

PLAINTIFF'S EXHIBIT

SH-2477

*Seating materials
1977-8, 7242*

LAM 012209

DPMC 13572.1

		CHEMICAL SORTED BY MSDS NUMBER				
RCD#	MSDS #	SUBSTANCE	SUPPLIER	BOOK NO.	NO. COPI	UNIT\ZONE
2961	830032	LIGHT NAPHTHA	SHELL	031	2	DISTILLING
2962	REQUESTED	LIQUID C-5 AND LIGHTER	SHELL	031	2	DISTILLING
3039	6050	MURIATIC ACID	SHELL	031	2	DISTILLING
3192	50040	PROPANE	SHELL	031	2	DISTILLING
3246	REQUESTED	RESIDUE	SHELL	031	2	DISTILLING
3425	8880	SULFUR	SHELL	031	2	DISTILLING
3508	7750	TOLUENE	SHELL	031	2	DISTILLING
3536	64410	TURBO OIL 150	SHELL	031	2	DISTILLING
3586	60220	TURBO OIL 68	SHELL	031	2	DISTILLING
3626	60710	VALVATA OIL J-460	SHELL	031	2	DISTILLING
3923	324860	WRICO 7988	WRIGHT	031	2	DISTILLING

Nalco IRC-706 3 30302 Nalco
1981-07

12/15/84 Add:

Normal Decane, Phillips, 338228
10/85

Shell Xylene, 7610, 10/4/85

Asbestos Vermont 327383 1979 Aug.

3/31/87 Add:

0317-
Preserve Ammonium Hydroxide, 335,403
(Aqueous ammonia) 02/85

DPMC-13573

LAM 012210

558.2
724.2
NET

Shell Oil Company • Shell Chemical Company
Interoffice Memorandum

JANUARY 25, 1985

FROM: INDUSTRIAL HYGIENE ASSISTANT

TO: DISTILLING OPERATING PERSONNEL

SUBJECT: THE IMPLEMENTATION OF THE WORK PERMIT ADDENDUM AT DISTILLING

On November 25, 1983 the Occupational Safety and Health Administration (OSHA) published a standard on Hazard Communication (48 Federal Register 53280). The primary objective of the standard is to ensure that the physical and health hazards of all chemicals produced or imported are evaluated and communicated to the employees.

The implementation of this standard at DPMC will involve many changes including the Material Safety Data Sheet Program, hazard warnings, labels and training.

One current means of relaying hazard information to employees is via the Departmental or Safe Work Permit. A "Work Permit Addendum" was developed to supplement the permit with chemical hazard information (See Attachment 1). These permit addendums are specific to the streams in each process area. Attachment 1 provides a detailed explanation of each section of the Work Permit Addendum and Attachment 3 gives definitions and examples of the abbreviated hazard categories.

For the purpose of getting feedback from operations and maintenance personnel on the practical use of the permit addendum, Distilling has agreed to use the addendums in the field on a trial basis.

The Work Permit Addendums have been printed in quantity and will be stored in a central location in the control room. When the operator issues a Departmental Permit to a craftsman he/she will attach the appropriate Work Permit Addendum associated with the stream name of the equipment's service. A reference book for all of the stream names and Work Permit Addendums will also be available in the control room.

During this 1-2 week trial period or (until notice is given) we would appreciate any input or constructive comments on how the Work Permit Addendum can be improved or changed. The intent is to design an addendum which provides concise and practical information for maintenance personnel who may not be familiar with all of the hazardous properties of chemicals and mixed streams.

LAM 012211

DPMC-13574

Your cooperation and input to this pilot program is appreciated.
Comments or questions can be directed to Ken Grams, ext. 6717 or
Industrial Hygiene, ext. 7375.


J.E. Barton

Attachments

cc: ECB Satellite
JEB Chron

LAM 012212

DPMC-13575

ATTACHMENT 1

PAGE 1

① STREAM #23

SHELL HAZARDS SYSTEM

WORK PERMIT ADDENDUM
STREAM DEBUT BOTTOMS
11/16/84

KEY HEALTH WARNINGS

② PHYSICAL FORM ANTICIPATED:
X MIST/LIQUID

VAPOR/GAS

SOLID/DUST

③ CHEMICAL

MSDS ④ HT IR COR EF LTND OT DERM TE CAN REP SEN

BENZENE	7600	X	X	X	X	X	X	X	X
ODOR DETECTED AT 2PPM; LEUKEMIA AND		OTHER BLOOD EFFECTS ARE POSSIBLE							
C6'S		X		X					
C7'S +				X	X				
LIGHT ENDS		X		X	X				
FEL=600PPM. REPEATED EXPOSURE WELL		ABOVE THIS MAY INJURY NERVOUS SYST							

