

GENERAL INSTRUCTION MANUAL

ISSUING ORG. ENVIRONMENTAL PROTECTION DEPARTMENT

ISSUE DATE
02/01/2011REPLACES
08/12/2003SUBJECT PROCEDURES & GUIDELINES FOR HANDLING
POLYCHLORINATED BIPHENYLS (PCBs)APPROVAL
Sr. VP, E&PMPAGE NO.
1 OF 14**SCOPE**

The General Instruction outlines the procedures to regulate the management of polychlorinated biphenyls (PCBs) for all electrical equipment (including capacitors) containing PCB contaminated fluids and defines the guidelines for response to PCB-related incidents.

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3. RESPONSIBILITIES OF ELECTRICAL EQUIPMENT USER/MAINTENANCE ORGANIZATIONS
4. RESPONSIBILITIES OF OTHER ORGANIZATIONS
5. IMMEDIATE RESPONSE TO PCB INCIDENT

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1.0 GLOSSARY**1.1 Abbreviations and Acronyms**

*NAMSD	Northern Area Materials Services Department
*FrPD	Fire Protection Department
EPD	Environmental Protection Department
*FE&SD	Facilities Engineering and Support Division
PDI	Power Distribution Department's Instruction
ppm/wt	Parts Per Million by weight
SAMSS	Saudi Aramco Materials System Specification
SCMM	Supply Change Management Manual
USEPA	United States Environmental Protection Agency
USDOT	United States Department of Transportation
TCDD	Tetrachlorodibenzo-p-dioxin
SALD	Southern Area Laboratory Division

1.2 Definitions**1.2.1 Classification of Equipment Containing PCB**

- PCB EQUIPMENT contains fluid with 500 ppm PCBs or greater.
- PCB CONTAMINATED EQUIPMENT contains fluid with 50 to less than 500 ppm PCBs.
- Non PCB EQUIPMENT contains fluid with less than 50 ppm PCBs.

Equipment should be marked or labeled as one of the above.

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1.2.2 Reclassification of PCB/PCB Contaminated electrical equipment is a program to reduce the PCB content to a stabilized concentration of less than 50 ppm.

1.2.3 Sensitive areas are facilities, and the area within a 30 meter (100 foot) radius, whether on land or offshore, of such facilities normally populated by employees and/or the public, or facilities which, if shutdown, would seriously affect company operations.

1.3 General Instructions

GI 2.714 Environmental Protection Policy Implementation

GI 150.100 Hazardous Material Communication Program

**GI_1786 Hazardous Material Emergency Response

1.4 Other References

Policy Int.-5 Environmental Protection Policy

SAES-P-121 Transformers and Reactors

14-SAMSS-531 Power Transformers

14-SAMSS-534 Overhead Type Distribution Transformers

14-SAMSS-536 Three-Phase Distribution Transformers

26-SAMSS-059 Insulating Oil

* USEPA 40 CFR-761 PCB Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions (<http://www.epa.gov/osw/hazard/tsd/pcbs/pubs/laws.htm>)**2.0 CORPORATE GUIDELINES**

2.1 The Company will purchase or install only non PCB equipment.

2.2 The Company will eliminate the use of existing PCB/PCB contaminated equipment in all Company operations.

2.3 The Company will replace or reclassify all PCB/PCB contaminated equipment.

3.0 RESPONSIBILITIES OF ELECTRICAL EQUIPMENT USER/MAINTENANCE ORGANIZATIONS

3.1 Provide annual PCB training and certification offered by Industrial Training Department, Central Area Industrial Training Division to employees who regularly work with PCB/PCB-contaminated equipment. Send their names, employee numbers and job descriptions to the Environmental Protection Department.

3.2 Determine the PCB content of electrical equipment. Provide samples for testing by Southern Area Lab Division/Hydrocarbon Analysis Unit. All samples must be accompanied with the information shown in Exhibit 2.

