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# Title 40

## PART 455 - PESTICIDE CHEMICALS

**Authority:** Secs. 301, 304, 306, 307, and 501, Pub. L. 92-500, 86 Stat. 816, Pub. L. 95-217, 91 Stat. 156, and Pub. L. 100-4 (33 U.S.C. 1311, 1314, 1316, 1317, and 1361).

**Source:** 43 FR 17776, Apr. 25, 1978, unless otherwise noted.

### § 455.10 General definitions.

As used in this part:

- (a)
  - (1) **Pesticide** means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest.
- (b) **Active ingredient** means an ingredient of a pesticide which is intended to prevent, destroy, repel, or mitigate any pest.
- (c) **Pesticide chemicals** means the sum of all active ingredients manufactured at each facility covered by this part.
- (d) **Pest** means:
  - (1) Any insect, rodent, nematode, fungus, weed, or
  - (2) any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other micro-organism (except viruses, bacteria, or other micro-organisms on or in living man or other living animals) which the Administrator declares to be a pest under section 25(c)(1) of Pub. L. 94-140, Federal Insecticide, Fungicide and Rodenticide Act.
- (e) Except as provided in this regulation, the general definitions, abbreviations and methods of analysis set forth in part 401 of this chapter shall apply to this part.
- (f) **Priority Pollutants** means the toxic pollutants listed in 40 CFR part 423, appendix A.
- (g) **Appropriate pollution control technology** means the wastewater treatment technology listed in Table 10 to this part 455 for a particular PAI(s) including an emulsion breaking step prior to the listed technology when emulsions are present in the wastewater to be treated.
- (h) **Equivalent system** means a wastewater treatment system that is demonstrated in literature, treatability tests or self-monitoring data to remove a similar level of pesticide active ingredient (PAI) or priority pollutants as the applicable appropriate pollution control technology listed in Table 10 to this part 455.
- (i) **Formulation** of pesticide products means the process of mixing, blending or diluting one or more pesticide active ingredients (PAIs) with one or more active or inert ingredients, without an intended chemical reaction to obtain a manufacturing use product or an end use product.
- (j) **Group 1 mixtures** means any product whose only pesticidal active ingredient(s) is: a common food/food constituent or non-toxic household item; or is a substance that is generally recognized as safe (GRAS) by the Food and Drug Administration (21 CFR 170.30, 182, 184, and 186) in accordance with good manufacturing practices, as defined by 21 CFR part 182; or is exempt from FIFRA under 40 CFR 152.25.
- (k) **Group 2 mixtures** means those chemicals listed in Table 9 to this part 455.
- (l) **Inorganic wastewater treatment chemicals** means inorganic chemicals that are commonly used in wastewater treatment systems to aid in the removal of pollutants through physical/chemical technologies such as chemical precipitation, flocculation, neutralization, chemical oxidation, hydrolysis and/or adsorption.
- (m) **Interior wastewater sources** means wastewater that is generated from cleaning or rinsing the interior of pesticide formulating, packaging or repackaging equipment; or from rinsing the interior of raw material drums, shipping containers or bulk storage tanks; or cooling water that comes in direct contact with pesticide active ingredients (PAIs) during the formulating, packaging or repackaging process.
- (n) **Microorganisms** means registered pesticide active ingredients that are biological control agents listed in 40 CFR 152.20(a)(3) including Eucaryotes (protozoa, algae, fungi), Procaryotes (bacteria), and Viruses.
- (o) **Packaging** of pesticide products means enclosing or placing a formulated pesticide product into a marketable container.
- (p) **PFPR/Manufacturer** means a pesticide formulating, packaging and repackaging facility that also performs pesticide manufacturing on-site and commingles their PFPR process wastewaters and pesticide manufacturing process wastewaters.
- (q) **Pool chemicals** means pesticide products that are intended to disinfect or sanitize, reducing or mitigating growth or development of microbiological organisms including bacteria, algae, fungi or viruses in the water of swimming pools, hot tubs, spas or other such areas, in the household and/or institutional environment, as provided in the directions for use on the product label.
- (r) **Refilling establishment** means an establishment where the activity of repackaging pesticide product into refillable containers occurs.

