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**PCB****Polychlorinated Biphenyls**[Home](#)[Publications](#)**Handbook on PCBs in Electrical Equipment****Chapter 6 Preparation of PCB Equipment for Storage**

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**6.1 Handling of PCBs**

It may be necessary to handle PCBs during the preparation of PCB-equipment for storage and transportation. Stringent precautions must be observed when handling askarel. The following gear should be worn for protection against the hazards of splashes or spills:

- i. safety hard hat;
- ii. full face shield or chemical-resistant goggles (tight-fitting);
- iii. rubberized protective suit that completely covers arms and legs;
- iv. rubberized gloves (gauntlet type to provide forearm protection); and
- v. rubberized boots.

All rubberized clothing should be made of PCB-resistant material, such as nitrile rubber or, if cost permits, Tyvek, Saranex, or Viton. All protective equipment and clothing that becomes contaminated with askarel should be thoroughly cleaned; if possible, or properly disposed of since some materials deteriorate after exposure and lose their protective efficiency.

Additional ventilation is required when working with askarel at temperatures above 55°C. Fumes at these temperatures can be irritating to the lungs and eyes. The recommended handling temperatures for some commonly used askarels are listed in [Table 12](#). If exposure to hot askarel with a temperature above 55°C is necessary, a self-contained breathing apparatus, or a chemical cartridge-type respirator should be worn. It should be noted that the occupational health hazards associated with hot askarel are due more to the TTCB in the askarel than the PCBs. Refer to [Table 13](#) for first aid treatment.

**Table 12**  
**Recommended Handling Temperatures for Some Askarels**

<b>Askarel Product</b>	<b>Handling Temperatures (°C)</b>
<b>Pyranol A 13B3B-3</b>	20-55
<b>Inerteen 70-30</b>	20-55
<b>Inerteen 100-42</b>	35-75

**Table 13 First-Aid for Contact with Askarel**

<b>In Case of</b>	<b>First Action</b>	<b>Second Action</b>
<b>Askarel on skin</b>	Wash with soap and water for at least 15 minutes.	See physician if rash develops.
<b>Askarel in eyes</b>	Flush eyes with gentle stream of lukewarm water for 15 minutes keeping eyelids apart.	See physician as soon as possible.
<b>Askarel swallowed</b>	Rinse mouth out with water. Do not give victim anything to drink.	Write down details about the liquid swallowed and take victim to hospital or physician immediately.
<b>Strong askarel fumes</b>	Get victim into fresh air.	If discomfort does not clear up, take victim to physician.

Other precautions are necessary when handling askarel. One should:

- i. pump, not pour, askarel into containers (this minimizes splashing and spillage);
- ii. frequently inspect equipment used to handle askarel and replace if necessary;
- iii. use askarel pumps and hoses only for this purpose (to prevent cross-contamination);
- iv. use centrifugal pumps recommended for handling hot oil, not gear-type or other positive displacement pumps;
- v. provide forced air ventilation in the working area and exhaust air to the outside when handling hot askarel.

All wetted surfaces of the pump should be made of stainless steel. The shaft

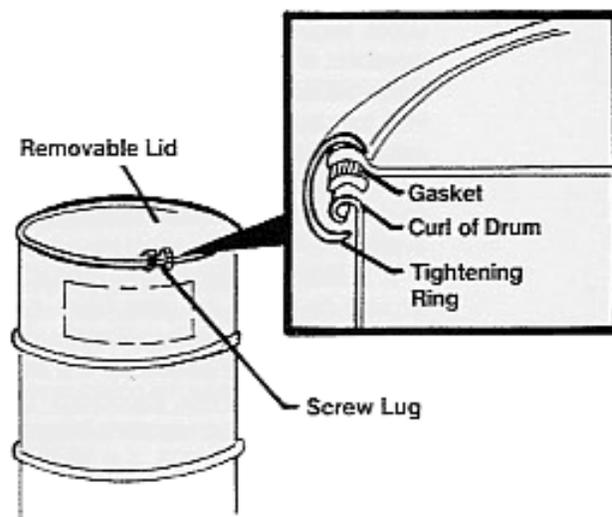
seal should be an external carbon ring type to eliminate exposure of the packing material to the deteriorating effects of askarel. Valves should be brass or stainless steel lined. Hoses should be flexible metal or lined with tetrafluoroethylene (Teflon) or silicone polymers to provide protection against deterioration.