3.3 * Maintain equipment history records for each piece of equipment and provide copies to EPD and FrPD with the following information:

Location, type of installation and condition
Equipment type, plant number, serial number
Dates of inspection and of leak reporting
PCB concentration and quantity of fluid
Presence of PCB label

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Disposal or reclassification date

3.4 Institute the following labeling requirements:

3.4.1 PCB/PCB contaminated electrical equipment shall be prominently labeled in Arabic and English using HAZCOM labeling requirements as per GI 150.100.

3.4.2 Where PCB/PCB contaminated equipment is in a protected location (for example, fixed to a pole or structure or behind a fence) all approaches to the pole, structure or fence must be properly labeled using HAZCOM labeling requirements as per GI 150.100.

3.4.3 When used to transport containers or equipment, vehicles containing over 45 kg (99 lb) of PCB liquid with a concentration of 50 ppm (by weight) or more, must be labeled using HAZCOM labeling requirements as per GI 150.100.

3.5 Inspect PCB/PCB contaminated equipment for leaks quarterly, except in food handling locations which are to be inspected weekly.

* 3.5.1 Update the equipment history record and copy EPD and FrPD.

3.5.2 Take action if a leak is detected as outlined in the Supplement.

3.6 Comply with the following equipment handling requirements when dealing with PCB/PCB contaminated equipment.

3.6.1 Assign a PCB trained and certified person to be responsible on site for each equipment repair or maintenance job (note section 3.1).

3.6.2 Cover nearby drains and protect waterways when there is the possibility of a PCB leak during maintenance work or other activities.

3.6.3 Conduct the work and spill response in accordance to the Supplement.

*3.6.4 Refer to procedure set out in SCMM CU 22.06 "Disposal of Polychlorinated Biphenyls (PCBs)" when PCB/PCB contaminated equipment is scheduled for shipment or disposal.

4.0 RESPONSIBILITIES OF OTHER ORGANIZATIONS

4.1 Environmental Protection Department

4.1.1 Review the medical condition of all PCB trained and certified employees, as listed by the user organizations on a periodic basis.

4.1.2 Advise employees of the appropriate protective equipment.

4.1.3 Set exposure limits for work environments and for building occupancy after a PCB fire.

4.1.4 Obtain air samples when indicated to determine effective decontamination.

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4.1.5 Advise, on request, about methods for the handling, disposal and area decontamination of PCBs.

4.1.6 Obtain surface samples when indicated to determine contamination and effective decontamination.

4.2 Southern Area Laboratory Division

4.2.1 Coordinate the analysis of special samples from PCB related incidents.

4.2.2 Use approved procedures (USEPA or equivalent) for analysis of dielectric fluids.

4.2.3 Report analytical results to the requesting organizations.

4.3 Power Distribution Department

4.3.1 Power Dispatcher to receive all 110 calls reporting electrical equipment leak/electrical fire incidents and record them in his log.

4.3.2 Design and maintain a PCB Equipment Data Base and provide updated copies to EPD on annual basis.

4.4 * Facilities Engineering and Support Division

4.4.1 Coordinate transportation for storage and/or disposal of all PCB/PCB contaminated equipment and PCB contaminated wastes. If required, may also coordinate testing and analysis.

4.4.2 Manifest PCB/PCB contaminated equipment and wastes after receipt from users to final disposal. Refer to SCMM 22.06 for storage and disposal procedures.

4.5 Fire Protection Department

4.5.1 Provide Emergency Response to all PCB-related incidents

5.0 IMMEDIATE RESPONSE TO PCB INCIDENT

When a PCB incident is discovered, the following actions shall be taken as soon as possible:

5.1 Call 110.

5.2 Evacuate the immediate area in case of dispersed spills or fires. This may include the whole building in large incidents or just the affected room or floor in smaller incidents.

5.3 Isolate and limit access to spill area.

5.4 Shut-down heating, ventilating and air conditioning units if applicable.

5.5 Call for medical help and initiate first aid when required. Have contaminated persons remove soiled clothing and shower or wash the affected part with soap and water. Eyes should be flushed with water

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for a minimum of 15 minutes and medical attention sought. Caution must be exercised to ensure there is no unnecessary spread of contamination, i.e. 'walking out' when moving to showers.

