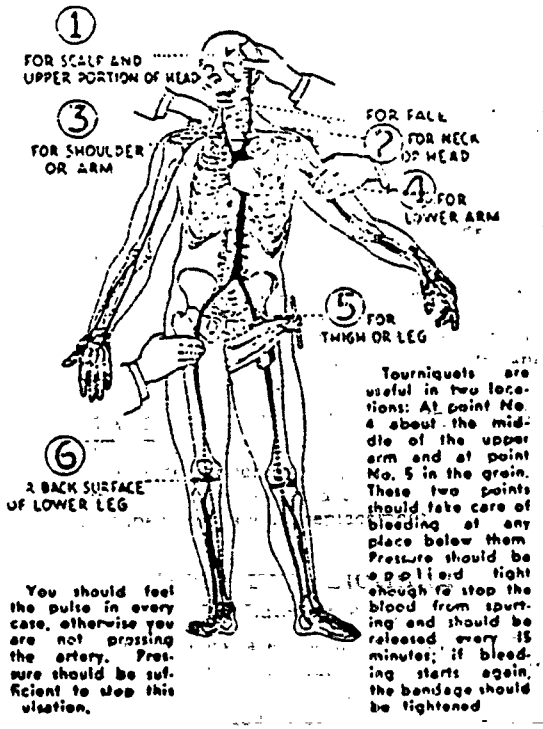
TREAT FOR SHOCK immediately. Don't wait for symptoms to develop.

CONTROL BLEEDING by exerting pressure directly on the wound. Have the victim lie down, remain quiet and elevate the injured member if possible. Know the exact location of the wound.

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PRACTICAL FIRST AID

Where to Apply Pressure to Stop Bleeding



RESTORE BREATHING using mouth-to-mouth resuscitation. Continue until breathing resumes or mechanical resuscitator arrives.

ELECTRIC SHOCK VICTIMS should not be touched until removed from electrical contact.

EYE INJURIES

...Chemical splashes — Flush immediately with large quantities of water for at least 10 minutes before reporting to the dispensary.

...Foreign objects — Report to the dispensary. Do not rub.

...Flash or arc burn — Report immediately to the dispensary.

BURNS

...Steam or heat burns — Report to the dispensary. Don't break blisters.

...Chemical burns — Use safety shower immediately, remove clothes (no time for embarassment here) and wash for at least 10 minutes before reporting to the dispensary. Speed in getting under the shower is vital

VAPORS

...Don't breathe vapors, fumes or gases since most are harmful. Report to the dispensary if after accidental inhalation you feel adverse effects.

OPEN CHEST WOUND

...If wound permits air to be sucked in, close wound promptly by pressure with your hand or applying a firm binder.

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...Summon the ambulance.

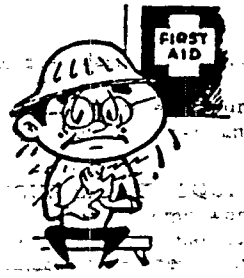
SNAKE BITE

...Apply a restrictor band (tourniquet which restricts blood flow, doesn't stop it) between the bite and the heart. Keep the victim quiet and summon the ambulance.

SHOCK

...The symptoms are a very pale face covered with beads of sweat; wide staring eyes, with pupils enlarged; cold clammy skin; feeble breathing or breathing with long sighs; pulse weak or undetectable.

WHAT TO DO



...Summon the ambulance.

...Have the victim lie down with head lower than feet if possible.

...Keep victim warm with blankets or clothes.

...If vomiting occurs, turn his head to one side.

REMEMBER — Varying degrees of shock occur with all injuries and if not treated may result in death.

HEALTH HABITS

Good health habits at work and at home help build up physical resistance to heat cramps. Following these suggestions will help you avoid cramps during hot weather...

...Get sufficient sleep and rest while off duty. Eat plenty of vegetables, fruits and fruit juices. Use more than the usual amount of table salt on your food.

...Go easy on food that is high in protein or fat, and therefore produces extra body heat, such as meat, eggs, and beans.

...Do not overindulge in eating or drinking (especially alcoholic beverages. Eat a light lunch (consisting mostly of vegetables, fruits and fruit juices) while at work. A heavy meal of the correct type of food may be eaten before and after work.

...Moderate amounts of cool water while at work are necessary. Drink most of your daily supply of water, however, at a time when body heat is near normal.

...Salt tablets are available for you in convenient locations and should be taken moderately during the day according to your individual requirements (usually 3 to 4 tablets daily).

ARTIFICIAL RESPIRATION

MOUTH-TO-MOUTH METHOD...

...Place nonbreathing victim on back, face up. To clean out any foreign matter, turn victim's head to side, force mouth open, wipe out throat and mouth with fingers or cloth.

MOUTH - TO - MOUTH METHOD IN ADULTS...

...Insert thumb of your left hand between victim's teeth. Hold the jaw upward so that the head is tilted backward. Close

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victim's nostrils with your right hand.

...Take a deep breath and place your mouth tightly over victim's mouth and your own thumb. Blow forcefully enough to make victim's chest rise. Repeat inflations every three or four seconds.

MOUTH - TO - MOUTH METHOD IN CHILDREN (or adults with tight jaws)



...Grasp the angles of the child's jaw at the ear lobes with both hands and lift up forcibly so that the head is tilted backward.



...Push child's lower lip toward the chin with your thumbs. Never let chin sag.

...Take a breath and place your mouth tightly over child's mouth (for a small child cover mouth and nose). Blow in gently until his chest moves, then take your mouth off and let him exhale passively. Repeat about once every two or three seconds. For infants use puffs to avoid lung damage.

BACK PRESSURE ARM-LIFT METHOD...

...Lay victim on stomach, head turned to one side, cheek on on hand. Clear mouth, throat of obstruction.

Kneel at victim's head.

...Place hands, thumb tips together on victim's back just below shoulder blades.



...Rock forward slowly to exert pressure. Keep your elbows straight.

...Release pressure by flexing your elbows. Rock back on your heels, sliding hands up victim's back and out along arms.



...Grasp arms just above the elbows. Pull up and toward you until you feel resistance.

...Lower arms, repeat beck pressure. Repeat cycle 10 or 12 times a minute.



...Do not interrupt rhythm. Continue until victim is breathing strongly or medical aid arrives.

NOT too HEAVY — NOT too FAST

...Let someone else loosen tight clothing, go for help, get blankets. You haven't time.

...If fractures are suspected to exist

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above waist or hips, this method may be inadvisable

Personal Protective Clothing and Equipment

(See Rules—Page 11)

"The first and worst of all frauds is to cheat one's self."

Many injuries have been prevented by use of authorized personal protective equipment, such as, hard hats, safety glasses or goggles, face shields, welding helmets, ear protectors, special gloves, life belts, leggings, shoes, slicker suits and air masks.

This equipment has been designed to provide the best possible protection for you in your job, but it will not help to prevent injury unless it is worn properly, at all times and in all areas designated.

TAKE CARE OF YOUR SAFETY EQUIPMENT. Even with care, it may become worn or otherwise inoperative through normal use. When this happens, replace it or check with your supervisor about replacement.

Protective Clothing

(See Rules—Page 11)

Certain work areas and jobs require special protective clothing, such as aprons, gloves, hoods, and rain suits, which will be provided for you. Your supervisor will determine what special clothing is required for a particular job.

SAFETY HATS, SAFETY SHOES, AND SAFETY GLASSES are furnished to all employees and must be worn in the plant. See Safety Policy No. 11 for exceptions.



