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**MOBIL CHEMICAL COMPANY
OLEFINS/AROMATICS PLANT
EMERGENCY MANUAL**

JULY 1, 1983

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INTRODUCTION

General

In extreme emergencies caused by acts of nature or industrial catastrophes, there are certain problems that can be anticipated. The purpose of this plan is to fix responsibilities and establish procedures for handling these problems quickly, economically and safely.

Definition

For the purpose of this plan, an emergency is a condition requiring assistance over and above the capabilities of the normal personnel on duty. This may be the result of a fire, explosion, hazardous vapor accumulation, storm, flood, or power failure.

Accidents that can be handled under existing procedures with normal duty personnel do not come under this plan.

This plan does not cover emergencies created by enemy action, direct enemy attacks, air raid, radio active fallouts, sabotage, and espionage.

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THE PLAN

PURPOSE

1. Fix Responsibility
2. Establish Procedures

PROBLEMS INVOLVED

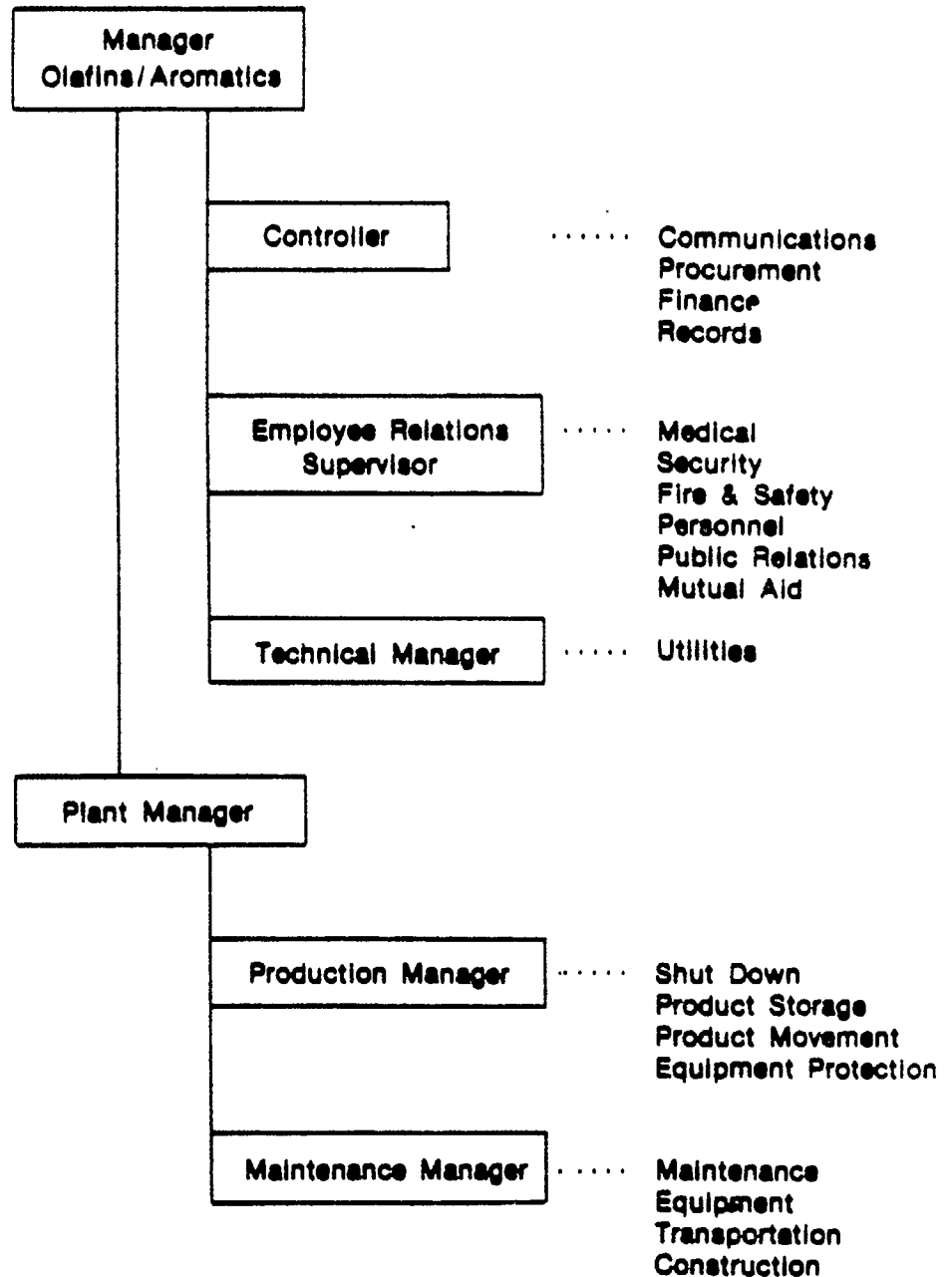
1. Fire or Explosion
2. Fume or Gas Liberation
3. Power Failure
4. Storm, Wind or Flood

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EMERGENCY ORGANIZATION

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CONTROL CENTERS

Emergency Headquarters Main Office
 Bldg. Room 103

Headquarters Staff

Manager O/A Beaumont
 Plant Manager
 Production Manager
 Maintenance Manager
 BCSP Manager
 Controller
 Employee Relations Supervisor
 Technical Manager
 Environmental Control Supvr.
 Utilities Supervisor

Field Control Center

Field Staff

Production Superintendents
 Maintenance Superintendent
 Contract Maintenance Supt.,
 Safety & Security Supervisor

Emergency Scene

Movement Supervisor
 Fire Brigade
 Outside Emergency Units
 Any other personnel as required
 by Field Control Center
 Safety Coordinator

Emergency Coordinator - EPA-RCRA

Safety Supervisor *
 Movements Supervisor **

* Monday - Friday (7:45 A.M. - 4:15 P.M.)

** All Other Times

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OLEFINS/AROMATIC EMERGENCY

CALL-OUT LIST

In the event of a fire within the Olefins/ Aromatics Plant, the Guard will make the following calls. If you get a busy signal after the first four calls, have the operator break the line. If no answer, try 10 or 15 minutes later.

As notified, mark an X after each person's name.

L. J. RYALL	866-3134
D. C. BECKERT	866-2752
H. V. STIVERS	899-2448
L. A. DUFFEE	866-2890
R. F. NASH	892-2557
C. R. JEANSONNE	892-7489
L. J. LEGATO	866-4487
E. T. CRAIG	892-5385
L. F. LUQUETTE	866-1790
R. A. MARTIN	7554255
D. J. SVETLIK	892-7912
P. C. HVIDDING	866-6634
P. B. MULLIN	835-6104
B. T. PORTER	860-4234
D. A. BRUCE	1-243-3385
J. E. WRINKLE	786-1132
W. G. SANDERS	1-243-3203

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If the person you call is not there but someone answers, advise them that there is an emergency at the plant and request that they contact whoever you are calling.

No one other than MCC personnel will be allowed entry into the plant during an emergency without permission from one of the Managers.

Other emergency numbers to call if instructed to do so are:

MOBIL OIL REFINERY(Night Supt.)
839-3420 - 839-3423 - 839-3428
MOBIL OIL EMERGENCY FIRE
839-3333-71-3333
BEAUMONT FIRE DEPT.(Mutual Aid)
838-6371
DR. J. K. STEWART866-4994

The Mutual Aid Radio (Frequency #2) call letters are KWE-394

NOTE: Anytime the fire truck goes out, whether it is a fire or not, notify

D.A. BRUCE 1231(Plant ext.)
1/243-3385 (Home)
W.G. SANDERS 1233(Plant ext.)
1/243-3203 (Home)
J.E. WRINKLE 1230 (Plant ext.)
786-1132 (Home)

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BCSP EMERGENCY

In the event of a fire at the Beaumont Chemical Specialty Plant, the Guard will make the following calls. If you get a busy signal on the first four calls have the operator break in on the line.

As notified, mark an X after each person's name.

S. S. DUNN1-962-0083

P. E. EUBANKS899-2852

J. L. WILLIS1-547-3648

R. C. COMPTON832-4434

C. E. RAGER860-4131

L. J. RYALL8663134

F. H. SCHNEIDER899-2448

D. A. BRUCE1-243-3385

W. G. SANDERS1-243-3203

J. E. WRINKLE786-1132

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FIRE ALARM - FIRE BRIGADE MANPOWER SOURCE

In the event of a fire all Fire Brigade Members will report to their assigned location. If a fire is in the assigned area of one of the Fire Brigade Members, he may have to control his area rather than work on the Fire Brigade Team. All other maintenance personnel including Rosendahl will report to their respective work areas, such as New Hot Train Fab Shop, Ethylene Fab Shop, Electrical and Instrument Shop, Rosendahl Fab Shop, and stand by for instructions from their foreman.

Shifts 1-2-3

1	Movements Supervisor	Fire Chief	To Emergency
1	Process Operator	Area 5 EU	To Emergency
1	Process Operator	Furnace Operator-USC-II	To Emergency
1	Process Operator	Hydrotreater BU	To Emergency
1	Process Operator	Watertreater Mov.	To Emergency
1	Process Operator	Pumper II Mov.	To Emergency
1	Process Operator	Loading Rack Mov.	To Emergency
1	Process Operator	#2 Catalyst Unit BCSP	To Emergency
1	Process Operator	#2 SHF Unit BCSP	To Emergency
2	Pipefitters (Shift)	MCC Maintenance	To Emergency
1	Lab Tech.	O/A	To Fire Pump
1	Lab Tech.	BCSP	To Fire Pump
1	From Safety Bldg.	Safety Trainee	To Emergency

The Movements Production Supervisor will direct all Fire Brigade activities. In his absence either the Ethylene, Benzene Unit or USC II Production Supervisor will assume this responsibility. Safety, Maintenance, Production and Technical Dept. personnel will be called and report to the Plant to provide the necessary assistance.

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In the event the Fire Brigade Director feels additional help is required to handle the situation, contact the Mobil Refinery Night Superintendent at phone 71-3420 or contact the Mobil Oil Gate on Channel 2 of the Safety Department radio.

Added help may also be obtained from Mutual Aid by contacting the Beaumont Fire Department, 838-6371. If the situation permits, the Safety Supervisor and/or Management personnel should be contacted for concurrence. If in the Production Supervisors opinion this help is immediately needed, he has the authority to request the BFD help.

O/A Plant will be notified by the Beaumont Fire Department of a fire in MCC Paint Mill. Engine #1 with operator and Movements Production Supervisor will respond and assist where directed by Fire Chief on scene. Safety Department personnel will respond and relieve the Movements Production Supervisor.

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FIRE ALARM CODE AND EMERGENCY SIGNALS

--- 3 Blasts No Location Code

Remote Area:

Fire assemble at Fire House

Ethylene Unit

--- 5 sec pause- 3 Blasts pause 1 Blast

Benzene Unit — USC I

--- 5 sec pause-- 3 Blasts pause 2 Blasts

Movements — Boilers

--- 5 sec pause--- 3 Blasts pause 3 Blasts

BSC Plant — Tank 36

--- 5 sec pause---- 3 Blasts pause 4 Blasts

USC II

--- 5 sec pause-----3 Blasts pause 5 Blasts

Clear Area

----5 sec pause---- 4 Blasts pause 4 Blasts

FIRE ALARM will be Blown Twice

Gas Release

3-sec Blast at 10-sec intervals for 1 min
Gas Release will require all Hot Work
stopped and all vehicles and equipment be
shut down. All non-essential personnel
leave unit areas.

All Clear

Five short blasts repated once.

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Fire alarm will be tested Each Friday morning at 8:30 a.m. Each station will sound one 5-sec. blast at one-min. intervals.

1. All "hot work" and motorized equipment such as welding machines, compressors, motorized cranes, etc., shall be stopped at the sound of "Unit Emergency Whistle" or "Fire Alarm" on the unit and in related areas.

2. Contractor employees shall evacuate to an unrestricted area and await instructions. The All Clear Signal will be three (3) short blasts - - - repeated one time.

3. The All Clear Signal will be the contractor's authority to return to work.

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EMERGENCY HEADQUARTERS

Manager - O/A Plant

Plant Manager

Production Manager

Maintenance Manager

Employee Relations Supervisor

Comptroller

Technical Manager

Utilities Supervisor

Contract Maintenance Superintendent

**Beaumont Chemical Specialty Plant
Manager**

**Fire Brigade assemblies at Safety Building
on No Location Code.**

**Fire Brigade will assemble at emergency
area when area code is given.**

**Maintenance personnel other than Fire
Brigade assemble at maintenance shop
areas and standby.**

**Maintenance vehicles assemble in the area
of the maintenance office and stand by.**

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FIELD CONTROL CENTER

Production Superintendents

Maintenance Superintendent

Utilities Engineer

Mechanical Superintendents

Contract Maintenance Superintendent

Safety & Security Supervisor

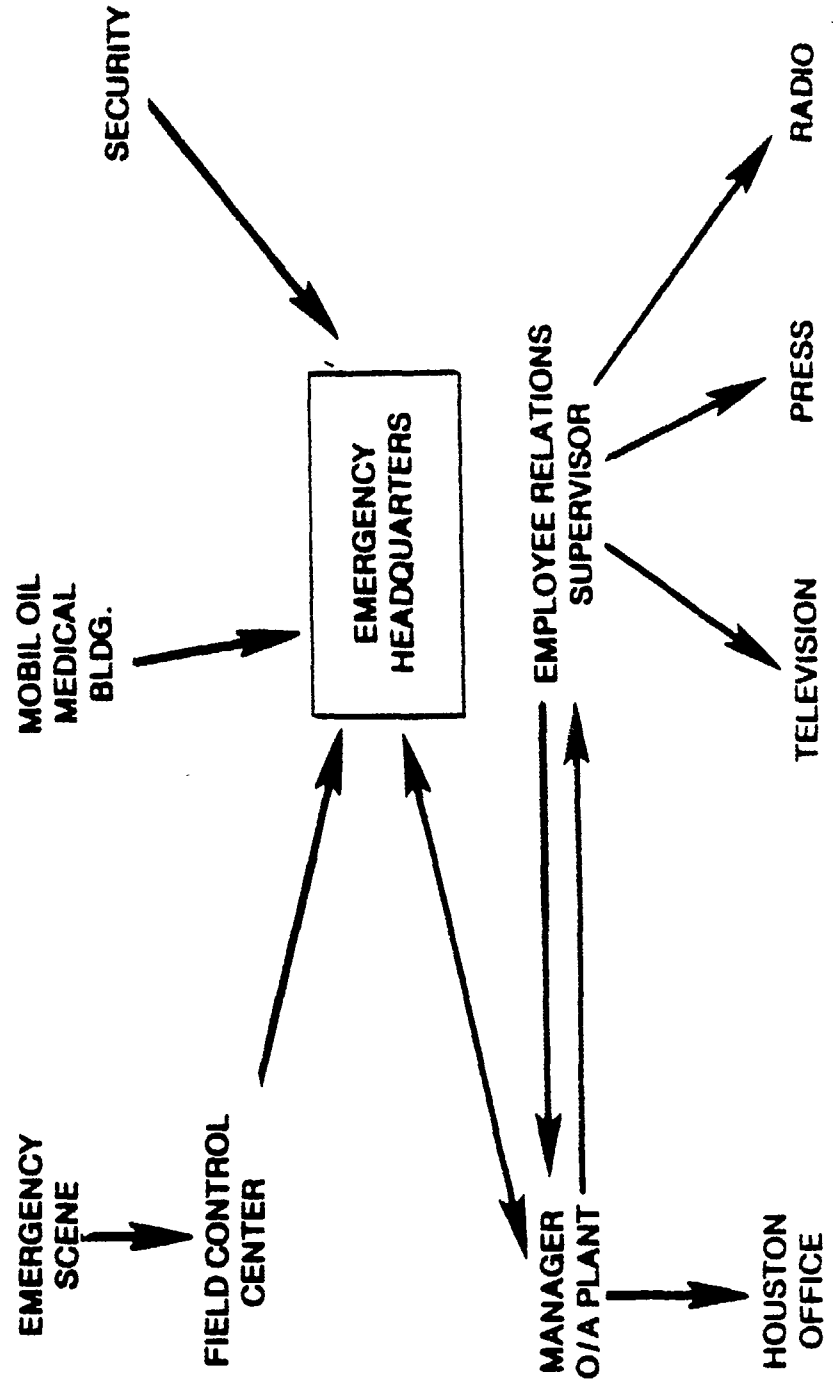
Electrical Engineer

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PUBLIC RELATIONS
INFORMATION FLOW



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GENERAL DUTIES

ORGANIZATION AND SERVICES

MANAGER - O/A PLANT

Responsible for overall protection of personnel, equipment materials and buildings.

PLANT MANAGER

Directs all protection activities prior to, during and after an emergency. Responsible for Emergency Plan's implementation.

TECHNICAL MANAGER

Perform special duty projects as required by the Manager O/A Plant.

PRODUCTION MANAGER

Directs emergency shutdowns, product movements and storage. Supervises process equipment and storage facilities protection programs.

MAINTENANCE MANAGER

Supplies transportation, power and utilities. Provides necessary equipment, maintenance, repair and construction.

CONTROLLER

Handle all procurements including food and financial matters prior to and during the emergency.

EMPLOYEE RELATIONS SUPERVISOR

Responsible for public relations activities, fire and safety, security, medical, personnel and mutual aid communication. Arranges alternate accessways to plant. Maintains liaison with area mutual aid members and local civil defense authorities.

DETAILED RESPONSIBILITIES

MANAGER - O/A PLANT

At the outset of the emergency the Manager O/A Plant will be called to "Emergency Headquarters," where he will be available for counsel and guidance of the overall protection activity.

PLANT MANAGER

The plant manager will direct all protection activities prior to, during and after the emergency. The responsibility is his to insure that emergency planning is adequate and that the organization of the

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emergency groups, emergency equipment, and training is sufficient to handle any foreseeable catastrophe.

The Plant Manager will report to emergency headquarters as soon as the emergency is declared.

The Plant Manager will relay and clear calls for information and assistance between plant groups. He will keep the Manager O/A Plant and emergency leaders informed as information becomes available.

It is the responsibility of the Plant Manager to order evacuation of employees and authorize all clear signals.

PRODUCTION MANAGER

Responsible for the organization, training, and execution of the protection plan in the production department.

Takes steps to control operations and put production equipment in a safe standby condition.

Directs the flow of products on the units, offsites and pipe lines. Takes necessary precautions to insure safe storage of products and protection of storage equipment.

Notify neighboring areas of the hazards involved and get instructions to off duty personnel regarding the conditions on the production equipment.

Establish evacuation plan for production employees. Survey damage to production equipment and initiate plans for restoration.

Maintains a close working liaison with the entire emergency team throughout the emergency.

MAINTENANCE MANAGER

Maintenance: Crews will be assembled by the Maintenance Manager as needed to affect demolition or repair measures as the emergency develops. It is his responsibility to keep Emergency Headquarters advised as to equipment used and work accomplished.

Equipment: The Maintenance Manager is charged with the responsibility for having necessary equipment and operators available and maintaining the equipment in a state of readiness. Calls for outside maintenance equipment aid originate with the Maintenance Manager.

Transportation: The Maintenance Manager is responsible for transportation of the

working forces. He will assemble vehicles and crews at strategic points and assign them to work as requested by Emergency Headquarters.

Construction: All construction, both temporary and permanent, requested by Emergency Headquarters will be the responsibility of the Maintenance Manager. Braces, shelters, scaffolds, tie-downs, drainage, and levees.

CONTROLLER

In case of mechanical communication failure, the Controller will have a messenger service organized as an alternate.

All procurement of food, materials, supplies and equipment will be the responsibility of the Controller.

Any problems arising that deal with finances will be handled by the Controller.

Perform any related duties as directed by the Manager O/A Plant.

EMPLOYEE RELATIONS SUPERVISOR

Medical: The Mobil Oil medical section and hospitals will handle all injuries.

Employee Relations Supervisor will authorize calls for medical aid. Employee Relations Supervisor will authorize release of information regarding injured personnel. He will be responsible for all health and sanitation problems.

Security: Employee Relations Supervisor is responsible for the security of personnel and property during and after the emergency.

Fire: The implementation of the existing plant fire protection plan in the event of fire is the responsibility of the Employee Relations Supervisor. In emergencies posing a threat of fire, it is his responsibility to have all fire protection equipment and materials in a standby ready status.

Safety: The safety section is responsible for assisting in accounting for personnel, continuous inspection for safety hazards and maintaining first aid, rescue and safety equipment in a state of readiness. Perform special assignments as directed by the Employee Relations Supervisor.

Personnel: The Employee Relations Supervisor will handle all contacts regarding injuries or fatalities. Employee Relations Supervisor is responsible to see that these contacts are made before any news releases to other agencies are completed. All claims concerning personal

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injury will be handled by the Employee Relations Supervisor.

Public Relations: Employee Relations Supervisor or his designated representative is responsible for all contacts with outside agencies. No information shall be given to representatives of the press, radio, television, or general public without prior approval by the Employee Relations Supervisor. All visitors to the plant during emergencies will be screened and handled by the Employee Relations Supervisor.