- 5.6 Prevent further discharge or dispersion, if safe and practical to do so, by controlling the source of the spill.

Recommended By:

Manager, Environmental Protection Department

Concurred By:

Vice President, Engineering Services

Sr. Vice President, Exploration & Producing

Sr. Vice President, Industrial Relations

Approved By:

Sr. Vice President, Sr. VP, Engineering & Project Management

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*EXHIBIT 1A

CHEMICAL HAZARD BULLETIN NO. 0375**POLYCHLORINATED BIPHENYLS**

DIRECT CHARGE

السابك
Saudi Aramco

Health	3
Fire	1
Reactivity	1

**TINTED LIQUID.**

HIGHLY TOXIC, SLIGHTLY FLAMMABLE & SLIGHTLY REACTIVE
HIGH CHRONIC TOXICITY. AVOID SKIN CONTACT WITH LIQUID. SKIN NOTATION

CAS: 1336-36-3
 UN: 2315
 GUIDE: 171

EAC: 2X

LIQUID:	Polychlorinated Biphenyls (PCBs) are a mixture of homologous and/or isomeric chlorinated biphenyls. The TLV for chlorodiphenyls 60 and 54% (Aroclor 1254) by weight is 0.5 mg/m ³ and 42% (Aroclor 1242) is 1 mg/m ³ . EFFECTS OF OVER-EXPOSURE:	health hazards
INHALATION:	Degradation inhalation may cause respiratory tract irritation including sore throat, coughing, bronchitis and pulmonary edema.	
EYE/ SKIN:	Vapor and liquid may cause eye irritation. Skin contact causes moderate irritation. May be absorbed through skin to affect liver and systemic poisoning. Degree of injury depends on the amount absorbed. Can cause dermatitis, chloracne and skin discoloration. IARC lists as probably cancer causing agent.	
INGESTION:	Toxic causes nausea, digestive disturbances, vomiting, abdominal pain and can possibly cause death. WEAR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT	

<p>The flashpoint for this product is >135°C (275°F). Firefighters must use self-contained breathing apparatus (SCBA) and protective clothing. During combustion, toxic hydrogen chloride, polychlorinated dibenzodioxins, furan, phenolics, aldehydes, oxides of carbon and other toxic compounds may be formed. A major toxic concern is inhalation of heat degradation products. Closed containers may rupture in fire conditions. Keep containers cool with water spray. Vapors are heavier than air and can flow along surface to distant ignition sources and flashback.</p> <p>REACTIVITY: May react with strong oxidizing agents, including chlorates, nitrates and peroxides.</p> <p>EXTINGUISHING MEDIA: DRY POWDER, WATER SPRAY/FOG, FOAM, OR CO₂</p>	fire and reactivity
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<p>USAGE: This product may be present in capacitors, transformers, heat exchangers, circuit breakers, natural gas compressors and hydraulic systems.</p> <p>STORAGE/ TRANSPORT: Store in a well-ventilated, cool, dry area, away from ignition sources. Keep containers labeled, upright, and tightly closed when not in use. Avoid storage near incompatible material, food, feed or drinking water. For transportation, packages do not require DOT-IMO hazardous warning label (diamond).</p> <p>SPILLS/ LEAKS: Evacuate all unnecessary personnel. Wear SCBA (1000127427) and PPE. Replace gloves immediately if any evidence of degradation or chemical breakthrough. Stop the flow if it can be done safely. Dike to prevent entry into sewer. Absorb with sand, place in a clean, dry, closed container, and label.</p> <p>DISPOSAL: For proper disposal methods and locations for the chemical or chemical contaminated material, contact the Environmental Engineering Division, 876-0434.</p> <p>SAFETY EQUIPMENT: Provide ventilation to control exposures below the TLVs. Air supplied or SCBA (1000127427) should be available. Chemical goggles (1000129810), face shield (1000129345), neoprene gloves (1000129418), apron (1000128583), and rubber safety boots (1000128971) must be worn when handling this material. APR or SCBA should be worn if conditions warrant. Maintain an eyewash fountain and emergency shower where the material is being stored/used (1000128433). USE CONFINED SPACE ENTRY PROCEDURES IF APPLICABLE.</p>	handling, storage & disposal
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<p>INHALATION: Move affected person to fresh air. If breathing is difficult, administer oxygen. If breathing stops, give cardiopulmonary resuscitation (CPR). Keep person warm and quiet.</p> <p>EYE: Flush eyes with large amount of water for at least 15 minutes. Lift eyelids occasionally.</p> <p>SKIN: Wash skin thoroughly with soap and water. Remove contaminated clothing and shoes promptly, and wash clothing before re-use.</p> <p>INGESTION: DO NOT induce vomiting. Aspiration of material into the lungs can cause chemical pneumonitis, which can be fatal. If conscious, drink one-two glasses of water to dilute. Keep person warm and quiet.</p> <p>GET MEDICAL AID IMMEDIATELY (CALL 110)</p>	first aid
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For further information call Environmental Protection: 876-0332 (DH), 678-4869(RT), 574-4722 (ABQ), or 427-1750 (JID).
 Hazard Ratings: 0=Insignificant, 1=Slight, 2=Moderate, 3=High, 4=Extreme