RAINCOATS OR RAIN SUITS, and rubber boots, besides their more obvious use, are worn when handling corrosive materials such as, acid or caustic, where overall protection is required.

RUBBER OR PLASTIC APRONS are worn in handling chemicals where the danger of clothing contamination exists and in certain cleaning operations where overall protection is not necessary.

RUBBER OR PLASTIC GLOVES are furnished for handling chemicals; asbestos gloves for handling hot materials. These gloves are intended for special use and will not give good service if used on general rough work.

SPECIAL LEATHER GLOVES, sleeves and face and eye protection are furnished to welders for burn protection or certain jobs.

USE AND CARE OF SAFETY SHOES. . .Be sure you get a comfortable shoe; a good fitting shoe will not cramp or chafe your feet on the job and it will wear longer.

. . .Clean your shoes frequently: dress the leather with neatsfoot oil or a good grease

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or polish.

...Keep your shoes as dry as possible; if they get wet, dry them very slowly—wet leather will be damaged by heat greater than your hand can bear.

...Wash your feet and change socks daily; perspiration harms the leather and causes the lining to wear out and become rough.

Approved Face and Eye Protection

(See Rules—Page 11)

"Blindness — total or even partial — is tragic and costly to the individual, to industry, and to society. Eye protection, therefore, has a prominent place in accident prevention."

To protect the eyes and face against injury from flying objects, splashing liquids, and rays that cannot always be controlled at the source, the following types of personal protective equipment are provided:

SPECTACLE TYPE — Provide protection against unexpected light to moderately heavy flying objects where there is little hazard except from directly in front of the user.

CHEMICAL COVER GOGGLES — Provide protection against splashes or injurious liquids, such as chemicals, oils, etc. This type is provided with screened ventilators that assist in preventing fogging and afford protection against dusts. These goggles are approved for protection against a heavy impact from relatively large flying objects resulting from chipping, cutting rivets or bolts, caulking,

heavy grinding, riveting, etc.

FACE SHIELDS — Certain operations present a hazard to the face as well as to the eyes. In such cases, a face shield provides suitable protection and is required for such jobs as using grinders, pouring asphalt, handling chemicals or hot oils where there may be splashes, and some woodworking operations, and lighting furnaces where danger of flashback exists.

WELDING GOGGLES — This equipment provides protection under the conditions of acetylene welding and cutting.



WELDING HOODS —This equipment provides protection for the eyes and face under the severe conditions of arc welding. Care must be taken to see that a lens of the correct density is used and that the cover lens is replaced as frequently as required.

WHEN IN DOUBT CONSULT YOUR SUPERVISOR.

PRESCRIPTION SAFETY GLASSES — Employees who wear corrective lenses will be issued prescription safety glasses. The cost of obtaining a prescription is borne by the employee. A local optometrist handles the prescription program. The Plant Nurse will be contacted prior to going to the optometrist.

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CLIP-ON SUN GLASSES are provided for employees required to work out doors.

GOGGLES alone or over ordinary glasses are acceptable eye protection except in areas and on jobs where additional requirements have been established.

NO LIST can cover every case where you are required to use special eye protection. The following are examples of work that require special protection...

...All work in location where special requirements have been established because of hazardous chemicals.

...Melting, pouring or working in the immediate vicinity of molten metals, molten asphalt, or molten chemicals where splattering is likely.

...Using power grinders, buffers or wire brushes.

...Welding or burning.

...Starting or inspecting fires in boilers and furnaces unless otherwise protected, requires face shield.

...Chipping or scraping surfaces prior to painting.

...Breaking out concrete, brick and similar materials with either hand or power tools.

...Using air, steam or other agents under pressure to unplug lines or equipment.

...While breaking flanges on lines or vessels that handle hazardous or toxic materials.

WHEN IN DOUBT CONSULT YOUR SUPERVISOR.

Respiratory Protection

Certain operations may contaminate the air with dust or corrosive, toxic vapors and gases. These conditions require a source of uncontaminated air for breathing.

FRESH AIR MASKS ON MANUAL BLOWER — Used when entering in enclosed area or vessel that cannot be prepared for entrance in accordance with accepted standards. Do not use over 150 feet of hose on each blower connection. Place the blower where the air will not be contaminated, keeping to the windward side of any possible contaminating source. Be certain that the gas or vapor is not of a type harmful to the skin.

DUST RESPIRATORS — Are used for all operations where there is an excessive amount of dust in the air; such as handling powdered chemicals.

This equipment filters dust only and will not protect against gases, fumes, vapors, or smoke. It must be properly adjusted to fit snugly around the nose and mouth and the filters should be cleaned or changed at frequent intervals as required to maintain ease of breathing.

SELF CONTAINED AIR MASKS — Provide eye and respiratory protection for the user. They consist essentially of a full face mask, corrugated rubber breathing tube, demand regulator, air supply cylinder and harness.

This unit operates on the demand princi-

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ple. Pure breathing air from the air supply flows to the mask automatically through the demand regulator. The air flows to the mask exactly in accordance with the user's requirements. In other words, when the user inhales, air flows to the mask during the inhalation period at a rate in accordance with the depth of inhalation. When the user exhales, the flow to the mask stops, starting again on next inhalation.

Lifebelts

(See Rules—Page 12)

Lifebelts are required when performing work at elevations where other protection from falls is not provided. Exceptions, unless specified by your supervisor, are as follows. .

...When working from approved scaffold or carriage.

...When working on roofs with less than ¼ pitch and no closer than six feet to edge of roof.

...When erecting scaffolds or timber framing.

...When erecting structural steel.

Only experienced men should be used to perform work covered in the above exceptions. If inexperienced personnel are



used, they must wear life belts when the above work involves an altitude hazard.

When a life belt is worn the connected line should be supported independently and not from the scaffold, carriage, or platform on which the man is working. Too much slack must not be allowed in the line.

All life belts and ropes must be thoroughly inspected each time before use and must be discarded if defective or questionable.

Life jackets must be worn when working at the barge docks in the designated areas.

Housekeeping

(See Rules—Page 12)

Your safety and good housekeeping are inseperable. Housekeeping is the foundation of safe healthful and efficient operation. Your job is not finished until you have cleaned your work area...

...Keep floors, aisles, passage ways, stairways, platforms and ladders clear of all obstructions and in good repair. Clean up spilled oil or chemicals immediately. Tripping and slipping hazards can cause fatal or painful injury.

...Do not leave tools, parts and rags in machinery or vessels.

...Dispose of trash and scrap in proper

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containers. Exercise care in handling these materials.

...Smoking areas, lunchrooms and restrooms are provided for your convenience and should be kept neat and orderly.

...No material or equipment is to be placed within ten feet around the base of power poles.

...Protruding nails are a serious hazard. Remove or bend down all nails wherever they may be, using hammer or other suitable implement. Do not bend down nails by stepping on them. All nails in the heads of kegs, wooden barrels or boxes should be removed when containers are opened.

...Place material or equipment no closer than six feet from any railroad track.

...Keep lockers, cabinets and storage bins neat and orderly.

Permits

(See Rules—Page 12)

The following is a summary of the Plant Safety Policies which governs all cases requiring fire and entry permits. For specific details refer to the original bulletin. All supervisors have a copy. Feel free to ask.