- (s) **Repackaging of pesticide products** means the transfer of a pesticide formulation (or PAI) from one container to another without a change in composition of the formulation or the labeling content, for sale or distribution.
- (t) **Sanitizer products** means pesticide products that are intended to disinfect or sanitize, reducing or mitigating growth or development of microbiological organisms including bacteria, fungi or viruses on inanimate surfaces in the household, institutional, and/or commercial environment and whose labeled directions for use result in the product being discharged to Publicly Owned Treatment Works (POTWs). This definition shall also include sanitizer solutions as defined by 21 CFR 178.1010 and pool chemicals as defined in this section (455.10(q)). This definition does not include liquid chemical sterilants (including sporicidal) exempted by § 455.40(f) or otherwise, industrial preservatives, and water treatment microbiocides other than pool chemicals.
- (u) **Stand-alone PFPR facility** means a PFPR facility where either: No pesticide manufacturing occurs; or where pesticide manufacturing process wastewaters are not commingled with PFPR process wastewaters. Such facilities may formulate, package or repackage or manufacture other non-pesticide chemical products and be considered a "stand-alone" PFPR facility.

[43 FR 17776, Apr. 25, 1978, as amended at 50 FR 40701, Oct. 4, 1985; 51 FR 44911, Dec. 15, 1986; 58 FR 50689, Sept. 28, 1993; 61 FR 57548, Nov. 6, 1996]

## Subpart A - Organic Pesticide Chemicals Manufacturing Subcategory

**Source:** 43 FR 44846, Sept. 29, 1978, unless otherwise noted.

### § 455.11 Compliance date for pretreatment standards for existing sources (PSES).

All discharges subject to pretreatment standards for existing sources (PSES) in subparts A and B of this part must comply with the standards no later than September 28, 1993.

[61 FR 57549, Nov. 6, 1996]

### § 455.20 Applicability; description of the organic pesticide chemicals manufacturing subcategory.

- (a) For the purpose of calculating and applying effluent limitations for COD, BOD<sub>5</sub>, and TSS, and applying pH limits under BPT (§ 455.22), BCT (§ 455.23), and NSPS (§ 455.25), the provisions of this subpart are applicable to discharges resulting from the manufacture of organic pesticide active ingredients and organo-tin pesticide active ingredients, excluding the following: Allethrin; Benzyl Benzoate; Bisethylxanthogen; Chlorophacinone; Coumafuryl; Dimethyl Phthalate; Diphacinone; Endothall Acid; EXD (Herbisan); Gibberellic Acid; Glyphosate; Naphthalene Acetic Acid; Propargite; 1,8 Naphthalic Anhydride; Quinmethionate; Rotenone; Sulfoxide; Triazine compounds (both symmetrical and asymmetrical); and Warfarin and similar anticoagulants. Provided, however, that the effluent limitations of this subpart for BOD<sub>5</sub> and TSS, but not COD, apply to manufacturers of Ametryn, Prometon, Prometryn, Terbutryn, Cyanazine, Atrazine, Propazine, Simazine, Terbutylazine, Hexazinone, and Glyphosate.
- (b) For the purpose of calculating BPT effluent limitations for organic Pesticide chemicals, the provisions of this subpart are applicable to discharges resulting from the manufacture of the following organic active ingredients: Aldrin, BHC, Captan, Chlordane, DDD, DDE, DDT, Dichloran, Dieldrin, Endosulfan, Endrin, Heptachlor, Lindane, Methoxychlor, Mirex, PCNB, Toxaphene, Trifluralin, Azinphos Methyl, Demeton-O, Demeton-S, Diazinon, Disulfoton, Malathion, Parathion Methyl, Parathion Ethyl, Aminocarb, Carbaryl, Methiocarb, Mexacarbate, Propoxur, Barban, Chlorpropham, Diuron, Fenuron, Fenuron-TCA, Linuron, Monuron, Monuron-TCA, Neubron, Propham, Swep, 2,4-D, Dicamba, Silvex, 2,4,5-T, Siduron, Perthane, and Dicofof.
- (c) The intermediates used to manufacture the active ingredients and active ingredients used solely in experimental pesticides are excluded from coverage in this subpart. Insecticidal pathogenic organisms such as *Bacillus thuringiensis*, insect growth hormones, plant extracts such as pyrethrins; sex attractants and botanicals such as Rotenone are also excluded from BPT coverage in this subpart.
- (d) A plant that manufactures a pesticide active ingredient listed in Table 1 of this part must comply with the BAT effluent limitations and new source performance and pretreatment standards for that pesticide active ingredient listed in table 2 (BAT and PSES) or Table 3 of this part (NSPS and PSNS). A plant that manufactures a pesticide active ingredient listed in Table 1 of this part must also comply with the BAT effluent limitations and new source performance and pretreatment standards for priority pollutants listed in Tables 4, 5 and 6 of this part. The limitations in Table 4 of this part (BAT and NSPS) are applicable to existing and new direct discharge point sources that use End-of-Pipe biological treatment. The