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*EXHIBIT 1B



أرامكو السعودية
Saudi Aramco

نشرة أخطار المواد الكيميائية رقم 375

بولي
كلوراينيتد ثنائي فينول
كلوروتنائي فينيل

شراء مباشر

الصحة	3
الاشتعال	1
التفاعل	1

سائل فاتح اللون، وشديد السمية (مزمّن)، وقابل
للقابلية للاشتعال والتفاعل. يترك علامات على
الجلد

مسجل خدمات التجريد الكيميائي: 3-36-1336

تصنيف الأمم المتحدة: 2315

الدليل: 171

<p>المخاطر</p> <p>الصحية</p>	<p>المسائل:</p> <p>تتكون هذه المادة من مزيج متشابه التراكيب و/أو ثنائي الفينول المعالج بالكحول متساوي الأجزاء. حد التعرض المسموح به هو 60 و 54% (أروكلور 1254) بالوزن هو 0.5 جزء في المليون و 42% (أروكلور 1242) هو 1 جزء في المليون.</p> <p>آثار التعرض الزائد:</p> <p>يسبب البخار والسائل تهيجاً للعينين. وملامستها للجلد تؤدي إلى تهيج معتدل. قد يمتصها الجلد فتؤثر على الكبد وتسبب تسهما للجسم كله. تعتمد درجة الإصابة على الكمية التي امتصت. قد تسبب التهاب جلدي وتلفح المكورات وتخثر في لون الجلد. وتظهر قائمة الوكالة الدولية لأبحاث السرطان احتمالاً تسببها للسرطان. يستنشق المتعامل معها بشكل رئيسي المواد الناتجة عن الحرارة أو الاحتراق.</p> <p>تسبب تهيجاً لمجرى جهاز التنفس بما في ذلك التهاب الحلق والسعال والتهاب الشعب والوذمة الرئوية وصعوبة التنفس. تتوقف درجة الإصابة على تركيز المادة في الهواء ومدة التعرض.</p> <p>سامة إذا ما ابتلعت ويمكن أن تسبب الغثيان واضطراباً في المعدة والتقيؤ وآلام البطن ومن الممكن أن تسبب الوفاة.</p> <p>استعمل معدات الوقاية الشخصية الموصى بها</p>	<p>العينين/الجلد :</p> <p>الاستنشاق:</p> <p>الابتلاع:</p>
<p>الحريق</p> <p>والتفاعل</p>	<p>تسطة الوميض هذه المادة تزيد عن 135 درجة مئوية (275 درجة فهرنهايت). على رجال الإطفاء استعمال جهاز التنفس المستقل والملابس الواقية. قد يتكون خلال الاحتراق كلوريد الهيدروجين السام ثنائي نيترو أكسيد المعالج بالكحول والفوران والفينولات أو الدهيدات وأكسيدات الكربون ومركبات سامة أخرى. قد تتفجر الأوعية المغلفة في حالات الحريق. حافظ على تبريد الأوعية برشها برذاذ الماء. الأبخرة أثقل من الهواء، ويمكن أن ينتقل على طول الأسطح ليصل إلى مصادر الاشتعال البعيدة وترتد مشتعلة.</p> <p>التفاعل: تتفاعل المادة مع العوامل المؤكسدة القوية بما في ذلك الكلورات والنترات والبيروكسيدات.</p> <p>وسائل الإطفاء: برشها برذاذ الماء أو ثاني أكسيد الكربون أو المواد الكيميائية الجافة</p>	<p>الاستعمال:</p> <p>التخزين:</p> <p>النقل:</p> <p>الاستكباب/التسرب:</p> <p>إجراءات التخلص من المادة:</p> <p>معدات السلامة:</p>
