PCB Regulations


# the generator

THE TRAVELERS ENGINEERING DIVISION

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## ASKARELS - UPDATE

Since Askarels were first discussed in "The Generator" (Vol. IV No. 1, February 1975), many new governmental rules about Askarels have been published. This liquid fire-resistant dialectric used in electric devices (such as transformers and capacitors) as a cooling medium is a PCB (polychlorinated biphenyl) which is sometimes mixed with chlorobenzene to give particular viscosity characteristics.

PCB has been on the E.P.A. (Environmental Protection Agency) Toxic Pollutant List for several years. It is a highly stable chemical composition that could gradually accumulate in certain ecological systems.

The latest governmental rules concerning Askarels are listed below in chronological order. (Remember that this is only a synopsis, and a section applicable to a particular use may have been left out.)

1. Public Law 94-469 dated October 11, 1976.

Under "Sec. 6 Regulation of Hazardous Chemical Substances" and section (e) the following appears:

> (e) POLYCHLORINATED BIPHENYLS. (1) Within six months after the effective date of the Act the Administrator shall promulgate rules to-
>
> (A) prescribe methods for the disposal of polychlorinated biphenyls, and
>
> (B) require polychlorinated biphenyls to be marked with clear and adequate warnings, and instructions with respect to their processing, distribution in commerce, use, or disposal or with respect to any combination of such activities.
>
> Requirements prescribed by rules under this paragraph shall be consistent with the requirements of paragraphs (2) and (3).
>
> (2)(A) Except as provided under subparagraph (B), effective one year after the effective date of this Act no person may manufacture, process, or distribute in commerce or use any polychlorinated biphenyl in any manner other than in a totally enclosed manner.
>
> (B) The Administrator may by rule authorize the manufacture, processing, distribution in commerce or use (or any combination of such activities) of any polychlorinated biphenyl in a manner other than in a totally enclosed manner if the Administrator finds that such manufacture,



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processing, distribution in commerce, or use (or combination of such activities) will not present an unreasonable risk of injury to health or the environment.

(C) For the purposes of this paragraph, the term "totally enclosed manner" means any manner which will ensure that any exposure of human beings or the environment to a polychlorinated biphenyl will be insignificant as determined by the Administrator by rule.

(3)(A) Except as provided in subparagraphs (B) and (C) -

(i) no person may manufacture any polychlorinated biphenyl after two years after the effective date of this Act, and

(ii) no person may process or distribute in commerce any polychlorinated biphenyl after two and one-half years after such date.

(B) Any person may petition the Administrator for an exemption from the requirements of subparagraph (A), and the Administrator may grant by rule such an exemption if the Administrator finds that -

(i) an unreasonable risk of injury to health or environment would not result, and

(ii) good faith efforts have been made to develop a chemical substance which does not present an unreasonable risk of injury to health or the environment and which may be substituted for such polychlorinated biphenyl.

An exemption granted under this subparagraph shall be subject to such terms and conditions as the Administrator may prescribe and shall be in effect for such period (but not more than one year from the date it is granted) as the Administrator may prescribe.

(C) Subparagraph (A) shall not apply to the distribution in commerce of any polychlorinated biphenyl if such polychlorinated biphenyl was sold for purposes other than resale before two and one half years after the date of enactment of this Act.

(4) Any rule under paragraph (1), (2) (B), or (3) (B) shall be promulgated in accordance with paragraphs (2), (3), and (4) of subsection (c).

(5) This subsection does not limit the authority of the Administrator, under any other provision of this Act or any other Federal law, to take action respecting any polychlorinated biphenyl.

2. *Federal Register, Vol. 41 No. 237, Wednesday, December 8, 1976 page 53692.*

People were asked to write comments on Public Law 94-469 concerning polychlorinated biphenyls.

3. *Federal Register, Vol. 42 No. 100, Tuesday, May 24, 1977 pages 26564 to 26577.*

SUMMARY: These proposed regulations prescribe disposal and marketing requirements for polychlorinated biphenyls (PCBs) and articles and equipment which contain PCBs. Newly manufactured PCBs, PCB articles, and PCB equipment, as well as PCBs, PCB articles, and BCB equipment presently in use are covered by these requirements. Section 6(e) of TSCA requires the promulgation of rules prescribing marking and disposal of PCBs by July 1, 1977. The intent of these regulations is to protect the environment from further contamination by PCBs resulting from improper handling and use and from release of PCBs to the environment following disposal.

