



Shell Oil Company • Shell Chemical Company
Interoffice Memorandum

PLAINTIFF'S EXHIBIT

SH-861

MAY 15, 1984

FROM: P.J. SNYDER - SR. INDUSTRIAL HYGIENIST
DEER PARK MANUFACTURING COMPLEX

TO: J.D. RANDELL - HEALTH & SAFETY
HEAD OFFICE

SUBJECT: BISPHENOL-A HAZARD EVALUATION

RECEIVED
MAY 16 11 00 AM '84
H.S. & E. DEPT.
INFORMATION

The attached report outlines proposed revisions in the Bisphenol A Material Safety Data Sheet. These proposed changes are based on recent field work at DPMC which indicates that significant U.R.T. irritation can occur at air levels below the current permissible exposure limit.

DPMC Medical is currently reviewing the histories on potentially exposed employees however, to date this has not revealed any significant findings.

Please let me know if you have any questions.

P.J. Snyder

Attachments

cc: L. Dixon
B. Drake
L. Horstman
B. Kern MD
H. Lee
C. Phillips - Head Office
G. Youngblood - Head Office
ECB Satellite
PJS Chron

LAM 025853

ABS-037900

Background

Bisphenol A has since 1976 been considered by Shell to be a "nuisance dust" and has been assigned a permissible exposure limit of 10 mg/m³ (total dust) and 5 mg/m³ (respirable dust), (Attachment 1). This determination was based on a review of the literature which did not reveal significant toxicity data or reports from human experience. However, it is noteworthy that this early review concluded that BPA was not biologically inert, and that after an appropriate interval with the temporary standard... an evaluation of human experience may indicate the need for a revised limit.

In recent months the Industrial Hygiene group at DPMC has been reviewing Bisphenol A dust exposure in the Resins Manufacturing and Distribution areas. This evaluation was initially prompted based on an observation of subjective discomfort by an individual who was conducting a walk-through audit of the ERU 2/3 Flaker area.

The investigation of the initial observation suggested the presence of both low level BPA and possibly phenol vapor exposure in the ERU flaker area. This particular combined exposure is currently under further study. The investigation did however reveal several observations relative to BPA exposure alone. The remainder of this report, which addresses BPA exposure, may constitute a submission under the Toxic Substance Control Acts (TOSCA) reporting requirements.

Survey Observations

The available air sampling data for ERU 2/3 suggests that the majority of 8 hour TWA exposures are well below 5 mg/m³ (total dust). However, peak dust exposures are associated with several sources and work procedures. Many of these peak exposures result in acute and immediate upper respiratory irritation. Based on observation and limited monitoring with a portable instantaneous dust monitor, (MDA P-5 and GCA PDM-1) this irritation appears to occur at approximately 1-5 mg/m³. The degree of subjective discomfort experienced appears to be related to individual sensitivity, and frequency of exposure. An effort to identify the percentage of airborne particles less than 10 microns (respirable) was unsatisfactory due to agglomeration. It is postulated however that a high percentage of the particles are "respirable".

To assess the validity of this surveyors personal observations, a questionnaire was developed and given to ERU 2/3 Distribution individuals which were identified by operations.

Efforts were made to avoid obvious biases or to lead individuals. Interviews were in general conducted "one on one". A summary of the responses from the nine Distribution personnel interviewed are provided as Attachment 2.

The most outstanding finding of this solicitation is the frequency of respiratory irritation among employees in spite of the low 8 hour exposure levels. The majority of the employees interviewed were non-smokers. It is noteworthy that the survey findings reflect actual exposure levels - respirator use is generally low.

A review of the first aid cases did not reveal a significant number of injuries for 1982, 1983. Examples of the ones which were reported are provided as Attachment 3.

Summary

The available information suggests that a permissible exposure limit of 10 mg/m³ (total dust) and 5 mg/m³ (respirable) will not prevent immediate respiratory irritation. A ceiling level of 1-5 mg/m³ appears to be a more appropriate guideline if significant discomfort is to be prevented in a majority of the employees.

These observations have suggested several action items for DPMC Resins Management which will be addressed separately. However, the information available suggests that consideration be given to revising the Material Safety Data Sheet on BPA with the following information:

Section III Prolonged skin contact can result in dryness, cracking and dermatitis.

Section IV 5.0 mg/m³ ceiling limit recommended to prevent eye, nose, throat irritation.

Section XI Do not blow dust off clothing with compressed air, use vacuum systems.