Fire Permits

Examples of work included in the fire policy are welding, cutting, heating with an open flame, soldering, grinding, chipping, drilling, using an impact wrench or air hammer, using non-explosion-proof electric equipment and others which may cause a spark

Fire permits shall be issued only when adequate precautions have been taken to assure that the work can be done safely. Piping to be worked on must normally be depressured, isolated by blinds or disconnections, and decontaminated. Attention must be given to the surrounding, such as sewers, cooling towers, insulation, other process lines, trash, etc Unusual precautions to be taken during the course of the work must be specified on the permit. It is specially pointed out that lines and equipment normally containing non-flammables may be contaminated through leakage.

Fire permits are issued by supervision responsible for the equipment involved to personnel doing the work.

PERMITS MUST BE SIGNED BY...

...The foreman who bears prime responsibility for adequate precautions and safe conditions of work in his area.

...The Processor, to signify that required precautions have been taken and that he is aware of the work to be done.

...The Maintenance Foreman who thereby approves the precautions taken and is responsible for carrying out special precautions required during the course of the job.

...The Maintenance Technician who signifies understanding of the necessary precautions to be taken.

...The Fire-Safety inspector if he makes necessary vapor tests and assists in interpret

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ing results with necessary recommendations for insuring a safe job.

The completed fire permit must be continuously displayed on or adjacent to the equipment to be worked on.

Exceptions to the need for a fire permit are detailed in Procedure Bulletin D-0540. Know this policy.

Special Permits

Special fire permits are required when hot work is performed on the shell of a closed vessel, on lines that are not decontaminated and depressured (example, hot tap) and on lines or vessels not isolated by blinds or disconnection (example, double block and bleeds or test plugs). For exceptions see Procedure Bulletin D-0540.

Special fire permits shall be issued only when precautions are taken which reflect the special hazards involved in work requiring them. Vessels must normally be isolated by nds, decontaminated, and depressured. Attention must be given to guage glasses, level instruments, and other attachments.

The special nature of the special fire permit allows deviation from standard procedures only when, after consideration of all factors involved, the parties signing the permit agree that the precautions taken are adequate.

Special fire permits are issued in the same ay as regular fire permits, but require, in ddition, the verbal approval of the General Supervisor and the verbal approval of the General Superintendent.

Entry Permit

Entry permits shall be issued only with adequate precautions both before and during the work. In general, the vessel must be isolated by blinding or disconnection and decontaminated both with respect to flammables and toxic material. Precautions must be taken to see that adequate air supply is present. Internal moving parts must be locked out electrically, and if hazard from falling exists, fixed mechanically. A watcher should generally be stationed outside the opening of any vessel in which men have entered. Any exceptions to these precautions require the approval of the General Superintendent.

Entry permits are issued in the same way as fire permits.

PERMITS CANCELLED because of a fire-spill alarm may be re-issued prior to the all-clear by the counter-signature of the foreman in the affected area, or by the counter-signature of the processor at the direction of the foreman in unaffected areas. After the all-clear the processor may re-issue the permit by his signature.



Permits are valid for a 24 hour period. When a permit is to be extended in the same 24 hour period, the original permit may be used, but personnel responsible on each succeeding shift must sign

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the permit if work is to be performed on their shift.

"Open Area" Permit

The following is a summary of Plant Safety Bulletin D-0524. For specific details refer to the bulletin.

"Open Areas" are specific geographic locations within the plant where any work that might create a source of ignition may be done without a fire permit.

To obtain permission and authority for an open area, a written request must be submitted to the Safety Department. Request forms are available at the Safety Department.

The use of, or tie-in to, any plant utilities, such as power, steam, etc., by an "open area" must be approved by the utilities department. This request should be done by letter and is not part of this permit.

Fire Prevention and Protection

EACH EMPLOYEE should become thoroughly familiar with the plant fire and spill alarm code.

IN THE EVENT OF A FIRE OR SPILL, turn in an alarm at once. To turn in an alarm for a fire or a spill the individual uses the regular phone, dials 7-7 followed by the code desired.

When the automatic fire and spill alarm system does not work or is out of service, the individual should call 222 and the guard will

manually sound the code of the effected area on the auxiliary code horn, located in Utilities Department.

Fire and Spill Alarm Codes

1-1-1	Barge Dock No. 1
1-1-2	Barge Dock No. 2
1-1-3	Barge Lock No. 3
2-1-1	API Separator
2-1-4	Feed Storage
2-1-5	Fire Training Area
2-2-2	Pressure Product Storage
2-2-4	West Intermediate Storage
2-3-1	Rail/Truck Loading
2-3-2	Organic Storage
2-3-3	Atmospheric Product Storage
2-3-4	East Intermediate Storage
3-1-2	Waste Treatment
3-1-4	Hydrocarbons
3-2-1	Chemical Storage
3-2-2	Phenol
4-1-3	Phenol Maintenance Shop
4-1-4	Ethlyene
4-1-5	Main Flare
4-2-4	Utilities
4-3-1	Scale House
4-3-2	Main Gate
5-1-1	Control Lab
5-1-2	Instrument Shop
5-1-3	Stores Bldg.
5-1-4	First-Aid Bldg.
5-1-5	Operations Bldg.
5-2-1	Administration Bldg.
5-5-5	Test Alarm (The System will be tested each Monday at 1 PM)

The "all clear" signal is a 15 second blast

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on the code horns.

FAMILIARIZE YOURSELF with the locations of all fire and safety equipment in the area in which you work.

THERE ARE THREE GROUPS or classes of fires. The class of fire determines to a great extent the type of extinguisher to be used. It is important that the right type of equipment be used. Every employee should become thoroughly familiar with the following table.

Class of Fire	Type of Fire	Extinguisher to Use
A	Wood, Paper	Water
B	Oil	Chemical or CO^2
C	Electrical	Chemical or CO^2

NEVER USE WATER ON CLASS C FIRES

Machinery

NO MAJOR REPAIR work should be done over moving machinery. When working close to moving machinery a temporary guard should be provided between the machine and the man working.

DO NOT WORK on any moving part of machinery while it is in motion. No adjustments should be made to shop-type machines or material in the machine while the machine is in operation.

DON'T ATTEMPT to break or slow down moving machinery with your hands or makeshift devices.

MAKE SURE everyone is clear and all tools have been removed before starting machinery.

TOOL RESTS on grinding and buffing ma-

chines should be kept adjusted close to the wheel and above the center of the wheel.

EMPLOYEES OPERATING CRANES winch trucks, air tuggers and other hoisting machines must be constantly alert and keep their eyes on the men giving signals and not allow cables to stack up on the side of drums A standard hand signal should be adopted or used when hoisting.

DO NOT LEAVE any equipment hanging on the chain hoist indefinitely.

Electrical Equipment

Employees should regard all wires as dangerous and are warned against permitting any object being handled to come in contact with electrical lines. The insulation on the wire is no guarantee that it will not cause instant death Employees must never attempt to distinguish between a live and dead line Qualified personnel should make this check Consider all wires live and dangerous

DEFECTIVE WIRING or electrical equipment should be reported immediately.

BEFORE USING an electric extension cord examine it carefully for bad insulation, defective ground cracked or broken protection. Do not use it it is in bad condition When in use it must not be laid on stairways, walkways, nor over sharp objects where it can trip someone or be damaged



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Avoid standing in water when using the cord.

WHEN CONNECTING GROUND WIRE clamps for portable electrical equipment, work the clamps back and forth at the point of connection so that rust, paint, etc., will be scraped off, thus insuring a good connection. Caution — Ground Wire Must Always Be Connected First and Disconnected Last.

ALL ELECTRICAL EQUIPMENT shall be properly grounded by use of three wire polarized cords, plugs and receptacles. All 440 volt connections are 4-wire polorized cords, plugs and receptacles.