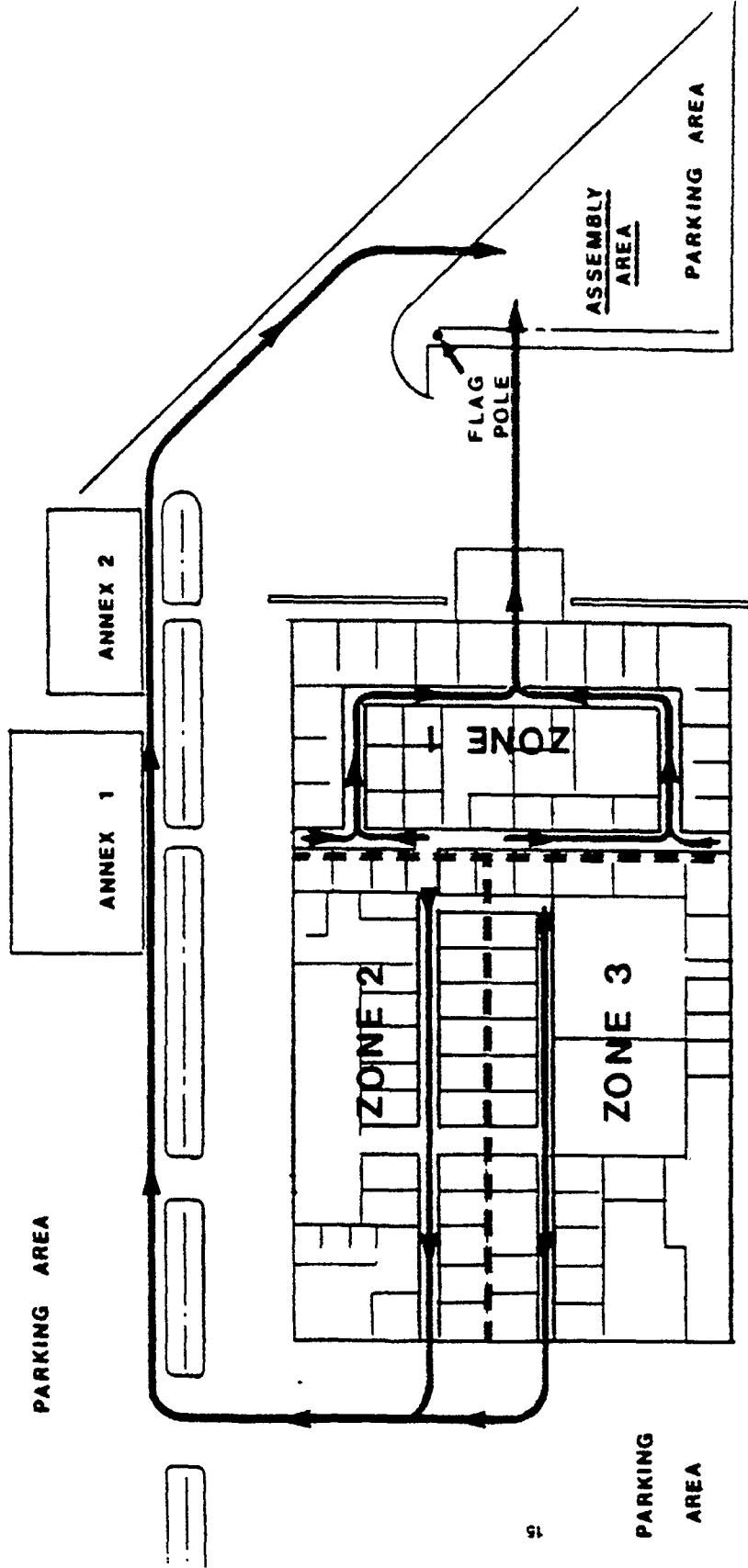
Mutual Aid: Employee Relations Supervisor will serve as liaison for the Plant Manager on matters of mutual aid. This includes neighboring industries, local, state, and federal agencies.

MANAGER - BCSP

Coordinates all activities of the BCSP operation with the Headquarters Emergency staff in time of emergency.

TECHNICAL MANAGER

Utilities: The Technical Manager will coordinate all utility and power activities during emergencies. A close working arrangement will be maintained with power suppliers and plant operating supervision. In case of failure of any utilities, the Technical Manager will notify all affected areas by telephone or messenger.

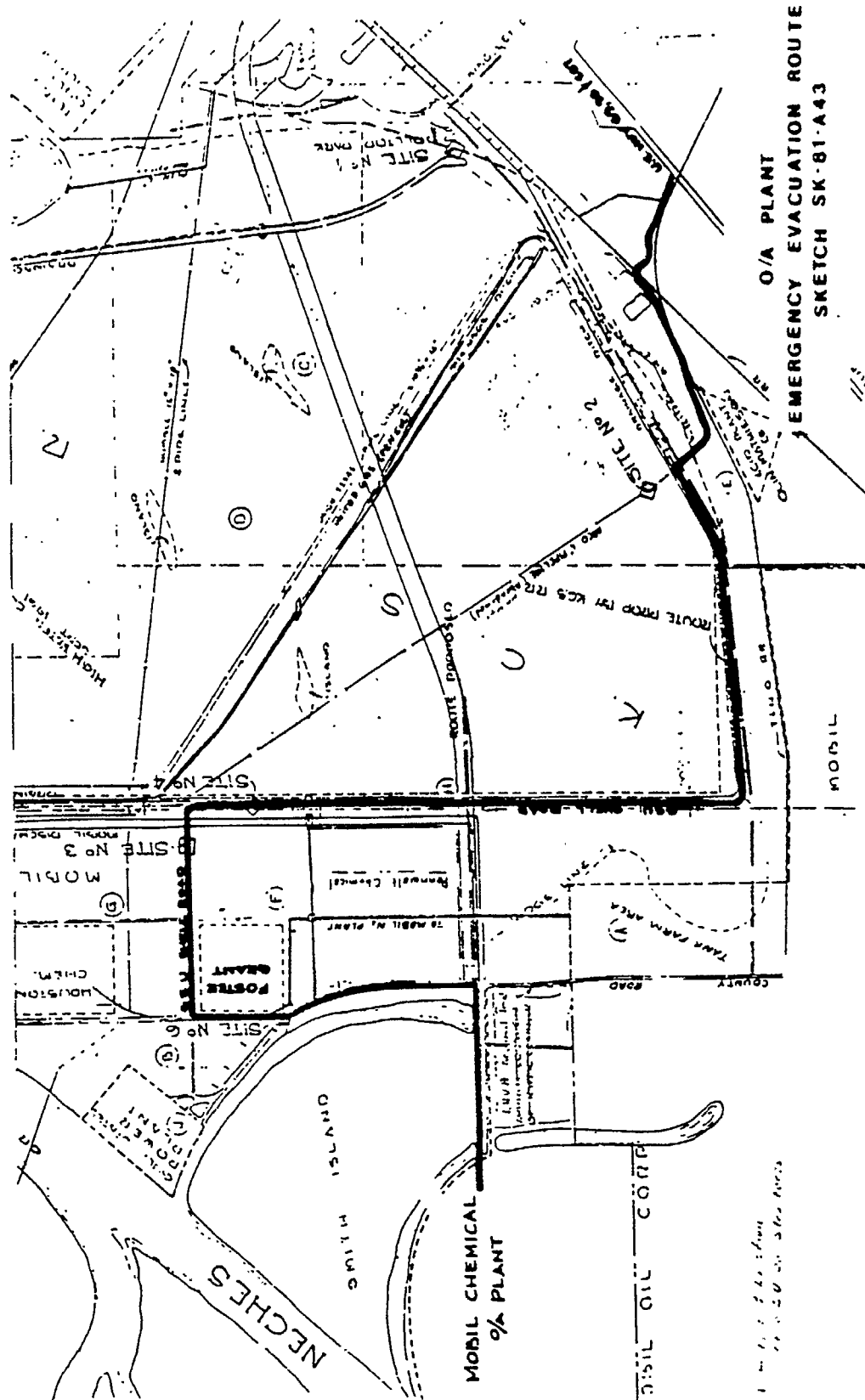


ADMINISTRATION
BUILDING EVACUATION PLAN

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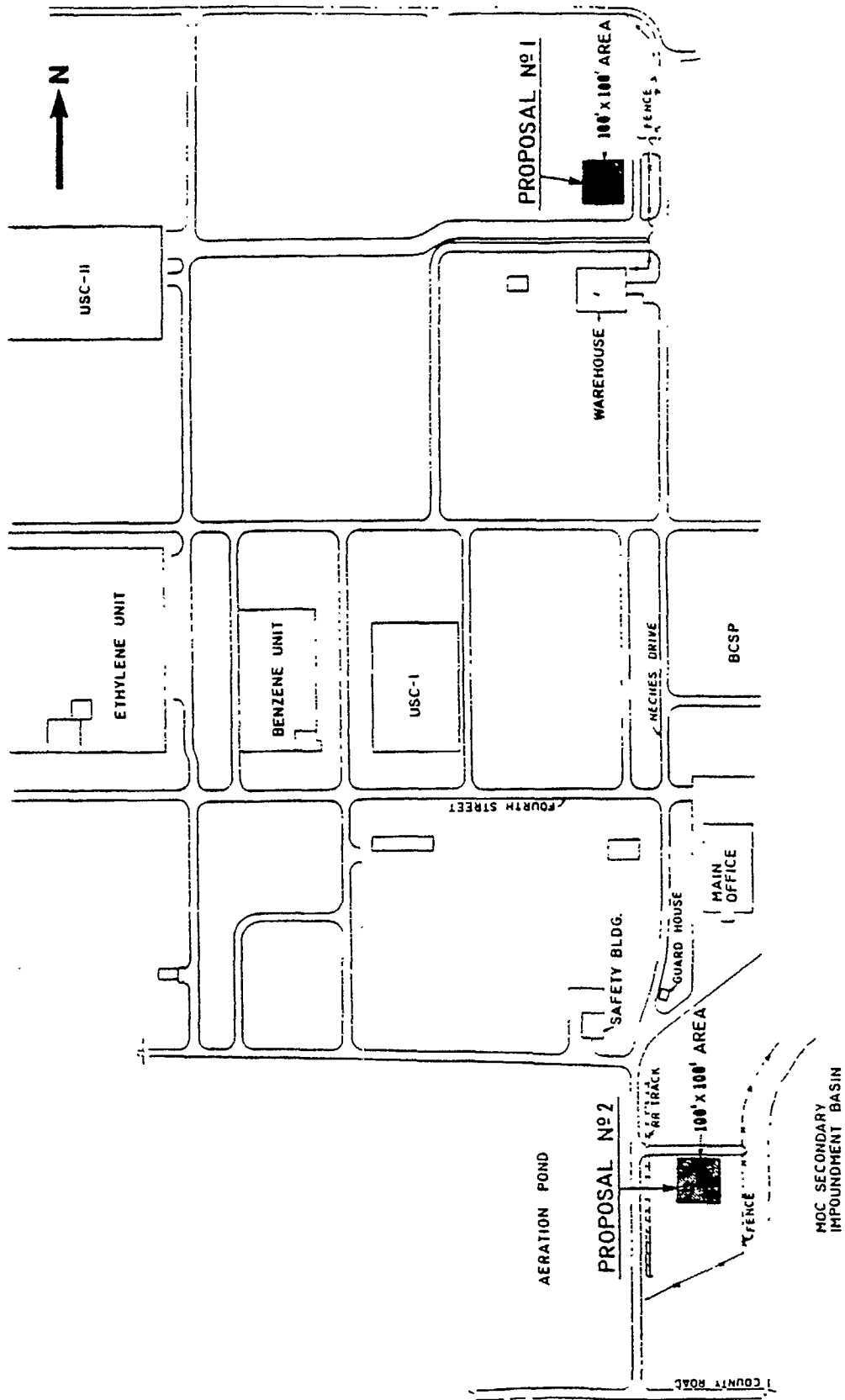
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PROPOSED LIFE FLIGHT LANDING SITES

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Visitor's Pass - Office Area

This is a fabric pass with an adhesive back, displaying the company name, pass number, date and words, "Visitor Office Area," in the upper left hand corner. This pass is issued by the attendant after approval for admittance has been received from appropriate person or persons within the office area. Visitor must register with the attendant before entering and must be signed out upon leaving the plant. Office area visitors will be escorted from their entry point to the place of visitation and back to the exit point. These passes are white with orange lettering.

Exceptions to Entry Pass Procedure:

Employees of professional ambulance company when entering the plant to make an emergency pickup. Fire fighting personnel entering the plant on a Mutual Aid call.

Employees of the KCS of SP Railroad while switching cars in this plant. This exemption is valid only for the area of the switch yard and coker tracks.

Employees of a vessel loading or unloading at the Wharf while on the wharf, tug boat, dock or smoke bench area at the wharf, and while being transported to and from the main gate.

Employee Privately Owned Vehicles

Authorization to Designated Parking Areas

This dark blue decal 2" x 3" in size with white lettering is to be attached to the lower right corner of the employee's windshield. This decal has the company name, employee's employment number, and plant location printed on the face of the decal and is required of all vehicles parking in Mobil Chemical employee parking area.

Authorization to Enter Production Area of Plant

Employee's privately owned vehicles will not be allowed in the plant without approval from the O/A Manager or his delegated representative. Vehicles with catalytic convertors will be allowed on the main roads and designated parking areas only.

Mobil Chemical Company-Owned or Leased Vehicles

Company owned or leased vehicles are marked "MCB" in the lower right corner of the windshield in in one inch letters followed by the vehicle number. These letters and numbers are painted a bright

orange color and are respected as authority for entry into all Mobil Chemical Plant areas.

A record of all traffic that enters or exits the plant is maintained by the safety and security department. This includes the drivers name, time in, time out and destination. If the gate attendant does not have this information or does not recognize the driver, they will be stopped and required to give this information.

Entry for Commercial Vehicles

A truck gate is provided for entry of commercial vehicles, trucks, cars, trailers, etc., into the production area of the plant. The truck gate is located adjacent to the employee-pedestrian entrance and will be manned 24 hours daily seven days a week. The truck gate is to remain closed and opened to allow a properly registered vehicle to enter and leave the production area.

Operators of commercial vehicles will furnish the attendant information required on the truck register. This information includes the name of the company represented, driver's name, truck number, pass number issued, cargo description, destination in plant, and time of arrival.

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The gate attendant in each case will complete a physical inspection of the vehicle to insure that data furnished by the operator is correct.

Operators of commercial vehicles leaving the plant will be signed out on the same register used in gaining entry into the plant. If leaving without pay load, the time of departure is the only entry necessary. Commercial vehicles leaving with pay loads must present invoices to gate attendant before departing.

The gate attendant will inspect all incoming and outgoing commercial vehicles to insure that no unauthorized material or equipment enters or departs the plant.

Gate Pass for Material Procedure

The "Gate Pass for Material" is a standard form to aid in the control of tools, equipment and materials leaving the plant. This form is prepared in triplicate. The original and one copy is given to the person moving the material from the plant and the second carbon is retained by the Company representative authorizing the movement. The original copy is recovered by the gate attendant and is turned in each morning to the Security Coordinator who checks and files for future reference. The

first carbon is retained by the mover of the materials for use as authority of possession and entry of the material into the facilities.

General responsibility for the "Gate Pass Procedure" is as follows:

The Mobil Chemical representative is responsible to complete the form properly, and to describe the material in sufficient detail so that the gate attendant can recognize and inventory the material leaving the plant. The O/A Manager is responsible for maintaining a current list of employees authorized to sign gate passes.

All tools and equipment leaving the plants for any reason are the responsibility of the Mobil Chemical Maintenance Manager and must bear the signature of an authorized representative.

All materials leaving the plant for maintenance purposes, regardless of destination (outside job or jobs in plant) must bear the signature of an authorized representative of the Maintenance Manager.

The movement of materials from the plants for purposes other than maintenance is the

responsibility of the Production Supervisors, or the Warehouse Supervisor and must bear the signature of an employee authorized by the O/A Manager.

Outside contractors that work in the plant on a regular basis (GSU, Big Three, etc.) will be given a permanent entrance pass and will not require a gate pass when leaving, and will still be subject to search at any time.

Special rules governing the preparation of the gate pass forms are:

A ball point pen should be used for all entries on the gate pass form.

All entry blocks of the form applicable to the cargo must be completed.

The gate attendant is responsible for recording the information in the lower left section pertaining to the gate, date and time of exit.

Withdrawals from the plant that appear unusual to the guard will be reported immediately to the Safety & Security Supervisor, or his designee, for investigation.

Vehicles that completely discharge their cargo inside the plant will not be required

to present a gate pass to leave the plant empty.

Special category passes or material transfers listed below will be processed as described:

Temporary Contractors operating within the plant must use the regular "Gate Pass for Material" form to remove equipment and material from the plant. The passes must be prepared and signed by an authorized Mobil Chemical Company representative.

Salvage property sold is removed from the plant on a "Material Transfer" form signed by Salvage Committee Chairman and the Olefins/Aromatics Manager. Once the material transfer is processed and stamped "Paid" by accounting, it is authority to drive into the plant and pick up the material purchased. The "Material Transfer" will be left with the gate attendant upon leaving the plant with the material. The purchased material will be checked against the "Material Transfer" by the gate attendant before allowing the load to leave the plant.

Company trash (boxes, bottles, cartons, etc.) that normally would go to trash, but is requested by a Mobil Chemical em-

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ployee for his personal use, requires a gate pass bearing the signature of an authorized Mobil Chemical representative and a member of the Plant Salvage Committee.

All waste leaving the plant requires either a Texas Department of Water Resources (TDWR) waste control ticket or a Mobil Chemical Waste manifest. Waste material going to an off-site location is to be accompanied by a gate pass. The security guard will pick up the gate pass.

Material to be disposed of at the MCC on-site landfill requires a Mobil Chemical waste manifest. Two copies of this manifest are picked up by the security guard. No gate pass will be required. One copy will be sent to the Environmental Control Office and one to the Safety Department for filing.

The O/A Plant Execution Supervisor (Area II) or his designated representative is responsible for determining what can be disposed of at the landfill.

MISCELLANEOUS

"Intoxication, possession of alcoholic beverages or illegal drugs, or possession of firearms on company property is prohibited. Anyone found with the above will be subject to termination and/or reported to law enforcement agencies."

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Traffic Control Policy

The following traffic policies are established to protect personnel and property of the Mobil Chemical Company and to move traffic in the plant expeditiously and efficiently.

Street Marking

East and west streets will be numbered numerically beginning at the north boundary of Mobil Chemical property. The numbering will be to the south.

North and south streets will be lettered alphabetically, beginning on the west side of the Mobil Chemical Company property and will be lettered in an easterly direction. The lone exception is the main thoroughfare running south to north from County Road to Neches River, which will be marked "Neches Drive." East and west streets off Neches Drive will have right-of-way. Intermediate streets and accessways may be named according to the facility being served.

Street Markers

Street markers will be located at each road or street intersection.

Intersection Signs

Stop signs will be placed at each intersection of north and south streets with east and west streets. East and west streets will stop before entering Neches Drive, which is the main artery.

Stop signs will be used at "all" intersections.

Caution signs will be used on congested streets and in areas of heavy pedestrian traffic.

Do Not Enter traffic signs will be used as required for the safety and protection of personnel and equipment.

Speed signs will be sparsely but conspicuously located.

Parking

Parking will be limited to established parking areas. Street and road shoulder parking will not be allowed.

Passenger Control

Vehicles must come to a complete stop to load or unload passengers. Passengers must be seated and remain so while vehicle is in motion, and arms and legs

must not extend beyond sides and rear of vehicle. Permitted load limits will be established and must be adhered to when carrying personnel.

Vehicle Operators

Vehicle operators must be completely familiar with all plant traffic rules and policies for in-plant operation.

Drivers of company vehicles outside the confines of Mobil Chemical property must have a complete knowledge and understanding of all traffic laws in the state, county, and city in which they are operating. A valid operator's license must be on the driver's person at all times when operating company vehicles.

Pedestrian Traffic

Pedestrian traffic will use the left side of the road or street thus facing oncoming vehicle moving on right side of the road or street.

Pedestrian traffic has right-of-way and will not walk more than two abreast.

Bicycles

Bicycles will be operated in the plant in conformance with safety procedure number fifteen.

Security Equipment and Installations

Perimeter Fencing

All perimeter boundaries of the Mobil Chemical property are enclosed by chain link fence topped with three strands of barbed wire.

All openings leading into the area will be securely locked or guarded. Equipment and materials in remote areas of the property will be patrolled by the security force.

Security Lighting

Adequate lighting is considered a vital part of our plant security program. Lights are installed in all parking areas, around buildings, equipment, and materials storage locations, and along the perimeter fence. Guard personnel will be equipped with portable lights for emergency use.

Security Lock System

A Best lock system is utilized to secure Mobil Chemical Company property. This includes office buildings, gates, metering stations, loading facilities, etc. The only exception is the receiving warehouse where a Medeco lock system is used.

Authority to Search

Mobil Chemical Company reserves the right to search any vehicle or containers (bags, lunch boxes, etc.) leaving Mobil Chemical property. This includes regular employees, temporary employees, visitors and contractor personnel.

Gates

All perimeter gates will remain closed and locked when not in use or manned by an authorized security guard. This applies to rail, pedestrian and vehicular traffic gates.

Records, Reports, Registers, and Files

Security Records

The plant security section will maintain a complete set of records covering security activities.

Security Reports

A daily report covering security activities for the previous 24 hour period is submitted to the Safety & Security Dept. at 8:00 a.m. each morning. This report will cover both routine operations and any unusual incidents that may occur.

Release of Information to Civil and Military Authorities

All releases of information to outside agencies will be cleared through the Employee Relations Supervisor.

Mobil Chemical Safety & Security section will maintain a working arrangement with federal, state and local authorities dealing with law enforcement, security and defense.

Personnel Files

Personnel data security file is maintained on each permanent employee. The file is maintained in the Employee Relations office and includes photograph, and signature of employees plus pertinent personal data.

PHYSICIANS TO BE CALLED IN EMERGENCIES

PLANT PHYSICIANS, DR. JAMES K. STEWARD - (home) 866-4994 (plant) 71-3712

IF PLANT PHYSICIAN CANNOT BE REACHED, CALL APPROPRIATE SPECIALIST

Eye Specialists

Dr. Jerry Johnson	833-3365	892-3086	892-2433
Dr. M. W. Haisten	833-3365	892-0249	892-2433
Dr. John R. Babb	833-3365	866-2481	892-2433
Dr. Weatherall	832-7611	892-7274	892-2433

Orthopedic Specialists (Fractures, sprains, back injuries, etc.)

Dr. L. Scott Wallace	838-0346	892-6098	832-1501
Dr. James W. Schuffield, Jr.	838-0346	892-2904	832-1501
Dr. J. McNeill	838-0346	892-1029	832-1501
Dr. G. G. Gill	838-5221	833-0291	892-2433
Dr. R. L. Shorkey	838-5221	892-9193	892-2433
Dr. A. Bessell, III	838-5221	866-6056	892-2433
Dr. H. A. Reid, III	838-5221	866-5284	892-2433
Dr. C. Dominiques	838-5221	866-2009	892-2433

Surgeons, (Lacerations, open wounds of any kind, burns)

Dr. W. W. Washburn, Jr.	838-6329	892-9434	892-2433
Dr. Youel C. Smith, Jr.	838-6311	866-2768	892-2433
Dr. M. M. Self	838-5241		838-5241
Dr. L. R. Lancaster	838-6453		838-6453

Dr. A. W. Harrison	838-6453	8386453
Dr. Howard B. Bell	838-6453	838-6453
Dr. A. J. Hinshaw	835-6581	835-6581

Neurosurgeons (Head injuries)

Dr. Harry Starr	838-3771	892-2433
Dr. Earl H. Rafes	838-3771	892-2433
Dr. M. E. Faulk	838-3771	892-2433
Dr. Mark J. Kubala	838-3771	892-2433

Internists (Other emergencies, including gas exposures, unconsciousness, etc.)

Dr. Leon Stertz, Jr.	832-8478	838-4289	832-1501
Dr. J. J. Esslinger	833-3307	833-4813	832-1501
Dr. D. D. Moore	838-1618	892-7167	838-1618
Dr. James Ivers	838-5205		892-2433
Dr. Stewart M. Williams	838-5205		892-2433

Hospitals:

Baptist 835-3781
St. Elizabeth 892-7171

Note: Carry all burn victims to
Baptist Hospital

Ambulance Service:

Beaumont Paramedics 842-5522
Kelly-Hixson Funeral Home 892-3456
Crawford Emergency Service .. 842-5140
L. M. Williams 835-5333
Sheriff Dept. 835-8411
Dept. of Public Safety 898-0770
Civil Defense 722-4371
Beaumont Fire Dept. 838-6371
Life Flight 839-5433

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FIRST AID CHART

INJURY	SYMPTOMS	TREATMENT
ASPHYXIATION	Breathing stopped; un-conscious; lips blue.	Remove to fresh air. Start artificial respiration.
BLEEDING - ARTERY	Bright red blood spurting from wound.	Apply pressure over wound with sterile compress or go to the pressure point; If neither works apply tourniquet taking note of time. Do not loosen for any reason other than doctor's instructions.

