

Contains No CBI



PHILLIPS PETROLEUM COMPANY

BARTLESVILLE, OKLAHOMA 74004 918 661-6600

Contains NO CBI

HEALTH, ENVIRONMENT AND SAFETY

A

August 24, 1992

Compliance Audit Program  
CAP ID#: 8ECAP-0075

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8EQ-92-12566

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Document Processing Center (TS-790)  
Office of Pollution Prevention and Toxics  
Environmental Protection Agency  
401 M Street, SW  
Washington, D. C. 20460

Attn: Section 8(e) Coordinator  
(CAP Agreement)

Gentlemen:

Phillips Petroleum Company is submitting the enclosed sixty (60) reports (two boxes, numbered 1 and 2) of toxicological studies pursuant to category II.B.2.b of the CAP Agreement 8ECAP-0075 Reports. Reports being submitted contain no confidential business information.

We are sending an additional five boxes (box numbers 3-7) of reports of studies that have, previously, been submitted to the FYI coordinator of the Office of Pollution Prevention and Toxics by the American Petroleum Institute (API). These are being provided solely for the Agency's convenience.

For questions concerning this correspondence, please contact Fred Marashi at 918-661-8153.

Very truly yours,

*Barbara J. Price*

Barbara J. Price  
Vice President  
Health, Environment & Safety

Enclosure (Seven Boxes)

FFM/dh:29

mm  
9/28/95



**Phillips Petroleum Company**

CAP Identification Number: 8ECAP-0075  
Pursuant to Category: II.B.2.b

43

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**Contains No CBI**

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**Title of Study:** Subacute Dermal Toxicity API Jet Fuel A

**Name of Chemical:** API Jet Fuel A

**CAS#:** 8008-20-6

**Summary:** Dermal application of API Jet Fuel A 5 days per week for two weeks produced histopathological changes in the liver and urinary bladder in the rabbit.

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**Contact:**

**Fred Marashi**  
**Phillips Petroleum Company**  
13 D2 PB  
Bartlesville, OK 74004  
Phone: 918/661-8153  
Fax: 918/661-5664

BIORESEARCH LABORATORIES  
August 6, 1980

Project No. 1443-F

Subacute Dermal Toxicity  
API Jet Fuel A

Conducted By:  
Elars Bioresearch Laboratories, Inc.  
225 Commerce Drive  
Fort Collins, Colorado 80524

Dates of Study:  
May 21, 1979 - June 9, 1980

Report To:  
American Petroleum Institute  
2101 L Street Northwest  
Washington, D.C. 20037

Vicki J. Mills  
Vicki J. Mills, B.S.  
Toxicology Technician  
Study Coordinator

L. Steven Beck  
L. Steven Beck, D.V.M., M.S.  
Assistant Director of Toxicology  
Study Director

William H. Halliwell  
William H. Halliwell, D.V.M., Ph.D.  
Pathologist

Douglas J. Hepler  
Douglas J. Hepler, Ph.D.  
Vice President, Toxicity  
Evaluation Division

REVIEWED BY QUALITY ASSURANCE: Sawn Feedles 9/29/80

Westpath Laboratories, Inc.  
Project Number 1014  
August 11, 1980

Elars Bioresearch Laboratories  
Project Number 1443-F  
API Jet Fuel

QUALITY ASSURANCE STATEMENT

A quality assurance inspection was made of 20% of the data in this report and included inspection of pathologist's dictation to individual animal histopathology forms and review of tabular summaries.

Linda K. Hatler  
Linda K. Hatler, B.S.  
Quality Assurance

8-11-80  
Date

BIORESEARCH LABORATORIES  
August 6, 1980

Project No. 1443-F

Subacute Dermal Toxicity  
API Jet Fuel A

OBJECTIVE:

The study described herein was conducted to evaluate the dermal toxicity of the test material when applied in repeated doses over a period of two weeks.

MATERIALS AND METHODS:

1. Test Material:

The test material, a liquid in a metal container identified as API Jet Fuel A, was received by Elars on October 8, 1979. The concentration, purity, and stability were not provided by the sponsor. The test material was stored in Elars test material storage room.