These proposed rules also state:

a. "PCB mixture are defined to mean mixtures, except sludges from municipal sewage treatment facilities, that contains 0.05 percent of greater of PCB chemical substances (on a dry weight basis)."

b. Persons affected by the regulation

The regulation applies to all persons who manufacture, process, distribute in commerce, use, or dispose of PCBs. Since persons include local, state, and Federal governments, the applicability is very broad.

c. Special precautions for workers

This regulation requires many handling and processing steps in the marking and disposal of PCBs which may result in exposure of workers to PCBs, particularly when leaking containers, electrical articles, or spills are encountered. Special precautions should be taken to avoid skin contact and ingestion of the PCB chemicals. Proper protective clothing and protective breathing devices are essential. Personal decontamination by actions such as hand washing and removal of contaminated clothing is necessary before eating or smoking.

d. Method of disposal

Should be done only by qualified disposal service companies. A complete list of all qualified disposal service companies is not available.

e. Required marking

This section has been superceded by a final rule in Federal Register, Vol. 43 No. 34, Friday, February 17, 1978, page 7163.

4. *Federal Register, Vol. 42 No. 251, Friday, December 30, 1977, page 65264.*

This issue discusses how the "EPA is actively engaged in developing a definition of the term 'totally enclosed manner'" for PCB.



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5. *Federal Register, Vol. 43 No. 34, Friday, February 17, 1978, page 7150 to 7164.*

ACTION: Final rule.

SUMMARY: These regulations prescribe disposal and marking requirements for polychlorinated biphenyls (PCB's), and are promulgated pursuant to section 6(e)(1) of the Toxic Substances Control Act (Pub. L. 94-469). The intent of these regulations is to protect the environment from further contamination by PCB's resulting from improper handling and disposal of PCB's.

One of the important requirements is:

a. 761.20 Marking requirements.

(a) The following marking requirements shall apply:

(1) Each of the following items in existence on or after July 1, 1978 shall be marked as illustrated in Figure 1 in Annex V - Section 761.44 (a): The mark illustrated in Figure 1 is referred to as $M_L$ throughout this subpart.

(i) PCB containers;

(ii) PCB transformers at the time of manufacture, at the time of distribution in commerce if not already labeled, and at the time of removal from use if not already labeled;

(iii) PCB large high voltage capacitors at the time of manufacture, at the time of distribution in commerce if not already labeled, and at the time of removal from use if not already labeled;

(iv) Equipment containing a PCB transformer or a PCB large high voltage capacitor at the time of manufacture, at the time of distribution in commerce if not already labeled, and at the time of removal of the equipment from use if not already labeled.

(v) PCB large low voltage capacitors at the time of removal from use.

(vi) Electric motors using PCB coolants.

(vii) Hydraulic machinery using PCB hydraulic fluid.

(viii) Heat transfer systems (other than transformers) using PCB's.

(ix) PCB article containers containing articles of equipment that must be marked under provisions (i) through (viii) above.

(x) Each storage area used to store PCB's for disposal.

(2) As of October 1, 1978, each transport vehicle loaded with PCB containers with more than 45 kg. (99.4 lbs.) of PCB chemical substances or PCB mixtures in the liquid phase or with one or more PCB transformers shall be marked with $M_L$ as described in Annex V - section 761.44(a).



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(3) As of January 1, 1979, the following PCB's shall be marked with mark $M_L$ as described in Annex V - section 761.44(a):

(i) All transformers not marked under paragraph (1) of this section;

(ii) All large high voltage capacitors not marked under paragraph (1) of this section in accordance with one of the following methods:

(A) Each individual capacitor is to be marked with mark $M_L$, or

(B) if one or more PCB large high voltage capacitors are installed in a protected location as on a power pole, or structure, or behind a fence; the pole, structure, or fence is to be marked with mark $M_L$ and a record or procedure identifying the PCB capacitors is to be maintained by the owner or operator at the protected location.

(4) As of January 1, 1979, all PCB equipment containing a small PCB capacitor at the time of manufacture shall be marked with the statement "This equipment contains PCB capacitor(s)". The mark shall be of the same size as the mark $M_L$.

(5) Where mark $M_L$ is specified but the PCB article or PCB equipment is too small to accommodate the smallest permissible size of mark $M_L$, mark $M_S$ as described in Annex V - Sec. 761.44(b), may be used instead of mark $M_L$.

(6) Each large low voltage capacitor, each small capacitor normally used in alternating current circuits, and each fluorescent light ballast manufactured between July 1, 1978 and July 1, 1998 that does not contain PCB's shall be marked by the manufacturer at the time of manufacture with the statement, "No PCB's". The mark shall be of similar durability and readability as other markings that indicate electrical information, part numbers, or manufacturer's name.

b. 761.44 Marking formats

The following formats shall be used for marking:

(a) Large PCB Mark - $M_L$ - Mark $M_L$ shall be as shown in Figure 1, letters and striping on a white or yellow background and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the equipment or container. The size of the mark shall be at least 15.25 cm (6 inches) on each side. If the PCB equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 5 cm (2 inches) on each side.