limitations in Table 5 of this part (BAT and NSPS) are applicable to existing and new direct discharge point sources that do not use end-of-pipe biological treatment. The limitations in Table 6 of this part (PSES and PSNS) are applicable to existing and new sources that discharge to Publicly Owned Treatment Works.

- (e) In the case of lead and total cyanide, the discharge quantity (mass) shall be determined by multiplying the concentrations listed in the applicable tables in this subpart times the flow from non-complexed lead-bearing waste streams for lead and times the flow from non-complexed cyanide-bearing waste streams for total cyanide. Discharges of cyanide in cyanide-bearing waste streams are not subject to the cyanide limitation and standards of this subpart if the permit writer or control authority determines that the cyanide limitations and standards are not achievable due to elevated levels of non-amenable cyanide (*i.e.*, cyanide that is not oxidized by chlorine treatment) that result from the unavoidable complexing of cyanide at the process source of the cyanide-bearing waste stream and establishes an alternative total cyanide or amenable cyanide limitation that reflects the best available technology economically achievable. The determination must be based upon a review of relevant engineering, production, and sampling and analysis information, including measurements of both total and amenable cyanide in the waste stream. An analysis of the extent of complexing in the waste stream, based on the foregoing information, and its impact on cyanide treatability shall be set forth in writing and, for direct dischargers, be contained in the fact sheet required by 40 CFR 124.8.

[43 FR 44846, Sept. 29, 1978, as amended at 50 FR 40702, Oct. 4, 1985; 51 FR 44911, Dec. 15, 1986; 58 FR 50689, Sept. 28, 1993]

### § 455.21 Specialized definitions.

- (a) **Organic active ingredients** means carbon-containing active ingredients used in pesticides, excluding metalloorganic active ingredients.
- (b) **Total organic active ingredients** means the sum of all organic active ingredients covered by § 455.20(a) which are manufactured at a facility subject to this subpart.
- (c) **Organic pesticide chemicals** means the sum of all organic active ingredients listed in § 455.20(b) which are manufactured at a facility subject to this subpart.
- (d) **Process wastewater flow** means the sum of the average daily flows from the following wastewater streams: Process stream and product washes, equipment and floor washes, water used as solvent for raw materials, water used as reaction medium, spent acids, spent bases, contact cooling water, water of reaction, air pollution control blowdown, steam jet blowdown, vacuum pump water, pump seal water, safety equipment cleaning water, shipping container cleanout, safety shower water, contaminated storm water, and product/process laboratory quality control wastewater. Notwithstanding any other regulation, process wastewater flow for the purposes of this subpart does not include wastewaters from the production of intermediate chemicals.
- (e) **Process wastewater pollutants** means those pollutants present in process wastewater flow.

[43 FR 44846, Sept. 29, 1978, as amended at 58 FR 50689, Sept. 28, 1993]

### § 455.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Except as provided in §§ 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT). The following limitations establish the quantity or quality of pollutants or pollutant properties controlled by this paragraph which may be discharged from the manufacture of organic active ingredient:

Effluent characteristics	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed -
COD	13.000	9.0000
BOD <sub>5</sub>	7.400	1.6000
TSS	6.100	1.8000

Effluent characteristics	Effluent limitations	
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed -
Organic pesticide chemicals	.010	.0018
pH	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Within the range of 6.0 to 9.0.