2. Animals:

Each dose group and a control group consisted of eight adult New Zealand White rabbits, four males and four females, weighing between 2 and 4 kg. The rabbits were purchased from Pel-Freez Farms, Rogers, Arkansas; Stevinson Rabbitry, Stevinson, California; and Keen Ridge Rabbitry, Edgewood, New Mexico, and were identified individually by metal ear tags and corresponding cage tags. The rabbits were allowed to acclimate at Elars at least one week. Purina Rabbit Chow<sup>®</sup> and fresh water were provided ad libitum. Throughout acclimation and testing, the rabbits were housed individually in standard laboratory rabbit cages.

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Subacute Dermal Toxicity  
API Jet Fuel A

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3. Method:

Prior to application of test material, the rabbits were shaved free of hair with a number 40 Oster<sup>®</sup> clipper blade. The shaved area on each animal constituted about 30 percent of the total body surface area.

The daily dosage used for this compound was 8 ml/kg body weight, and an untreated control group. The rabbits were exposed to the test material for five consecutive days followed by a two day rest period and then again for five consecutive days. The test material was applied to four-inch square gauze sponges backed by plastic wrap. The sponges and plastic wrap were taped to the shaved area of the animals' backs with porous adhesive tape. The entire trunk of each rabbit was wrapped with elastic tape to prevent slippage of the patches. The rabbits remained bandaged for 24 hours, at which time the patches were removed and a new dose of test material was applied. This procedure was followed each day of the five day dosing period. During the two day rest period the animals were not dosed.

Observations for mortality, local reactions, and behavioral abnormalities were made daily during the 14 day period. Initial and final body weights were recorded.

Any animals which succumbed during the study as well as those killed with T-61<sup>®</sup> at the termination of the study were subjected to necropsy, and all significant gross pathological alterations were recorded. In addition, the following tissues were submitted for histopathologic examination: skin from the test site, liver, kidney, spleen and urinary bladder.

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Subacute Dermal Toxicity  
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The collected tissues were fixed in 10% neutral buffered formalin. Afterwards, the tissues were trimmed, embedded in paraffin, sectioned at 4 to 5 microns, affixed to glass slides, and stained with hematoxylin and eosin. Histopathologic examination of the submitted tissues was conducted at Westpath Laboratories by William H. Halliwell, D.V.M., Ph.D., Diplomate: ACVP.

#### RESULTS:

Individual animal weights and doses are given in Tables 1 and 2 for the 8 ml/kg dosage level and the control, respectively. The most significant daily observation recorded for the 8 ml/kg test level was the progressive deterioration of the test site area. The skin at the test area became red and necrotic and alopecia was noted in areas surrounding the test site. All animals exhibited depressed behavior.

The animals in the test group showed decreased appetites and became emaciated, with an average weight loss of 0.8 kg. This dosage level produced 75% mortality. The control group exhibited an average weight gain of 0.2 kg and resulted in no mortality.

The gross postmortem examinations of rabbits treated at 8 ml/kg showed signs of anorexia and severe skin lesions. Three rabbits had pale kidneys; two of these rabbits also had pale livers. Two rabbits had red patches on the stomach lining. Other gross observations included one rabbit with white spots on the liver and one rabbit with slightly mottled kidneys. Two animals fractured their backs while on study.

The histopathologic diagnoses of selected tissues from rabbits exposed to 8 ml/kg of test material API Jet Fuel A and from untreated control rabbits are presented in Tables 3 and 4, respectively. The test material produced some or all of the following changes at the test site (skin):

BIORESEARCH LABORATORIES  
Subacute Dermal Toxicity  
API Jet Fuel A

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acanthosis, chronic inflammation, crusting, deep pyoderma, dermal congestion, dermal edema, hyperkeratosis, epidermal necrolysis, and parakeratosis that varied in severity from very slight to severe.

The liver from one of eight treated rabbits contained evidence of multifocal necrosis and two of eight rabbits contained centrilobular vacuolar degeneration. Both changes varied in severity from very slight to moderate. Three of five treated animals had evidence of hyperplastic change in the transitional epithelium of the urinary bladder mucosa that varied in severity from very slight to slight. Five of eight treated animals had congested spleens.

#### CONCLUSIONS:

The test material, API Jet Fuel A, caused acute dermal corrosion and resulted in obvious treatment-related signs in the 8 ml/kg treatment group during the 14 day observation period and at necropsy in the species examined.

Histopathologic examination of tissues from rabbits exposed to 8 ml/kg of the test material (API Jet Fuel A) revealed evidence of dermal and hepatic toxicity and hyperplastic changes in the urinary bladder transitional epithelium.

The dermal LD<sub>50</sub> for the test material is probably less than 8 ml/kg.