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BLEEDING - VEIN	Dark red blood flowing steadily.	Apply pressure over wound with sterile compress, or go to the pressure point; if neither works apply tourniquet taking note of time. Do not loosen for any reason other than doctor's instructions.
BLEEDING - INTERNAL	Faintness; pale face; weak, rapid pulse. Similar to shock	Lower head, unless patient has difficulty in breathing. Give no stimulant.
BURNS - THERMAL	1st degree - the skin is reddened. 2nd degree - blisters develop.	Treat for shock. Cover with dressing.
BURNS - CHEMICAL	3rd degree deeper destruction.	Treat as above.

DROWNING -	Unconscious; not breathing.	Apply artificial respiration at once.
DISLOCATIONS	Swelling; deformity; pain on motion.	Keep injured part at rest. Do not attempt to reduce deformity.
ELECTRIC SHOCK	Unconscious; breathing stopped; no pulse; burn at point of contact.	Remove victim from point of contact (insulate yourself first.) Start CPR. Treat for burns.
FAINTING	Face pale; cold sweat; weak; rapid pulse.	Lower head. Keep victim warm. Give stimulants if conscious.

INJURY	SYMPTOMS	TREATMENT
FRACTURE - SIMPLE	Pain; swelling; tenderness to touch; deformity.	Support limb above and below fracture. Apply splint. Do not attempt to set.
FRACTURE - COMPOUND	Pain; swelling, tenderness to touch; deformity.	Keep broken ends at rest. Control hemorrhage by pressure points. Do not push back protruding bone. Treat for shock.
FRACTURE - SKULL	Bleeding from eyes, nose, mouth, and ears.	Keep patient warm. Turn head towards the side to permit drooling. Do not give stimulants. If dressing is needed, lay a large dressing over the injury.
GAS POISONING	Giddiness; fluttering of heart; yawning.	Remove to fresh air. Give oxygen.

HEAT EXHAUSTION

Pale face; clammy skin;
shallow breathing; weak
pulse.

Provide rest. Give salt
solution (1/2 teaspoon to a
half glass of water) every 15
minutes for 3 or 4 doses.
Massage extremities.

HEAT OR SUNSTROKE

Unconscious; face red and
Flushed; skin hot and dry;
breathing of snoring
character; slow pulse.

Provide rest. Elevate head.
Reduce body temperature by
applying cold packs to body
and head.

SHOCK

Pale face; cold, clammy skin;
partial or total un-
consciousness.

Keep patient lying down and
warm. Lower head. Give
fluids, but not alcohol.

WOUNDS

Break in skin - incised,
lacerated, punctured.

Apply sterile or clean
dressing and bandage into
place.

REMEMBER TO: Be calm. Locate the injury. Send for the doctor. Treat for shock.

MOBIL CHEMICAL COMPANY
OLEFINS/AROMATICS PLANT
BEAUMONT, TEXAS

ACCIDENT PREVENTION MANUAL

SECTION A. RESPONSIBILITIES OF
SUPERVISORS

GENERAL

The supervisor (defined as anyone directing people or work regardless of ordinary title) is charged with personal responsibility for the prevention of accidents.

Cooperation must be exercised with other supervisors in preventing accidents.

All Production Supervisors shall cooperate and coordinate fully with Mechanical Supervisors to the end of promoting safe operations of mechanical work in the vicinity of their equipment.

All Mechanical Supervisors shall cooperate and coordinate fully with Production Supervisors in all cases where work is being done on or in the vicinity of production equipment.

No work shall be started on operating units until the Mechanical Supervisor knows

definitely that the Production Supervisor has been notified what work is to be done and the Mechanical Supervisor has been issued a Safe Work Authorization.

When conditions arise either before starting a job or during the progress of any work, which in the opinion of a supervisor makes it unsafe to proceed, the work shall be stopped and the supervisor's immediate superior shall be notified at once.

Supervisors must know the safe methods of doing the work under his supervision.

All safety rules and regulations must not only be known by the supervisors but must all be practiced by way of example.

Responsibility for the proper maintenance and correct use of all safety devices and protective equipment required for the work is also the duty of the supervisor.

The use of safety devices and protective equipment shall be required by supervisors at all times when needed. When in doubt as to the necessity of using safety devices and protective equipment, their use shall be required.

Supervisors must instruct in the correct methods of doing the job safely.

Supervisors shall satisfy themselves that the people working under them are competent to perform their work with safety.

When receiving new people whether newly employed by the company or transferred from another department, attention shall be given to their mental and physical fitness for the work they are to perform.

The supervisors shall explain in detail to new employees the safety rules and safe practices which apply to their new job duties. It must not be taken for granted that new people know their work just because they say so.

The supervisors shall explain in detail the particular hazards of the department in which the employees are working and the precautions to be taken to insure their safety.

A follow-up should be made by supervisors on their instructions to make certain they are understood and carried out.

Supervisors are held responsible for taking all possible and reasonable precautions within their power to prevent accidents. They shall satisfy themselves by observance and checkup that all safety rules and safe practices are being observed.

Supervisors are responsible for the general housekeeping conditions on or around the work of which they are in charge.

Supervisors shall not permit the use of improper or unsafe tools or equipment.

No set of written rules, however complete, can provide for all situations, contingencies, or emergencies which are constantly arising. Supervisors are expected to see that intelligence is employed in the selections of methods in performing the tasks at hand.

The Following Rules Are Primarily Supervisory In Nature And Are To Be Observed And Enforced By The Supervisor:

All excavations shall be adequately covered or properly guarded when left before the work has been completed.

Makeshifts of any kind shall not be used.

When work is completed, all leftover material, junk, tools, and equipment are to be removed and put in the proper place.

All conditions which may affect the safety of people or equipment must be reported

to management at once. When correction is within the authority of the individual, it must be done immediately.

All portable hand lights must be of the explosion-proof type.

Electric extension cords and lights should be inspected before each use. They must be returned to the tool room for inspection at least once each week.

No work shall be started on acid, caustic, or hot oil lines or equipment before receiving the personal approval of the operating supervisor in charge. A Safe Work Authorization must be issued.

Supervisors in charge of operating equipment must make certain that the pressure is off, lines and equipment are drained where necessary, vessels and lines are blanked off where needed, valves are locked or tagged if necessary and that it is safe to perform the work before authorizing Mechanical Supervisors to proceed. Particular checking should be made on all chemical, acid, caustic, and hot oil equipment. When necessary, adjacent or connected lines or equipment should be protected against their being broken.

Arrangements shall be made to contact at regular intervals, all people working alone in isolated locations, by telephone or otherwise. These contacts shall be made at least twice a shift, at equal intervals, in addition to the contact at the beginning and end of the shift. More frequent contacts shall be made if the conditions are such as to justify it.

When work is completed, all guards, handrails, etc., must be replaced.

All installations requiring the placing of electric circuits or conduit underground are to be protected by a layer of concrete to which red coloring matter has been added.

Gas tests and O₂ tests must be made before entering a vessel or excavation where a person's head will be below the top of the vessel or excavation. Such gas tests must be repeated at frequent intervals in recognized gaseous areas. Care must be exercised to see that all possible sources of gas accumulations are found and cared for.

No connections into or alterations to the domestic water systems shall be made without the knowledge and written approval of the Utility Engineer.

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The number of employees working on or around a process unit must be kept to an absolute minimum when that unit is being taken out of operation or being put into operation. The Production Supervisors are responsible for advising the proper Mechanical Supervisors when such operations are in progress. Mechanical Supervisors must notify the operating personnel when they are starting work on any part of an operating unit.

SECTION B. FOR ALL EMPLOYEES

PERSONAL CONDUCT

Every employee should consider it a part of his duties to take an active part in all safety work and should insist on the observance of safe practice by fellow workers.

All injuries, no matter how slight, must be reported to the supervisor.

An employee getting his clothing saturated with oil or chemicals must wash the parts of the body affected with water, change his clothing, and report to the Mobil Oil medical building if necessary.

Before starting any work on lines or equipment request specific instructions from the operator of the equipment involved and obtain his permission before proceeding with the work.

Loitering around operating units is prohibited at all times.

Place tools or materials on scaffolds, tank buggies, top of towers, platforms, or other elevations in such a manner that they will not create a tripping hazard or become dislodged and fall.

Before lowering material from above, the area below must be properly blocked off and guarded to prevent anyone from passing underneath.

All loose objects must be removed from the top of tank buggies or scaffolds before they are moved.

Conduct which may be termed "fooling" or "horseplay" is strictly forbidden.

Climbing over railroad cars, crawling or sitting under such cars or attempting to pass between cars that are standing close together on the same track, except at loading racks, is strictly forbidden.

Employees must never use high pressure compressed air to clean their clothing or their person, and the air hose must not be pointed toward anyone.

Do not use short cuts or make pathways through process equipment areas.

Where walkways are provided, employees shall use them. When necessary to use the roads, employees shall keep on the left side in order to face any approaching vehicles, unless otherwise directed by traffic signs.

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Major work shall not be done while standing on lines or fittings.

Avoid walking on pipe lines, transite roofs, or defective roofs.

Exercise every effort to prevent anyone from walking in the vicinity of lines holding a strain.

All employees shall keep clear of suspended loads.

Employees should be on the watch for leaks, defective ladders, railings, cables and all unsafe conditions or absence of safeguards. Report such defects to your supervisor or to the Safety Department and write a work request to correct these defects.

Do not use defective equipment of any kind.

Use the proper method when lifting; keep the back as upright as possible, using the leg muscles. Do not attempt to lift more than can be safely handled. See that there are sufficient men for the load. Use a hoist to move large heavy object.

In cases of serious injuries and injuries which might be serious even though not

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apparently so, call the ambulance; give specific information as to the exact location where the ambulance should go. If possible, state the extent of the injuries. Give your name and number.

Every employee is urged to secure knowledge of correct emergency first aid. This can be done by taking one of the standard First Aid courses.

Do not pass under scaffolds or other elevations from which work is being performed.

Exercise care in walking and in moving from your work in order to avoid slipping, tripping, or falling. Particular care should be taken while walking on fire walls or going up or down stairs.

Falling objects have caused many serious injuries. Handle material with care. Keep feet in the clear.

Lunches shall not be stored or eaten in any area where toxic materials are present.

Protective hat must be worn at ALL times while on job. Only exceptions are in office building or other building where there are no hazards from falling objects and no mechanical work is being performed.

When working on equipment in acid, caustic, or other chemical services wear impervious clothing such as goggles, protective gloves, rubber aprons, rubber boots, acid suits, face shield, etc.

All employees working with or where there is a probability of exposure to acid, caustic, chemicals, hot oil, steam or fires, must wear clothing covering the body, including some type of head covering; particularly, they must wear shirts with sleeves down. Any employee who in the course of his work may become exposed to the hazard, must wear shirts with sleeves which can be rolled down. When additional protective clothing is necessary, it must be secured and worn.

The wearing of shoes with protruding nails or metal taps is prohibited. (Employees should avail themselves to the privilege of purchasing safety shoes through the company and should wear them at work.)
NOTE: See Work Procedure No. 8 for additional requirements.

Employees must not wear neckties, dangling sleeves, or other loose clothing while operating or working close to moving machinery. Gloves must not be worn while using abrasive or buffing sheels.

Do not tie or attach a rag to your person in such a manner that it can not be removed with one quick movement.

Long-cuffed gloves and other protective equipment, should be used in drawing hot oil samples.

No rings, bracelets, necklaces, wrist watches, etc., should be worn when one is working around moving machinery or when exposed to chemicals.

Do not work in oily clothing as a flash might prove fatal. Have work clothes washed frequently.

ELECTRIC EQUIPMENT

Only authorized employees shall start electrically-driven equipment. In the event that it does not start or run properly, they must not tamper with it. The Electrical Department must be notified.

In cases of emergencies, Electrical Personnel or instructed individuals are permitted to change cartridge-type fused up to and including 440 volts. Under all circumstances, an electrician must be called.

Vapor-proof globes are not to be removed for any purpose, except for cleaning or by

those authorized to replace burned out light globes. They must be replaced. This does not apply to explosion-proof fixtures which can be opened only by authorized person.

All electrical equipment must be properly grounded.

On portable electric equipment with an outside ground wire, the ground connection must be made before making the electrical connection. Work the ground clamp back and forth at the point of connection, so that rust, paint, etc., will be scrapped off, thus insuring a good connection.

The use of an unapproved flashlight is prohibited.

An electric extension cord should not be used if it is in bad condition. Check each cord before using it for bad insulation, broken grounds, or cracked or broken protecting globes. Avoid wrapping the cord around the arms or any part of the body. Avoid standing in water while using the cord.

Employees should regard all wires as live and dangerous and are warned against permitting any object being handled to

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come in contact with electric lines. The insulation on the wire is no guarantee that it will not cause instant death. Any wire found dangling from a post or any other electrical equipment should be reported immediately to the Electrical Department.

Any defective electrical equipment should be reported to your supervisor or to the Electrical Department.

See Safety Procedure No. 4 before starting or stopping electrical motors.

EYE PROTECTION

No attempt shall be made by any employee to remove a chip or foreign substance of any kind from the eye, other than the use of an emergency eye fountain in case of chemicals.

Employees must wear the correct type of goggles on all operations where a hazard to the eyes exists. Consult your supervisor or the Safety Department as to the correct type of goggles to use.

The Following Work Requires The Use Of Goggles; In Addition, Supervisors May Require Their Use On Other Work Not Specified.

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Anyone working near other persons where work requires them to wear goggles must also wear them.

Working where rust, dust, sand, coke, or other foreign objects are blowing about.

Handling or moving junk, coke, brick, cinders, garbage, or trash.

Working in or going in and out of fireboxes.

Handling material in powder and semi-powder forms and where a dust hazard exists.

Mixing, pouring, melting, or working where there is a probability of exposure to molten metals, asphalt, pitch, or chemicals.

Handling chemicals or opening containers in which such material is received.

Cleaning, making repairs or adjustments on lines or equipment which contains or has contained chemicals or hot oil.

Opening or closing or adjusting packing on all chemical or light hydrocarbon valves.

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Opening, bleeding, venting, or draining lines, pumps, vessels, and other equipment, which have contained chemicals or pressure, either by opening drain valves or flanges.

Using air, steam, or other agents to open any plugged line or vessel or when exposed to the discharge or such agents being used to purge equipment to the atmosphere.

Adjusting packing glands on compressors, pumps, engines, etc., while in operation.

Cleaning or lubricating stopcocks, valves, pumps, or other equipment where grease plugs, pressure screws, or grease guns are used.

Investigating or working on or around oil, gas, steam, or chemical leaks.

Opening lines and dismantling equipment such as safety valves, pressure gauges, manhole covers, etc.

Internal inspection of towers, safety valves, and tanks.

Chipping, cutting, breaking, reaming, or drilling any material where a flying chip hazard exists.

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Grinding, filing, and buffing of all kinds.

All scraping and cleaning on metal surfaces.

Cleaning, removing, or tightening gauge glasses.

Performing overhead work which requires looking upward.

Using air, steam or water hose for cleaning.

All operations where there is a hammering of metal against metal, except carpenters driving nails.

When working in the vicinity of electric welding, wear goggles with special lenses.

Paint scraping and paint spraying.

Shearing scrap metal.

All welding and burning operations.

Working under rolling or stationary mechanical machinery or equipment.

Removing insulation, cutting insulation, lacing up insulation, handling granulated insulation, and on all close insulation work.

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Using pick or mattock.

Operating concrete mixer, cement gun, sandblasting, mixing, pouring, and puddling mortar or concrete.

Machine operations where a flying chip hazard exists.

Drilling into pipe lines.

Heating and inspecting heated materials and equipment.

Working with or replacing glass.

Handling rusty cables and materials.

Using portable pneumatic tools.

Using metal brush.

When pulling with pliers, when cutting wire under tension, or when handling wire where a hazard exists of loose ends flying.

Drawing hot samples of oil.

Drawing samples of light hydrocarbons, gas or chemicals from lines, vessels, or other equipment.

Starting fires in furnaces and inspecting fires and fireboxes.

Gauging any tank containing chemicals.

Drawing water when units are coming on.

No employee shall leave the plant when he knows that his eye is giving him trouble as the result of circumstances connected with his work, without reporting to the Medical Department or Supervisor. This must be done even though the employee thinks that there is no foreign substance in his eye.

All repairs to goggles should be made by the Safety Department.

FIRE PROTECTION

The use of burning or welding equipment, forges, tar pots, portable emery wheels, soldering equipment, nonexplosion-proof floodlights, string lights (which must be installed, moved, or removed by an electrician only) or any other such equipment, in locations outside of those areas approved for hot work, requires a - "Hot Work" permit.

All portable cleaned equipment such as steel drums, barrels, shell, and tube heat exchangers, etc., which can be readily moved from place to place with the possibility of becoming confused with a

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like piece of equipment which has not been cleaned, must be prominently marked as cleaned or gas free, together with the date of such preparation.

The use of light distillates for cleaning purposes is strictly forbidden.

Smoking, except at approved locations, and carrying matches other than safety matches anywhere within the plants, are absolutely forbidden.

Fire fighting equipment should be used for fires only.

Do not block access to fire fighting equipment with equipment or materials.

Never use water to extinguish a fire on or about electric apparatus unless you have been trained on the proper procedures. Water is a conductor of electricity. Use dry chemical extinguishers, CO₂ extinguishers or Halon extinguishers when possible.

Avoid working close to sewer manholes whenever possible. Do not drag or drop material on them as such action might create a spark.

Familiarize yourself with the location of fire extinguishers, fire blankets, and safety

showers in the area in which you are working.

GLASS CONTAINERS

Sample bottles are to be used only for those purposes for which they are furnished.

Samples having Reid vapor pressure of less than 15 lbs. require no special protection or marking.

Samples having Reid vapor pressures of 15 to 25 lbs. may be taken in the approved glass bottles provided they are kept during storage or transportation in an ice water - bath or in a metal container in a refrigerated storage room at a temperature not to exceed 45°F.

Samples having Reid vapor pressures of 15 lbs. or higher in glass containers must have a red tag attached solely for the purpose of indicating the vapor pressure. A separate tag should be used for sample identification.

Samples having Reid vapor pressures of 35 lbs. or higher must be taken in approved metal bombs, except under the following circumstances:

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Personnel conducting experimental laboratory work may place samples up to one quart in size in glass containers and store in wet or dry ice baths or in suitable refrigerated storage under their own custody. If the samples are to be transferred from one laboratory section to another, the conventional procedure must be used, except under special agreement with the receiving section head or his authorized representative.

Glass bottles three gallons or larger, regardless of contents, or one gallon or larger containing corrosive chemical solutions, shall be transported and handles only in a protective container.

Empty bottles and bottles containing clear products should not be placed where they might act as a burning glass and direct the sun's rays on flammable material.

GOOD HOUSEKEEPING

Remove or bend down all nails wherever they may be, using a hammer or other suitable implement, as protruding nails are a serious hazard. Do not bend down nails by stepping on them.

Do not place material or equipment closer than six feet from the outside rail of any railroad track.

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Keep all aisles, passageways, stairs, platforms, and ladders clear of all obstructions. Material should not be placed where it will offer a stumbling hazard and should be piled with due regard to safety.

Never allow oily waste, rags, or clothes to lie around. They should be placed in closed metal containers. Oily or chemically damaged boards should not be used to build scaffolds.

Any oil, catalyst, or chemical spilled on stairs, platforms, walkways, or any other walking areas should be cleaned up immediately; it may cause a fall.

Waste material should not be allowed to accumulate but should be cleaned up and hauled away.

Floors should be kept clean and in good repair.

GUARDS

All excavations must be adequately guarded or covered with boards to prevent anyone from falling or stepping into them. Boards of adequate strength and length must be used. Covers and guardrails must be replaced before leaving a job where the work is not continuous.

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Opening in handrails made to facilitate the handling of material must be adequately guarded. Permanent handrails and guardrails must be replaced immediately after the need for the opening is ended.

Handrails must not be used as a support for material such as exchanger heads, manhole cover plates, etc.

Any employee removing covers from manholes or pits in floors or in the ground must replace them or see that the openings are adequately guarded if left open.

When working on a ladder, platform, or piece of equipment over a road, walkway, or passageway, a warning sign "Employee Working Overhead" must be prominently placed below.

LADDERS AND STAIRWAYS

Ladders must be in good condition. They must be equipped with safety shoes and/or securely fastened to prevent slipping.

Ladders must not be placed in front of a door unless the door is locked or adequately guarded.

To descend a ladder, always face the ladder and keep a firm hold.

When necessary to climb ladders or stairways, use a hand line to raise or lower material. Carpenters building scaffolds and riggers doing construction work are excepted. However, they should see that a reasonably free use of the hands is provided at all times.

While going up or down stairways, avoid carrying tools or material in such a way as to prevent the free use of the hands.

When working from a ladder, care should always be taken to keep from leaning too far.

LIFE BELTS

Safety Belts, Lifelines and Lanyards.

Lifelines, safety belts, and lanyards shall be used only for employee safeguarding. They will not be used for any purpose other than employee safety.

Lifelines shall be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5,400 pounds.

Lifelines used on or in areas where the lifeline may be subjected to cutting or abrasion shall be a minimum of 7/8 inch

wire core manila rope for all other lifeline applications, a minimum of 3/4 inch manila or equivalent with a minimum breaking strength of 5,400 pounds shall be used.

Safety belt lanyard shall be a minimum of 1/2 inch nylon or equivalent, with a maximum length to provide for a fall of no greater than 6 feet. The rope will have a nominal breaking strength of 5,400 pounds.

All safety belt and lanyard hardware shall be drop forged or pressed steels cadmium plated. Surface shall be smooth and free of sharp edges.

Working over or near water.

Employees working over or near water, where the danger of drowning exists, shall be provided with U. S. Coast Guard approved life jacket or buoyant work vests.

Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units will not be used.

Ring buoys with at least 90 feet of line shall be provided and readily available for

emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.

At least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water.

MACHINERY

The operation of any machine except by an authorized employee is prohibited.

Do not work on any machinery while it is in motion, if it is practical to shut it down. All guards must be kept in place while the machinery is in motion and not being worked on.

No major repair work should be done over moving machinery. When working close to moving machinery, a guard must be provided between the machinery and the men working.

Tool rests on abrasive wheels must be kept adjusted 1/8 inch to the wheel and above the center of the wheel.