KEEP CONTROL AND FUSE BOXES closed at all times, and clear of coats, rags, bottles, etc.

Lockout Procedure

The following is a summary of Plant Safety Bulletin D-0525 which establishes a uniform lockout procedure for machinery and equipment in order to prevent accidents. Refer to the bulletin for specific details. All supervisors have a copy — feel free to ask.

THE OPERATING DEPARTMENT is responsible for shutting down the equipment for work, testing the effectiveness of the means used for lockout and specifying any special safety precautions that must be observed during the course of the work.

THE MAINTENANCE DEPARTMENT is responsible for adhering to special safety precaution as specified for the job, and releasing the equipment to operations in

a safe operating condition upon completion of maintenance work.

THE LOCKOUT PROCEDURE is normally required to perform work on electrical or mechanical equipment which must be taken out of operation before such work is performed.

THE OPERATING DEPARTMENT initiates the lockout by placing their lock on first..

THE TEST FOR EFFECTIVENESS of the electrical lockout will be made by attempting to start the equipment with the control push button.

Hand Tools

EXAMINE all tools and be sure they are in good condition before using them. Exercise care in using the proper tool for the work at hand.

TOOLS having burrs or cracks should not be used. Weakened or broken handles should be replaced at once.

THE USE OF TOOLS in fire permit areas is covered in the fire permit section of this manual.

EXERCISE CARE in carrying and using tools to avoid striking anyone who is passing or standing nearby.

WHEN USING A WRENCH be sure it fits the nut and when applying force use care.

DO NOT USE files without handles.

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COUPLING AND HOSE CONNECTIONS on pneumatic tools must be inspected to see that they are safely attached and in good order.

CHAIN FALLS must be kept in good condition and tested as outlined in the procedure manual. They must always be inspected before being used. See that the chains and hooks are in good condition. All hooks should be provided with a safety bridle to insure that the slings will not come out of the hook.

THE USE OF CHEATER PIPES on wrenches is to be avoided. In extreme cases where a make-shift is necessary, cheaters may be used; however, extreme care should be taken.

MALLS should not be used on any wrenches except striking wrenches.

CROWS FOOT connections on hoses should be pinned when the hoses are used under pressure.

WHEN BREAKING FLANGES, open flange so that any fluid under pressure is directed away from you.

DO NOT PAINT name plate tags or moving parts of control systems such as overspeed trip assemblies on turbines, control valve stems, etc.

Guards

ALL EXCAVATIONS must be adequately shored and guarded by roping off or otherwise enclosing them to prevent anyone from

falling or stepping into the opening.

OPENINGS IN HANDRAILS made to facilitate the handling of material must not be left unguarded. A top rope shall be made fast across the opening. Permanent handrails or guard rails must be replaced immediately after the need for the opening has ended.

ANY PERSON removing covers from manholes, floor plates, or pits in the floor or in the ground must replace them or see that openings are adequately guarded.

WHEN WORKING on a ladder, platform, or piece of equipment over a road or walkway, a warning sign "men working overhead" should be prominently placed below.

WHEN WORK is being done on the tracks the necessary warning signs must be placed on the open end of the track.

Scaffolds

SCAFFOLDS should be erected to afford maximum safety and sufficient work space for the workmen. Scaffolds should be provided with a safe means of access and equipped with proper handrails, regardless of height.

BE SURE that all scaffolds and working platforms are constructed by competent workmen. Do not overload any scaffolds or platforms.

SCAFFOLDS should be decked where possible with a minimum width of three 2x10 boards.

EACH DECKING BOARD should have an overhang of four to eight inches on each end, and be properly cleated to prevent sliding, kicking up, or turning over. All scaffold

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decking boards must be made of standard scaffolding material of good quality. All decking boards will be painted on ends with yellow paint for identification.

DRUMS AND BARRELS must not be used as a substitute for a proper scaffold.

STEEL ROPES or 5/8" steel rods must be used for swinging scaffolds.

PROVIDE sufficient sills or under-pinning in addition to standard base plates on all scaffolds to be erected on any surface except concrete.

TO COMPENSATE for unevenness of ground use adjusting screws rather than blocking on safe-way type.

BE SURE that all scaffolds are plumb and level at all times.

DO NOT FORCE braces to fit. Adjust evenness of scaffold until the proper fit can be made with ease.

DO NOT OMIT, or fail to tighten, any bolts and wing nuts that are a part of the scaffold.

HORIZONTAL BRACING should be used to prevent racking of the scaffolds in excess of 25 feet height.

GUY, or otherwise support, all scaffolds every 25 feet of elevation to prevent tipping.

DO NOT ATTEMPT to use scaffolds as material hoist towers or for mounting derricks without first determining the loads and stresses.

KEEP ALL EQUIPMENT in good repair —the strength of rusted material is not known. Never use any scaffold equipment that is damaged or deteriorated.

HANDLE ALL ROLLING TOWERS WITH ADDITIONAL CARE...

...Apply all caster brakes when not in motion.

...Do not ride towers.

...Look where you are going with a rolling tower.

...Don't attempt to move a rolling tower without sufficient help.

...Do not extend adjusting screws to full extent.

...Horizontal bracing is to be used at the bottom, top and at intermediate levels of 25 feet.

Ladders and Stairways

INSPECT LADDERS for defects (missing cleats, cracked rungs, broken spreaders) before using them.

FACE the ladder when climbing up or down. Use both hands. Tools carried on the person must be secured. Hand tools and other equipment should be hauled up with a line.

MAKE SURE all tools have been removed from top before closing step ladders.

WHEN CARRYING a ladder keep the front end high to clear a person's head, the back end near the floor. Be particularly careful when carrying a ladder through doorways, passageways, and around blind corners.

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DON'T OVER-REACH, move ladder as your work progresses.

LADDERS FIXED to permanent platforms are normally equipped with a spring loaded gate. When working on such a platform, check gate for operation to prevent falling.

DO NOT PLACE ladders in front of unlocked doors unless properly guarded.

LADDERS SHOULD be properly placed so that the bottom is 1/4 the length of the ladder away from the vertical surface against which the top is resting.

ANY STRAIGHT LADDER used to climb onto a work platform should extend at least 3 1/2 feet above the working level.

DO NOT RUN up or down stairways. Walk normally and hold onto the handrail. Be especially cautious in wet weather.

Step Ladders

Most step ladder accidents are caused by defects in the ladder or by the climber losing his balance and falling. Here are some important suggestions...

...Make sure the ladder has no defects.

...Open the ladder wide enough so that the spreader locks itself in the fully opened position. Avoid step ladders having rope or chain spreaders.

...If the ladder is placed before a doorway, lock the door or have someone guard it; protect the ladder base from traffic, if necessary.

...Place the ladder on a firm level base; if blocking is necessary, anchor both blocking and ladder, or tie it in place.

...Set up the ladder so that you can reach your objective easily; never lean far out from a ladder in any direction.

...Avoid standing on the top of a step ladder; use a ladder tall enough to let you stand at least two steps from its top.

...Never use boxes or other makeshifts to increase the height of a ladder; never set the ladder on loose or makeshift supports.

...Tools should never be left on a step ladder unless tool holders are provided.

Rigging and Hoisting

WIRE ROPE shall be used for all slings and lifting lines. Fiber rope may be used for special lifting jobs on the approval of the supervisor in charge of the work and should be disposed of as soon as the job is complete.

HOISTING MACHINERY should be inspected before it is put into use, and should be tested before being used on heavy loads.

GIN POLES and derricks must be checked for safe working loads. If there is doubt concerning the safety factor of any hoisting equipment, the Technical Services Department should be consulted.