PJS08/14
5-7-84

LAM 025855

ABS-037902

SHELL OIL COMPANY

SHELL CHEMICAL COMPANY

DEER PARK MANUFACTURING COMPLEX

DATE JUNE 9, 1976

TO HEAD OFFICE - MANAGER MANUFACTURING
OPERATION & DISTRIBUTIONFROM SUPERINTENDENT CHEMICAL
DEER PARK MANUFACTURING COMPLEXSUBJECT BISPHENOL-A BAG
WARNING LABEL

An inconsistency in the package warning labels for bagged bisphenol-A was recognized during an industrial hygiene survey. Two products, BPA 154 and BPA 157, are packaged in Shell bags, but only the BPA 154 bags contain a warning label. Also, the warning label on Shell's bag differs from warnings on competitors' bags which have caused questions in the past from our employees.

In an effort to resolve these differences, B. M. Slomka, Manager - Toxicology and Applied Pharmacology, was requested to review bisphenol-A toxicity to recommend both safe employee exposure limits and an appropriate warning label. The reply is contained in the attached memoranda dated March 26 and May 19, 1975, and proposes a bag warning based upon the "irritant potential" of BPA.

We believe that all Shell BPA bags should be equipped with a warning similar to that proposed in the May 19, 1975 memo. However, conforming with the precise language for a bag label proposed in the May 19 memo would necessitate an unjustified change in our work practices. Therefore, our proposed bag warning label is as follows:

IRRITATING TO THE EYES AND RESPIRATORY TRACT. IF EYE
CONTACT OCCURS, FLUSH THOROUGHLY WITH FLOWING WATER AND
GET MEDICAL ATTENTION. MAY IRRITATE SKIN WITH PROLONGED
CONTACT. WASH CLEAN WITH SOAP AND WATER. AVOID PROLONGED
BREATHING OF DUST.

Further, if this label is adopted, the material safety data sheets for the BPA products should be modified accordingly.

It is noteworthy that, based upon current data, BPA dust is considered a "nuisance dust". Slomka recommends that the ACGIH nuisance dust standard of 10 mg/m^3 , in conjunction with the OSHA limit of 5 mg/m^3 respirable dust, would be an appropriate temporary standard for BPA. Our review of BPA dust exposures indicates that we do not have any difficulties meeting the above proposed limits.

LAM 025856

ABS-037903

HEAD OFFICE - MANAGER MANUFACTURING
OPERATION & DISTRIBUTION

2

In view of Shell's leading role in the manufacture of BPA, it may be appropriate to consider more definite studies on toxological properties of BPA.


H. J. Bettencourt

Attachment

cc: H. L. Kusnetz

bc: Messrs. D. C. Andrews
L. W. Horstman
D. E. Miller
J. D. Ransdell
F. G. Reitz
J. L. Rivard
Mgrs. Circ. File
Central File

JLR/ww

LAM 025857

ABS-037904

SHELL CHEMICAL COMPANY

DATE MAY 19, 1975

TO DEER PARK MANUFACTURING COMPLEX -
INDUSTRIAL HYGIENIST - J. D. RANDELL

FROM MANAGER - TOXICOLOGY &
APPLIED PHARMACOLOGY -
SAN RAMON COMPLEX

SUBJECT BISPHENOL-A TOXICOLOGY

In response to your memorandum of May 6, to V. L. Kirkland on this subject, TAP has reviewed the wording of the warning statements used by the various companies. It is our opinion that the irritant potential of Bisphenol-A is sufficient to require an adequate warning on the labeling of all packages. It is our recommendation that all Shell bags of Bisphenol-A bear the following statement:

"Avoid prolonged or repeated breathing of dust. Irritating to skin and eyes. Avoid prolonged or repeated contact with skin. Avoid contact with eyes.

"In case of contact, flush skin or eyes with water for at least 15 minutes; for eyes, get medical attention."



M. B. Slonka

cc: San Ramon Complex - IS (2)

LAM 025858

ABS-037905

SHELL CHEMICAL COMPANY

DATE MARCH 26, 1975

TO HOUSTON - SHELL OIL COMPANY -
DEPT. OF OCCUPATIONAL SAFETY &
HEALTH - INDUSTRIAL HYGIENIST
(J. D. RANSELL)

FROM MANAGER - TOXICOLOGY &
APPLIED PHARMACOLOGY -
SAN RAMON

SUBJECT BISPHENOL A TOXICOLOGY

With reference to your memorandum of October 30, 1974, on this subject, and your subsequent discussions with Dr. V. L. Kirkland, TAP has reviewed the published literature on the toxicology of Bisphenol-A and offers the following comments relevant to the appropriate air standard categorization of the material:

1. Bisphenol-A cannot be considered biologically inert. The acute toxicity of the material has been defined, and a subacute feeding study has also been reported (Fedyanina, Sanitary-Toxicological Investigations of Diphenylpropane; Standardization of its Content in Water.; Gig. Sanit. 33: 25-30, 1968; CA 69: 6950, 1968). In the latter Russian study, it was found that a daily intake of Bisphenol-A by rats of 0.025 mg/kg for 6 months was without effect. A daily dose of 0.25 mg/kg resulted in some measurable effect, and "larger concentrations produced numerous pathological effects". The nature of the pathology was not further defined in the available abstract.
2. There are very little data bearing directly on the issue at hand, viz. the air standard. The study of Shumskaya (Possible Chronic Intoxication by Diphenylpropane Dust, Tokisol. Novykh Prom. Khim. Vesh. 4: 43-52, 1962; CA 58: 10652, 1963) included inhalational exposure of rats to Bisphenol-A concentrations between 15 and 86 mg/M³, and on the basis of the study a maximum allowable air concentration of 5 mg/M³ in the work place was recommended. Unfortunately, the abstract is not sufficiently detailed to determine if the data adequately support the recommendation. (It has been our experience that even the full English translation of a Russian technical article is not very revealing.)
3. In vitro bioassay in experimental animals has established that Bisphenol-A possesses weak estrogenic activity. Although no practical problems are anticipated as a result of this demonstration, it must be noted that the physiological effects of estrogens are many, varied, and often subtle. Additional experimental investigations into this aspect of Bisphenol-A activity may therefore be required.
4. There is no evidence from the published literature that Bisphenol-A elicits any chronic irreversible effects following prolonged low-level exposure by any route, although adequate investigation of this possibility has not been reported.

ABS-037906

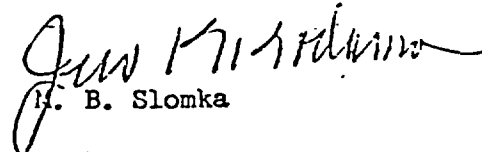
LAM 025859

5. The current OSHA nuisance dust standard of 15 mg/M^3 (TWA) is apparently not sufficiently stringent, since you indicate upper respiratory irritation occurs in a percentage of workers at this level.

In view of the above information, it is recommended that the ACGIH nuisance dust standard of 10 mg/M^3 , in conjunction with the OSHA limit of 5 mg/M^3 respirable dust, would be an appropriate temporary standard for Bisphenol-A. Evaluation of human experience after an appropriate interval with the temporary standard should indicate if its further downward revision is necessary.

With respect to your question regarding the potential for Bisphenol-A to cause dermatitis, several investigators have shown that the material can produce an allergic contact dermatitis in susceptible individuals. As might be expected from Item 3 above, in certain persons there seems to be a cross-sensitization between Bisphenol-A and certain non-steroidal estrogenic substances of the stilbesterol type. Further, it has been suggested that the incidence of sensitivity to Bisphenol-A would be higher among people with multiple susceptibilities to the more common allergens such as pollens, animal dander, and dusts. In view of the foregoing, it is suggested that good hygienic and housekeeping practices be followed to minimize the opportunity for dermal contact with the material.

We will be happy to discuss the above with you at your convenience.

for 
J. B. Slomka

cc: San Ramon - Reg. Affairs - T&AP - Technologist
" " - Information Services (2)

LAM 025860

ABS-037907

ATTACHMENT 2

BPA DUST EXPOSURE ASSESSMENT

NAME: 9 Shell Employees DATE: Spring 1984

COMPANY NO.: _____

JOB ASSIGNMENT(S) SINCE 1975: Distribution Operations Epon 2/3

Number of years you have worked with BPA. _____ 6.3 Yrs. Average
Range 1-13 Yrs.

The inhalation of dust can result in many perceived sensory sensations depending on the type of dust, the individual, the exposure level, duration of exposure and exposure conditions. For example, most individuals would agree that fiberglass dust is irritating to breathe and to the skin. On the other hand only about 10% of the population are allergic to house dust and will experience sneezing and respiratory congestion. Of course, other dusts may not result in any sensory effect at all.

The purpose of this questionnaire is to collect some additional information on one particular type of dust at DPMC, BPA. This information will be used to:

- 1) Help direct exposure monitoring activities so as to include 'worse case' situations, and
- 2) Help understand the real world experiences that workers have had with BPA.

This information will be reviewed by the Medical and Industrial Hygiene Departments and may be used to help update Shell Health and Safety Training programs, such as the Material Safety Data Sheet, (MSDS).

QUESTIONS

SECTION I

1. For each work situation listed below please identify which sensory perception level you would typically expect to occur. (Assume no respiratory protection is used).

Also, where a sensory perception is indicated, list what that effect would probably be.

Your responses should be based on personal experience only.

Sensory perception effect levels to select from:

- a No effect noticed at all
- b Slight immediate effect that disappears with time
- c Slight effect after several hours
- d Effect after several minutes
- e Tolerable only for a few minutes
- f Intolerable

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OPERATIONS

*Interviews for these employees postponed due to possible confounding factors due to previously unrecognized phenol exposure at the Flakers.