Only authorized employees shall be permitted to change or replace grinding wheels on permanent installations.

Hoist machine operators should keep their eyes on the person giving signals and should not allow cables to stack up in the side of the drum.

MECHANICAL EQUIPMENT

The use of any makeshift apparatus is prohibited. For example, drums of barrels must not be used for workbenches, supports for scaffolds, etc.

Employees are not allowed to ride on material, hoists, crane blocks, or crane loads.

Chains are to be used only in places and on work where their use has been authorized.

Inspect all scaffolds and working platforms before going on them to see that they are adequately supported and made from good and substantial material. Use enough boards to provide sufficient footing. All scaffolds must have hand rails, mid-rails and toe boards.

Do not overload any scaffold or platform.

Avoid the use of ropes which show wear or which may have been weakened due to exposure to the elements or to chemicals.

Test ropes before trusting your life to them.

PETROLEUM AND CHEMICALS

The petroleum aromatics and certain chemicals present additional hazards to those of the ordinary petroleum hydrocarbons. In addition to the vapor inhalation hazard, they may be absorbed by skin contact. Care should be taken to avoid skin contact.

Before entering vessels or closed areas, such as pump pits, where aromatic hydrocarbons or chemicals have been stored, authorized personnel must be called in order that proper tests for concentration may be made. Fresh air mask, or respirators suitable for the condition which exists must be worn.

Fresh air mask, or respirators and protective gloves must be used when gauging and sampling these materials in tanks or tank cars.

Protective gloves must be used when sampling these materials at units.

In case of skin contact with these materials, they must be immediately washed off with soap and water.

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When sampling or gauging on equipment handling these chemicals, extra care should be taken to avoid skin contact. The hands should be washed with soap and water after such operations.

When opening or cleaning equipment, processing or handling these chemicals, protective equipment such as gloves, rubber aprons or suits, etc., must be used.

If any of these chemicals are spilled on the clothing, the clothing shall be removed and a shower taken. If a change of clothing is not available, coveralls may be provided upon authorization of the supervisor or his authorized representative.

Any skin irritation must be reported to the Medical Department.

Tanks and equipment handling toxic materials shall be posted with the approved caution sign.

When tanks which have contained these materials are removed from service for cleaning, the Safety Department is to be notified.

When mechanics are given permission to work on lines or equipment handling toxic material, the line or equipment must be tagged with a caution tag by the operator designating the work.

Before giving permission for equipment to be repaired, the operator must check that all the necessary preparations have been made, that the required permits have been issued, and that the mechanics have been advised of any special hazards.

No one shall enter any vessel which has contained oil, chemicals, or other harmful materials, until the vessel has been properly prepared and the necessary permits have been issued.

Before returning equipment to service after repairs, the operator must inspect it to assure that it is in proper condition to operate.

When equipment in chemical service is to be worked on, a connected water hose must be at hand. Do not permit work until the hose is connected and ready to use.

Caustic or acid solutions should never be placed in galvanized iron drums.

Do not gauge acid or caustic tanks when materials are being unloaded into the tanks.

The air pressure used to remove any chemicals from tank cars shall not exceed thirty pounds per square inch.

Red tags are to be used on all containers holding samples having a Reid vapor pressure above 15 lbs. Approved sampling bombs are excepted.

Employees exposed to any toxic materials shall consult their Supervisor for definite instructions and necessary protective equipment. Written memoranda covering the regulations for handling toxic materials will be issued and are to be considered a part of this Accident Prevention Manual.

Wear respirators when gauging and sampling in order to avoid, as far as possible, breathing vapor or fumes as they may be harmful.

If highly volatile products come in contact with the skin, wash them off at once as they may cause severe burns. If burning occurs, report to the Supervisor and get treatment at once.

PRODUCTION EQUIPMENT

When any work is to be performed in a confined space, a standby person is required. The person performing the work shall be responsible for seeing that a standby man is provided.

When any work is to be performed inside an enclosed space where a hazardous condition exists or may be created by work inside or other mechanical work in the vicinity, one man shall be designed to remain in constant attendance immediately outside to give warning, or render assistance in any emergency. The supervisor in charge of the work shall be responsible for securing the individual to function in this capacity, and for providing proper equipment and instructions.

The standby person shall be a person who understands the work being performed, who is capable of recognizing conditions which are hazardous, and who can render adequate assistance in emergencies. The equipment to be furnished (rope, extinguishers, blanket, respirators, etc.) shall be determined and secured by the supervisor in charge of the work. The instructions to be given the standby person shall be determined by the person or persons involved.

Because of thermal expansion, liquid must not be blocked off in any line or piece of equipment where the temperature of the liquid can be raised from any source of heat. Failure to bleed vent or circulate the liquid may result in the rupture of the line due to thermal expansion and a possible subsequent explosion. Attention is called to refrigeration systems, exchangers, coolers, condensers, cooling jackets, steam traced lines, pancake coils, and similar types of equipment.

Production operators must see that water or test liquid has been drained from equipment hydrostatically tested, after the final test has been made and before the equipment is placed in operation.

Tightening or adjusting of production equipment in service must not be done until the Mechanical Department mechanic doing the work has made a personal check of the work and received the approval of the Production Department. Some member of the Production Department must be in the immediate vicinity when the work is being done.

Before starting a fire in a firebox, be sure that the firebox has been purged of gas.

Do not go on top of tanks during storms.

When gauging tanks with steel tapes, the tape should be kept in contact with the gauge hatch at all times when raising or lowering the bob.

Inspect all stairways, tank tops, and lines as you pass over them and report any major defects. Keep off roofs as far as possible, particularly roofs showing signs of rusting.

RESPIRATORY PROTECTION

Where a gas hazard exists, respirators of a type suited to protect against the specific condition must be worn. If there is any doubt, consult your supervisor.

The following work requires the use of a respirator; in addition, supervisors may require its use on other work not specified.

Dust Respirators:

Using buffing machines.

Installing or repairing lead lining in enclosed vessels or enclosed spaces.

Cleaning tubes in boilers, stills, flues, etc., where a dry or dusty condition exists.

Dismantling concrete, brick, removing asbestos insulation or other materials of a similar nature.

Acetylene burning and cutting in confined spaces.

Handling materials in powder or semi-powder form or which cause dust particles to be present in the atmosphere: (catalyst, aluminum sulphate, bulk soda lime, sulphur, filter clay, and all powdered chemicals).

Handling litharge.

Filling sandblast and gunnite machine.

Handling cement in enclosed areas and dumping cement bags.

Anyone standing or working near other persons whose work required the use of a respirator must also wear one.

Organic Respirators:

All paint spraying operations.

All operations where annoying or irritating gases or fumes may be present in small quantities.

Before using a respirator, be certain that you are thoroughly familiar with the proper methods of adjusting and testing it. See your Supervisor or report to the Safety Department for instructions.

In mounting stairs with a respirator on, walk up slowly and rest a minute at the top before beginning operations.

TOOLS

Do not use defective tools.

Small wrenches or light wrenches of any kind shall not be struck with a maul or hammer.

The use of two open end wrenches to secure leverage by placing one into the jaws of the other is prohibited.

Files without handles must not be used (glass work excepted).

Tools made from spark-resistant material must be used where gas may be present. The minimum requirements are the use of intermediate tools made of spark-resistant materials. In extreme cases, a water hose must be placed on the tools.

When using a wrench, be sure it fits properly and in applying force push or pull evenly and steadily.

Before using a pneumatic tool, inspect the couplings and hose connections to see that they are safety attached and in good condition.

No hoist or chain block is to be used for a load greater than its rated safe working capacity. These tools should be inspected

before each use to assure that they are in good condition.

Care should be exercised to use the proper tool and method for the work at hand.

Exercise care in carrying and using tools to avoid injury to yourself and others.

SCAFFOLDS

It is the intentions of Mobil Chemical O/A Plant to use Reg. 1910.28 in the OSHA General Industry Standard as our minimum requirements when purchasing, erecting or using scaffolds. The OSHA General Industry Manual can be obtained from the Safety Department.

MISCELLANEOUS

Protective caps must be kept on compressed gas cylinders at all times when the cylinders are not actually connected to equipment.

The use of air for opening plugged sewers is unsafe and is prohibited.

Packing must not be removed from a gland by blowing it with pressure.

Wash the hands frequently, always before eating.

SECTION C. - PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment is provided to enable work to be carried on where the hazard involved cannot be eliminated. The ideal solution, and always the first thing to be considered, is to remove the hazard. Since this is not always possible, especially where the condition is of an emergency or temporary nature, the use of personal protective equipment is the only practical solution. The selection of the proper personal protective equipment for the needs of the job is very important. As a guide in making this selection, the following information is provided.

RESPIRATORY PROTECTION

In general, four different types of respiratory protection are approved. These are:

- Air line or supplied air equipment.
- Organic vapor respirators.
- Dust respirators.
- Self contained breathing apparatus (SCBA)

Each type of equipment has a definite purpose, but its limitations must be kept

in mind. One limitation is common to all: They will not provide protection in an atmosphere contaminated by a substance which may be absorbed through the skin.

Air Line Respirators and Self Contained Breathing Apparatus

Air line respirators and self contained breathing apparatus must be used in all cases where it is necessary to enter any enclosed area where tests indicate hydrogen sulphide (H_2S) gas to be present even in slight concentrations; in all cases where the gas concentration exceeds the allowable limit for respirators; in entering areas where there is heavy smoke; or where there is an oxygen deficiency.

Operation - Maintenance - Inspection

The face piece should be adjusted and tested. The regulator and gauges should be checked to see that they are working properly. A life line shall be attached when working inside vessels.

Always have a person present to assist in any emergency which might arise.

Use only employees who are thoroughly experienced in the work which is to be performed.

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Be certain that the gas or vapor is not a type which may be harmful to the skin; for example, a high concentration of ammonia.

The air will be supplied from approved cylinders purchased for breathing air only. Connection to the in-plant compressed air system is prohibited.

Chemical Respirator - Cartridge and Disposable

When and Where Used

Chemical cartridge and disposable respirators may be used for all operations where toxic gases or fumes may be present in such small quantities that the air line respirator or SCBA is not needed. Such operations as spray painting, catching benzene samples, or where organic solvents are used and when done in the open air, are examples of situations where the use of this equipment is advisable. It is recommended for use during long exposure to gases which are not ordinarily considered harmful or are not present in harmful concentrations.

Operation

The facepiece should be adjusted so as to fit snugly on the face. The head straps

should be adjusted to maintain tension without discomfort. The correct cartridge should be used for the service. The cartridges are identified by the same color system as is used in the canisters.

Maintenance and Inspection

The facepiece should be inspected for any defects in the exhalation and inhalation valves, and to assure that the headbands are in good condition. The cartridge should be checked to see that it is the proper type and is tightly screwed into the holder. Keep the facepiece clean and dry.

Limitations and Cautions

This equipment must not be used where gases or fumes may be present in high concentrations.

It must not be used in closed vessels. It must not be used as a substitute for a fresh air mask.

If any gases or fumes are smelled through the cartridge, it should be changed at once.

Do not wear a respirator which has been worn by someone else until it has been sterilized. Return it to the Safety Department for cleaning.

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Keep the cartridge dry. If it becomes saturated with moisture, it should not be used again.

No one cartridge or disposable respirator will provide protection from all contaminants. Make sure you have the correct one.

Dust Respirators (Mechanical Filter Type)

When and Where Used

Dust respirators must be used for all operations where there is an excessive amount of dust in the air. Such work as handling powdered chemicals, lime, soda ash, sulphur, litharge, and handling filter clays, sand, etc., are examples of operations where dust respirators must be worn. The filters provided are approved for all dusts, both toxic dusts such as lead, cadmium, arsenic, etc., as well as Type A dusts such as silica, asbestos, coke, cement, etc.

Operation

The respirator must be adjusted so that it fits snugly around the nose and mouth to secure protection. Respirators with metal facepieces should be shaped by the user to fit his individual facial contours. The headbands should not be any tighter than necessary to hold the facepiece secure.

Maintenance and Inspection

The facepiece should be inspected for any defects in the inhalation and exhalation valves and to assure that the headbands are in good condition.

The filter must be properly fitted and securely fastened.

The filters should be changed as frequently as is required to maintain ease of breathing. This will depend on the amount of dust present.

Limitations and Cautions

This equipment is only a dust filter. It will NOT protect against gases, fumes, vapors, or smoke.

Do not wear a respirator which has been worn by someone else.

FACE AND EYE PROTECTION

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

Goggles and Safety Glasses
Face Shields

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Dust Hoods
Acid Hoods
Welding Hoods

Goggles

When and Where Used

Nearly all eye injuries can be prevented by the use of goggles and safety glasses. Eye injuries may be caused in so many different ways that it is impossible to say under what circumstances we may be safe without goggles.

There is hardly any job, whether in a shop, on maintenance or construction work, on any operating unit, in a laboratory, or even in an office, where an eye injury has not occurred. From past experience of our own, as well as that of others, certain jobs and operations have been designated as requiring the use of goggles. See pages 7 through 9 in the Accident Prevention Section.

Operation

For maximum protection and comfort, goggles must be properly adjusted to fit the face.

Goggles with elastic headbands can be easily adjusted by the user. The head-

bands should be worn just tightly enough to hold the goggle firmly to the face. The headband should come just above the ears and then slope down on the lower part of the back of the head. Do not place the goggle over a cap or hat while using the goggles.

Maintenance and Inspection

Keep your goggles and lens clean. Do not wear a pair of goggles which have been worn by someone else until they have been sterilized.

Be sure the headbands are in good condition and elastic. Have defective bands replaced.

The lens must be securely held in the frames. Inspect them for pits or scratches which may cause eye strain. Have such lens replaced at once.

Limitations and Cautions

Do not make any repairs to goggles. Do not use defective goggles. Return them to the Safety Department for repairs or exchange.

Safety Glasses

All personnel regularly assigned to the O/A plant, whose duties require them to make frequent visits into the plant will be issued safety glasses and are required to

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wear the safety glasses at all times in the plant. (See safety procedure on eye protection.)

Prescription Glasses

When corrective lens are needed, prescription glasses will be provided. These do not replace the need for other types of eye protection, where an employee is exposed to splash hazards. In such cases, additional suitable eye protection must be secured and used.

In all cases, the employee must furnish the prescription. (See safety procedure #22).

The procedure for obtaining prescription glasses is as follows:

Contact Safety Department to make necessary arrangements.

Wearing of contact lenses is prohibited, unless it is for a medical reason, in which a statement from the doctor is required. This will be placed in Personnel file.

Face Shields

When and Where Used

Certain operations present a hazard to the face as well as to the eyes. In such cases, one of the various types of face shields provides suitable protection. A transparent plastic shield in a suitable frame is recommended for such jobs as metal sawing, working with chemicals at labora-

tory benches, taking samples, buffing, sanding, light grinding, wood-working, operations, etc.

Operation

The headband is the only adjustable feature on the face shield. It should be adjusted so as to hold the shield in place.

Maintenance and Inspection

As the shield is plastic, it is easily scratched. It should be replaced when these scratches cause interference with the vision.

Limitations and Cautions

These shields should not be used for heavy grinding, chipping, or other operations where resistance to severe impact is necessary.

Dust Hoods

When and Where Used

Dust hoods are provided to furnish working comfort on all dusty jobs where nuisance or harmful dusts affect the eyes as well as the respiratory system. The hood type is particularly suited for use when cleaning boilers, furnaces, etc., or where irritating dusts are present.

Operation

The operation is similar to that of the air line respirator.

Maintenance and Inspection

Same as for air line respirators.

Limitations and Cautions

This equipment is only for dust. It will NOT protect against gases, fumes, vapors, or smoke.

Do not use hood which has been worn by someone else until it has been sterilized.

Acid Hoods

When and Where Used

An acid hood should be used for protection of the head, eyes, and face from chemical sprays and splashes. Opening chemical lines, repairing chemical pumps, emergency repair work, etc., are types of work for which it is recommended.

Operation

The headband should be adjusted to fit the wearer. The lens should be cleaned before use.

Maintenance and Inspection

The lens should be inspected to see that it is not broken.

The hood should be checked for breaks or tears.

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Limitations and Cautions

This equipment does not protect against fumes, vapors, or gases.

HEAD PROTECTION

When and Where Used

The protective or safety hat is a necessary item of personal protective equipment where the head is exposed to the impact of falling objects or severe bumps against overhead structures or objects. Since these hazards are ever present in almost all parts of the plant, it follows that the sensible and practical course is to use a safety hat at all times when in the plant.

Operation

The cradle should be adjusted so that the weight of the hat is carried on it. There must be 1 ¼ inch clearance between the top of the hat and the head.

Do not draw the headband too tight, just snug enough to prevent the hat from tilting. Special liners are available for winter use.

Maintenance and Inspection

Inspect the hat daily for broken brim or crown, defective headband, or cradle.

Replace them at once if found defective.
Keep the headband clean.

Limitations and Cautions

Do not cut or drill any holes in your safety hat. You will weaken it and destroy its protection ability.

HAND PROTECTION

Chemicals and Irritants

When and Where Used

The injurious effects of chemicals and many oils on the skin require the use of protective gloves.

BODY PROTECTION

Aprons and Suits

When and Where Used

When opening or working on equipment in chemical, aromatic, or heavy catalytic cracked oil service, protection for the body must be obtained by the use of synthetic rubber or plastic coated aprons. Where severe conditions exist, synthetic rubber or plastic suits should be used.

The suits may also be used for protection on extremely wet jobs such as in cooling towers, condenser boxes, etc.

For special conditions, complete protection can be obtained by the use of the acid suit which combines boots and gloves as a integral part of the suit. This should be used with an acid hood.

Operation

When using combinations of protective clothing, the upper garment should always overhang the lower to avoid dripping chemicals or oil into the lower. Trouser legs should be outside of boots.

When corrosive or harmful liquids are handled, the protective clothing should be washed with a water hose before it is removed. Boots, coats, hats, and aprons should be removed before gloves, and the hands should be washed before removing goggles or face shields.

Limitations and Cautions

When using this equipment, it should be remembered that its use to eliminate one hazard may introduce another. Working with such equipment around revolving or reciprocating machinery may introduce a hazard of loose ends catching. Under such

conditions, be sure there are no loose or dangling strings or parts.

When using this equipment, be sure that the proper respiratory protection, if needed, is secured. If a hood is not used or required, use the proper goggle.

Coveralls

When and Where Used

Coveralls may be furnished to protect ordinary clothing upon authorization of the department foreman or his designated representative for:

Working on or opening equipment in chemical service.

Working on extremely dirty jobs.

Limitations and Cautions

These coveralls do not provide adequate protection from liquid splashes of harmful chemicals or oils. Synthetic rubber or plastic coated aprons or suits should be used in such cases.

MISCELLANEOUS ITEMS

Sweat Pads

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When and Where Used

Sweat pads are provide to eliminate the discomfort and possible hazard caused by perspiration from the forehead running over the face and into the eyes.

Operation

The pads should be dipped in cool water and squeezed dry before use.

Maintenance and Inspection

The pad should be washed out after each use. Keep it clean.

EAR PROTECTION

When and Where Used

In boiler shops, on construction jobs, during the operation of pneumatic tools and cleaners, excessive noise may cause fatigue and distraction which might result in an accident and injury. For such jobs, ear plugs and ear muffs can reduce the sound level and provide protection. Ordinary conversation can be carried on while wearing them. Wear ear protection in all areas that have been designated as high noise areas. There are signs placed in these areas - "Danger Hearing Protection Required".

HAZARDOUS CHEMICALS

GENERAL INFORMATION

1. All chemicals are relatively safe if the proper precautions are observed.
2. Good hygiene requires that all chemicals be removed from the skin as soon as possible.
3. Unless otherwise stated, only soap and water should be used to remove any chemical from the skin, and only water for the eyes.
4. All petroleum products are solvents and continued contact with the skin may produce irritation.

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INDUSTRIAL HYGIENE INFORMATION

EXPLANATION

Any of a class of more or less unstable poisonous compounds acting as a causative agent in many diseases or body reactions.

Inhalation
Skin Contact
Ingestion

Threshold limit value - the amount of a chemical substance to which an average healthy person may be repeatedly exposed to for eight hours of each working day. These are guidelines only, to which you may expect no adverse reactions.

TERM

TOXIN:

ROUTES OF ENTRY:

TLV:

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mg/m³:

Approximate milligrams of particulate per cubic meter of air.

ppm:

Parts of vapor or gas in per million parts of contaminated air by volume.

N/D:

Not determined to be on ACGIH List.

ACGIH:

American Conference of Governmental Industrial Hygienist.

Carcinogen:

Chemical or substance suspected of causing cancer.

In the event that any additional information should be necessary, please refer to the Commodity Chemical Index. This manual is located in the Environmental Department.

All chemicals containing Accounting Charge Codes are listed below. They are referenced in the Commodity Chemical Index by their last three digits.

ANHYDROUS AMMONIA	7362-333-402
BETZ AF - 103	7362-333-401
BETZ 35	7362-333-413
BETZ 50	7362-333-412
BETZ 419	7362-333-411
BETZ 2020	7362-333-446
BETZ 2040	7362-333-446
BETZ 2080	7362-333-446
BETZ BALANCE POLYMER 5115	7362-333-454
BETZ CORROGEN	7362-333-406

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BETZ CONTROL - 778	7362-333-452
BETZ FERROSPHERE HP	7362-333-408
BETZ HYZEEN	7362-333-409
BETZ LIQUIMINE - SERIES	7362-333-407
BETZ LIQUIMINE - SERIES	7362-333-443
BETZ PETROMEEN AF - 109	7362-333-445
BETZ SLIMICIDE C-30	7362-333-414
BETZ SLIMICIDE J-12	7362-333-420
CAUSTIC POTASH (LIQUID)	7362-333-418
CAUSTIC SODA (LIQUID)	7362-333-418
CHLORINE (CYLINDERS)	7362-333-415
DIETHYL SULFIDE (DES)	7362-333-419
FILTROL 24	7362-333-426
FURFURAL	7362-333-441
METHYL ALCOHOL (METHANOL)	7362-333-428
NALCO 8RF-706	7362-333-441
NALCO 354	7362-333-416
NALCO 5136	7362-333-442

NALCO 5203	7362-333-456
NALCO 7270	7362-333-417
NITROGEN	7362-333-429
NORMAL P. ALCOHOL (N-PROPANOL)	7362-333-431
SODIUM BISULFITE	7362-333-435
SODIUM NITRITE	7362-333-436
SULFURIC ACID (STOCK 940)	7362-333-425
TERT-BUTYL CATECHOL (TBC)	7362-333-439
TRIETHANOLAMINE (TEA)	7362-333-437
TRIETHYLENE GLYCOL (STOCK 929)	7362-333-440

HAZARDOUS CHEMICALS

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ACETONE

GENERAL DESCRIPTION:

Colorless liquid with sweet odor.