#### PERSONNEL:

Personnel responsible for the collection and interpretation of data generated in the course of this study were Vicki J. Mills, B.S., Toxicology Technician, Study Coordinator; L. Steven Beck, D.V.M., M.S., Assistant Director of Toxicology, Study Director; Denice E. Morita, B.S., Irma

BIORESEARCH LABORATORIES  
Subacute Dermal Toxicity  
API Jet Fuel A

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August 6, 1980

Albinana, and Kris L. Hansen, B.S., M.S., Toxicology Technicians; Terry A. Hewett, B.S., Laboratory Assistant; Douglas I. Hepler, Ph.D., Director of Toxicology; and William H. Halliwell, D.V.M., Ph.D., Pathologist.

RAW DATA:

Raw data regarding this study are to be found in Elars' notebooks #239 and #1505 in file #1443-F.

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Subacute Dermal Toxicity  
API Jet Fuel A

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August 6, 1980

Table 1  
Individual Animal Weights and Dosages  
Dose Level 8 ml/kg, 75% Mortality  
May 26, 1980

Animal Number	Sex	Body Wt. Day 0 (kg)	Dose (ml)	Body Wt. Terminal	Weight Gain (kg)	Termination Day
975	M	3.3	26.4	2.3	-1.0	6
993	M	3.0	24.0	2.5	-0.5	4
1121	M	3.0	24.0	2.4	-0.6	14
1161	M	2.2	17.6	1.7	-0.5	4
940	F	3.4	27.2	2.2	-1.2	11
960	F	3.0	24.0	2.0	-1.0	14
1168	F	2.7	21.6	1.8	-1.1	12
1170	F	2.7	21.6	2.0	-0.7	13

Table 2  
Individual Animal Weights and Dosages  
Dose Level Control, 0% Mortality  
May 21, 1979

Animal Number	Sex	Body Wt. Day 0 (kg)	Dose (ml)	Body Wt. Terminal	Weight Gain (kg)	Termination Day
421	M	2.4	0	2.5	0.1	14
423	M	2.3	0	2.7	0.4	14
425	M	2.4	0	2.5	0.1	14
427	M	2.5	0	2.7	0.2	14
422	F	2.7	0	2.9	0.2	14
424	F	2.7	0	3.0	0.3	14
426	F	2.7	0	2.9	0.2	14
428	F	2.4	0	2.5	0.1	14



Westpath Laboratories, Inc.  
Project No. 1014

Table 4

Elars Bioresearch Laboratories  
Project Number 1443-P  
API Jet Fuel

## INDIVIDUAL HISTOLOGIC OBSERVATIONS

Control

Accession Number	N225	N226	N227	N228	N229	N230	N231	N232
Animal Number	421	422	423	424	425	426	427	428
Sex	M	F	M	F	M	F	M	F
Reason Discontinued	FS							
Days on Test	14	14	14	14	14	14	14	14
LIVER			NR		NR	NR		
Abscess, focal				4			4	
Congested								
Mineralization								
Necrosis, multifocal								
Pericholangitis	1	3						1
Vacuolar Degeneration, centrilobular	3							
KIDNEY	NR							
Congested								
Mineralization, focal								
Mononuclear Cell Infiltrate, focal								
Mononuclear Cell Infiltrate, diffuse								
Nephrosis, tubular								
SPLEEN			NR		NR	NR		NR
Congested							3	
Hyperplasia, reactive	2	1		2			2	
URINARY BLADDER	NR							
SKIN (Test Site)	NR							
Acanthosis								
Acute Inflammation								
Chronic Inflammation								
Crusting								
Deep Pyoderma								
Dermal Congestion								
Dermal Edema								
Epidermal Microabscesses, multifocal								
Hyperkeratosis								
Liquefactive Degeneration								
Necrosis, epidermal								
Parakeratosis								
OTHER LESIONS								
LUNG	TNP							
Atelectasis								
STOMACH	NR	NR	NR		NR	NR	NR	NR
Congestion, mucosal								
Lymphoid Hyperplasia, submucosal				2				

KEY: Acc = Accidental Death  
DOT = Died on Test  
FS = Final Sacrifice  
MS = Moribund Sacrifice  
SS = Scheduled Sacrifice  
NDT = Tissue Present, No  
Diagnosis Tendered

TNP = Tissue Not Present  
NR = Tissue Present, Not  
Remarkable  
AUT = Autolysis  
O-NR = Paired Organ, Unilateral  
Absence, Tissue Present,  
Not Remarkable  
O- = Unilateral Lesion

Severity  
1 = Very Slight  
2 = Slight or Small  
3 = Moderate  
4 = Severe

BIORESEARCH LABORATORIES  
Acute Toxicity Tests

Project No. 1443

Analysis of Feed

The guaranteed analyses of feed for Purina Guinea Pig Chow<sup>®</sup>, Purina Formulab Chow<sup>®</sup>, and Purina Rabbit Chow<sup>®</sup>, as provided on the manufacturer's labels, are listed below. No additional analyses of feed were made.