BE ALERT to prevent anyone from walking under suspended loads or being in the vic-

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lality of lines holding a strain.

WHEN DOING RIGGING work in the immediate vicinity of electric wires, call the supervision in charge and request any necessary protection or instructions.

HOISTING MACHINE operators should keep their eyes on the man giving signals, who must keep his attention on the load. Misunderstandings and accidents can be avoided by using the standard crane signals. (See Page 56)

ROPE, cable, or any type of sling should be protected with pads or blocks where it is taken around sharp edges.

HOIST CABLES should not be used if more than three adjacent wires are broken within a length of one lay, or if outer wires are to 2/3 of their original diameter, or if corrosion other than light rust appears.

IN SLINGING PIPE or any smooth-surfaced materials, slings (bridle and chockers) should be placed around the object with at least two turns and fastened choker fashion.

WHERE POSSIBLE, all guy derricks are to be rigged up completely on the ground with boom lying down. In all cases, extreme care should be taken to assure sufficient length of cable. Hoist drums are to be checked for sufficient turns of cable at all times and in no case, when under strain, should the number of turns of cable on the drum be less than five.

LOADS should not be handled by any equipment beyond the capacity and radius specified in the manufacturer's chart.

THE OPERATOR of any crawler type machine (which is working under load) shall

see that the machine is working on firm ground or mats.

WHEN HANDLING HEAVY LOADS with pneumatic-tired mobile cranes or auto cranes which are provided with outriggers, the outriggers should be out and on good blocking. The need for this shall be determined from the manufacturer's chart or the load table prepared for the machine. Such machine shall be operated on firm ground or mats.

CRANE OPERATORS should carefully observe the position of overhead electric wires and should avoid approaching them with the crane.

IN UNCOILING WIRE ROPE it is important that no kinks be allowed to form, since once a kink is made no amount of strain can take it out and the rope becomes unsafe.

LOADS should not be applied to ropes, cables or chains with a sudden jerk as the resulting stress will equal many times the weight to be lifted.

DO NOT LEAVE defective chains, cables or rope lying around where there is a possibility of their being used again. Do not repair chains by bolting links or rings together.

ROPE that has been contaminated with corrosive chemicals should be discarded.

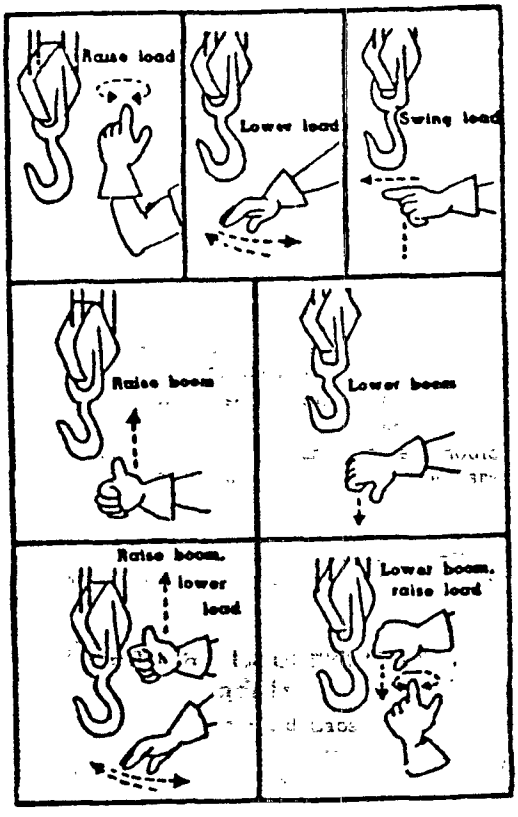
AVOID SPLICING Fiber or wire ropes where possible. If splicing is necessary, it must be approved by the maintenance foreman concerned.

TAG LINES should be used on loads when cranes are used to raise loads beyond reach of man handling load.

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Hand Signals for

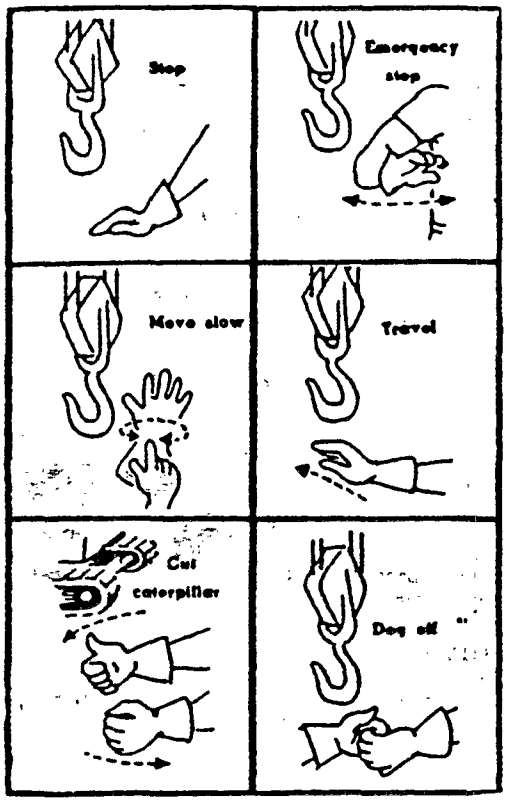
Use these hand signals



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Hoisting Procedures

for all hoisting operations



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Vehicle Operation

"When you cross the international date line on the ocean, you can lose a whole day. There's also a line on the highway where you can lose much more!"

A RED SIGNAL FLAG should be used on any load that extends beyond the front, side or rear of vehicle.

THE DRIVER of a loaded vehicle shall not permit anyone to ride on the load. It is an act of courtesy to yield the right-of-way at intersections. Always be considerate of the rights of others when driving because your thoughtlessness will reflect adversely on your company.

BEFORE PASSING pedestrians, or other vehicles, warn them of your approach at a reasonable distance by sounding your horn.

Stop motor and set brakes when vehicle is unattended.

Avoid passing another vehicle at an intersection.

Keep your vehicle in a safe operating condition at all times. Report any defects immediately to your supervisor.

IF INVOLVED IN AN ACCIDENT secure all facts and write them down: Name and address of all persons involved including witnesses, location of accident, time, and extent of damage. (Forms to aid you are in the glove compartment of each company car.) Report the accident immediately to your department head. Refer inquiries to company officials, and sign no papers on your own authority except as required by law officers.

NORMAL VEHICULAR PROCEDURES shall also apply to bicycles. Pedestrians should walk on the left hand side of the road facing oncoming traffic.

Handling Material

PROPER LIFTING METHOD...

...Size up the load first. Get help if you need it.

...Be sure of your footing.

...Lift with your legs, not your back.

...Keep your balance — don't twist under strain or jerk the load.

...Keep load close to your body.

...Bull strength isn't enough — you have to supply power where it counts. Lift Safely.

LIFTING SACKED MATERIALS...

...Bend your knees in a squatting position, grip the ends of the sack.



...When fairly erect, let the sack rest against your hip and abdomen; then swing the sack to one shoulder so that it rests on its side.

...When the sack is to be put down, reverse the movements used in lifting. Swing the sack slowly from your shoulder until it rests against your hip and abdomen. If it must be lowered to the ground, bend your knees — not your back.

...Never heave the load off your shoulder

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with a sudden movement.

PILING MATERIALS...

...Poorly piled materials are dangerous. A safe pile has no irregular ends. It cannot topple over on you or fall on others.

...Give each pile a firm foundation, and start it right.