TOXIC PROPERTIES:

Moderate eye irritant. Slight skin irritant.
Respiratory irritant. Do not ingest.

PRECAUTIONS:

Use proper respiratory, skin, and eye protection.
Highly flammable.

FIRST AID:

Flush eyes and skin thoroughly. For eyes seek medical aid. If victim is found unconscious remove from further exposure and seek medical aid. If breathing has stopped, use mouth-to-mouth resuscitation on victim, and obtain medical aid.

TLV:

750 ppm

USAGE:

Solvent, for laboratory analysis and equipment cleaning.

ACETYLENE

GENERAL DESCRIPTION:

A colorless gas with a garlic-like odor.

TOXIC PROPERTIES:

Not a health hazard, unless it would cut down supply of oxygen.

PRECAUTIONS:

No special precautions necessary except as to a fire hazard.

FIRST AID:

Remove from further exposure if victim is unconscious. If breathing has stopped, give mouth-to-mouth- resuscitation and seek medical aid.

TLV:

N/D

USAGE:

A specialty gas used in analytical detection, at O/A laboratory. Also used at Maintenance Fabrication Shop for welding and cutting purposes. Stored in cylinders at each location.

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ANHYDROUS AMMONIA

GENERAL DESCRIPTION:

A colorless gas with a sharp pungent odor.

TOXIC PROPERTIES:

Causes severe burns. Vapors irritate nose and throat. Do not ingest. Product may aspirate chemical pneumonia.

PRECAUTIONS:

Have adequate ventilation or use proper respirator, goggles. Wear rubber gloves. Avoid inhaling vapors. Avoid contact with the skin, eyes, and clothing. Keep away from open flames. Very flammable.

FIRST AID:

Flush skin and eyes with large quantities of water. Remove clothing if necessary. Give CPR if necessary. Get medical aid.

TLV:

50 ppm

USAGE:

P.H. control

ACCOUNTING CHARGE CODE: 7362-333-402

ASBESTOS

GENERAL DESCRIPTION:

"Asbestos" includes chrysotile, amosite, crocidolite, tremolite, anthrophyllite and actinolite. A white fibrous material.

TOXIC PROPERTIES:

Inhalation of fibers of dust may cause damage of the lungs. A suspect carcinogen.

PRECAUTIONS:

Wet Methods; insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent emission of airborne fibers. An asbestos respirator and special clothing, such as coveralls or similar whole body clothing, head coverings, gloves and foot coverings are to be worn when handling asbestos.

2 fibers/per cc of air - greater than 5 m.

Insulation

TLV:

USAGE:

00130

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BENZENE

GENERAL DESCRIPTION:

A water white liquid with an aromatic odor.

TOXIC PROPERTIES:

This product is a suspect carcinogen. Vapor forms explosive mixture with air. Toxic by inhalation, absorption, and ingestion. High concentrations can be fatal.

PRECAUTIONS:

Avoid inhalation of vapors. Avoid contact with skin. Eyes, skin, and respiratory systems must be protected. In higher concentrations, use a supplied air respiratory system.

FIRST AID:

Remove patient from exposure. Remove clothing and wash with soap and water. Start artificial respiration if breathing has stopped. Get medical aid.

TLV:

10 ppm. - Note: This product is absorbed through skin contact.

USAGE:

Manufactured at O/A. Stored at wharf tank, and Mobil Oil Tank Farm.

BETZ AF-103

GENERAL DESCRIPTION:

A blended liquid product with a moderate odor.

TOXIC PROPERTIES:

May cause skin irritations. Moderate eye irritant. Do not ingest.

PRECAUTIONS:

Flammable. Extinguishing media - water, foam, dry chemical and carbon dioxide. Wear proper eye and skin protection.

FIRST AID:

Skin Contact: Wash with soap and water.

Eye Contact: Flush thoroughly with clear water. In case of ingestion or eye contact obtain immediate medical attention.

TLV:

N/D

034609

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00133

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USAGE:

Anti-foulant for compressor area.
(G-2251 4th stage); also USC-I and USC-II.

ACCOUNTING CHARGE CODE: 7362-333-401

034746

BETZ 35

GENERAL DESCRIPTION:

A blended product. A water solution of a polyphosphate. A yellow liquid with no distinguishing odor.

TOXIC PROPERTIES:

May cause skin irritations. Severe eye irritant. Do not ingest.

PRECAUTIONS:

Wear rubber gloves, face mask or goggles. Non-flammable.

FIRST AID:

Skin Contact: Wash with soap and water.

Eye Contact: Flush with water for a minimum of 15 minutes. Obtain medical attention.

TLV:

N/D

034610

00174

USAGE: Biological bacteria control at No. 1 cooling tower.

ACCOUNTING CHARGE CODE: 7362-333-413

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034767

BETZ 50

GENERAL DESCRIPTION:

A blended product. A water solution of chromate and zinc salts. A ruby red liquid with no distinguishing odor.

TOXIC PROPERTIES:

Moderate eye irritant. Do not ingest. May cause skin irritations with prolonged contact.

PRECAUTIONS:

Wear rubber gloves, goggles, or face mask.

FIRST AID:

Skin Contact: Wash well with soap and water.

Eye Contact: Flush with water for a minimum of 15 seconds. Obtain medical aid.

Ingestion: Obtain medical aid.

N/D

TLV:

Treatment of H₂O at No. 1, No. 2, No. 3 and No. 4
cooling towers, for biological growth.

USAGE:

ACCOUNTING CHARGE CODE: 7362-333-412

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BETZ 419

GENERAL DESCRIPTION:

Proprietary material. An aqueous solution containing a phosphoric acid derivative, an acrylic type polymer, a thiazole derivative and caustic soda. A pale yellow liquid.

TOXIC PROPERTIES:

Severe eye irritant. Do not ingest. May cause skin irritation with prolonged use. Vapors may be irritating to respiratory tract.

PRECAUTIONS:

Avoid breathing vapors. Wear rubber gloves, goggles or face mask. Flammable. Extinguish with water or foam.

FIRST AID:

Skin Contact: Wash well with soap and water.

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Eye Contact: Flush thoroughly with clear water. In case of ingestion or eye contact obtain immediate medical attention.

TLV:

N/D

USAGE:

For biological bacteria growth control at No. 4 cooling tower.

ACCOUNTING CHARGE CODE: 7362-333-411

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BETZ 2020

GENERAL DESCRIPTION:

An aqueous solution with a mild odor.

TOXIC PROPERTIES:

Causes eye and skin irritations on contact. Causes irritation to upper respiratory tract.

PRECAUTIONS:

Use with adequate ventilation. If ventilation is not available use respirator with dust/mist fume cartridge. Use proper eye and skin protection when handling.

FIRST AID:

Flush eyes and skin thoroughly. If victim is found unconscious, remove to fresh air. Do not induce vomiting if ingested, call physician.

TLV:

N/D

034613

00140

USAGE: Microbiological bacteria control agent, used at the
Liquid Ethylene Cooling Tower.

ACCOUNTING CHARGE CODE: 7362-333-446

00141

034750

BETZ 2040

GENERAL DESCRIPTION:

Clear, amber liquid; mild odor.

TOXIC PROPERTIES:

Causes skin irritation immediately on contact. Is a severe irritant to the eyes and causes irritation to the upper respiratory tract. Do not ingest.

PRECAUTIONS:

If ventilation is inadequate, use respirator with dust/mist fume cartridges. Wear rubber gloves. Wear face shield with air tight goggles. Flammable. Extinguish with H₂O or foam. Spread sand or grit afterwards, as a slippery surface can result.

FIRST AID:

Skin Contact: Remove contaminated clothing and wash with soap solution or water for 15 minutes.

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034751

Eye Contact: Immediately flush with water for 15 minutes.

Inhalation: Remove victim to fresh air area.

Ingestion: Do not induce vomiting. Dilute stomach contents with milk and water. Contact physician.

TLV:

N/D

27

USAGE:

For biological bacteria growth control at Liquid Ethylene Cooling Tower.

ACCOUNTING CHARGE CODE: 7362-333-446

BETZ 2080

GENERAL DESCRIPTION:

An aqueous solution with a clear, mild odor.

TOXIC PROPERTIES:

Causes severe eye and skin irritations on contact.
May cause irritations of the upper respiratory tract.
Do not ingest.

PRECAUTIONS:

Avoid inhalation of the fumes. Wear proper respiratory equipment. Use only cartridge labeled for dust/mist and fume usage. Wear proper eye and skin protection when handling.

FIRST AID:

If victim is overcome by vapors, remove to fresh air.
If ingested, dilute contents of stomach with milk or water and seek medical aid. Flush eyes and skin thoroughly; seek medical aid for eyes.

00144

034615

618460

00145

TLV:

N/D

USAGE:

Microbiological bacteria control agent, used at the
Liquid Ethylene Cooling Tower.

ACCOUNTING CHARGE CODE: 7362-333-446

034752

BETZ BALANCE POLYMER SERIES

GENERAL DESCRIPTION:

A pale yellow, aqueous solution. No odor.

TOXIC PROPERTIES:

Moderate irritant to upper respiratory tract. Causes skin irritation on contact. Severe eye irritant on contact.

PRECAUTIONS:

Use eye and skin protection when handling. Wear respiratory protection, avoid vapors. Do not ingest. Flammable.

FIRST AID:

Flush eyes and skin thoroughly, seek medical aid for eyes. If ingested and victim is conscious, dilute contents of stomach with 3-4 glasses of water, and seek medical aid.

TLV:

2 mg/m³ - for the Sodium Hydroxide content.

034616

00146

USAGE: Boiler water systems treatment aid.

ACCOUNTING CHARGE CODE: 7362-333-454

034753

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034753

BETZ CORROGEN

GENERAL DESCRIPTION:

Sodium Sulfite, Catalyzed. Off-white granular powder with slight sulfur odor.

TOXIC PROPERTIES:

May cause skin irritation. Moderate eye irritant. Do not ingest.

PRECAUTIONS:

Wear rubber gloves, goggles or face shield.

FIRST AID:

Skin Contact: Wash well with soap and water.

Eye Contact: Flush with water for a minimum of 15 minutes. Obtain medical attention.

Ingestion: Obtain medical attention.

TLV:

10 mg/m³ - for nuisance dust.

034617

00148

113100

00149

USAGE:

O₂ scavenger for 600# boiler, also used at Area #5 in
Ethylene Unit.

ACCOUNTING CHARGE CODE: 7362-333-406

034754

BETZ CORTROL - 778

GENERAL DESCRIPTION:

Clear liquid with a mild odor.

TOXIC PROPERTIES:

Moderate skin and eye irritant. Vapors may irritate upper respiratory tract.

PRECAUTIONS:

Wear proper eye, skin, and respiratory aids when handling. Do not inhale the vapors. Do not ingest.

FIRST AID:

Flush eyes and skin thoroughly. Remove victim to fresh air if found unconscious. Administer mouth-to-mouth resuscitation if the victims' breathing has stopped, and seek medical aid. If ingested give large amounts of milk or water and seek medical aid.

TLV:

100 ppm

034618

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00151

USAGE:

Oxygen scavenger for the 1500# steam systems,
used at USC-I and USC-II.

ACCOUNTING CHARGE CODE: 7362-333-452

034755

BETZ FERROSPHERSE HP

GENERAL DESCRIPTION:

A clear solution of a polymeric carboxylic acid salt, polyoxethylene and caustic soda.

TOXIC PROPERTIES:

Can cause severe eye and skin irritations. Do not ingest.

PRECAUTIONS:

Avoid skin and eye contact. Use proper protective equipment when handling this chemical.

FIRST AID:

Flush eyes and skin thoroughly; seek medical aid for eyes. If ingested, give large amounts of water and milk and seek medical aid.

TLV:

None established for this product.

00153

USAGE:

An iron dispersement used in water treatment at the 600# steam system at the Boiler. This chemical will be used at USC-II during start-up.

ACCOUNTING CHARGE CODE: 7362-333-408

034756

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BETZ HYZEEN

GENERAL DESCRIPTION:

A 35% solution of hydrazine. A colorless liquid with ammonia-like odor. Non-flammable.

TOXIC PROPERTIES:

Inhalation, skin absorption or ingestion may cause death, temporary blindness, dizziness, nausea, irritations, neurological damage, damage to the liver, kidneys, lungs and blood forming organs and other disorders. Symptoms may be delayed. Material is a suspected carcinogen.

PRECAUTIONS:

Do not breathe vapors. Use approved self-contained respirator or an air line type respirator. Use rubber gloves. Wear goggles or face shield. Handle only when wearing complete protective gear, including apron and boots.

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FIRST AID:

Skin contact: Wash well with soap and water.

Eye Contact: Flush with water for minimum of 15 minutes and obtain prompt medical attention.

034757

Ingestion: Wash mouth out thoroughly with water and continue to drink plenty of water. Remove victim to fresh air; obtain immediate medical attention.

TLV:

1 ppm - Note: Readily absorbed by skin contact.

USAGE:

O₂ scavenger for 1500# boiler feedwater systems, used at USC-II.

ACCOUNTING CHARGE CODE: 7362-333-409

BETZ LIQUIMINE - SERIES

GENERAL DESCRIPTION:

Colorless liquid. Amine odor.

TOXIC PROPERTIES:

Irritant to skin and eyes. Do not ingest. Moderate upper respiratory irritant.

PRECAUTIONS:

Wear rubber gloves, goggles or face shield. Flammable. Extinguish with water, foam, CO₂ and dry chemical extinguisher.

40

FIRST AID:

Skin Contact: Wash with soap and water.

Eye Contact: Flush with water for a minimum of 15 minutes. Get medical attention.

Ingestion: Get medical attention.

00156

034621

00157

TLV:

700 ppm

USAGE:

For control of CO₂ in dilution steam system, at USC-I, USC-II, Boiler 600# steam system.

ACCOUNTING CHARGE CODE: 7362-333-407
7362-333-443

034756

158460

BETZ PETROMEEN AF-109

GENERAL DESCRIPTION:

A mixture of alkylated phenols in a heavy aromatic naptha.

TOXIC PROPERTIES:

Readily absorbed by skin contact. Causes skin irritation on contact. Severe irritant to eyes and upper respiratory tract. Prolonged exposure may cause dizziness and headaches.

PRECAUTIONS:

Avoid eye and skin contact. Do not inhale vapors. Do not ingest.

FIRST AID:

Flush eyes and skin thoroughly; obtain medical aid for eyes. Remove victim to fresh air. If ingested, do not induce vomiting, give victim 3-4 glasses of milk. One burnt piece of toast will substitute for milk. Seek medical aid.

00158
034622

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00159

TLV:

22 mg/m³ - for the cresol content of AF-109. Note:
This product contains a skin notation, for skin
absorption.

USAGE:

An antioxidant, designed to prevent oxygen-
promoted polymer fouling.

ACCOUNTING CHARGE CODE: 7362-333-445

034759

BETZ SLIMICIDE C-30

GENERAL DESCRIPTION:

Straw colored liquid with hydrocarbon odor.

TOXIC PROPERTIES:

Moderate upper respiratory irritant. Do not ingest.
Causes skin irritations and eye burns on contact.

PRECAUTIONS:

Wear rubber gloves, goggles or face shield.
Inhalation of vapors of mists should be avoided.
Flammable. Extinguish with water, CO₂ and dry
chemical extinguishers. Keep drums cooled if in
area of fire.

FIRST AID:

Skin Contact: Wash well with soap and water.

Eye Contact: Flush with water for a minimum of 15
minutes and obtain medical aid.

00160

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034623

00161

034760

Inhalation: Remove patient from contaminated area.

Ingestion: Obtain medical attention.

10 ppm

TLV:

USAGE:

Controls biological growth. Used in No. 1 cooling tower.

ACCOUNTING CHARGE CODE: 7362-333-414

BETZ SLIMICIDE J-12

GENERAL DESCRIPTION:

Light tan liquid.

TOXIC PROPERTIES:

Avoid vapors; an irritant to respiratory tract. May be absorbed through the skin. Causes severe eye and skin damage. Do not ingest.

PRECAUTIONS:

Wear rubber gloves, goggles or face mask. Keep container covered. Protect from freezing. Do not contaminate or store near food or foodstuffs. Flammable. Use water, foam, CO₂, and dry chemical extinguishers. Wear respiratory protection.

46

FIRST AID:

Skin Contact: Wash well with soap and water.

Eye Contact: Flush with water for a minimum of 15 minutes. Consult physician.

00162

034624

Ingestion: Give victim large amounts of water.
Obtain prompt medical attention.

TLV: 50 ppm

USAGE:

Controls growth of biological bacteria. Used at No. 2, No. 3, and No. 4 cooling towers and Ethylene Cooling Tower.

ACCOUNTING CHARGE CODE: 7362-333-420

00163

034761

034761

BUTADIENE

GENERAL DESCRIPTION:

A colorless gas.

TOXIC PROPERTIES:

Has a narcotic effect in high concentrations. May irritate skin, eyes, and upper respiratory passages. Effect on skin may be delayed and burning sensation not immediately apparent.

PRECAUTIONS:

Explosive. Wear eye, skin and organic vapor respirators when handling.

FIRST AID:

Wash skin with soap and water. Irrigate eyes with water for a minimum of 15 minutes, and obtain medical attention. Remove victim from further exposure if unconscious. If breathing has stopped, give CPR. Seek medical aid.

00164

034625

1,000 ppm

Manufactured at O/A. Stored at Product
Movements.

TLV:

USAGE:

00165

034762

034762

BUTYLENE

GENERAL DESCRIPTION:

A colorless gas. A slight aromatic odor.

TOXIC PROPERTIES:

An asphyxiant flammable; undue exposure may irritate skin. A severe respiratory irritant.

PRECAUTIONS:

Avoid contact with skin. Adequate respiratory protection is necessary. Wear eye protection.

FIRST AID:

Get medical aid if victim is unconscious. Give CPR if breathing has stopped. Seek medical aid immediately. Wash skin thoroughly with soap and water.

TLV:

800 ppm

USAGE:

Manufactured at O/A. Stored at Product Movements.

00166

034826

00167

058400

CARBON DIOXIDE

GENERAL DESCRIPTION:

A heavy, colorless, odorless gas.

TOXIC PROPERTIES:

High concentrations may cause headache, weakness, dizziness, unconsciousness, increased breathing. Severe respiratory irritant.

PRECAUTIONS:

This is a heavy gas that collects in low places such as manholes, tank bottoms, etc. If working where there is a high concentration, wear fresh air mask or proper respirator. Cylinder of carbon dioxide should be handled carefully to prevent breaking.

FIRST AID:

Remove to fresh air immediately, and if breathing has stopped, institute artificial respiration. If necessary, give oxygen. Get medical aid.

TLV:

5,000 ppm

USAGE:

By-product when cracking gases at furnace operations.

CARBON DISULFIDE

GENERAL DESCRIPTION:

Clear colorless liquid. Odorless when pure; commercial grades have disagreeable odor.

TOXIC PROPERTIES:

High concentrations may be fatal. Toxic by inhalation, absorption, and ingestion. Severe eye irritant.

PRECAUTIONS:

Avoid inhalation of vapors. Avoid contact with skin. Have emergency showers or wash water readily available. In high concentrations, require air line or cartridge respirator. Wear chemical-proof gloves and clothing. Extremely flammable.

FIRST AID:

Remove patient to fresh air. If breathing has stopped, start artificial respiration. Keep patient quiet and warm. Get medical aid. Flush eyes and skin thoroughly.

00168

034627

20 ppm

Prevents CO and CO₂ formation in furnace tubes, at
USC-I and USC-II.

TLV:

USAGE:

00169

034784

034784

CARBON MONOXIDE GAS

GENERAL DESCRIPTION:

A colorless, odorless gas, usually found in exhaust from motors or around furnaces.

TOXIC PROPERTIES:

May cause headaches, dizziness, nausea. High concentrations may cause severe illness or death.

PRECAUTIONS:

If concentration is great, wear fresh air mask. Avoid inhalation.

FIRST AID:

Remove from area. Give artificial respiration. Get medical aid.

TLV:

50 ppm

USAGE:

By-product when cracking gases at furnace operations.

03458

00171

CARBON TETRACHLORIDE

GENERAL DESCRIPTION:

A clear, colorless, heavy liquid with an odor of chloroform.

TOXIC PROPERTIES:

A dangerous, highly toxic solvent. Vapors may injure upper respiratory system. May irritate the skin. Severe irritant to eyes. Do not ingest.

PRECAUTIONS:

Have adequate ventilation or wear proper respirator. Wear rubber gloves or goggles. Avoid inhalation of vapors. Avoid contact with the skin and eyes.

FIRST AID:

Wash skin with soap and water. Flush eyes with water. Give artificial respiration if necessary. Remove victim to fresh air.

TLV:

10 ppm

USAGE:

For laboratory analysis, a solvent for cleaning analytical equipment.

034765

CAUSTIC POTASH (LIQUID)

GENERAL DESCRIPTION:

A heavy, odorless, cloudy liquid.

TOXIC PROPERTIES:

Very dangerous. Causes severe burns. Inhalation of vapors or mists causes serious injury to respiratory system. Do not ingest. Severe eye irritant.

PRECAUTIONS:

Have adequate ventilation or wear proper respirator. Wear face mask and rubber gloves. Avoid contact with skin, eyes, and clothing. Avoid inhalation of vapors or mist.

FIRST AID:

Wash skin with water. Flush eyes with water. Gargle throat with water. Get medical aid.

TLV:

2 mg/m³

USAGE:

P.H. control, for demineralizer regeneration, acid gas neutralizer. Stored at the Water Treatment Unit.

ACCOUNTING CHARGE CODE: 7362-333-418

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CAUSTIC SODA (LIQUID)

GENERAL DESCRIPTION:

A heavy, colorless, cloudy liquid.

TOXIC PROPERTIES:

Very dangerous. Causes severe burns. Inhalation of vapors or mist causes severe injury to respiratory system.

PRECAUTIONS:

Have adequate ventilation or wear proper respirator. Wear face mask and rubber gloves. Avoid contact with skin, eyes, and clothing. Avoid inhalation of vapors or mist.

FIRST AID:

Wash skin with water. Flush eyes with water. Gargle throat with water. Get medical aid.

TLV:

2 mg/m³

USAGE:

P.H. control, for demineralizer regeneration, acid gas neutralizer. Stored at the Water Treatment Unit.

ACCOUNTING CHARGE CODE: 7362-333-418

CHLORINE (CYLINDERS)

GENERAL DESCRIPTION:

In cylinders under pressure. When liberated, it is a greenish-yellow gas. Pungent odor.

TOXIC PROPERTIES:

Very dangerous to eyes, injurious to nose and throat. High concentrations of gas irritate the skin. This product may aspirate chemical pneumonia.

PRECAUTIONS:

Wear proper respirator, and goggles. Avoid contact of gas or liquid with skin, eyes, nose and throat.