Guaranteed Analysis of Feed

Nutritional Content	-----Type of Purina <sup>®</sup> Chow-----		
	Purina Guinea Pig Chow <sup>®</sup> 5025 (%)	Purina Formulab Chow <sup>®</sup> 5008 (%)	Purina Rabbit Chow, Checkers <sup>®</sup> 5301 (%)
Crude protein, minimum	18.0	23.0	16.0
Crude fat, minimum	4.0	6.5	2.0
Crude fiber, maximum	16.0	4.0	18.0
Ash, maximum	9.0	8.0	9.0
Added minerals, maximum	3.5	2.5	3.0



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

Barbara J. Price  
Vice President  
Health, Environment & Safety  
Phillips Petroleum Company  
Bartlesville, Oklahoma 74004

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

MAY 08 1995

EPA acknowledges the receipt of information submitted by your organization under Section 8(e) of the Toxic Substances Control Act (TSCA). For your reference, copies of the first page(s) of your submission(s) are enclosed and display the TSCA §8(e) Document Control Number (e.g., 8EHQ-00-0000) assigned by EPA to your submission(s). Please cite the assigned 8(e) number when submitting follow-up or supplemental information and refer to the reverse side of this page for "EPA Information Requests".

All TSCA 8(e) submissions are placed in the public files unless confidentiality is claimed according to the procedures outlined in Part X of EPA's TSCA §8(e) policy statement (43 FR 11110, March 16, 1978). Confidential submissions received pursuant to the TSCA §8(e) Compliance Audit Program (CAP) should already contain information supporting confidentiality claims. This information is required and should be submitted if not done so previously. To substantiate claims, submit responses to the questions in the enclosure "Support Information for Confidentiality Claims". This same enclosure is used to support confidentiality claims for non-CAP submissions.

Please address any further correspondence with the Agency related to this TSCA 8(e) submission to:

Document Processing Center (7407)  
Attn: TSCA Section 8(e) Coordinator  
Office of Pollution Prevention and Toxics  
U.S. Environmental Protection Agency  
Washington, D.C. 20460-0001

EPA looks forward to continued cooperation with your organization in its ongoing efforts to evaluate and manage potential risks posed by chemicals to health and the environment.

Sincerely,

Terry R. O'Bryan  
Risk Analysis Branch

Enclosure

12566A



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**Triage of 8(e) Submissions**

Date sent to triage: 12/14/95

NON-CAP

CAP

Submission number: 12566A

TSCA Inventory:

Y

N

D

Study type (circle appropriate):

Group 1 - Dick Clements (1 copy total)

ECO                  AQUATO

Group 2 - Ernie Falke (1 copy total)

ATOX                  SBTOX                  SEN                  w/NEUR

Group 3 - Elizabeth Margosches (1 copy each)

STOX                  CTOX                  EPI                  RTOX                  GTOX  
STOX/ONCO          CTOX/ONCO          IMMUNO                  CYTO                  NEUR

Other (FATE, EXPO, MET, etc.): \_\_\_\_\_

Notes:

**THIS IS THE ORIGINAL 8(e) SUBMISSION; PLEASE REFILE AFTER TRIAGE DATABASE ENTRY**

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entire document: <u>0</u> 1 2 pages <u>1</u>	pages <u>1, 2, tabs</u>
Notes:	
Contractor reviewer : <u>ZPS</u>	Date: <u>4/14/95</u>

CECATS/TRIAGE TRACKING DBASE ENTRY FORM

CECATS DATA:  
Submission # BEHQ-0992-12566 SEQ. A

TYPE: INT. SUPP FLWP

SUBMITTER NAME: Phillips Petroleum  
Company

INFORMATION REQUESTED: FLWP DATE: \_\_\_\_\_  
0501 NO INFO REQUESTED  
0502 INFO REQUESTED (TECH)  
0503 INFO REQUESTED (VOL. ACTIONS)  
0504 INFO REQUESTED (REPORTING RATIONALE)  
DISPOSITION:  
0570 REFER TO CHEMICAL SCREENING  
0578 CAP NOTICE