	Effect Level A - F	Describe Effect (If Any)
1. Center of top floor ERU 2/3 between A-1944 (East) and A-1802 (West) Flakers (Both running, typical work conditions exist).		
2. Floor level 5 ft. of A-1944 (East) or A-1802 (West) Flakers, some visible dust being emitted to the air from Flaker at gasket or door.		
3. Just West of A-1802 (West) Flaker, door to equipment is closed, Flaker running.		
4. On platform of either A-1944 (East) or A-1802 (West) Flaker with some visible dust being emitted to the air from Flaker at gasket or door.		
5. Standing in the immediate vicinity of the A-18502 (North) Flaker while it is running.		
6. Standing in the drum dumping area by A-1944 when charging the BPA to pre-mix.		
7. Rodding a silo.		
8. Working on the top floor of ERU 2/3 when BPA dust particles can be seen in sunlit areas.		
9. Working at the crusher end of the Sandvic belt on the ground floor (5-10 ft. away).		

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ABS-037909

	Effect Level A - F	Describe Effect (If Any)
10. Dumping solified mother liquor purge of the Sandvik belt to lugger pans at ground floor (5-10 ft. away).		
<u>DISTRIBUTION</u>		
11. Forklift driving in ERU-2 Warehouse without floorsweep operating.	A-3 B-4 D-2	Various irritation conditions described
12. Cleaning up dry BPA dust with broom (ERU-2 Warehouse or top floor.	B-4 C-2 D-2 E-1	Various irritation conditions described
13. Debagging BPA in ERU-2 Warehouse or into ERU-2/3 Reactors.	B-2 C-2 D-1 E-2 F-2	Various irritation conditions described
14. Operating "the palletizer" in the ERU-2 Warehouse.	A-5 B-4	Various irritation conditions described
15. Operating the "Super Sacker" in the ERU-2 Warehouse.	B-4 C-2 D-2	Various irritation conditions described
16. Bagging BPA in the ERU-2 Warehouse.	A-2 B-4 C-1 D-1	Various irritation conditions described
17. Digging out a BPA conveyor.	B-3 C-2 E-1 F-3	Various irritation conditions described
18. Bulk loading BPA - top of railcar.	B-5 C-2 D-1 F-1	Various irritation conditions described

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2. What effects do you associate with BPA skin contact?

(✓) Check One 2 (a) - No effect even after prolonged contact

5 (b) - Skin dryness only

2 (c) - Skin irritation after several hours

1 (d) - Immediately irritating

3. If you checked either (b), (c) or (d) is there a circumstance when the perceived 'effect' becomes worse?

3 Reported humidity makes it worse sometimes causing skin irritation

(around goggles). Off Spec/Hi-Phenol BPA worse - majority

4. List the primary "Health Effects" that you associate with BPA dust:

(1) Lips Tingle - 1 Watery Eyes - 2

(2) Running Nose - 2 Sneezing - 3

(3) Skin Dryness - 3 Burning Eyes (when sweating) - 4
Difficult Breathing-3

5. Your responses may be different because of individual variables. To help us understand these differences please answer the following.

a. Do you smoke?

Record yes if you were regular smoker upto one month ago
(cigarettes, cigar or pipe).

Yes 2 No 7

b. If No,

Have you ever smoked?

Yes 3 No

If Yes, how long ago did you stop?

2,5,17 yrs. Years

6. Do you perceive that differences in the types of BPA cause different inhalation and skin contact effects? (Which types are worse?).

157 is generally thought to be more irritating.

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SECTION II

Check (✓) One

Cough

1. Do you usually cough first thing in the morning (on getting up)?

0
Yes

8
No

- 2a. Do you usually cough during the day or at night (ignore the occasional cough)?

2
Yes

6
No

If yes to either question 1 or 2:

- b. Do you cough like this on most days for as much as three months a year?

1
Yes

6
No

Phlegm

- 3a. Do you usually bring up phlegm from your chest first thing in the morning?

1
Yes

7
No

- b. If yes, do you bring up phlegm like this on most days for as much as three months each year?

1
Yes

6
No

- c. If yes, how long have you had this phlegm, (cough)?

 2 years or less

1 more than 2 years
less than 10 years

 more than 10 years

Chest Tightness

4. At work does your chest ever feel tight or your breathing difficult?

5
Yes

4
No

5. If yes, do you notice any difference in how you feel between the first day back to work and these symptoms after being at work for several days?

5
Yes

No

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ABS-037912

Breathlessness

6. Do you get short of breath walking with other people at an ordinary pace on level ground?

2
Yes

7
No

Other Illnesses

7. Have you ever had asthma?

1
Yes

8
No

8. Have you ever had hay fever or other allergies?

0
Yes

9
No

- 9a. Do you ever experience respiratory (nose, throat, lungs) discomfort while at work?

8
Yes

1
No

- b. If yes, when does this occur?