FIRST AID:

Remove victim from area. Give victim oxygen or artificial respiration. Get medical aid. Use olive oil for eyes. Handling procedure for cylinders - see Safety Procedure #14.

TLV:

1 ppm

00174

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ACCOUNTING CHARGE CODE: 7362-333-415

DIETHYL SULFIDE (DES)

GENERAL DESCRIPTION:

Dark straw color liquids with mercaptan stench.

TOXIC PROPERTIES:

Very dangerous. High concentration of vapors may temporarily desensitize olfactory system. Long term exposure may cause systemic failure. Do not ingest. Severe irritant to skin and eyes.

PRECAUTIONS:

Have adequate ventilation or wear proper respirator (self-contained or supplied air type). Avoid contact with skin, eyes, and clothing. Avoid inhalation of vapors of mists. Highly flammable.

FIRST AID:

Wash skin with soap and water. Flush eyes with plenty of water for at least 15 minutes. Get medical attention. Remove victim if found unconscious. If not breathing, give CPR and seek medical aid.

00177

TLV:

19 ppm

USAGE:

Prevents CO and CO₂ formation on metal furnace
tubes, at USC-I and USC-II.

ACCOUNTING CHARGE CODE: 7362-333-419

034768

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DIMETHYLFORMAMIDE (DMF)

GENERAL DESCRIPTION:

Colorless, mobile liquid with a weak ammonia-like odor.

TOXIC PROPERTIES:

Dimethylformamide is capable of producing cumulative systemic injury. Avoid contact with skin. Do not inhale or ingest. Is moderately irritating to eyes. Suspected to be embryotoxic to females.

PRECAUTIONS:

Wear proper eye, skin, and respiratory protection. Remove contaminated clothing. Keep away from open heat or flames. Class II combustible liquid.

FIRST AID:

Remove to fresh air. Keep warm and made to rest. If breathing stops, give CPR. If breathing is difficult give oxygen and seek medical aid. Flush eyes and skin thoroughly.

TLV:

10 ppm

USAGE:

Extract oil for Butadiene process Modernization. Stored at Ethylene Unit and Product Movements.

00178

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00178

SEARCH

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E/P MIX

GENERAL DESCRIPTION:

A gas with a slight odor.

TOXIC PROPERTIES:

Undue exposure to evaporating E/P Mix may irritate the skin. An asphyxiant.

PRECAUTIONS:

Avoid contact with skin. Wear respiratory aids if concentrations are great.

FIRST AID:

Get medical aid if frost burns occur.

TLV:

1,000 ppm

USAGE:

Feedstock for furnaces.

ETHYLENE

GENERAL DESCRIPTION:

Colorless liquified gas with mild sweet odor.

TOXIC PROPERTIES:

Can cause irritations or freeze burns if contact with liquified gas occurs. Slight eye irritant. Avoid inhaling, can be an asphyxiant in high concentrations.

PRECAUTIONS:

Wear proper eye, skin and respiratory protective equipment. Flammable.

FIRST AID:

Flush eyes and skin thoroughly. If freeze burns occur, immerse involved area in warm water (between 100°F and 110°F). Keep immersed for 30-60 minutes. Seek Medical Aid if victim is found unconscious, seek medical assistance and give CPR if breathing has stopped.

1,000 ppm

Manufactured at O/A. Stored at Liquid Ethylene Unit
for truck and train loading.

TLV:

USAGE:

00181

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FILTROL 24

GENERAL DESCRIPTION:

Buff-Brown resin dust.

TOXIC PROPERTIES:

Moderate eye and skin irritant. Severe upper respiratory irritant. Do not ingest. Avoid inhalation of dust.

PRECAUTIONS:

Use respiratory, eye and skin protection.

FIRST AID:

Flush eyes and skin thoroughly. Remove victim from further exposure. If ingested, give water and seek medical attention.

TLV:

20 mg/m³ - for nuisance dust

USAGE:

Removes trace quantities of unsaturates from benzene tower feed.

ACCOUNTING CHARGE CODE: 7362-333-426

034634

00182

034771 00183

FURFURAL

GENERAL DESCRIPTION:

A yellowish to reddish brown liquid with a characteristic penetrating odor.

TOXIC PROPERTIES:

May irritate the skin. Vapors may irritate eyes, nose and throat. This product is a suspected skin carcinogen.

PRECAUTIONS:

If concentration is heavy, wear proper respirator and goggles. Wear rubber gloves. Avoid contact with skin and eyes. Avoid inhalation of vapors.

FIRST AID:

Wash skin with soap and water. Flush eyes with water. Remove victim from further exposure. If unconscious, give CPR and seek medical aid.

TLV:

5 ppm

USAGE:

Extract oil used in butadiene process. Also stored in tank at Movements.

ACCOUNTING CHARGE CODE: 7362-333-427

GASOLINES (NON-LEADED)

GENERAL DESCRIPTION:

A colorless liquid with a sharp odor.

TOXIC PROPERTIES:

May irritate the skin and eyes. Avoid inhaling vapors. Do not ingest.

PRECAUTIONS:

Avoid prolonged contact with skin. Do not wash skin with gasoline. Keep away from open flames.

FIRST AID:

Wash skin with soap and water. Flush eyes with water.

TLV:

N/D

USAGE:

For vehicle fuels, stored at Movements and Maintenance shops.

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GAS OILS, HIGH BOILING AROMATIC

GENERAL DESCRIPTION:

A bright green liquid.

TOXIC PROPERTIES:

May cause skin irritation. These products are suspected skin carcinogens.

PRECAUTIONS:

Wear organic vapor respirator. Wear rubber gloves. Avoid contact with skin. Avoid prolonged wearing of contaminated clothing.

FIRST AID:

Wash skin with soap and water. Change clothing if contaminated.

TLV:

10 ppm. - Should be treated as benzene, because of high concentrations in these streams.

USAGE:

Manufactured at O/A.

HYDROGEN SULFIDE GAS

GENERAL DESCRIPTION:

A colorless gas with an odor of rotten eggs.

TOXIC PROPERTIES:

Very poisonous. May cause dizziness, nausea. Irritates respiratory system and eyes. High concentrations may cause severe sickness or death.

PRECAUTIONS:

Wear airline respirator if concentration is great. Avoid inhalation of gases. Avoid contact with eyes.

FIRST AID:

Remove to fresh air. Give artificial respiration if necessary. Get medical aid.

TLV:

20 ppm

USAGE:

Used to "kill" the catalyst reaction on D-303 at the Benzene Hydrogenation Unit after the regeneration process.

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KEROSENE, SOLVASOL, AND NAPHTHAS

GENERAL DESCRIPTION:

Colorless liquids.

TOXIC PROPERTIES:

May irritate the skin and eyes. Can cause upper respiratory irritation. Do not ingest.

PRECAUTIONS:

Avoid prolonged contact with the skin. Do not wash skin with these products unless specifically instructed. Keep away from open flames. Wear proper eye, skin and respiratory protection.

FIRST AID:

Wash skin with soap and water. Flush eyes with water.

TLV:

200 ppm - for all 3 chemicals

USAGE:

Solvents for degreasing parts, used at Maintenance Fabrication Shop.

MERCURY (QUICK SILVER)

GENERAL DESCRIPTION:

An extremely heavy silver colored liquid.

TOXIC PROPERTIES:

Relatively high vapor pressure. Vapors or mist may be absorbed into system. Finely divided dust may be absorbed through skin. Absorption of mercury affects nervous system. Poisonous if eaten.

PRECAUTIONS:

Avoid contact with skin. Avoid inhalation of vapors. Wash hands before eating. Vacuum clean where mercury is spilled. Change clothes if contaminated.

FIRST AID:

Wash skin with soap and water. If ingested, seek immediate medical aid.

TLV:

105 mg/m³

USAGE:

Found in certain types of instruments at O/A.

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METHYL ALCOHOL (METHANOL)

GENERAL DESCRIPTION:

A clear, colorless liquid.

TOXIC PROPERTIES:

Toxic if inhaled for periods of time. Very poisonous if ingested. May be absorbed through skin. Do not ingest.

PRECAUTIONS:

Avoid contact with skin. Avoid inhalation of vapors. Wear proper eyes, skin and respiratory protection.

FIRST AID:

Wash skin with soap and water. Irrigate eyes with water. If ingested, get medical aid immediately.

TLV:

250 ppm

USAGE:

Solvent for parts cleaning, injected into Cold Train at Ethylene Unit.

ACCOUNTING CHARGE CODE: 7362-333-428

METHYL ETHYL KEYTONE (MEK)

GENERAL DESCRIPTION:

Colorless liquid with mint-like odor.

TOXIC PROPERTIES:

This product may aspirate chemical pneumonia. Narcotic effects occur at levels above the TLV. Strong eye irritant. Moderate skin irritant. Do not ingest.

PRECAUTIONS:

Wear proper eye and skin protection when handling. Use proper respiratory, or ventilation aids. Extremely flammable.

FIRST AID:

Flush eyes and skin thoroughly. For eyes seek medical aid. If victim is unconscious, remove and seek medical aid. If breathing has stopped give CPR and obtain medical aid. If ingested do not induce vomiting. Give large quantities of water and seek medical aid.

TLV:

200 ppm

USAGE:

Lab Analysis solvent.

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MOBIL D.T.E. OIL 797

GENERAL DESCRIPTION:

Light colored oil and odor.

TOXIC PROPERTIES:

This product is not considered a hazardous substance. Avoid eye contact. Do not ingest.

PRECAUTIONS:

Wear proper eye and skin protection when handling.
Flammable.

FIRST AID:

Flush eyes thoroughly. Wash skin with soap and water. If ingested, induce vomiting and seek medical aid.

TLV:

5 mg/m³ - for mineral oil mist.

USAGE:

Circulating lube oil, stored in drums on-site.

MOBIL D.T.E. OIL - EXTRA HEAVY

GENERAL DESCRIPTION:

Lube oil odor and color.

TOXIC PROPERTIES:

Is not considered a hazardous substance by definition. Moderate eye irritant. Do not ingest.

PRECAUTIONS:

Wear proper eye and skin protection when handling.
Flammable.

FIRST AID:

Flush eyes thoroughly. Wash skin with soap and water. If ingested in large quantities, induce vomiting and seek medical aid.

TLV:

5 mg/m³ - for mineral oil particulates.

USAGE:

Lube oil - stored on-site in drums.

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MOBIL D.T.E. B.B. OIL

GENERAL DESCRIPTION:

Light colored oil and odor.

TOXIC PROPERTIES:

Not expected to be a hazard to health. Do not ingest.
Avoid eye contact.

PRECAUTIONS:

Use proper eye and skin protection. Flammable.

FIRST AID:

Flush eyes thoroughly. Wash skin with soap and water. If ingested in large quantities, induce vomiting and seek medical aid.

TLV:

5 mg/m³ - for mineral oil mist.

USAGE:

Circulating lube oil - stored in drums on-site.

034776

MONOETHANOLAMINE (MEA)

GENERAL DESCRIPTION:

Clear, odorless liquid.

TOXIC PROPERTIES:

Severe eye and skin irritant. Do not ingest.

PRECAUTIONS:

Wear eye and skin protection.

FIRST AID:

Flush skin and eyes thoroughly. Do not induce vomiting. If ingested, give large amounts of water and seek immediate medical attention.

TLV:

N/D

USAGE:

For P.H. control on lean glycol stored in drums at Benzene Unit and Warehouse.

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NALCO 8RF-706

GENERAL DESCRIPTION:

Liquid quaternary ammonium compound in alcohol. Straw colored, with amine odor.

TOXIC PROPERTIES:

Over exposure may cause eye or skin damage. May be harmful if swallowed or absorbed through the skin.

PRECAUTIONS:

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Wear proper eye, skin, and respiratory protection. Flammable - may evolve into toxic nitrogen oxide fumes.

FIRST AID:

Eyes: Flush with water for at least 15 minutes. Consult a physician at once.

Skin: Flush contacted areas with water for 15 minutes. Consult physician.

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Ingestion: Induce vomiting. Give water. Consult physician.

Inhalation: Remove to fresh air.

TLV: 400 ppm

USAGE: An interstage film coating used at compressor areas. Used and stored at Ethylene Unit.

ACCOUNTING CHARGE CODE: 7362-333-441

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GENERAL DESCRIPTION:

NALCO 354

Alkaline based product. Brown liquid, organic odor.
Non-flammable.

TOXIC PROPERTIES:

Corrosive to skin and eyes. May be harmful if
swallowed. May cause allergic response in
susceptible persons.

PRECAUTIONS:

Use organic respirator, rubber gloves, air-tight
goggles and impervious clothing.

FIRST AID:

Eye Contact: Flush eyes with water for 15 minutes.
Call a physician at once.

Skin Contact: Wash with water for 15 minutes. Call a
physician.

Ingestion: Do not induce vomiting. Give milk or
water to dilute stomach contents.

Inhalation: Remove to safety.

TLV:

N/D

USAGE:

P.H. adjuster, used and stored at Ethylene Unit.

ACCOUNTING CHARGE CODE: 7362-333-416

NALCO 5136

GENERAL DESCRIPTION:

A solution of alkyl primary amine. Colorless to light yellow.

TOXIC PROPERTIES:

Corrosive to tissue. Can cause eye damage. Inhalation may cause respiratory irritation. Do not ingest.

PRECAUTIONS:

Organic canister if vapors are present. When handling, use rubber gloves, full face shield or goggles. Flammable. May form oxides of nitrogen if burned. Extinguish with CO₂, dry chemical or foam.

FIRST AID:

Eyes: Flush with water for 15 minutes. Consult physician.

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Skin: Immediately flush with water for 15 minutes.
Consult physician.

Ingestion: Do not induce vomiting. Give water.
Consult physician.

Inhalation: Remove to fresh air.

TLV:

N/D

USAGE:

Corrosion inhibitor for compressors, used and
stored at Ethylene Unit.

ACCOUNTING CHARGE CODE: 7362-333-443

NALCO 5203

GENERAL DESCRIPTION:

Amine is basic neutralized petroleum sulfonates in aromatic solvent. Dark brown liquid with hydrocarbon odor.

TOXIC PROPERTIES:

May cause severe eye and skin irritation. Avoid inhalation of vapors.

PRECAUTIONS:

Respiratory protection not normally required. Wear rubber gloves, face shield or safety goggles while handling. Flammable. Extinguish with foam, CO₂ or dry chemical. Fight as any acid type fire.

FIRST AID:

Eyes: Flush with water for 15 minutes. Consult physician.

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Skin: Wash contacted areas thoroughly with soap and water and flush with water for 15 minutes.

Ingestion: Do not induce vomiting. Give large amounts of fluids. Consult physician.

Inhalation: Remove from area.

TLV:

N/D

USAGE:

Neutralizer for corrosion control at compressor area, used and stored at Ethylene Unit.

ACCOUNTING CHARGE CODE: 7362-333-456

NALCO 7270

GENERAL DESCRIPTION:

Aqueous solution of primary amines. Brown liquid with fishy odor.

TOXIC PROPERTIES:

Causes severe injury to eye, skin and mucous membranes. May be harmful if swallowed. Could cause allergic response in susceptible persons.

PRECAUTIONS:

Wear organic respirator, rubber gloves, air-tight goggles and impervious clothing. Non-flammable.

FIRST AID:

Eye Contact: Flush with water for 15 minutes. Call a physician.

Skin Contact: Wash with water.

Ingestion: Do not induce vomiting. Give milk or water to dilute stomach contents.

Inhalation: Remove to safety.

N/D

Neutralizer used for corrosion control on compressors in Ethylene Unit.

ACCOUNTING CHARGE CODE: 7362-333-417

TLV:

USAGE:

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NITROGEN

GENERAL DESCRIPTION:

Odorless gas.

TOXIC PROPERTIES:

An asphyxiant. Can displace oxygen.

PRECAUTIONS:

Never enter a vessel containing a nitrogen atmosphere without a supplied air source.

FIRST AID:

Remove victim to fresh air. If breathing has stopped, give victim mouth-to-mouth resuscitation. If victim is unconscious and breathing, seek medical aid.

TLV:

Never enter a vessel with less than 20% O₂

USAGE:

To purge vessels of all types. Used to purge instruments at Liquid Ethylene.

ACCOUNTING CHARGE CODE: 7362-333-429

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NORMAL P. ALCOHOL (N-PROPANOL)

GENERAL DESCRIPTION: TOXIC PROPERTIES:

Water-white liquid with a mild nonresidual odor. Breathing vapors will be irritating to the nose and throat. In high concentrations, may cause nausea, dizziness, headache, and stupor. Contact with eyes is extremely irritating and may cause eye burns.

Wear air-supplied respirator when a fire occurs or in a confined area. Wear eye and skin protection. Use impervious gloves when handling. Use of local exhaust systems strongly recommended. Flammable. Thermal decomposition may cause CO and CO₂

FIRST AID:

Flush eyes and skin with plenty of water. Obtain medical care for eyes. Remove inhalation exposure cases to fresh air. Call a physician.

TLV:

200 ppm

USAGE:

Calibration of gas chromatographs. Also injected into the cold box at Ethylene Unit.

ACCOUNTING CHARGE CODE: 7362-333-431

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OXYGEN

GENERAL DESCRIPTION:

Stored in a cylinder. It is a colorless, odorless gas.

TOXIC PROPERTIES:

Flammable. Compressed oxygen dangerous if cylinder shocked or broken. May form explosive mixtures with other materials.

PRECAUTIONS:

Handle cylinders with great care so that they will not be shocked or broken. See procedure #14.

FIRST AID:

None necessary under normal conditions of handling.

TLV:

N/D

USAGE:

Specialty gas used when welding and cutting metal

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PROPANE

GENERAL DESCRIPTION:

A gas.

TOXIC PROPERTIES:

Non-toxic. Undue exposure to evaporating propane may irritate the skin.

PRECAUTIONS:

Avoid contact with skin. Flammable.

FIRST AID:

Get medical aid if frost burns occur.

TLV:

1,000 ppm

USAGE:

Feedstock for furnaces. Also used to light furnace burners. These furnace ignition aids are stored in small metal cylinders.

PROPYLENE

GENERAL DESCRIPTION:

Colorless liquified gas, with a mild odor.

TOXIC PROPERTIES:

Can cause skin irritations or freeze burns on contact. Slight eye irritant. A severe respiratory irritant.

PRECAUTIONS:

Wear proper eye, skin, and respiratory protection. Flammable.

FIRST AID:

Flush eyes and skin thoroughly. Seek medical aid for eyes. If freeze burns occur, immerse involved areas in warm water (100°F to 110°F). Keep immersed for 30-60 minutes, and seek medical aid. If unconsciousness has occurred, remove to fresh air and seek medical aid.

TLV:

800 ppm

USAGE:

Manufactured at O/A. Stored at Product Movements and Liquid Ethylene Units. Used as a compressor refrigerant

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PYROLYSIS GASOLINE

GENERAL DESCRIPTION:

Amber liquid with pungent odor.

TOXIC PROPERTIES:

This compound contains approximately 35% benzene. Chronic exposures to high concentrations have been reported to result in blood abnormalities. This is a suspect skin carcinogen. Moderate eye irritant. Do not ingest.

PRECAUTIONS:

Avoid inhalation, ingestion, eye and skin contact. Wear proper protective equipment when handling. Flammable.

FIRST AID:

Flush eyes and skin thoroughly. Remove victim from further exposure. If unconscious, seek medical aid. If breathing has stopped, used mouth-to-mouth resuscitation.

TLV:

10 ppm

USAGE:

Feedstock for benzene production.

RAFFINATE

GENERAL DESCRIPTION:

Clear liquid with mild, aromatic odor.

TOXIC PROPERTIES:

Slight skin irritant. Moderate eye irritant. Moderate respiratory irritant. Do not ingest. Note: This product may cause chemical pneumonia when aspirated in lungs.

PRECAUTIONS:

Wear eye, skin and respiratory protection. Flammable.

FIRST AID:

Flush eyes and skin thoroughly. Seek medical aid for eyes. Do not induce vomiting. Give victim vegetable oil and seek medical assistance. If victim is unconscious, remove and seek medical attention. If breathing has stopped, give CPR and seek medical attention.

TLV:

100 ppm

USAGE:

By-product of benzene process.

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Re-RUN TOWER BOTTOMS

GENERAL DESCRIPTION:

Dark liquid with pungent odor.

TOXIC PROPERTIES:

This product is a suspect skin carcinogen. Moderate eye and skin irritant. Strong respiratory irritant.

PRECAUTIONS:

Maintain good personal hygiene. Use proper respiratory, skin and eye protection. Flammable.

FIRST AID:

Flush eyes thoroughly and seek medical aid. Wash skin with soap and water. If unconsciousness occurs to victim, remove and seek medical aid.

TLV:

10 ppm - because it contains trace quantities of benzene.

USAGE:

Manufactured at O/A. Stored in tank farm at wharf.

SAND

GENERAL DESCRIPTION:

White to tan colored granules. Used in sandblasting.

TOXIC PROPERTIES:

Inhalation of dust may cause irritation of lungs.

PRECAUTIONS:

When sandblasting, wear respirator. Avoid inhalation of dust. Wear proper eye protection.

FIRST AID:

Flush eyes thoroughly. Seek medical aid if irritations persist.

TLV:

20 mg/m³

USAGE:

For sandblasting and covering underground drainage systems.

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SODIUM BISULFITE

GENERAL DESCRIPTION:

White powder form with strong odor.

TOXIC PROPERTIES:

Dust is considered to be a strong respiratory irritant. Avoid breathing. Moderate eye irritant. Do not ingest.

PRECAUTIONS:

Use dust respirator and appropriate eye and face protection.

FIRST AID:

Wash eyes and skin thoroughly. If ingested, give large amounts of water and seek medical attention.

TLV:

Same as for most nuisance dust - 20 mg/m³

USAGE:

O₂ scavenger in water make-up at Butadiene Unit. Stored in drums at Ethylene Unit and Warehouse.

ACCOUNTING CHARGE CODE: 7362-333-435

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SODIUM NITRITE

GENERAL DESCRIPTION:

Yellow colored odorless crystalline solid.

TOXIC PROPERTIES:

Moderate eye and skin irritant. Harmful or fatal if swallowed. Dust is a nuisance problem. Avoid breathing.

PRECAUTIONS:

Wear proper respiratory, eye and skin protection.

FIRST AID:

Flush skin and eyes thoroughly. If ingested, give large quantities of water. Seek immediate medical aid.

TLV:

10 mg/m³ - nuisance dust.

USAGE:

O₂ scavenger in chemically water treated injection systems. Stored in drums at Ethylene Unit and Warehouse.

ACCOUNTING CHARGE CODE: 7362-333-436

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SULPHUR DIOXIDE GAS

GENERAL DESCRIPTION:

A colorless, odorless gas found in most stack gases.

TOXIC PROPERTIES:

Irritating to the eyes, nose, throat and lungs.

PRECAUTIONS:

Wear proper respirator and if concentration is greater than 5 ppm, goggles should be worn.