<p>المناولة</p> <p>والتخزين</p> <p>وإجراءات التخلص من المادة</p>	<p>هذه المادة موجودة في المكثفات والمحولات والمبدلات الحرارية وقواطع الدائرة الكهربائية والضواغط التي تعمل بالغاز الطبيعي والأنظمة الهيدروليكية. وفر التهوية المناسبة مع عدم التدخين. تجنب ملامستها للجلد. لا تستنشق الأبخرة أو الرذاذ. تغسل اليدين جيداً قبل تناول الطعام أو التدخين.</p> <p>تخزن المادة في مكان جيد التهوية وبارد وجاف بعيداً عن مصدر الاشتعال. عند عدم استعمالها توضع على هذه الحاويات بطاقة التعريف بمحتوياتها ويحتفظ بها في وضع رأسي وتعلق بإحكام. تجنب تخزينها بالقرب من مواد غير ملائمة أو الطعام أو المواد الغذائية أو ماء شرب.</p> <p>للنقل لا تحتاج بطاقة التعريف الخاصة بوزارة النقل الأمريكية/ منظمة النقل البحري الدولي للتحذير من الخطر (شكل معين).</p> <p>إخلاء المكان من الأشخاص غير المعنيين. يستعمل جهاز التنفس المستقل ومعدات الوقاية الشخصية لتبديل القفازات فوراً إذا كان هناك أي دليل على تغلغل أو تسرب مواد كيميائية. أوقف التدفق إذا كان الغيوم بذلك ممكناً بشكل آمن. طوق المادة بالرمل لمنع تسربها إلى شبكة الصرف الصحي. تمتص المادة بالرمل وتوضع في أوعية نظيفة وجافة ومنفصلة مع وضع بطاقة التعريف الخاصة بالمادة.</p> <p>لمعرفة الإجراءات المناسبة ومواقع التخلص من المواد الكيميائية أو المواد الملوثة بها اتصل بقسم هندسة البيئة على الهاتف رقم 876-0434.</p> <p>وفر التهوية الكافية لإبقاء مستوى التعرض دون حد المسموح به. وفر إمداد الهواء أو جهاز التنفس المستقل (1000127427). عند التعامل مع هذه المادة، يجب استعمال نظارات السلامة الواقية (1000129810) وقناع الوجه والقفازات المصنوعة من مادة النيوبرين (1000129418) والمنزلة (1000128583) والأحذية الواقية (1000128971) عند مناولة هذه المادة. يجب وضع جهاز التنفس المزود بمنقي الهواء أو جهاز التنفس المستقل إذا استدعت الحالة ذلك. وفر مغاسل لغسل العينين للحالات الطارئة في أماكن تخزين واستعمال المادة.</p> <p>اتبع إجراءات المناطق المحصورة إذا كانت منطبقة</p>	<p>التخزين:</p> <p>النقل:</p> <p>الاستكباب/التسرب:</p> <p>إجراءات التخلص من المادة:</p> <p>معدات السلامة:</p>
<p>الإسعافات الأولية</p>	<p>تغسل العينان بكميات وافرة من الماء لمدة 15 دقيقة على الأقل مع رفع الجفنين من حين لآخر. يغسل الجلد جيداً بالماء والصابون. تخلع الملابس والأحذية الملوثة فوراً مع غسل الملابس. تخلص من الأحذية المادية والطويلة الملوثة وغير المقاومة للماء.</p> <p>الابتلاء التي تعرضت لهذه المواد توضع في الهواء الطلق. إذا كانت هناك صعوبة في التنفس يعطى الأكسجين. إذا توقف التنفس يجري إنعاش للقلب والرئتين.</p> <p>لا تحمل المصاب على التقيؤ إلا إذا طلب الطبيب ذلك. قد يسبب وصول المادة للرئتين الإصابة بالتهاب رئوي مميت بمادة كيميائية. إذا كان المصاب بوعيه يسقى كأساً أو كأسين من الحليب أو الماء لتخفيف تأثير المادة. حافظ على دفءة وهدوء المصاب.</p> <p>اطلب المساعدة الطبية فوراً واتصل على الرقم 110</p>	<p>ملامسة الجلد/ العينين:</p> <p>الاستنشاق:</p> <p>الابتلاع:</p>