...Do not pile material too high for safe lighting and handling.

...Allow ample room for passageways. Observe clearance rules at aisles, sprinkler heads, and railroad tracks.

...Never obstruct the path to fire fighting equipment.

...Whenever materials are of a shape to permit it, cross-tie the tiers so that they support each other.

...When there is danger of the pile's being insecure, interlock the tiers with boards or other material.

...When piling heavy materials in buildings, learn the safe load limit of that particular floor and observe it.

...Block round objects, such as pipe and drums, so they cannot roll.

Use of Compressed Air

A compressed air hose is a tool, not a toy, and should be used carefully, with respect.

Keep the pressure of compressed air as low as possible for doing the job adequately.

Don't use compressed air to dust off clothing or clean away dust and chips. Don't use it where it causes particles to fly over a large

area.

Be sure you have a secure hold on the nozzle before turning on the pressure.

Don't kink the line to cut off the air supply.

Make certain you have only sound, strong hose with secure couplings and connections.

Wear suitable eye and face protection when using compressed air.

Never, under any circumstances, point a compressed air hose at yourself or a fellow worker.

Use of Hand Trucks

Keep the center of gravity of the load as low as possible, placing heavy objects at the bottom.

Place the load well forward so that the weight will be carried by the axle, not by the handles of the truck. The operator only maintains its balance and provides the motive power.

Place the load so that it will not slip, shift or fall off.

Load only to a height which will allow clear view ahead.

Never walk backwards with a truck.

When going down an incline, keep the truck ahead of you; when going up, keep the truck behind you.

Move trucks at a safe speed. Do not run; keep the truck constantly under control.

Use of Steam

Steam used at any pressure, including

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atmospheric, is dangerous.

Personnel not familiar with operating procedures should get instructions from proper authority before starting any work involving steam under pressure.

Personnel manipulating valves should exercise extreme care and caution at all times.

Long-sleeved clothing is recommended when operating steam valves or handling a steam hose.

When operating any steam valve, stand to one side of the valve stem.

When removing or disconnecting a steam hose, first close the line valve and allow the pressure to bleed off.

Never kink a steam hose to stop the flow of steam.

Never leave a steam hose under pressure or unattended unless adequately secured.

Coiled steam hose should never be tied with wire; use hose rack for storage.

All steam hoses, lines and valves should be inspected periodically to see that they are in first-class condition.

Before steaming out containers which have held volatile and flammable materials, the steam hose nozzle must be bonded to the vessel.

Chemical Laboratories Safety

Including Field Labs

LABEL all chemical containers, plainly indicating contents.

GLASS TUBING should be wrapped with a towel when inserting in rubber or cork stoppers.

ASPIRATOR BULBS should be used for pipetting chemicals; never use your mouth.

BE EXTREMELY CAREFUL when adding strong acids to strong alkalies or vice versa. Always add acid to water, never water to acid; add slowly with stirring. Always place mixing vessel in the sink or other confining area to prevent injury.

DO NOT PLACE BOTTLES containing volatile, flammable material in direct sunlight or near artificial heat.

MAKE SURE hands and container are dry when required to lift heavy carboys or jars. Use plastic bottles when possible.

FIRE-POLISH or destroy cracked glassware or glassware with sharp or broken edges. Fire - polish ends of glass tubing before using.



IMMEDIATE DISPOSAL of broken glassware is essential in preventing accidents. Discard them in proper waste containers.

USE BOTTLE racks when transporting samples; never overload bottle racks.

REGULARLY INSPECT rubber tubing for defects.

DO NOT USE laboratory equipment for

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eating or drinking purposes.

NOTE: An extensive Laboratory Safety Manual for reference purposes is available from lab supervision.

Chemical Hazards

If your job requires handling and using chemicals or otherwise exposes you to them—

AVOID BREATHING vapors of any kind since they may be harmful. Keep upwind.

IMMEDIATELY REMOVE anyone overcome by vapors or gases from the contaminated area. Apply first aid as needed.

NEVER enter a contaminated area without wearing protective equipment.

DO NOT place acid or caustic solutions in galvanized pipe or containers. Their reaction with zinc liberates hydrogen gas which can cause an explosion either by overpressuring or by combustion.

USE ONLY an established procedure or obtain written instructions from your supervisor before using air or gas pressure to transfer chemicals or hydrocarbons from one vessel to another.

BECAUSE OF THE DANGER of being sprayed, do not gauge caustic or acid tanks through an open hatch when cars of these materials are being unloaded into the tanks.

SEWER MANHOLES are a source of danger. Avoid working close to sewer manholes whenever possible. Observe all precautions necessary to prevent striking a spark.

CLEANING OF TOOLS and equipment with chemical solvents is hazardous and must

be avoided when possible.

OXYGEN, in contact with various hydrocarbons and chemicals can cause spontaneous ignition — no other source of ignition required. Serious fires and explosions have been attributed to this generally unrecognized cause.

When handling equipment in oxygen service take the following precautions...

...Use only a chlorinated solvent for cleaning purposes (such as FO-145). Do not use solvents which leave an oily film.

...Always completely disassemble to clean equipment, whether new or old.

...Make certain all equipment or material is "white glove" clean after cleaning or before placing in oxygen service.

...Always clean and inspect equipment which has been in chemical or hydrocarbon service before using for oxygen.

...Never alter cylinder gas regulators to fit oxygen cylinders.



AVOID USING copper, mercury, silver or their alloys for acetylene service.

MERCURY is a cumulative poison. Toxic vapors are given off even at room temperature. Spills must be cleaned up with a vacuum trap system or after sprinkling with powdered sulfur. Do not dump into sinks or attempt to brush it under furniture—

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vapors still are present.

PHENOL is worthy of special mention. In addition to its skin-burning properties, phenol is absorbed through the skin and unless flushed thoroughly and immediately can result in very serious illness. All phenol splashes must be flushed until the odor is gone and reported to Medical.

HYDROGEN SULFIDE is a by product gas which smells like rotten eggs. A deep breath of the gas can be fatal. The gas anesthetizes the nose so that it seems to disappear.

Table of Chemical Hazards

The safe handling and use of chemicals DEMANDS your knowledge and respect. Everything can be handled safely if you know what you are doing. Know and respect these chemicals.

Explanation of Physiological Terms:

Irritants — Damaging to the eyes, skin or breathing passages.
Simple Asphyxiants — Vapors that act primarily by dilution of the air.
Chemical Asphyxiants — May cause suffocation when breathed in small quantities.
Anesthetics — Exert a drug-like action when breathed.
Systemic Poisons — These materials may cause injury to the organs of the body after absorption into the blood.

Hazard Rating of Physiological Effect:

1. Materials that are dangerous when breathed in small quantities or highly corrosive to the skin.
2. Continued exposure to small quantities may cause serious injury.
3. Dangerous on prolonged skin contact or when breathed in considerable quantities.
4. Principally suffocation due to air dilution.