VOLUNTARY ACTIONS:  
0401 NO ACTION REPORTED  
0402 STUDIES PLANNED/IN PROGRESS  
0403 NOTIFICATION OF WORKING CONDITIONS  
0404 LABEL/MSDS CHANGES  
0405 PROCESS HANDLING CHANGES  
0406 APP/USE DISCONTINUED  
0407 PRODUCTION DISCONTINUED  
0408 CONFIDENTIAL

SUB. DATE: 08/24/92 OTS DATE: 09/02/92 CSRAD DATE: 02/28/95

CHEMICAL NAME: API Jet Fuel A

282  
8008-20-6

INFORMATION TYPE:	P F C	INFORMATION TYPE:	P F C	INFORMATION TYPE:	P F C
0201 ONCO (HUMAN)	01 02 04	0216 EPICLIN	01 02 04	0241 IMMUNO (ANIMAL)	01 02 04
0202 ONCO (ANIMAL)	01 02 04	0217 HUMAN EXPOS (PROD CONTAM)	01 02 04	0242 IMMUNO (HUMAN)	01 02 04
0203 CELL TRANS (IN VITRO)	01 02 04	0218 HUMAN EXPOS (ACCIDENTAL)	01 02 04	0243 CHEM/PHYS PROP	01 02 04
0204 MUTA (IN VITRO)	01 02 04	0219 HUMAN EXPOS (MONITORING)	01 02 04	0244 CLASTO (IN VITRO)	01 02 04
0205 MUTA (IN VIVO)	01 02 04	0220 ECO/AQUA TOX	01 02 04	0245 CLASTO (ANIMAL)	01 02 04
0206 REPRO/ITERATO (HUMAN)	01 02 04	0221 ENV. OCCURENCE/FATE	01 02 04	0246 CLASTO (HUMAN)	01 02 04
0207 REPRO/ITERATO (ANIMAL)	01 02 04	0222 EMER INCI OF ENV CONTAM	01 02 04	0247 DNA DAM/REPAIR	01 02 04
0208 NEURO (HUMAN)	01 02 04	0223 RESPONSE REQEST DELAY	01 02 04	0248 PROD/USE/PROC	01 02 04
0209 NEURO (ANIMAL)	01 02 04	0224 PROD/COMP/CHEM ID	01 02 04	0251 MSDS	01 02 04
0210 ACUTE TOX. (HUMAN)	01 02 04	0225 REPORTING RATIONALE	01 02 04	0299 OTHER	01 02 04
0211 CHR. TOX. (HUMAN)	01 02 04	0226 CONFIDENTIAL	01 02 04		
0212 ACUTE TOX. (ANIMAL)	01 02 04	0227 ALLERG (HUMAN)	01 02 04		
0213 SUB ACUTE TOX (ANIMAL)	01 02 04	0228 ALLERG (ANIMAL)	01 02 04		
0214 SUB CHRONIC TOX (ANIMAL)	01 02 04	0239 METAB/PHARMACO (ANIMAL)	01 02 04		
0215 CHRONIC TOX (ANIMAL)	01 02 04	0240 METAB/PHARMACO (HUMAN)	01 02 04		

TRIAGE DATE: \_\_\_\_\_ NON-CBI INVENTORY: YES ONGOING REVIEW: YES (DROP/REFER) SPECIES: RBT TOXICOLOGICAL CONCERN: LOW Subacute Dermal Toxicity USE: Fuel PRODUCTION: \_\_\_\_\_

CAS SR: \_\_\_\_\_ NO NO (CONTINUE) MED: \_\_\_\_\_ HIGH Dermal Irritation

US-286123

12566A

Subacute Dermal Toxicity - Low

Dermal Irritation - ~~High~~ <sup>medium</sup> there were

Subacute dermal toxicity is <sup>low</sup> ~~high~~ based on 6/8 deaths in rabbits exposed to 8000 mg/kg (ml/kg conversion, assumed density of 1) 5 days/week for 2 weeks. Depressions and histopathological changes in the liver and urinary bladder were observed. Dermal irritation is ~~high~~ based on necrosis at the test site in rabbits. <sup>medium</sup>