- immediately after entering work area

1 (✓)

- after several hours in work area

1 (✓)

- only after performing a task involving exposure to dust

6 (✓)

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5-7-84

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ABS-037913

PARAPHRASED INFORMATION OFFERED BY INTERVIEWED EMPLOYEES

"After being in a heavy dust area for awhile you lose your sense of smell"

"BPA dust exposure aggravates my hayfever, expecially in the Fall (when no respirator used)"

"You get used to the dust after a few hours into the shift"

"Causes skin dryness"

"After driving the forklift for awhile I start sneezing and my eyes water"

"I have to use hand cream for dryness"

After working in the department for several years, operating the forklift has no effect at all. The dust's irritating nature is worse for first timers.

Irritation effect depends on product 157 or 154.

It is worse when you come back the longer you're off.

Regarding Debagger:

- No way to keep dust in confined area.
- Must be in very good shape and a non-smoker.
- Can't be done without a mask.
- Forklift stirs up dust
- Dust collector should be on bottom or side of hood.
- Nasal irritation.

Regarding ERU-2 Bagger:

- Dust always in the air from all 3 spouts.
- As long as equipment is blown off everything pretty clean.

Regarding Digging Out A BPA Conveyor:

- Worse type of exposure, have to handle directly.
- Respirator needed.
- Should use vacuum.

LAM 025867

ABS-037914

FIRST REPORT OF INJURY OR ILLNESS - DFWJC

☒ CHEMICAL
☐ REFINERY
☐ COMPLEX

PART ONE - TO BE COMPLETED BY DISPENSARY PERSONNEL

LAST NAME Montgomery	FIRST Fawille	MIDDLE INITIAL P.	BADGE 1825	SEX F
DEPT. distribution	CLASSIFICATION opr.	SUPERVISOR L. N. Chaney		
DATE AND TIME OF OCCURRENCE 2 PM 8-7-82	DATE AND TIME REPORTED 3:30 8-7-82	PLACE OF ACCIDENT (PLANT, UNIT, ETC.) open Warehouse		
EMPLOYEE'S DESCRIPTION Stated: Bagging BPA & super sacking at night.				
DIAGNOSIS AND INITIAL CARE Irritation on skin from BPA dust - showered 15 minutes - Contractions & sores disappeared - no itching - after shower sensation decreased - no other injuries noted at present is too current - to return if necessary advised has also used cream at home - which doctor will be applied to skin				
ATTENDING PHYSICIAN - NAME		DATE AND TIME		HOSPITAL OR LOCATION

N3

PART TWO - TO BE COMPLETED BY IMMEDIATE SUPERVISOR ON SAME SHIFT

JOB WHEN INJURED BPA SUPER SACKING 157	COMMENCED WORK - DAY OF INJURY 2:30 PM 8-8-82	RETURN TO WORK SAME SHIFT NO YES
DESCRIPTION OF INCIDENT CLOTHES BECAME DUSTY FROM HANDLING AND WORKING AROUND BPA. DUSTY NATURE OF WORK & S. EAT SOMETIME CAUSES IRRITATION OF SKIN.		
IDENTIFY CAUSE OF INCIDENT AND EXPLAIN every job in wher. has chance of exposure to dust. She had to correct wts on some S/S AND this involved DIRECT exposure		
PROTECTIVE EQUIPMENT REQUIRED HARD HAT, SAFETY GLASSES	WORN? YES	SPECIAL INSTRUCTIONS GIVEN? NO.
ACTION TAKEN OR RECOMMENDED TO PREVENT RECURRENCE WEAR GLOVES WHEN HANDLING BPA. Coveralls when NECESSARY SO YOU CAN CHANGE INTO clean clothes if they ARE CONTAMINATED. REPORT DUSTY CONDITIONS TO SUPERVISOR. AVOID UNNECESSARY exposure if possible.		

ABS-037915

LAM 025868

WITNESSES - NAME - CLASSIFICATION - AND BADGE NO.

IMMEDIATE SUPERVISOR'S SIGNATURE

DEPT. APPROVAL

RETAIN ONE COPY IN DEPARTMENT - FORWARD ORIGINAL TO SAFETY DEPARTMENT

Late Report

FIRST REPORT OF INJURY OR ILLNESS -- DP...