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Material	Physical State, Atmos. Temp., Pressure	Physical State as Normally Handled	Hazard Rating, Physiological Effect	Flammable Flash Pt. of Liquids	Vapor Density To Air	Water Soluble (liquids, solids)
PRODUCTS, BY-PRODUCTS, INTERMEDIATES, RAW MATERIALS						
Acetaldehyde	Liquid	Liquid	1 Anesthetic	Yes(-36°) can heat violently with oxidizers	Heavier	Yes
Acetone	Liquid	Liquid	3 Anesthetic	Yes-0	Heavier	Very
Acetylene	Gas	Gas	4 Anesthetic	Yes	Lighter	—
Aromatic Pitch	Solid	Liquid	3 Systemic	Yes-400°*	Heavier	No
Aromatics, Heavy	Liquid	Liquid	3 Systemic	Yes-200°	Heavier	No
Benzene	Liquid	Liquid	2 Systemic	Yes-12°	Heavier	V. Slightly
Butadiene	Gas	Liquid	3 Simple Asphyx.	Yes	Heavier	No
Butene - 2	Gas	Liquid	3 Simple Asphyx.	Yes	Heavier	No
Cis-mixed	Gas	Liquid	4 Simple Asphyx.	Yes	Heavier	No
C5s	Liquid	Liquid	3 Irritant	Yes-(0°	Heavier	No
Cumene	Liquid	Liquid	2 Systemic	Yes-102°	Heavier	No
Cumene Hydroperoxide	Liquid	Liquid	1 Irritant	Yes-198° can react violently with reducing agents	Heavier	No
Diisopropyl Benzene	Liquid	Liquid	2 Systemic	Yes-170°	Heavier	No

Table of Chemical Hazards

Material	Physical State, Atmos. Temp., Pressure	Physical State as Normally Handled	Hazard Rating, Physiological Effect	Flammable Flash Pt. of Liquids	Vapor Density To Air	Water Soluble (liquids, solids)
PRODUCTS, BY-PRODUCTS, INTERMEDIATES, RAW MATERIALS						
Ethane	Gas	Gas	4 Simple Asphyx.	Yes	Sl. Heavier	—
Ethylbenzene (EB)	Liquid	Liquid	3 Anesthetic	Yes-85°	Heavier	No
Ethylene	Gas	Gas	4 Simple Asphyx.	Yes	Sl. Lighter	—
Flux Oil	Liquid	Liquid	3 Simple Asphyx.	Yes-(100°	Heavier	No
Hydrogen	Gas	Gas	4 Simple Asphyx.	Yes	Lighter	—
Hydrogen Sulfide	Gas	Gas	1 Chem. Asphyx.	Yes	Heavier	—
Methane (Nat. Gas)	Gas	Liquid Gas	4 Simple Asphyx.	Yes	Lighter	—
Methyl Styrene, Alpha	Liquid	Liquid	3 Systemic	Yes-136°	Heavier	No
Methylacetylene	Gas	Gas	3 Anesthetic	Yes	Heavier	—
Naphthalene	Solid, white flakes	Liquid	3 Systemic	Yes-176°	Heavier	Slightly
Naphthalene Conc.	Liquid	Liquid	3 Systemic	Yes-190°	Heavier	Slightly
Phenol	Solid or Liquid (m.p. 105°)	Liquid	1 Systemic	Yes-175°	Heavier	Yes
Propadiene	Gas	Gas	3 Simple Asphyx.	Yes	Heavier	—
Propane	Gas	Liquid-Gas	4 Simple Asphyx.	Yes	Heavier	—
Propylene	Gas	Liquid-Gas	4 Simple Asphyx.	Yes	Heavier	—
Resin Oil	Liquid	Liquid	3 Systemic	Yes-110°	Heavier	No
Sulfur	Liquid	Liquid	4 Simple Asphyx.	Yes-(20-60°)	Heavier	No

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Material	Physical State, Atmos. Temp., Pressure	Physical State as Normally Handled	Hazard Rating, Physiological Effect	Flammable Flash Pt. of Liquids	Vapor Density To Air	Water Soluble (liquids, solids)
PRODUCTS, BY-PRODUCTS, INTERMEDIATES, RAW MATERIALS						
Sulfon	Liquid	Liquid	3 Systemic	Yes-(20-50°)	Heavier	No
Toluene	Liquid	Liquid	2 Anesthetic	Yes-40°	Heavier	No
Waste Hydrocarbons, Phenol Plant	Liquid	Liquid	1 Systemic	Yes-Indef	Heavier	No
Xylenes	Liquid	Liquid	2 Anesthetic	Yes-80°	Heavier	No
SOLVENTS, CHEMICALS, CATALYSTS, GASES						
Ammonia, Aequeous	Water Solution	Water Solution	1 Irritant	Yes	Lighter	Yes
Ammonia, Anhydrous	Gas	Gas	1 Irritant	Yes	Lighter	Yes
Brine, (NaCl) saturated salt	Solid	Water Solution	—	No	—	Yes
Calcium Chloride	Solid	Solid	—	No	—	Yes
Carbon Monoxide	Gas	Gas	1 Chem. Asphyx.	Yes	Sl. Lighter	—
Catalyst (Phenol Plant)	Solid	Solid	3 Irritant	Emits-Toxic Vapors when Heated	—	Yes
Chemlime-Lime slurry	Water Slurry	Water Slurry	1 Irritant	No	—	No
Chlorine	Gas	Liquid-Gas	1 Irritant	No-Supports combustion	Heavier	—
Copperas, Liquid (Ferrous sulfate)	Liquid	Water Solution	—	No	—	Yes
Control "C"	Water Solution	Water Solution	3 Irritant	No	—	Yes

Material	Physical State, Atmos. Temp., Pressure	Physical State as Normally Handled	Hazard Rating, Physiological Effect	Flammable Flash Pt. of Liquids	Vapor Density To Air	Water Soluble (liquids, solids)
SOLVENTS, CHEMICALS, CATALYTS, GASES						
Di Ammonium Phosphate	Solid	Water Solution In Hydrocarbon	3 Irritant	No	—	Yes
DRPC-"Ionol" (ditertiary-butyl-paracresol)	Solid or liquid	solution	4 —	Yes-280°	Heavier	No
DEG (di-ethylene-glycol)	Liquid	Liquid	3 Systemic	Yes-290°	Heavier	Yes
DMF (di-methyl-formamide)	Liquid	Liquid	3 Irritant	Yes-153°	Heavier	Yes
DPG (di-propylene-glycol)	Liquid	Liquid	3 Systemic	Yes-280°	Heavier	Yes
Furfural	Liquid	Liquid	1 Systemic	Yes-140° Do not contact strong acids alkalies	—	Slightly
Hagafilm Octadecylamine	Solid	Water Solution	1 Irritant	Yes	—	Yes
Hydrobon 53	Solid	Solid	3 Irritant-q after use emits SO2	No	Heavier	No
MEA (mono-ethanol-amine)	Solid-Liquid MP 51°	Liquid	3 Irritant	Yes-200°	Heavier	Yes
Mercury	Liquid	Liquid	2 Systemic	No	Heavier	No
Methanol (methyl alcohol)	Liquid	Liquid	2 Systemic	Yes-54°	Heavier	Yes
Methyl Mercaptan	Gas	Liquid-Gas	2 Systemic 4 Simple Asphyx.	Yes-0°	Heavier	—
Nitrogen	Gas	Gas		No	Sl Lighter	—