FIRST AID:

Get to fresh air. Give artificial respiration. Flush eyes and skin thoroughly with water. Seek medical aid.

TLV:

5 ppm

USAGE:

By-product produced when gases are cracked at USC-I and USC-II.

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SULFURIC ACID (STOCK 940)

GENERAL DESCRIPTION:

A heavy liquid that may be colorless or any shade of brown to black. Will give off heat when diluted with water.

TOXIC PROPERTIES:

Causes severe burns to skin and eyes. Vapors irritate nose and throat. Do not ingest.

PRECAUTIONS:

Have adequate ventilation or wear proper respirator. Wear goggles, rubber gloves. Avoid contact with skin, eyes and clothing. Avoid inhaling vapors.

FIRST AID:

Wash eyes and skin with great quantities of water. Get medical aid. In case of inhalation, remove from further exposure. If breathing has stopped, use mouth-to-mouth resuscitation. Get immediate medical attention.

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TLV:

1 mg/m³

USAGE:

Used in demineralizer regeneration and in certain
vessel cleaning processes.

ACCOUNTING CHARGE CODE: 7362-333-425

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TERT-BUTYL CATECHOL (TBC)

GENERAL DESCRIPTION:

Buff brown crystalline solid.

TOXIC PROPERTIES:

Moderate eye and skin eye irritation. Damage may escalate to severe damage depending on dosage. Do not ingest; can cause severe convulsions.

PRECAUTIONS:

Use all skin, eye and respiratory protection necessary to handle.

FIRST AID:

Flush thoroughly with water, if eye and skin contact occur. If swallowed and patient is not having convulsions or unconscious, give copious quantities of milk or water. Then induce vomiting and get immediate medical attention. No specific antidote known - treat symptomatically.

TLV:

200 mg/m³

USAGE:

O₂ scavenger - polymer inhibitor.

ACCOUNTING CHARGE CODE: 7362-333-439

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TOLUENE

GENERAL DESCRIPTION:

A clear, colorless liquid with an aromatic odor.

TOXIC PROPERTIES:

Vapors irritate eyes, nose and throat and are injurious to lungs. Irritating to the skin.

PRECAUTIONS:

Have adequate ventilation or wear proper respirator. Wear goggles and rubber gloves. Avoid contact with skin and eyes. Avoid inhalation of vapors. Flammable.

FIRST AID:

Wash skin with soap and water. Flush eyes with large quantities of water. Seek medical aid. If victim is overcome by vapors, remove. If unconscious, seek medical aid. If breathing has stopped, give CPR and seek medical aid.

TLV:

200 ppm

USAGE:

Manufactured at O/A. Used as a solvent for certain areas of plant operations. Stored in tanks at wharf area.

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TRICHLOROFLUOROMETHANE (FREON 11)

GENERAL DESCRIPTION:

Colorless liquid, with ethereal odor.

TOXIC PROPERTIES:

Moderate eye and skin irritant. Narcotic effects occur at levels above the TLV. Do not ingest.

PRECAUTIONS:

Use required respiratory protection. Wear proper eye and skin protection. Use with adequate ventilation. Non-flammable.

FIRST AID:

Flush eyes and skin thoroughly. For eyes, seek medical aid. If unconscious, remove victim. If breathing has stopped, give CPR and seek medical aid.

TLV:

1,000 ppm

USAGE:

Solvent used at Laboratory and in Maintenance Department. Stored in metal 5-gallon containers.

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TRIETHANOLAMINE (TEA)

GENERAL DESCRIPTION:

Clear liquid with mild odor.

TOXIC PROPERTIES:

Causes eye irritations on contact. May cause skin irritation. Do not ingest.

PRECAUTIONS:

Wear eye and skin protection when handling.

FIRST AID:

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Flush eyes and skin thoroughly. For eyes, seek medical aid. If ingested, give large amounts of milk or water and seek medical aid.

TLV:

15 mg/m³ or 3 ppm

USAGE:

Anti-foulant, polymer inhibitor used at Ethylene Unit. Stored in barrels at Warehouse.

ACCOUNTING CHARGE CODE: 7362-333-437

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TRIETHYLENE GLYCOL (STOCK 929)

GENERAL DESCRIPTION:

Clear, colorless, heavy, viscous liquid with practically no odor.

TOXIC PROPERTIES:

A relatively safe material. Do not ingest.

PRECAUTIONS:

Wear eye and skin protection.

FIRST AID:

Flush eyes and skin thoroughly.

TLV:

N/D

USAGE:

Absorbs aromatics from Udex Unit feedstock. Stored in Benzene Unit storage tanks.

ACCOUNTING CHARGE CODE: 7362-333-440

SAFETY PROCEDURES

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SAFETY PROCEDURE NO. 1

SAFE WORK AUTHORIZATION PERMITS

(GENERAL REQUIREMENTS)

Work performed in a unit, area or department must be accomplished safely. The line supervisor/coordinator is accountable for providing the necessary safety considerations to control accidents and prevent injury in any job.

This procedure is broad and encompasses all work activities including hot work, cold work, confined space entry and vehicle entry. This permit shall be issued by a process operator. In all instances, a Safe Work Authorization shall be executed not only in the interest of safety, but for the sake of awareness and communications.

Procedure:

1. It is the Production Department's responsibility to define the exact area of the intended work.
2. He/she must physically inspect the work site taking into account the possibility of vapor or gases drifting or being blown into the defined area.

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3. The operator who is responsible for the area where the work, hot work, confined space entry or vehicle entry is to be performed, will check and test the area for fire-safe working conditions using instructions on the form.

4. Safe Work Authoruzation permits are required and all pertinent information must be filled in by the parties concerned. The Area Operator or Process Supervisor is responsible for assuring that the environment in the area of entry or work is clear of flammable hydrocarbon vapors which are dangerous to life or of an explosive level. All signatures for the work permit are required before the job is started, specifically, the signatures of the process operator who checks the job and the maintenance mechanic who will perform the work. A minimum of two signatures is required. Initials are not acceptable.

5. The Safe Work Authorization shall be completed immediately after the area has been tested and found safe. The operator will determine how long the permit will be in effect. Under no circumstances will the permit be in effect past the operator's shift change. The operator is required to re-visit the work site regularly and may cancel the permit at any time that the conditions

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change and it is unsafe to continue to work. All permits are automatically cancelled at the sound of the emergency alarm.

6. The original copy is given to the mechanic performing the work after it has been signed and he agrees to all the restrictions on the permit. The second copy is left in the operator's permit pad book.

7. **The person performing the work** will be instructed to keep the Safe Work Authorization permit until the job is complete. Upon completion of the job the permit will be returned to the operator who will check the job to determine if all required work has been completed and no safety hazards exist. The operator will then sign the permit complete, show the date of completion and return the permit to the maintenance mechanic.

8. When there is a question or an unknown factor concerning the work in the area or on certain equipment, by either Production or Maintenance, they should inform their supervisor. A permit should **never** be issued until all questions or problems are resolved.

9. Obtaining a safe indication through the use of subject test instruments **does not** necessarily mean that the area is safe for

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breathing air. Many toxic chemicals do not displace oxygen and many are dangerously toxic below their flammability limit. These types of chemical toxins would not be detected by the combustible gas detector. Notify the industrial hygienist when work will be in an area that may possibly contain toxic chemicals. The Operating Instruction Guide for the particular detecting or sampling equipment shall be followed by the employee performing the test.

10. For **maximum** safety, the following precautions should be followed:

- No hot work will be performed unless explosive meter reads 0%.

- No entry will be allowed into a confined space without a supplied air respirator or SCBA equipment unless oxygen meter reads at least 20%.

11. An attendant (s) shall be present before entry into an enclosure or confined space can commence. The attendant shall remain in the vicinity of the entry point within an area where communication or voice contact is effective. Attendant must be properly equipped and attired for emergency situations unless alternate provisions have been made for rescue and are made known.

For More Details On Hot Work Permits,
See Safety Procedure No. 2

For More Details On Confined Space
Entry, See Safety Procedure No. 3

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SAFETY PROCEDURE NO. 2

HOT WORK PERMITS

The Safe Work Authorization for hot work applies to work functions which produce a flame, hot surfaces, or sparks outside of the designated and authorized shop areas.

The Area Operator is responsible for assuring that the environment in the area of work is clear of hydrocarbon vapors, liquids, and other combustible materials.

Some examples of operations that are considered hot work are:

Non-explosive proof electronic instruments, tools, or lighting equipment

Welding and cutting

Torches and other open flames

Hot forging

Diesel, gasoline or electric powered vehicles or equipment

Portable electric tools

Grinding

Drilling

Chipping

Soldering

Sandblasting (see procedure on Abrasive Blasting)

Portable gas or electric heaters

Hot plates

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Discharging photograph flash bulbs
Electric displays
Opening electric terminals

The following checklist should be used as a guide prior to issuing a Safe Work Authorization permit for hot work:

1. 0% reading on the explosive meter in the presence of the mechanic doing the job.
2. Any oil spills and all flammable materials in the area must be removed.
3. Equipment blinded and valves closed as close to equipment or vessels as possible (first flange).
4. Sewers covered with plywood, and/or burlap and sand. Sand should be wetted periodically.
5. Oil soaked areas wetted down with water spray and fire blankets in place.
6. When necessary, ventilating equipment must be in place and operating.
7. Firefighting equipment should be ready for use at the job site. Minimum requirements are, one fire extinguisher and one 1-½% water hose pressured up to nozzle.

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8. Means of emergency access and egress are provided to the work area.

9. Surrounding conditions should be inspected and precautions taken with consideration given to wind direction, ground slope, housekeeping, etc.

10. Emergency communication must be available for jobs requiring entry into confined spaces, and work within 200 feet of a flare stack.

11. Equipment such as welding machines, gas bottles, hose, tools, etc., shall be removed or located so as not to impede access or egress.

12. All equipment within a 50 foot diameter in all directions of the area where the hot work will be performed shall be checked. This includes all valves, flanges, etc.

13. All permits are automatically cancelled at the sound of the emergency alarm. The permit is void at the end of the shift from which it was issued.

The following additional steps should be taken when issuing a Safe Work Authorization for burning and welding:

1. All burning and welding jobs will have a fire guard with fire extinguisher and a 1- $\frac{1}{2}$ %" fire hose pressured up to the nozzle.

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2. Welding and burning torch ignitors will not be worn on the body outside the area covered by the Hot Work Permit.

3. The welding machine will be placed outside the battery limits. In extreme cases where this is not possible the Safe Work Authorization must include the location of the welding machine and this area shall be checked out as well as the site where the actual hot work will be performed.

4. Caution shall be taken to place the welding machine in a location where there is no possibility for leaking hydrocarbons to fall on the machine.

5. The welding machine shall be properly grounded in the area that has been tested and found safe. This will be as near the hot work site as practical.

6. The Mobil Chemical representative issuing the Safe Work Authorization is responsible for determining the need for catching the slag or beads on each job cleared, plus the requirements for fire guards and the special fire fighting equipment.

7. Welding and burning baskets and/or fire retardant blankets will be used when

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the work permit calls for catching the beads or when welding within the unit battery limits or process units.

8. The operator that issued the permit will re-visit the work site regularly and may cancel the permit at any time the conditions change and it is unsafe to continue to work.

Hot Tapping

Hot tapping represents a delicate and potential hazardous operation. Before a Safe Work Authorization is granted for hot tapping, the appropriate supervisors from the Production, Maintenance, and Safety Departments must be consulted. They will grant approval for the operation and specify protective procedures to be used while the hot tapping is taking place.

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SAFETY PROCEDURE NO. 3**CONFINED SPACE ENTRY**

The following procedure is designed to reduce the hazards of entering confined spaces such as towers, tanks, etc. This procedure is applicable to all confined spaces. A "Safe Work Authorization" must be obtained on all confined space entries. (See Safety Procedure No. 1)

Procedure:

1. All lines leading to the vessel to be entered must be blinded at the flange nearest the vessel or be disconnected and offset where blinding is not feasible. The blinds must be placed in such a manner to prevent the passage of any gas, steam or liquid into the vessel. The piping between the blinds and the vessel must be free of all potentially hazardous liquids or gasses.
2. The vessel must be gas free, depressured and cleaned by process procedures. The atmosphere inside the vessel must be tested and be free of all explosive materials and contain a minimum of 20% oxygen. The toxicity level is to be measured to assure that the vapor concentrations are below the levels

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required by MCC, State, and Federal regulatory agencies (see chemical section for maximum toxicity levels on chemicals and products).

3. All electrical equipment associated with that particular vessel must be locked out and tagged out after de-energizing the circuits. All steam-driven equipment must be blinded and depressured at the drive with bottom drain open.

4. Ventilation, either natural or mechanical is required. If possible, an air mover will be installed at one of the vessel manholes or at a pipe flange. The air mover will pull air through the vessel. The air mover will be installed at the bottom and will pull air from the top of the vessel. (On spheres or isolated equipment where this is not possible, check with supervisor for special precautions.)

5. An attendant with a pre-planned rescue procedure shall be stationed outside and observe the work performed. The attendant must be capable of putting the rescue operation into effect.

6. Personnel are to evacuate the vessel in the event an emergency arises either in the vessel or elsewhere in the immediate area, and the "Safe Work Authorization" is

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automatically cancelled. A new Safe Work Authorization must be issued prior to any work commencing thereafter.

7. At the sound of the "Emergency Alarm" for fire, hydrocarbon release or chemical spill, the permit is void. The permit shall also become void at the end of the shift on which it was issued.

8. No gas cylinders may be placed inside the confined space.

9. Portable electrical lighting used shall be operated at a maximum of 12 volts. Exception: 120 volt portable electric lights protected with a ground fault circuit interruptor.

It is the policy of Mobil Chemical Company to take the necessary steps to provide the best possible conditions before a confined space entry permit is issued. The ideal conditions are: 0% reading on explosive meter; minimum of 20% oxygen; and toxicity levels in compliance with all regulatory agencies. If this is not possible then extra precautions must be taken to insure the employees' safety and health. Some examples are as follows:

1. If a 20% minimum of oxygen cannot be obtained, the following procedures are required:

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a. An air line respirator or a self contained breathing apparatus must be worn before entry will be permitted. The air will be supplied from approved cylinders purchased and tested as breathing air only. Connections to the in-plant compressed air system is prohibited.

b. Harnesses must be worn by everyone entering the vessel. If one person enters the vessel, a lifeline must be attached to the person's harness. If two or more people enter the vessel, a lifeline need not be attached to the harnesses but a lifeline must be in the vessel and attached to a point outside the vessel for removing a disabled employee from within the vessel. The lifeline must be secured to a structure adequate to support the person. No wire-rope lifelines may be used where any electrical hazard exists.

c. A watch person shall be stationed at the point of entry and have at least one pressure/demand or continuous supply air mask available for emergency use, with a separate air source from that used by inside workers.

2. If the vapor concentrations exceed the levels set by MCC, State or Federal agencies, a vapor organic respirator or supplied air mask will be required. If vapor

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organic respirators are required, check with the supervisor or the Safety Department to be sure the correct type of respirator is used. (See chemical section for maximum levels on products and chemicals).

3. If, because of inadequate ventilation, a hazardous breathing atmosphere could collect during welding, cutting, painting or other work, a continuous supply or pressure/demand air mask will be worn.

4. When a vessel that has contained an acid, alkali, carcinogenic materials, etc. is to be entered, protective equipment and protective clothing shall be required. Examples are acid-suits, rain-suits, chemical gloves, chemical splash goggles, approved footwear, etc.

5. All vessels where polymer has been or is present shall have a 1-1/2" water hose strung up the vessel with water pressured up to the nozzle while parties are working in the vessel. The inside of the vessel shall be wetted down at least once a shift.

SAFETY PROCEDURE NO. 4**LOCK-OUT/TAG-OUT PROCEDURE FOR****REPAIR OF ELECTRICAL AND
ELECTRICALLY POWERED EQUIPMENT**

The following procedure will govern the preparing of electrically-operated equipment for mechanical work in the Mobil Chemical Company's O/A Plant.

The procedure is outlined below:

1. When a piece of electrically-operated equipment has been shut down for repairs, the operator in charge shall open the main disconnect switch, the exception being an open or rack-type 2300 volt or greater disconnect switch. This type switch should always be operated by electricians who are on call 24 hours per day. After any type disconnect switch has been opened for equipment repair work, a white "Danger - Do Not Operate" tag and a lock is attached to the disconnect switch by the operator. The tag is to be signed and dated. Then the operator will try the switch to see if the motor is off.

2. Before repair men start work on any electrically-operated equipment, they must be sure that the "Danger" tag and

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lock of the operator of the equipment are attached to the main disconnect switch. The craftsman shall then sign and date the "Danger" tag and attach his lock to the main disconnect switch.

3. Any mechanic or operator who has tagged or locked out equipment must inform his relief of such action and pass on responsibility for the tag and locks. This is done by changing the tag to reflect the name and date of the man coming on shift in each craft. The mechanic will inform the area operator when work is complete and remove his name and lock. Operator's tag and lock will remain on the switch until work is complete and all other names and locks are removed.

4. When necessary to start and stop machines and equipment during repairs or to energize circuits controlling such equipment for test purposes during such repairs, the operator in charge of the equipment and the mechanic working on the equipment, after having properly warned and safeguarded all others who might be subject to injury from such operations, will temporarily remove the "Danger" tag and locks and permit the test operation. The "Danger" tag and locks will be replaced following the test unless the job is complete and no further work is to

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be done on the equipment. The operator's tag and lock are always the first placed on the switch and are the last to be removed.

5. The operator's locks will be a Best (trade name) and will be keyed separately. The production supervisor will have a master key to the operator's locks at his disposal at all times. The number of operator's locks required for each plant is the responsibility of the production supervisor. A white "Danger - Do Not Operate" tag with five lines, erasable, reusable type, will be procured for each operator's lock in the plant. The operator signs the first line on the tag, to be followed by the signature of the craftsman working on the equipment.

6. The craftsman locks will be Best (trade name) and will be keyed alike within the craft, but differently from the other craft locks. The Maintenance Supervisor must have access to a master key. The number of craftsmen locks in each plant is the responsibility of the maintenance supervisor.

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SAFETY PROCEDURE NO. 5**PROCEDURE FOR THE
CONTROL OF INTAKE
STEAM ON TURBINES
THAT CANNOT BE BLINDED**

The following procedure will govern the control of intake steam on turbines, that pose alignment problems due to blinding.

The following steps, in the sequence listed, will be followed in making safe intake steam to the turbines in preparation for maintenance work.

1. Check bleeder valve to insure that it is free and open and operating properly.
2. Close the bleeder valve.
3. Close block valve from main steam header and tag out of service with a "Danger Do Not Operate" tag.
4. Close block valve on intake system next to turbine and tag out of service.
5. Reopen bleeder valve and bleed off trapped pressure. Tag out of service.

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6. Leave bleeder valve in the open position during tenure of maintenance work.

7. At the completion of the maintenance work, the equipment will be returned to the appropriate Area Operator. The Area Operator is responsible for the removal of the "Do Not Operate" tags.

NOTE: There is no change in the procedure on the turbines regarding exhaust steam and product. They will continue to be blinded.

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SAFETY PROCEDURE NO. 6**PROCEDURE FOR HANDLING
REPAIR OF POWER EQUIPMENT**

The following plan for preparing power equipment other than electrical for maintenance work will be plant-wide in the Mobil Chemical O/A Plant. The procedure is outlined below:

1. When a piece of power operated equipment (other than electrical) is to be shut down for repair, the operator in charge will accomplish the shutdown. The operator will inspect the equipment to insure that it is safe to start the repair work. As soon as the safety inspection is completed and everything is in order, the operator will place a "Danger - Do Not Operate" tag on the equipment. The tag will be dated and bear the signature of the operator taking the equipment out of service.

2. The Maintenance Craftsman will make sure that the equipment is properly "tagged out" of service and is ready for repair work to start. The Maintenance Craftsman will place his "Danger" tag on the equipment indicating that he accepts the equipment as ready for repair work.

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3. The Maintenance Craftsman must remove his "Danger" tag at the end of each day and at any time he moves to another job or the job is completed. The Craftsman will inform the area operator when the job is complete.

4. Where work continues past shift change or longer, the operator in charge of the equipment at the time the work is completed will remove the operator's "Danger - Do Not Operate" tag.

5. To put the equipment back in service permanently or for test purposes, the operator and Maintenance Craftsman on the job must personally remove their respective tags.

UNDER NO CONDITION WILL A PIECE OF POWER EQUIPMENT BE ENERGIZED SO LONG AS A "DANGER" TAG IS ATTACHED.

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SAFETY PROCEDURE NO. 7

eye protection

1. All MCC personnel entering the plant will be required to wear safety glasses with sideshields.

2. All MCC personnel entering the plant shall have chemical goggles on their safety hats. Safety glasses provide only partial protection against hazards such as chemical splashes, grinding, chipping, etc.

3. Laboratory personnel shall have chemical goggles on their person or have them conveniently located in their work area. Anyone observing testing procedures will be governed by the same policy as laboratory personnel.

4. The Production, Maintenance and Laboratory Departments will publish or display orders governing the specific areas and/or operations where the wearing of safety goggles is mandatory. It is mandatory to wear safety goggles when working around or handling chemicals, acid, caustic or when grinding, chipping, etc.

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5. Eye wash stations are provided through the units. Should chemicals, acid, caustic, hydrocarbons or any other foreign material get into the eyes, they should be flushed with water for a minimum of 15 minutes.

6. All eye injuries, no matter how slight shall be reported to the supervisor and the Medical Department.

7. The wearing of contact lenses is prohibited, unless it is for a medical reason. A statement from the doctor is required and it will be placed in the employee's personnel file. Visitors and employees who wear contact lenses shall wear chemical goggles when in the laboratory or operating area of the plant.

General Information About Contact Lenses

- Contact lenses should not be worn in areas where flashes and electrical arcs could occur. They serve to concentrate the heat onto the cornea of the eye causing eye damage and loss of vision.
- Contact lenses should not be worn when exposed to foreign bodies such as dust or particles, fumes, smoke, molten metals or irritant chemicals. Normally, foreign particles in the eyes would be

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washed away by tears but contact lenses prevents this.

- OSHA regulation 1910, 134 (e) (5) (ii) prohibits the wearing of contact lenses in contaminated atmospheres where the wearing of a respirator is required.

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SAFETY PROCEDURE NO. 8**FOOT PROTECTION IN
PRODUCTION AREAS**

The following safety precautions will be observed in the production areas of the O/A Plant to insure more adequate foot protection for all employees. Underwriters' approved safety shoes are available at cost through your Employee Relations Department.

1. All employees are urged to wear approved safety shoes while working or visiting the production areas of the plant.
2. Running shoes, fabric or canvas-type footwear shall not be worn in the production areas of the O/A Plant.
3. Perforated shoes of any material, either safety toe or conventional, shall not be worn.
4. Safety rubber boots and shoes are furnished by the company to be worn in areas approved by the area superintendent where this type of foot protection is required.
5. In areas where the wearing of liquid-proof footwear is required, employee will

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wear the trousers outside and over the boot and shoe tops.