لمزيد من المعلومات اتصل بخدمات الصحة الصناعية على الهاتف رقم 876-0332 (الظهران) أو رقم 678-4869 (رأس تنورة) أو 574-4722 (بقيق) أو 427-1750 (جدة)

2003/5/7

درجة الخطورة: صفر= غير خطير، 1= قليل، 2= متوسط، 3= شديد، 4= شديد جداً

PCB Data Report

[illegible]

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EXHIBIT 2

PCB Data ReportFieldEntry

Location

State Central, Northern or Southern Area (CA, NA, SA)

Equipment Area

Equipment Area, e. g. AB, UDH, or RT.

Equipment Facility

Description given in the Saudi Aramco Plant number Index Report.

Plt No.

Engineering Plant number

Equipment Type

Drawing Identification, e.g. Transformer or switch

Eng. Item Number

Engineering or Tag Identification Number

Serial No.

Manufacturer's serial number

Voltage PRI/SEC

Name plate voltage rating

KVA

Name plate KVA

US Gal's

Nameplate liquid capacity

Account Plt No.

Accounting plant number

PCB PPM

PCB content in part per million, by weight

PCB Type

PCB Type, i.e. 1242 or 1254 or 1260

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EXHIBIT 3A

EQUIPMENT LABEL (ENGLISH)*POLYCHLORINATED
BIPHENYLS**أرامكو السعودية
Saudi Aramco**WARNING**

DIRECT CHARGE

UN: 2315

EAC: 2X

3**HEALTH HAZARD**

HIGH CHRONIC TOXICITY. AVOID SKIN CONTACT WITH LIQUID.

**1****FLAMMABILITY**

FLASHPOINT = 135°C (275°F). PRODUCTS OF COMBUSTION AND DEGRADATION ARE TOXIC BY INHALATION.

1**REACTIVITY**

WILL REACT WITH STRONG OXIDIZING MATERIALS.

FIRST AID: Remove to fresh air. Get medical aid immediately (Call 110). Use shower and eyewash. Flush eyes with large amounts of water for at least 15 minutes, lifting eyelids occasionally. Wash skin thoroughly with water, remove contaminated clothing and shoes.

PPE:

1000128583



1000129418



GOGGLES

1000129810



1000128971

CHB 0375For further information call Environmental Protection: 876-0332 (DH), 678-4869 (RT), 574-4722 (ABQ), or 427-1750 (JID).
Hazard Ratings: 0=Insignificant, 1=Slight, 2=Moderate, 3=High, 4=Extreme

SAUDI ARABIAN OIL COMPANY (Saudi Aramco)
GENERAL INSTRUCTION MANUAL

ISSUING ORG. ENVIRONMENTAL PROTECTION DEPARTMENT
SUBJECT PROCEDURES & GUIDELINES FOR HANDLING
POLYCHLORINATED BIPHENYLS (PCBs)