## 6.2 Collection and Containment of PCBs

Care must be taken during the collection of askarel to prevent any spillage on the ground or down drains. Good quality, 200-litre steel drums (preferably No. 16 gauge or thicker) with a double bung design are the preferred containers. A 7-cm to 10-cm airspace should be left at the top of the drum to allow for liquid expansion. The drums should be clearly marked with the unserialized PCB warning label described in [Chapter 2](#). Askarel that has collected in drip pans under transformers should be transferred to storage drums as soon as possible. Askarel should be moved from one location to another *ONLY* in sealed metal containers which should not be used for any other liquid. Other liquids should not be mixed with the askarel. If a spill occurs, the askarel should be cleaned up immediately, following the instructions provided in [Chapter 5](#). If askarel is moved off the owner's property, the requirements of the Transportation of Dangerous Goods Regulations apply.

## 6.3 Handling PCB Capacitors

PCB capacitors should be left intact, wrapped in a heavy-duty plastic bag and placed into a 200-litre steel drum (no. 18 gauge or thicker) fitted with a removable steel lid and a gasket made of PCB-resistant material such as nitrile rubber, cork or Teflon ([Figure 14](#)). The capacitors should be stored with the terminals up to prevent leakage from the capacitor bushings. The drum should be packed with sawdust or some other sorbent so that any leaks will be absorbed. The drum should then be sealed, labelled with an unserialized PCB warning label and moved to a storage area. Capacitors that do not fit into drums should be placed in heavy gauge plastic bags which are then heat sealed. The packaged capacitors should then be crated for shipment to an approved storage area.



## Figure 14 Drum for Containing PCB Capacitors

### 6.4 Handling PCB Transformers

The Chlorobiphenyl Regulations No. 2 (Product) prohibit the sale or resale of transformers and capacitors designed to use PCBs unless the PCB content is less than 50 ppm. In addition, the Transportation of Dangerous Goods Regulations place restrictions on the movement of transformers containing PCBs. In decommissioning (i.e., taking out of service) a PCB transformer, owners and plant personnel must be fully cognizant of their responsibilities for ensuring proper storage of the unit (usually on-site) until approved destruction facilities are available.

If a decommissioned transformer is to be returned to service at some future date, a containment system similar to that described in [Chapter 5](#) should be constructed and arrangements made for periodic inspections. On the other hand, if a PCB transformer is being retired, it should be stored following the procedures outlined in [Chapter 7](#). The unit should not be drained and rinsed except to comply with the Transportation of Dangerous Goods Regulations when there is a requirement to transport the carcass. Draining and rinsing generate additional PCB waste and rinse materials which must be stored and eventually destroyed. In addition, rinse materials, such as kerosene, are highly combustible and, when co-stored with askarels, increase the possibility of fire in the storage area.

PCB transformers cannot be sold for scrap unless *all* of the PCBs contained within them are removed *or* the PCB concentration of the remaining fluid is reduced below 50 ppm. As both of these operations are extremely difficult, selling drained PCB transformers for scrap is not a viable option.

### 6.5 Waste Disposal

This handbook does not address waste disposal. If information on this subject is required, consult the Environment Canada publication "Manual for the Management of Wastes Containing PCBs" (1987). In addition, as waste disposal is primarily a provincial responsibility, the appropriate provincial agency should be contacted to determine provincial regulatory requirements. [Appendix B](#) contains a list of provincial contacts.



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