(b) Small PCB Mark-$M_S$-Mark $M_S$ shall be as shown in Figure 2, letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the equipment or container. The mark shall be a rectangle 2.5 by 5 cm (1 inch by 2 inches). If the PCB equipment is too small to accommodate this size, the mark may be reduced in size porportionately down to a minimum of 1 by 2 cm (.4 by .8 inches).

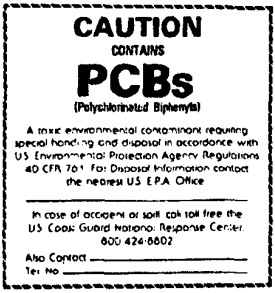


Figure 1

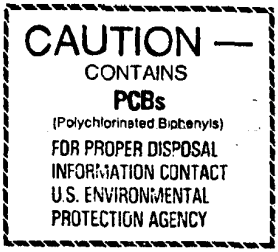


Figure 2

6. *Federal Register, Vol. 43, No. 110, Wednesday, June 7, 1978, page 24802 to 24818.*

SUMMARY: This proposed rule is designed to implement provisions of the Toxic Substances Control Act (TSCA) prohibiting the manufacture, processing, distribution in commerce, and use of polychlorinated biphenyls (PCB's), and to provide several limited exceptions to these general prohibitions for activities which will not present an unreasonable risk of injury to health or the environment.

SUMMARY OF PROPOSED AUTHORIZATIONS

Authorization and Expiration Date

a. Transformers-Use (Servicing),[1] 5 years after the effective date of the rule.

b. Transformer Dielectric Fluid-Processing and Distribution in Commerce,[1] July 1, 1979; yearly exemption required thereafter.

c. Railroad Transformer-Use,[1] 5 years after the effective date of the rule.



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d. Mining Equipment-Use,[1] December 31, 1981, for both continuous miners and loaders except that 12 months after the effective date of the rule there can be no rebuilding of miner motors.

e. Mining Equipment-Processing and Distribution in Commerce,[1] July 1, 1979; yearly exemption required thereafter.

f. Hydraulic Die Casting System-Use, 5 years after the effective date of the rule.

g. Carbonless Copy Paper-Use, 5 years after the effective date of the rule.

Since intact, nonleaking transformers and capacitors are considered totally enclosed, authorizations are not needed for the distribution in commerce and use (except servicing) of intact, nonleaking transformers (except those used on railroad locomotives and self-propelled cars) and intact, nonleaking capacitors.

7. *Federal Register, Vol. 43, No. 149, Wednesday, August 2, 1978, pages 33918 to 33920.*

SUMMARY: The polychlorinated biphenyl (PCB) disposal and marking rule (43 FR 7150-7164, Feb. 17, 1978) contained several ambiguities and technical errors. This notice includes (1) an addendum to the preamble, which will clarify the ambiguities, and (2) corrections to the errors in the final rule. Since this notice is nonsubstantive, notice and public comment are unnecessary and it is effective August 2, 1978.

CONCLUSION

Simplification of these requirements is impossible; however, the average commercial or industrial plant involved with PCB should follow these rules:

1. Mark equipment properly.

2. Make sure PCB cannot get into the surrounding environment.

3. Test PCB in equipment (such as transformers). This should be done periodically by a competent contractor.

4. Call in outside experts who have knowledge of governmental regulations if there is a spill.

5. Contact qualified disposal service companies if equipment with PCB is to be disposed of.

[1]These authorizations permit non-totally enclosed servicing. However, companies who service articles owned by others must meet the exemption requirements explained in section IV-F of this Preamble.



MONS 000118

Bibliography:

1. Public Law 94-469, 94th Congress, October 11, 1976.

2. *Federal Register*, Vol. 41, No. 237, Wednesday, December 8, 1976, page 53692.

3. Ibid, Vol. 42, No. 100, Tuesday, May 23, 1977, pages 26564 to 26577.

4. Ibid, Vol. 42, No. 251, Friday, December 30, 1977, page 65264.

5. Ibid, Vol. 43, No. 34, Friday, February 17, 1978, page 7150 to 7164.

6. Ibid, Vol. 43, No. 110, Wednesday, June 7, 1978, pages 24802 to 24818.

7. Ibid, Vol. 43, No. 149, Wednesday, August 2, 1978, pages 33918 to 33920.