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Material	Physical State, Atmos. Temp., Pressure	Physical State as Normally Handled	Hazard Rating, Physiological Effect	Flammable Flash Pt. Of Liquids	Vapor Density To Air	Water Soluble (liquids, solids)
SOLVENTS, CHEMICALS, CATALYSTS, GASES						
Oxygen	Gas	Gas	—	No-pure O_2 may cause spontaneous ignition of organics	Heavier	—
Polyfil 100	Liquid	Liquid	3 Irritant	Yes-82°	Heavier	No
Soda Ash (Sodium carbonate)	Solid	Water Solution	3 Irritant	No	—	Slightly
Sodium-Hexameta-Phosphate	Solid	Water Solution	3 Irritant	No	—	Yes
Sodium Hydroxide (Caustic)	Solid	Water Solution	1 Irritant	No-may react with organics	—	Yes
Sodium Nitrate	Solid	Water Solution	3 Irritant	No-may react with organics	—	Yes
Sodium Nitrite (double spaced)	Solid	Water Solution	3 Irritant	No-may react with organics	—	Yes
Sulfuric Acid	Liquid	Liquid	1 Irritant	No-may react with organics	Heavier	Yes
TBC (tertiary-butyl-catechol)	Solid	Water Solution	3 Irritant	Yes-265°	—	Slightly
TEA (tri-ethanol-amine)	Solid-Liquid MP 71° F	Liquid	3 Systemic	Yes-365°	Heavier	Yes
TEG (tri-ethylene-glycol)	Liquid	Liquid	3 Irritant	Yes-350°	Heavier	Yes
Linear	Liquid	Liquid	4 Simple Asphyx.	Yes-11g°	Heavier	No
Argon	Gas	Gas	4 Simple Asphyx.	No	Heavier	—
Helium	Gas			No	Lighter	—
Sapiosite (Sodium S[illegible]	Solid	Water Solution	3 Irritant	No-heated decomposes SO_2	—	Yes

YOUR SAFETY

OFF-THE-JOB

is important

too!

THERE IS NO PLACE LIKE HOME ... "TO HAVE AN ACCIDENT"

Our statistics on the injuries you receive on the job as compared to the injuries you receive off the job indicate that you are at least five times safer ON your job than you are OFF the job.

For this reason, we include this section for your use as a guide to help you recognize hazards and to prevent accidents at home and on the highways. Use this guide to help make your home as safe as you have helped make your plant.

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Home Accidents

IN KITCHEN

Studies show that home accidents occur most frequently in the kitchen. To prevent burns, cuts, accidental poisoning and falls, here are some things to watch for...

...Turn hot handles in from the edge of the stove when cooking. Many youngsters are severely scalded when they pull a pan off the stove.

...When using knives, use a cutting board and always cut away from you.

...Keep knives in a special rack on the wall, not scattered loosely in a drawer.

...Wipe up any spilled water or grease immediately.

...Use a can opener, not a knife, to open cans.

...If there is linoleum on the floor, keep it flat, don't let it bulge or curl up at the edges.

...Keep matches, drain solvents, insecticides and knives out of reach of children.

...Shelves should be within easy reach. If this is impossible keep frequently used items on the lower shelves. Use a sturdy step stool, not a chair, to reach high shelves.

...Keep portable electric appliances while plugged in away from the sink so that you can't touch the faucet and the appliance at the same time.

...If your stove has an open flame and is within eighteen inches of a window, fast-

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en the curtains securely to prevent them from catching fire.

...Have broken electric appliances repaired promptly. Don't attempt to use them with makeshift repairs.

IN BATHROOM

The bathroom is another location of home accidents. In this area falls poisoning, and electric shock are the most common hazards. Simple precautions can prevent many accidents...



...Discard used razor blades in a closed container.

...Keep all medicines out of the reach of children.

...Don't use electric appliances in the bathroom.

...Never touch a switch or electric appliance with wet hands, while in the tub, or when touching a faucet or other grounded article.

...When taking medicine, be sure you have the right one. Always read the label before using.

...Be extremely careful when entering, leaving or standing up in the bathtub. A non-skid rubber mat in the tub will help to prevent falls.

AROUND THE HOUSE

...Hazards are not restricted to the kitchen

nd bathroom, but may exist throughout the ouse. Get in the habit of inspecting all areas make your home as safe as possible. Take se precautions...

...Repair immediately any defective stairs or railings; see that all stairs are well lighted.

...Keep stairways clear of mops, pails, rubbers, toys, etc.

...Burn rubbish only in an approved incinerator.

...Anchor throw rugs to prevent slipping and falling.

...When waxing floors apply a thin coat and rub it in thoroughly to minimize slipping. Use a non-skid wax if practicable.

...Don't overload electrical circuits. Don't have cords where someone may trip on them.

...Keep drawers and cupboard doors closed.

...Check your furnace at least once a year; if defective, repair.

...When a fuse blows, replace it only with a fuse of proper rating for the circuit involved.

...Don't collect paper, old clothing, oily rags, or other fire causing refuse.

...Don't smoke in bed, or when there is danger of your falling asleep.

...Never start a fire with gasoline or kerosene. Store gasoline or kerosene only in approved and labeled metal containers.

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...Keep all firearms and ammunition locked up.

...Don't use gasoline, benzene, naptha and other flammables or carbon tetrachloride for home dry cleaning.

...Exercise care in using power lawn mowers. Before you start, inspect the area to be mowed and remove rocks and other objects which might be thrown into the air by the action of the machine. Wear safety shoes and safety glasses.

...Exercise Caution When Using Power Tools — Don't Place Your Fingers Where The Guard Is Supposed To Be.

Accidents to Children

We have all read and heard of terrible accidents happening to young children in and around the home. Many of these accidents could have been prevented by teaching the children safe practices as soon as they are old enough to learn and by eliminating hazardous conditions which they are too young to understand. Some suggestions are...

...Never leave a young baby alone in the bath or on a table, sofa or bed.

...In the kitchen, place high chair away from stove and sink.

...Give a baby safe toys to play with—nothing small enough to swallow.

...Never leave a young child alone in the house, not even for a few minutes.

...Teach your youngster to stay out of the street.

...Teach him, when he's old enough to accept responsibility, how to use matches properly and the danger of playing with fire.

...Wait to give your child a bicycle, skates or other wheeled toys until he's old enough to handle them safely.

Vacation Accidents

The vacation period is, unfortunately, a time when many accidents happen. Here are a few tips to make your vacation safer and more enjoyable...

...Plan your trip so that you will have plenty of time to get where you are going.

...Don't try to do too much. Trying to crowd a year's sightseeing, exercise or other activities into a few weeks can lead to trouble.

...Wear the correct clothing for the location and your activities.

...Do not use your car when in poor mechanical condition. Defective brakes or lights, or worn out tires can wreck your life.

...Know and obey traffic regulations — The child you strike when passing a school bus could be your own.

...Courtesy on the road, like safety, is contagious — Try To Start An Epidemic.

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Hours of Danger

Statistics show that the most dangerous times of the day for industrial plant workers occur about three hours after work begins, both in the morning and afternoon. The times are between 10 and 11 o'clock in the morning, and 3 and 4 o'clock in the afternoon.

It is generally at these times that work is in full sway, that physical activity is the greatest, that this activity is becoming more monotonous than during earlier hours, and that fatigue is at its height. Such factors frequently contribute to the occurrence of accidents.

You can help make these danger hours safer by doing the following...

...Being especially alert to danger during the late morning and afternoon hours.

...Giving special thought to the hazards of your job, and the things you can do, personally, to overcome them.

...Keeping yourself in good mental and physical condition.

...Getting at least eight hours sleep every night.

...Eating enough of the right kind of food at meals to keep your strength up to par. Do not overeat.

Notes

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FOR YOUR SAFETY

- Do the job right—the safe way—don't take chances.
- Report all injuries—get first aid promptly.
- Correct or report unsafe conditions — suggestions are appreciated.
- Use tools and equipment as instructed; only authorized persons may make repairs.
- Use the protective equipment provided; keep it in good condition.
- When lifting, bend your knees; get help for heavy loads.
- Keep stairs and floors clear—there'll be less tripping and slipping.
- Follow instructions; if you aren't sure, ask.



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