G. I. Number 2.717 Approved

ISSUE DATE 01/01/2011	REPLACES 08/12/2003
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EXHIBIT 3B

***EQUIPMENT LABEL (ARABIC)**

بولي كلوراينتيدي ثنائي فينول
كلور ثنائي فينيل
تحذير

شراء مباشر

الرقم الدولي للمادة: 2315
رمز حالة الطوارئ: 2 X

المخاطر الصحية **3**

هذه المادة تسبب تسمماً شديداً. تجنب ملامسة سائل المادة بالجلد. تترك علامات بالجلد.

قابلية الاشتعال **1**

درجة الوميض من 135 درجة مئوية (275 درجة فهرنهايت). اشتعال المادة المحترقة أو المتأكلة سام.

التفاعل **1**

تتفاعل المادة بالمؤكسيدات القوية.

الإسعافات الأولية: ينقل المصاب إلى الهواء الطلق وتقدم له الرعاية الطبية فوراً (اتصل على الرقم 110). استخدم مغسلة العينين ومرشحة الاستحمام. اغمر العينين بكمية وافرة من الماء لمدة لا تقل عن 15 دقيقة مع رفع الجفنين من حين لآخر. يغسل الجلد جيداً بالماء وتخلع الملابس والأحذية الملوثة.

نشرة الأخطار الكيميائية 375

معدات السلامة الشخصية

1000128583 1000129810 1000129418 1000128971

لمزيد من المعلومات اتصل بحماية البيئة على الهاتف: رقم 876-0332 (الظهران) أو رقم 678-4869 (رأس تنورة) أو رقم 574-4722 (بقيق) أو رقم 427-1750 (جدة).

درجة الخطورة: صفر = غير خطر، 1 = قليل، 2 = متوسط، 3 = شديد، 4 = شديد جداً

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SUPPLEMENT 2.717-1

SCOPE

Subsequent to the immediate response, listed in the PCB GI paragraph 5, the following actions are to be taken in response to a PCB release. Additional care is exercised in electrical fire incidents due to the presence of toxic pyrolysis products. All spilled dielectric fluid is treated as PCB fluid unless otherwise documented.

CONTENTS

- 1 SAMPLING
- 2 PERSONAL PROTECTION
- 3 DECONTAMINATION PROCEDURES
- 4 ACCEPTABLE DECONTAMINATION LEVELS
- 5 DISPOSAL OF CONTAMINATED MATERIAL
- 6 REFERENCES

1.0 SAMPLING

- *1.1 Ascertain PCB concentration of the original fluid. Use plastic sample bottles (MM# 1000158392) for liquids and sample jar (MM# 1000502308) for soil or sludge samples. Label sample bottles with time, date and location and send to SA Laboratory Division/Hydrocarbon Analysis Unit, Box 5000, Abqaiq (572-1864).
- 1.2 Establish boundaries by visual inspection. If not possible, take samples for analysis to delineate boundaries of the contaminated area.
- 1.3 Obtain statistically valid samples before and after decontamination.

2.0 PERSONAL PROTECTION

- 2.1 Use respirators and protective clothing to prevent contact with contaminated air or materials. Whenever possible, disposable clothing should be used. All disposable clothing shall be disposed in accordance with Section 5.
- 2.2 *Use a Self Contained Breathing Apparatus (SCBA) with full face piece (MM# 1000127427) operated in positive pressure mode (refer to GI 1780.001) for all electrical fires and heavy indoor spills until acceptable decontamination levels are reached.
- 2.3 *Consider using respirators with half-mask (MM# 100012828213 small, -216 medium, or 240 large) and face shield (MM# 1000129345) or full facepiece mask (MM# 1000127829) with canister (MM# 1000127932) in minor incidents.
- 2.4 *Use neoprene gloves (MM# 1000129148) and knee length rubber boots (MM# 1000128971) (#8), -975 (#9) or -978 (#10).
- 2.5 *Wear 'Tyvek' disposable coveralls (MM# 1000129251) (small), -254 (medium) or -252 (large) and neoprene protective apron (MM# 1000128583).