6. Footwear that is worn to the extent that there are holes or tears in tops or soles will not be worn in the production areas of the plant.

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SAFETY PROCEDURE NO. 9**HANDLING AND TREATMENT
OF INJURED EMPLOYEES**

The following procedure will be used in the event a Mobil Chemical Company employee is injured on the job to the extent that he/she requires medical treatment.

1. If the employee's condition is such that he/she can be moved, he/she will be taken to the Mobil Oil Medical Building for emergency treatment. The Medical Building is open Monday through Friday between 7:30 a.m. and 4:00 p.m. On off shifts, weekends or holidays the employee will be taken to the emergency room at St. Elizabeth's Hospital or Baptist Hospital. All burn victims shall be carried to Baptist Hospital. The injured employee will be transported by the MCC ambulance, outside ambulance or any available company vehicle.

2. If the employee's condition is such that he/she should not be moved except on the advice of trained medical personnel, the supervisor in charge should call the Beaumont Fire Department or have the Security Guard radio the Fire Department who will dispatch an ambulance with trained medical personnel. The supervisor

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shall request the Security Guard to assist the ambulance through the plant to the scene of the accident.

3. The supervisor in charge will send someone (MCC employee, if possible) to accompany the injured employee to the hospital and direct the ambulance driver to take such employee to the emergency room of either St. Elizabeth's or Baptist Hospital.

4. The supervisor will notify other members of management. It will be determined at this time who will notify the injured employee's immediate family.

5. Our plant physician should be called at the earliest possible time. He should be advised of the accident and be informed about which hospital is treating the injured employee.

6. If an on-the-job injury requires outside medical attention, the employee is required to report to the Mobil Oil Medical Building and report the incident to the Company Physician. It should be reported before returning to work when the Medical Building is open. If the Medical Building is not open, it should be reported as soon as practical between 7:30 a.m. and 4:00 p.m. Monday through Friday.

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7. In case of injury to contractor personnel, emergency first aid and emergency arrangements will be handled by the contractor. Mobil Chemical Company will assist in the handling and transporting of injured contractor personnel only if the contractor signs a waiver holding MCC harmless for such actions.

Department	Beaumont Fire
Building	Mobil Oil Medical
	Dr. J. K. Stewart
838-0613	
839-3712	
866-4994	

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SAFETY PROCEDURE NO. 10

PORTABLE FIRE EXTINGUISHERS

- 1. Hand operated and wheel mounted fire extinguishers are placed throughout the plant to be used as needed for fire fighting. These extinguishers are not to be moved or used for any other purpose.**
- 2. Extinguishers to be used for fire guard service will be provided by the Safety Department.**
- 3. Hand extinguishers for welding machines, pickup trucks, etc. will be bracket-mounted on each machine or vehicle.**
- 4. The Safety Department is responsible for servicing all fire extinguishers on a routine basis.**
- 5. Any time a fire extinguisher is used or appears to need servicing (broken seal, etc.) the Safety Department should be notified.**

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SAFETY PROCEDURE NO.11**PROCEDURE FOR USING FIRE
WATER FOR PURPOSES
OTHER THAN FIRE FIGHTING**

When it is necessary to use fire water and fire water equipment for purposes other than fire fighting, the following procedure will be followed:

1. Contact the Safety and Security Supervisor or in his absence the Production Supervisor and describe the work that is to be done. This information should include the supervisor in charge, location, pressure required, fire equipment to be used, and estimated time to complete the job.
2. Upon completion of the job involving fire water and fire fighting equipment, notify the Safety and Security Supervisor that the job is complete and report any damage to the fire equipment.
3. When the fire water system is connected to any vessel or line for filling or any purpose, a check valve will be placed in the line. The check valve will be placed on the vessel end of the hose, never next to the fire hydrant.

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4. Work involving fire water and fire fighting equipment will immediately be discontinued and the equipment will be returned to fire fighting service when the fire alarm is sounded.

5. Fire hydrants when used for any purpose will be completely opened. Severe damage is caused when a fire hydrant is operated at partial capacity. Be sure the hydrant is completely opened or closed.

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SAFETY PROCEDURE NO.12**TANK CAR LOADING RACKS**

1. Before loading or unloading tank cars at the racks, "Stop Tank Car Connected" sign will be placed on the open track end of the car. The sign will be two car lengths from the exposed end of the connected car. A track "Derail" will be located two car lengths on the open track end of the connected car.

2. Bonding cables and static lines must be connected at all times during tank car loading and unloading operations.

3. Employees will not enter a tank car until a Safe Work Authorization has been issued.

4. Extreme care should be exercised in using hand tools (to prevent sparking) around the loading operation. (Preferably Brass)

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7. Cars will be disconnected immediately after loading or unloading operation is completed.

8. Do not attempt to connect cars that are improperly spotted.

9. Set hand brake on all cars during loading or unloading operation.

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SAFETY PROCEDURE NO. 13**PROCEDURE FOR
SAMPLING LIQUIFIED GASES**

The following safety precautions will be observed when sampling liquified gases. Liquified gas is any material which exists as a liquid in the system being sampled, but which will boil or vaporize at room temperature. Examples are butadiene, butylene, propylene, and propane.

1. Sample cylinders carrying Underwriters approval for the service intended should be used. These cylinders are available in our laboratories and are marked for the service for which they were designed.
2. Always check to insure that the sample cylinder has a greater pressure rating than the pressure of the system being sampled.
3. Be sure the material being sampled is compatible with the cylinder. For example, do not take a butadiene sample in a cylinder with brass fittings, as butadiene and brass can react to form an explosive compound. Watch for tags on the cylinders designating their intended service capabilities.

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4. Check the area in the vicinity of the sample point to insure that it is safe to vent flammable materials. Be sure there are no open flames, power grinding, non-explosion proof equipment, etc., in the area.

5. Extreme caution should be exercised in connecting the sample cylinder to prevent breaking the sample tube or connection. Connect the cylinder to the sample point either by means of a transfer line such as tubing or directly if the sample line is large enough to support the cylinder.

6. Approximately 20 per cent outage should be allowed in filling cylinders to take care of heat expansion.

7. Check the cylinder for leaks after the sample is taken. If leaks appear, clear the sample cylinder by opening both valves.

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SAFETY PROCEDURE NO. 14**HANDLING AND STORAGE
OF CYLINDERS CONTAINING
COMPRESSED OR LIQUIFIED GASES****1. Handling Cylinders**

A. Always consider cylinders as full and handle them with corresponding care.

B. Do not drop cylinders nor permit them to strike each other or other objects violently. Protect cylinder surfaces from cuts and abrasions.

C. Cylinders may be rolled during loading and unloading provided the protective cap is fully threaded in place but such rolling should be kept to a minimum.

D. Where cylinders must be handled by crane or davit, carry them in a cradle or similar device. Do not use a sling.

E. Do not use cylinders, whether full or empty, for rollers, supports, or any other purpose than to contain gas.

F. All empty cylinders should be tagged - and returned to a storage rack as soon as possible.

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G. Cylinder caps must be placed on all cylinders when not connected for use, or when empty.

H. When moving cylinders manually, they must be handled one at a time.

I. When transporting gas welding carts with cylinders the cylinder valves shall be closed, the regulators removed and the protective caps fully threaded in place.

2. Storing Cylinders

A. All cylinders must be securely tied in storage to prevent falling.

B. Cylinders should be stored valve end up where possible.

C. Indoor storage of cylinders should be well ventilated.

D. Oxygen cylinders should be stored apart from cylinders containing flammable gases.

E. Do not store or place cylinders near any source of heat or sparks.

3. Using Cylinder

A. To open cylinder valves not provided with hand wheels, use the special tools

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provided or approved. Never hammer on cylinder valves.

B. Approved pressure regulators should be used on compressed gas cylinders where recommended.

C. Only inert gas may be used as a substitute for compressed air or as a source of pressure.

D. Never use oil or grease as a lubricant on valves or attachments for oxygen or chlorine cylinder.

E. Regulators and pressure gauges shall be used only with gases for which designed or intended.

F. Leaky cylinders should be isolated and bled down.

G. Fully open cylinder valves while in use.

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SAFETY PROCEDURE NO. 15**BICYCLE OPERATION AND
TRAFFIC CONTROL**

The following procedures will be followed in the operation of bicycles in the Mobil Chemical Plant:

1. Employees will keep both hands on the handle bars at all times when riding in the plant.
2. Bicycles will be ridden on the right side of the road.
3. Bicycles will be ridden with care on sidewalks or trails commonly used by pedestrians.
4. Bicycles will not be ridden at speeds in excess of estimated 15 mph.
5. Bicycles will not be ridden double; only one rider to the bicycle.
6. Bicycle operators are responsible for keeping the bicycle in good repair at all times.
7. Bicycles will not be ridden inside the battery limits of the production units, without permission of unit supervisors.

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8. Bicycles will not be parked in roadways leading into the units or in front of building doorways.

9. Bicycle parking racks will be used when available.

10. Bicycles will not be towed behind motor powered vehicles.

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SAFETY PROCEDURE NO. 16**CONTROL AND SANITARY
PROTECTION OF POTABLE
WATER SUPPLY**

The following procedures will govern the use, control, and sanitary protection of the O/A Chemical Plant's drinking water.

1. An adequate supply of potable water shall be provided for drinking, ablutionary, and culinary purposes within the Beaumont Plant.
2. Sanitary drinking fountains shall be of a type approved by the Texas State Department of Health or the local health authorities having jurisdiction.
3. Open containers such as barrels, buckets, or tanks for drinking water from which the water must be dipped or poured shall not be used.
4. The use of community or common drinking cups is prohibited.
5. Where single service cups are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

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6. After repairs or extensions have been made to the potable water system, it must be properly treated to meet requirements.

7. There shall be no cross connection, open or potential, between a system furnishing water for drinking purposes and a process water system or any other non-potable water.

8. All plant construction shall be such that there shall be no possibility of backflow of contaminated water, toxic chemicals, or hydrocarbon into the potable water system.

9. No connections into or alterations to the domestic water systems shall be made without the knowledge and written approval of the Utility Supervisor.

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SAFETY PROCEDURE NO. 17**SANITARY MAINTENANCE OF
RESPIRATORY SAFETY EQUIPMENT**

All Personal Protection Respiratory Equipment will be cleaned and sterilized after each use. This procedure applies to respiratory equipment in service in all operations within the Plant.

1. After each use, respiratory equipment normally in or subject to multiple use must be cleaned and sterilized before returning it to storage.

2. Maintenance-Contractors are responsible for the sanitary maintenance of all multiple use respiratory protection equipment in its charge.

3. Sanitary care of First Aid or Emergency type multiple use respiratory protective equipment located on the Units, Production Movements areas, and laboratories is the responsibility of the Safety Dept.

4. Used or contaminated respiratory equipment shall be washed with mild soap and water and sterilized with an approved disinfectant.

5. This procedure does not apply to respiratory equipment issued on an individual basis for private or individual use. Sanitation is the individual's responsibility for individual issue equipment.

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SAFETY PROCEDURE NO. 18**ACCIDENT INVESTIGATION**

Accidents resulting in injury to employees or damage to equipment will be investigated by the supervisor of the area. A report on the incident will be routed to the Manager, Olefins/Aromatics Plant, Plant Manager, Employee Relations Manager and to the Safety Department. A report should generally cover the following considerations:

1. The time, place and conditions at the time of the accident.
2. A brief description of what happened and how the accident occurred.
3. The cause of the accident.
4. The extent of injury to personnel or damage to equipment or property.
5. What can be done to prevent a recurrence of this accident or incidents of a similar nature.

The Supervisors' Accident Investigation Form (MCC-75) will be filled out by the supervisor and forwarded within 24 hours.

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SAFETY PROCEDURE NO. 19

LECTRODRYER DEWPOINT
APPARATUS OPERATION

The lectrodryer dewpoint apparatus safe working pressure is 2 PSIG. To prevent overpressure and rupture of the casing or glass window, the following procedure shall be followed:

1. The operator shall be wearing safety goggles or full face shield for protection.
2. A ½" throttling needle valve shall be connected to the gas source that is to be tested.
3. A short length, 18" or so, of rubber tubing shall be slip connected to the throttling needle valve. Clamps should not be used on the rubber tubing.

ACCEPTABLE ALTERNATE:

A length of capillary tubing can be utilized, for added pressure drop, downstream of the needle valve, but it shall not be connected rigid to the lectrodryer. A short length of rubber tubing shall be utilized between the capillary and the lectrodryer. Again clamps shall not be used on the rubber tubing.

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4. Start a 5 Ft 3/hr. flow with the needle valve through the rubber tubing. This flow can be felt when blown against wetted lips, but is not readily felt by the hand.

5. With proper flow established, slip the free end of the rubber tubing onto the smooth inlet nozzle of the lectrodryer apparatus. Again, no clamps shall be utilized on the rubber tubing. The smooth outlet nozzle of the lectrodryer shall be left open to the atmosphere.

6. Pour Acetone (about 2") into the cup.

7. After the sample has passed through the apparatus for five minutes in order to purge it completely, a small amount of crushed dry ice should be added to the acetone while stirring constantly with the thermometer.

8. At the first sign of dew or moisture on the polished surface, the temperature is read from the thermometer. This is an accurate indication of the dewpoint of the gas. Dewpoints as low as -106°F can be checked in this manner.

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SAFETY PROCEDURE NO. 20**EMERGENCY POTABLE
WATER SUPPLY SYSTEM**

There are two potable water storage tanks with a capacity of 12,000 gallons each to be used as emergency water for the eye wash stations and the safety showers in the event we lose our normal supply of water. In order to avoid confusion about this system, the following safety procedures will be adhered to:

1. The Movements Area is responsible for the operation of the emergency water system. All persons requesting to work on this system should notify Movements Production Supervisor.

2. Before the normal water supply is blocked, the following should be notified:

A. During normal work hours, 7:45 a.m. - 4:15 p.m. Monday through Friday, notify the Safety Department.

B. Holidays and off shifts, notify the Production Supervisors, Lab Personnel and BCSP.

3. The pump will be started and will be working properly before the normal supply of water is blocked.

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4. All areas will conserve as much water as possible while the emergency supply system is in use.

5. If water supply is to be out of service for an extended length of time, the Movements Supervisor will keep appropriate personnel informed of the approximate length of time remaining for emergency water supply.

6. When the normal supply of water is ready to be returned to service, Movements will be notified. Movements will then return the system to service and notify all appropriate personnel.

7. Should there be problems with the emergency water system and the supply is lost, all appropriate personnel will be notified and special precautions must be taken until the system is back in service.

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SAFETY PROCEDURE NO. 21**ABRASIVE BLASTING**

The following procedures must be adhered to when abrasive blasting:

1. A Safe Work Authorization is required for abrasive blasting in the O/A Plant. (Exception: blasting in the sandblast building.)
2. A fire guard will not be required for blasting except in hazardous areas. This will be determined at the time the Safe Work Authorization is issued.
3. The blast cleaning nozzles shall be equipped with an operating valve which must be held open manually. A support shall be provided on which the nozzle may be mounted when it is not in use.
4. A continuous flow air-line respirator shall be worn while blasting. It must cover the wearer's head, neck, and shoulders. Only respiratory protective equipment approved by the NIOSH shall be used. The breathing air will be provided from air cylinders certified as breathing air. Under no circumstances will the respirator be attached to any plant piped air system.

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5. The blast nozzle shall be bonded and grounded to prevent the buildup of static charges.

6. Operators shall be equipped with heavy canvas or leather gloves and aprons or equivalent protection to protect them from the impact of abrasives.

7. The blasting area shall have barricade tape around it and the surrounding equipment shall be protected as much as is practical. Wrapping of meters and other delicate items shall be required.

8. Frequent clean-up of the area is a necessity.

9. The pot tender shall remain in the immediate area for the safety of the person doing the blasting. If the pot tender must leave the area for any reason, they will turn the pot off and the person blasting will remove the hood until the pot tender returns.

10. A dry chemical fire extinguisher will be mounted on the pot.

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SAFETY PROCEDURE NO. 22

Mutual Aid - Mobil Chemical - Mobil Oil

Mobil Chemical Paint Mill

Should a fire emergency develop at any of the above facilities that is of such scope and intensity that it cannot be controlled with the personnel and equipment on duty, aid may be summoned or received in the following manner.

1. The following list of Mobil personnel are authorized to request or dispatch aid:

Mobil Chemical

L. J. Ryall
F. H. Schneider
P. C. Hvidding
D. A. Bruce, Sr.
J. E. Wrinkle
W. G. Sanders
Movements Prod. Supv.

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Mobil Refinery

R. J. Niederstat
L. E. Limbocker, Jr.
G. W. Christopher
(Night Supt.)

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Mobil Paint Mill

R. G. Osborne
J. L. Matherson

BCSP

S. S. Dunn
J. L. Willis
R. C. Compton

2. The Mobil Chemical supervisor requesting aid will, during normal working hours 8:00 a.m. to 4:30 p.m., Monday through Friday, call any one of the following Mobil Oil Supervisors:

R. J. Niederstat	839-3801
L. E. Limbocker, Jr.	839-3262
G. W. Christopher	839-3348
Night Superintendent	839-3420 or 3423
Main Gate	839-3367

During nights, weekends, and holidays, the request for emergency aid will be directed to the Mobil Refinery Night Superintendent at 839-3420 or 839-3423. If there is no answer, call the Main Gate at 839-3367.

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DIAL: 839-3420 or 839-3423

The supervisor requesting aid will give his name and job title, location of fire, brief description of emergency, and the gate to use in entering Mobil Chemical property. The gate southwest of the Ethylene Unit cooling tower will be used if accessible. Alternate routes would be via Coker Unit gate and County Road into the Mobil Chemical main gate.

3. The Mobil Chemical supervisor in charge is responsible for opening the designated gate and directing the emergency aid personnel and equipment to the fire.

4. Mobil Chemical will supervise the fire control activity of both Mobil Oil and Mobil Chemical personnel and equipment during any emergency at Mobil Chemical.

5. Mobil Oil will supervise the fire control activities of both Mobil Oil and Mobil Chemical personnel and equipment during any emergency at Mobil Oil.

6. The city of Beaumont Fire Department will direct the fire control activities during emergencies at the Paint Mill. They will be assisted by Mobil Chemical and Mobil Oil fire brigades.

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The Paint Mill has an automatic A-D-T alarm system which will notify the A-D-T dispatcher of the City of Beaumont Fire Department who will dispatch personnel and equipment. The dispatcher will also call the Movements Production Supervisor who will respond with the Mobil Chemical fire brigade and assist the City Fire Department as needed.

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OLEFINS/AROMATIC EMERGENCY

CALL-OUT LIST

In the event of a fire within the Olefins/Aromatics Plant, the Guard will make the following calls. If you get a busy signal after the first four calls, have the operator break the line. If no answer, try 10 or 15 minutes later.

As notified, mark an X after each person's name.

L. J. Ryall	866-3134
D. C. Beckert	866-2752
H. V. Stivers	899-2448
L. A. Duffee	866-2890
R. F. Nash	892-2557
C. R. Jeansonne	892-7489
L. J. Legato	866-4487
E. T. Craig	892-5385
L. F. Luquette	866-1790
R. A. Martin	755-4255
D. J. Svetlik	892-7912
P. C. Hvidding	866-6634
P. B. Mullin	835-6104
B. T. Porter	860-4234
D. A. Bruce	1-243-3385
J. E. Wrinkle	786-1132
W. G. Sanders	1-243-3203

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If the person you call is not there but someone answers, advise them that there is an emergency at the plant and request that they contact whoever you are calling.

No one other than MCC personnel will be allowed entry into the plant during an emergency without permission from one of the Managers.

Other emergency numbers to call if instructed to do so are:

MOBIL OIL REFINERY(Night Supt.)
839-3420 - 839-3423 - 839-3428

MOBIL OIL EMERGENCY FIRE
839-3333-71-3333

BEAUMONT FIRE DEPT.(Mutual Aid)
838-6371

DR. J. K. STEWART866-4994

The Mutual Aid Radio (Frequency #2) call letters are KWE-394

NOTE: Anytime the fire truck goes out, whether it is a fire or not, notify

D.A. BRUCE 1231(Plant ext.)
1/243-3385 (Home)

W.G. SANDERS 1233(Plant ext.)
1/243-3203 (Home)

J.E. WRINKLE 1232(Plant ext.)
786-1132 (Home)

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ETHYLENE UNIT SUPERVISORS

D. C. Graham1/246-4267
 A. K. Brown892-5881
 T. L. Miller892-7382
 T. H. Davis722-7522
 M. S. Touchett1/385-3976

BENZENE UNIT SUPERVISORS

C. R. Swearengin722-1561
 W. E. Waters1/834-2556
 D. L. Ervi755-6722
 F. M. Vincent755-4315
 W. T. Frazer722-5954

MOVEMENTS SUPERVISORS

T. L. Veuleman/786-1265
 F. Riley866-1330
 R. Kuebodeaux752-5403
 G. T. Gill786-1632
 B. D. Worthy1/834-2520

UU. S. C. II

C. W. Jinks769-2500
 J. W. Dalton753-2333
 G. C. Kondos755-2887
 J. M. Whitt753-2905

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MAINTENANCE SUPERVISORS

H. V. Stivers866-3595
R. A. Martin755-4255
L. F. Luquette866-1798
W. L. Wright769-3615
E. Lounsberry898-2981

ENVIRONMENTAL CONTROL

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J. R. Seale722-7914
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4 LICENSED IN TEXAS AND
THE DISTRICT OF COLUMBIA

November 6, 1991

In Re: Russell Allen, et al v. Various Defendants

Ms. Luci Ramirez
2190 Harrison
Beaumont, TX 77704

BY HAND DELIVERY

Dear Luci:

This is a follow-up to our previous conversations regarding the production of documents by Mobil. As I told you, I thought it would be more efficient to forward the documents in piecemeal fashion, as the organization and numbering is completed.

Enclosed please find records numbered 0001 through 01072, which are responsive, often by way of illustration, to the following interrogatories, which were previously answered in July 1990: #8, 11, 13, 14, 17, 23, 25, 31, 32, 33, 34, and 35. Please note that the documents numbered 01047 through 01072, which are clipped to the inside back cover of the Mobil Chemical Beaumont Chemical Specialty Plant Employee Safety Manual, appear to be sections of the manual which have subsequently been revised.

As you can see, the copying and numbering process is very tedious and time consuming. I am continuing to work on this project, and I will be forwarding additional records very shortly.

Thank you for your cooperation in this matter. I hope to forward additional records later this week, or early next week.

Sincerely,

Mary Beth Jones
Mary Beth Jones, CLA
Legal Assistant to
GAIL C. JENKINS

:mbj
Enclosures

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