⑤ SUMMARY

IMMEDIATE HEALTH HAZARDS

CHRONIC DELAYED HAZARDS

X HIGHLY TOXIC	X CANCER AGENT
X IRRITANT	X REPRODUCTIVE AGENT
X CORROSIVE	X SENSITIZER/ALLERGEN
X EMBRYO FETUS	
X LOW TOXICITY/NUISANCE DUST	
X EFFECTS SUCH AS HEADACHE, NAUSEA, DIZZINESS POSSIBLE	
X DERMITITIS/ WITH REPEATED CONTACT	

⑥ ROUTE OF EXPOSURE TO PROTECT AGAINST

INGESTION

X INHALATION

SKIN CONTACT

X SKIN ABSORPTION

⑦ KEY PHYSICAL HAZARDS

TEMPERATURE OF MATERIAL
X FLAMMABLE/COMBUSTIBLE

UNDER HIGH PRESSURE
REACTIVE/PYROPHORIC

LAM 012213

DPMC-13576

ATTACHMENT 2

1) Stream

All of the streams have been identified by their common stream name and assigned a number (presently there are 30 streams identified at Distilling).

2) Physical Form

Three categories are given. Usually one of the three will be designated.

3) Chemical

This section lists the primary chemicals in the stream.

4) MSDS

References the Material Safety Data Sheet number for the chemical. More information can be obtained from the MSDS sheet.

HT, IR.....

Hazard categories of the specific chemicals. These are defined on Attachment 3. Also may find additional comments written in this section.

5) Summary

Summarizes all of the hazards for the stream as a whole (a combination of the individual chemical hazards above).

6) Route Of Exposure

One or more of these categories may apply. This should help in determining the type of protective clothing needed ie. respiratory, slicker suit, coveralls, gloves.

7) Key Physical Hazards

Most frequently used category will be flammable/combustible, however, information on temperatures and pressures can be inputted in the future.

LAM 012214

DPMC-13577

ATTACHMENT 3

DEFINITIONS OF HAZARD CATEGORIES FOR WORK PERMIT ADDENDUM

<u>Abbrev.</u>	<u>Category</u>	<u>Definition</u>	<u>Examples</u>
HT	Highly Toxic	Can seriously effect body systems from short term exposure	Galvanized fume, H ₂ S, chlorine, tetraethyl lead, aniline, phenol.
IR	Irritant	Can irritate respiratory system, eyes, nose or skin from inhalation or skin contact.	Chlorine, epichlorohydrin, methyl ethyl ketone, BPA dust, most solvents and oil like hydrocarbons, welding fume.
COR	Corrosive	Can cause burns and other serious destruction of tissue	Phenol, caustic and chromate solutions, most acids.
EF	Embryo Fetus	Substances presently classified as having a potential toxic effect to the embryo or fetus.	Benzene, hydrazine and methyl oxitol.
LTND	Low Toxicity/Nuisance Dust	Chemicals with no known serious body organ effect or requiring high exposure conditions to cause such an effect.	Butane, propane, alcohol, kerosene, BPA dust, catalyst dusts, iron oxide fume.
OT	Other Effects	Typically materials which can produce a "narcosis" with headaches, nausea, etc.	MEK, H ₂ S, mixed light hydrocarbons, ethylene dichloride.
DERM	Dermatitis/With Repeated Contact	Contact may result in a skin condition characterized by reddening, itching, scaling, peeling, drying, etc.	Hydrocarbon solvents epichlorohydrin, BPA dust.

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DPMC-13578

<u>Abbrev.</u>	<u>Category</u>	<u>Definition</u>	<u>Examples</u>
TE	Other Toxic Effects To Body Organs	Repeated, excessive exposure may result in medical problems with respiratory system, liver, kidney, etc.	N-Hexane, (neurotoxic) benzene (blood cell abnormalities).
CAN	Carcinogen	Reported to have produced cancer in at least test animals.	Vinyl chloride, benzene, asbestos, PCA's.
REP	Reproductive	Toxic to reproductive organs of male or female.	-

LAM 012216

DPMC-13579

Distilling (ref):

Heavy Flush Distillate

Toluene

Butane

Gasolines & Naphthas

Turbine Fuel

Heavy Gas Oil

Extra Heavy Gas Oil

Residues

Pitch

Wrico Cooling Water Additive

Kontol 424 Additive

Kontol 430 W Additive

Shell Parts Loosener (Aerosol)

Isopropyl Alcohol (IPA)

In Laboratory: Doctor Solution

Phenophthalein

Silver Nitrate

Acetic Acid

Methyl Orange Indicator

Potassium Chromate