☒ CHEMICAL
☐ REFINERY
☐ COMPLEX

PART ONE - TO BE COMPLETED BY DISPENSARY PERSONNEL

LAST NAME <i>Reyes</i>	FIRST <i>Mike</i>	MIDDLE INITIAL	BADGE <i>2040</i>	SEX <i>M</i>
DEPT. <i>distribution</i>	CLASSIFICATION <i>opr</i>	SUPERVISOR <i>Lee Daugherty</i>		
DATE AND TIME OF OCCURRENCE PM AM <i>7-18-82</i>	DATE AND TIME REPORTED <i>2:25 7-18-82</i>	PLACE OF ACCIDENT (PLANT, UNIT, ETC.) <i>BPA</i>		
EMPLOYEE'S DESCRIPTION <i>was working in BPA, Surolo - was sneezing every 10 min. Went to doctor yesterday and got medication. Dr. said he was also told was allergic to dust - wore a mask today but feels bad going home ill - thought had a cold but doctor said otherwise. T 98.6 BP 120/80 no rest and given - only filled out report</i>				
ATTENDING PHYSICIAN - NAME <i>Hal Boone</i>		DATE AND TIME <i>7-20-82</i>	HOSPITAL OR LOCATION <i>Platinum E</i>	

Non-Occ.

PART TWO - TO BE COMPLETED BY IMMEDIATE SUPERVISOR ON SAME SHIFT

JOB WHEN INJURED <i>Bagging, weighing off wh. bags</i>	COMMENCED WORK - DAY OF INJURY <i>7-18-82</i>	RETURN TO WORK SAME SHIFT NO ☐ YES ☒
DESCRIPTION OF INCIDENT <i>Breaking dust over a period of time</i>		

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IDENTIFY CAUSE OF INCIDENT AND EXPLAIN

working around dust with out a dust mask.

PROTECTIVE EQUIPMENT REQUIRED <i>SAFETY GLASSES + DUST MASK</i>	WORN? <i>did not</i>	SPECIAL INSTRUCTIONS GIVEN? <i>WEAR DUST MASK IN AREA</i>
ACTION TAKEN OR RECOMMENDED TO PREVENT RECURRENCE <i>OPERATOR WAS DRAFTED TO WORK OVERTIME, AND he didn't feel well. He had gone to his doctor, who said he was allergic to dust. OPERATOR went home, and next man in line was DRAFTED to work</i>		
<i>IF There is excessive DUST WEAR DUST MASK. we will try to find source each time and eliminate it.</i>		

ABS-037916

WITNESSES - NAME - CLASSIFICATION - AND BADGE NO.

IMMEDIATE SUPERVISOR'S SIGNATURE

DEPT. APPROVAL

RETAIN ONE COPY IN DEPARTMENT — FORWARD ORIGINAL TO SAFETY DEPARTMENT

FIRST REPORT OF INJURY OR ILLNESS

☒ CHEMICAL
☐ REFINERY
☐ RETREATMENT

TO BE COMPLETED BY DISPENSARY PERSONNEL

040134 0001747

0205

EMPLOYEE INFORMATION:		DEPARTMENT: <u>Maint (Chem.)</u>		MANAGER'S NAME: <u>Annie Schiler</u>
LAST NAME	FIRST	MIDDLE INITIAL	EMPLOYEE NUMBER	FOREMAN
<u>Richards</u>	<u>Vernie</u>	<u>E</u>	<u>2154</u>	<u>Mr. Al Payne</u>

SITUATION INFORMATION				
DATE AND TIME OF OCCURRENCE		DATE AND TIME REPORTED		PLACE OF ACCIDENT
<u>4/23/84 7:30 AM</u>		<u>4/24/84 8:00 AM</u>		<u>Department (mtn)</u>
ON OVERTIME	TIME STARTED WORK ON DAY OF INJURY	RETURNED TO WORK SAME SHIFT		EMPLOYEE DESCRIPTION OF ACCIDENT
☐ YES ☒ NO	<u>7:30 AM</u>	☒ YES ☐ NO		<u>Working around</u>
<u>BPA dust and apparently inhaled too much because my eyes hurt I have a headache my eyes are irritated, I'm hoarse and my throat is sore</u>				

MEDICAL INFORMATION	
DIAGNOSIS AND INITIAL CARE	
<u>Temp 98°. BP 112/78. Chest clear to A&P. Pharynx injected.</u>	
<u>Has sx suggestive of upper resp. irritation by BPA dust.</u>	
<u>Disp: ① Ornade suspension i.q. 12h (disp #12)</u>	
<u>② Avoid excessive fumes, heavy BPA dust concentration</u>	
<u>X48hrs</u>	
<u>Disp 2300 BP 1050</u>	
RESTRICTIONS/RECOMMENDATIONS/MEDICAL CAUSAL INFORMATION	