3.0 DECONTAMINATION PROCEDURES

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SUPPLEMENT 2.717-2

- 3.1 Start decontamination within 24 hours in sensitive areas, and not longer than 72 hours in other areas.
- 3.2 *Absorb excess liquid with suitable material such as sand, and place it in approved containers for disposal. Large volumes may be pumped into containers for disposal as free liquid (SCMM CU 22.06).
- 3.3 Place contaminated soil in approved containers.
- 3.4 *Wash down contaminated surfaces twice with a suitable solvent such as Turco Solv (MM# 1000186759). Repeat wash down twice with a high phosphate detergent such as ALCONOX (MM# 1000182343). Rinse twice with water then leave to dry. Repeat wash down and sampling until the acceptable decontamination level is attained (note section 4.0).
- 3.5 Wear adequate personal protective equipment. Smoking, eating and drinking is not allowed in the area.
- 3.6 Provide a designated area to remove contaminated protective equipment and clothing. Remove clothing and wash with soap and water before leaving the area.
- 3.7 Consider all material used during decontamination operations as contaminated and clean or dispose of it. This includes wipe rags, wash/rinse liquids, work clothing and personal protective equipment.
- 3.8 *Disposal of PCB/PCB contaminated material must be done in accordance with SCMM CU 22.06.

4.0 ACCEPTABLE DECONTAMINATION LEVELS

- 4.1 HIGH CONTACT (HC) SURFACES are those repeatedly touched such as manned machines/panels, walls up to two meters from the floor, vehicles, etc.
10 micrograms (ug) PCBs/100 sq cm

0.25 nanograms (ng) TCDD equivalent/100 sq cm (for soot producing PCB electrical fires)
- 4.2 LOW CONTACT (LC) SURFACES are those not usually touched, such as unmanned machinery, electrical substations and switch-gear rooms, piping and ducting, ceiling/roofs, roads/curbs, exterior structures, etc.
 - 4.2.1 LC Indoor Non-Porous Surfaces having metal, glass, enamel, laminated surfaces, etc.
10 micrograms (ug) PCBs/100 sq cm
 - 4.2.2 LC Indoor Porous Surfaces such as wood, concrete, asphalt, plasterboard, etc.
10 micrograms (ug) PCBs/100 sq cm
or 100 micrograms (ug) PCBs/100 sq cm (followed by encapsulation)
 - 4.2.3 LC Outdoor Surfaces of any type.
100 micrograms (ug) PCBs/100 sq cm

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4.3 Soil Concentrations in Restricted Access Areas

Less than 50 ppm of PCBs, by weight.

4.4 Soil Concentrations in Non-Restricted Access Areas

Less than 10 ppm of PCBs, by weight

4.5 AIR CONCENTRATIONS above which access is only allowed with personal protective equipment.

1.0 mg PCBs/cu meter air (PCB products with 42% chlorine)

0.5 mg PCBs/cu meter air (PCB products with 54% chlorine)

10 picogram (pg) TCDD equivalent/cu meter air (suggested for electrical fires)

5.0 DISPOSAL OF CONTAMINATED MATERIAL

5.1 *Keep contaminated material in approved leakproof Disposal Drums (MM# 1000169845).

5.2 Consider the following materials as contaminated unless determined to contain less than 10 micrograms (ug) PCBs/100 sq cm of surface or a concentration of less than 50 ppm PCBs:

Sampling containers and contents.

Contaminated material that cannot be decontaminated such as soil, concrete, and other debris.

Decontamination material (note section 3.7) and fire fighting material (water, chemicals, etc.) or personal protective equipment used during the decontamination or fire-fighting.

5.3 *Send all contaminated material to a designated facility in accordance with SCMM CU 22.06 "Disposal of Polychlorinated Biphenyls".

6.0 REFERENCES

*GI 1780.001 "Atmosphere-Supplying Respirators"

SCMM 22.06 "Disposal of Polychlorinated Biphenyls"