ATTENDING PHYSICIAN - NAME	DATE AND TIME	AM PM	HOSPITAL OR LOCATION
<u>[Signature]</u>	<u>/ /</u>		

SAFETY DEPARTMENT COPY

LAM 025870

ABS-037917

☒ CHEMICAL
☐ REFINERY
☐ COMPLEX

FIRST REPORT OF INJURY OR ILLNESS -- DPMC

Major Resins Distribution

PART ONE - TO BE COMPLETED BY DISPENSARY PERSONNEL

LAST NAME Moulton	FIRST Michael	MIDDLE INITIAL L.	BADGE 2045	SEX M
DEPT. EPON II Warehouse	CLASSIFICATION OPR #1	SUPERVISOR Lee Daugherty		
DATE AND TIME OF OCCURRENCE PM 7-19-82	DATE AND TIME REPORTED 3P 8-2-82	PLACE OF ACCIDENT (PLANT, UNIT, ETC.) BAGGING MACHINE EPON II		
EMPLOYEE'S DESCRIPTION Hadden working around BPA dust and it began to cause irritation to eyes, nose, throat, and lungs.				
DIAGNOSIS AND INITIAL CARE Seen by Dr. Gross - see Clinical note concerning BPA dust exposure.				
ATTENDING PHYSICIAN - NAME Dr. Gross		DATE AND TIME 8-2-82		HOSPITAL OR LOCATION DBach RN

NS

PART TWO - TO BE COMPLETED BY IMMEDIATE SUPERVISOR ON SAME SHIFT

JOB WHEN INJURED E-2 Distr. Operator	COMMENCED WORK - DAY OF INJURY 8-2-82	RETURN TO WORK SAME SHIFT NO YES
DESCRIPTION OF INCIDENT Seen Doctor because of Sore Throat possibly caused by Smoking -		
IDENTIFY CAUSE OF INCIDENT AND EXPLAIN Unknown assumed caused by Smoking but aggravated by dust		
PROTECTIVE EQUIPMENT REQUIRED Dust Mask	WORN? Yes	SPECIAL INSTRUCTIONS GIVEN? None
ACTION TAKEN OR RECOMMENDED TO PREVENT RECURRENCE Doctor placed him on restriction for 5 days away from BPA Dust & Chemical fumes in order for sore throat to clear up Note: May not be work related		
WITNESSES - NAME - CLASSIFICATION - AND BADGE NO.		
IMMEDIATE SUPERVISOR'S SIGNATURE [Signature]	DEPT. APPROVAL [Signature]	

LAM 025871

ABS-037918

RETAIN ONE COPY IN DEPARTMENT — FORWARD ORIGINAL TO SAFETY DEPARTMENT

8/3/82

George Gutierrez - Process Manager, Resins Distribution

Mr. Gutierrez:

Mr. Reitz thought it would be a good idea if you attached this copy of Mouton's clinical note re BPA dust to his FRII dated 8/2/82. If you have any questions, please call him on 7143.


L.A. GUTHRIE

ABS-037919

LAM 025872

ED. DEPT. VISIT RECORD
Shell Oil Co.

NAME:

Morton Mr.

AGE

SEX

311427

LOCATION:

DPmc

DEPT.

Dist/opk

CLINICAL NOTES

TIME &
INITIAL

8/2/82 See FET. I did exam on 7/29
(exam) & that time he had sore throat
& cough & some sputum production. He
has had recent daily exposure to heavy
BPA dust as Epon II unit is coming up.
I suggested he d.c. cigarettes to see if
this helped - it didn't. He still has cough
& greenish sputum. On exam today
pharynx is inflamed. Lungs clear. I have
written restriction to stay out of BPA
dust & chemical fumes X 5 days. JRS

LAM 025873

ABS-037920



Shell

97002 (1-81)

MATERIAL SAFETY DATA SHEET

MSDS NUMBER

59-3

PAGE 1 OF

SECTION I		NAME		24 HOUR EMERGENCY ASSISTANCE	
PRODUCT	Bisphenol A (resin grade)			SHELL	713-473-9461
CHEMICAL SYNONYMS	4,4'-isopropylidenediphenol, BPA			CHEMTREC	800-424-9300
CHEMICAL FAMILY	Substituted phenols			HAZARD RATING	
SHELL CODE	43106	C.A.S. NUMBER	80-05-7	LEAST 0	SLIGHT 1
				MODERATE 2	HIGH 3 EXTREME 4
				HEALTH	0
				FIRE	1
				REACTIVITY	0

SECTION II		INGREDIENTS	
COMPOSITION	%	TOXICITY DATA	
Bisphenol A (BPA)	100%	Acute Oral LD ₅₀ (rat) = 3-4g/kg	
		Acute Dermal LD ₅₀ (rbt) = 3g/kg	

SECTION III	HEALTH INFORMATION
May give moderate skin irritation on prolonged contact. May be a skin sensitizer. Can cause moderate eye irritation on short or single exposure and severe eye irritation on prolonged contact. Ingestion produces stomach irritation, cramps, diarrhea. Inhalation can cause irritation of the respiratory tract, sore throat, coughing, and sneezing.	

LAM 025874

ABS-037921

SECTION IV	OCCUPATIONAL EXPOSURE LIMITS
For nuisance dust: ACGIH-TLV/TWA for respirable dust - 5mg/m³; total dust - 10mg/m³.	



MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶

PAGE 3 OF 4

SECTION V

EMERGENCY AND FIRST AID PROCEDURES

SKIN CONTACT: Wash with soap and water. Remove contaminated clothing and shoes; do not reuse until cleaned. If persistent irritation occurs, get medical attention.

EYE CONTACT: Flush with water for 15 minutes while holding eyelids open. Get medical attention.

INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

INGESTION: Do not give liquids if victim is unconscious or very drowsy. Otherwise, give no more than 2 glasses of water and induce vomiting by giving 30cc (2 tablespoons) Syrup of Ipecac. If Ipecac is unavailable, give 2 glasses of water and induce vomiting by touching finger to back of victim's throat. Keep victim's head below hips while vomiting. Get medical attention.

SECTION VI

PHYSICAL DATA

BOILING POINT (°F) ▶ --	MELTING POINT (°F) ▶ 306, min.	VAPOR PRESSURE --
SPECIFIC GRAVITY (H ₂ O=1) ▶ --	% VOLATILE BY VOLUME ▶ --	VAPOR DENSITY (AIR=1) ▶ --
SOLUBILITY IN WATER ▶ Negligible	EVAPORATION RATE (BUTYL ACETATE=1) ▶ --	
APPEARANCE AND ODOR		
Small, off-white flakes.		

SECTION VII

FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD USED	FLAMMABLE LIMITS/% VOLUME IN AIR	LOWER	UPPER
--	--	--	--
EXTINGUISHING MEDIA			
Water spray or deluge, foam, CO ₂ .			
SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS			
No special procedures. Avoid smoke inhalation.			
UNUSUAL FIRE AND EXPLOSION HAZARDS			
Can form highly explosive dust clouds.			

LAM 025875

ABS-037922



MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶

59-3
PAGE 3 OF 4

Shel .

87004 (10-79)

SECTION VIII

REACTIVITY

STABILITY ▶ ☐ UNSTABLE ☒ STABLEHAZARDOUS POLYMERIZATION ▶ ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID

Reacts vigorously with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

CO and unidentified organic compounds from incomplete combustion.

SECTION IX

EMPLOYEE PROTECTION

RESPIRATORY PROTECTION

Use a NIOSH approved respirator to prevent overexposure if exposure levels may or do exceed limits in Section IV. Use either an atmosphere supplying respirator or air purifying respirator for particulates in compliance with 29 CFR 1910.134.

PROTECTIVE CLOTHING

Wear gloves and other protective clothing as required to prevent skin contact. Wear chemical goggles as required to prevent eye contact.

ADDITIONAL PROTECTIVE MEASURES

Use explosion proof ventilation as required to control dust levels in air.

SECTION X

ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES

Wear NIOSH approved dust respirator and appropriate protective clothing. Sweep up or pick up with industrial vacuum cleaner. Avoid raising dust. Place sweepings in a tight container for disposal.

ABS-037923

WASTE DISPOSAL

Reclaim; remove to a waste disposal facility operating in compliance with state and local regulations.

ENVIRONMENTAL HAZARDS

--

LAM 025876



MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶

PAGE 1 OF 4

Shell

STONE (1-5-81)

SECTION XI**SPECIAL PRECAUTIONS**

Store in cool, dry place.

Handling can create dust clouds. Eliminate ignition sources.

Use explosion-proof electrical equipment (motors, switches, etc.).

Conveying and processing equipment should be spark-proof, well bonded and grounded. Practice good housekeeping. Avoid dust accumulation.

Wash with soap and water before eating, drinking, smoking or using toilet facilities. Launder contaminated clothing before reuse.

SECTION XII**TRANSPORTATION REQUIREMENTS**

DEPARTMENT OF TRANSPORTATION CLASSIFICATION	☐ FLAMMABLE LIQUID	☐ COMBUSTIBLE LIQUID	☐ OXIDIZING MATERIAL	☐ NON-FLAMMABLE GAS
	☐ FLAMMABLE SOLID	☐ POISON, CLASS A	☐ CORROSIVE MATERIAL	☒ NOT HAZARDOUS BY D.O.T. REGULATIONS
	☐ FLAMMABLE GAS	☐ POISON, CLASS B	☐ IRRITATING MATERIAL	☐ OTHER—Specify below

D.O.T. PROPER SHIPPING NAME

OTHER REQUIREMENTS

SECTION XIII**OTHER REGULATORY CONTROLS**

EPA, FDA, OSHA, USDA, CPSC, etc.

LAM 025877

ABS-037924

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

BE SAFE

READ OUR PRODUCT
SAFETY INFORMATION
... AND
PASS IT ON

(PRODUCT LIABILITY LAW
REQUIRES IT)

James J. Brown
Manager
SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
OIL AND CHEMICAL PRODUCTS
P.O. BOX 4320
HOUSTON, TEXAS 77210

DATE PREPARED

April 29, 1982