NOTE: For COD, BOD<sub>5</sub>, and TSS, metric units: Kilogram/1,000 kg of total organic active ingredients. English units: Pound/1,000 lb of total organic active ingredients. For organic pesticide chemicals - metric units: Kilogram/1,000 kg of organic pesticide chemicals. English units: Pound/1,000 lb of organic pesticide chemicals.

[43 FR 44846, Sept. 29, 1978, as amended at 60 FR 33971, June 29, 1995]

### **§ 455.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).**

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology: The limitations for BOD, TSS and pH are the same as those specified in 40 CFR 455.22.

#### **BCT Effluent Limitations**

##### **Effluent Limitations**

Pollutant or pollutant property	Maximum for any one day**	Average of daily values shall not exceed**
BOD <sub>5</sub>	7.400	1.6000
TSS	6.100	1.8000
pH	*	*

\* Within the range 6.0 to 9.0

\*\* Metric units: Kilogram pollutant/1,000 kg of total organic active ingredients.

English units: Pound pollutant/1,000 lb of total organic active ingredients

[58 FR 50689, Sept. 28, 1993]

### **§ 455.24 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available control technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology as specified in 40 CFR 455.20(d). For the priority pollutants, such sources must achieve discharges not exceeding the quantity (mass) determined by multiplying the process wastewater flow subject to this subpart as defined in 40 CFR 455.21 (d) times the concentrations listed in table 4 or table 5 of this part, as appropriate, of this subpart.

[58 FR 50690, Sept. 28, 1993]

**§ 455.25 New source performance standards (NSPS).**

- (a) Any new source subject to this subpart which discharges process wastewater pollutants must achieve the new source performance standards specified in 40 CFR 455.20(d), and subject to 455.20(a), must meet the following standards for BOD<sub>5</sub>, TSS, COD and pH:

**New Source Performance Standards**

## Standards

<b>Pollutant or pollutant property</b>	<b>Maximum for any one day**</b>	<b>Average of daily values shall not exceed**</b>
COD	9.360	6.480
BOD <sub>5</sub>	5.328	1.1520
TSS	4.392	1.2960
pH	*	*

\* Within the range 6.0 to 9.0

\*\* Metric units: Kilogram pollutant /1,000 kg of total organic active ingredients.

English units: Pound pollutant/1,000 lb of total organic active ingredients

- (b) For the priority pollutants, such sources must achieve discharges not exceeding the quantity (mass) determined by multiplying the process wastewater flow subject to this subpart as defined in 40 CFR 455.21(d) times the concentrations listed in table 4 or table 5 of this part, as appropriate, of this subpart.

[58 FR 50690, Sept. 28, 1993]

**§ 455.26 Pretreatment standards for existing sources (PSES).**

Except as provided in 40 CFR 403.7, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the pretreatment standards for existing sources (PSES) as specified in 40 CFR 455.20(d). For the priority pollutants, such sources must achieve discharges not exceeding the quantity (mass) determined by multiplying the process wastewater flow subject to this subpart as defined in 40 CFR 455.21(d) times the concentrations listed in Table 6 of this part. If mass limitations have not been developed as required, the source shall achieve discharges not exceeding the concentration limitations listed in Table 6 of this part.

[58 FR 50690, Sept. 28, 1993]

**§ 455.27 Pretreatment standards for new sources (PSNS).**

Except as provided in 40 CFR 403.7, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and must achieve the pretreatment standards for new sources (PSNS) as specified in 40 CFR 455.20(d). For the priority pollutants, the source must achieve discharges not exceeding the quantity (mass) determined by multiplying the process wastewater flow subject to this subpart as defined in 40 CFR 455.21(d) times the concentrations listed in table 6 of this part. If mass limitations have not been developed as required, the source shall achieve discharges not exceeding the concentration limitations listed in table 6 of this part.

[58 FR 50690, Sept. 28, 1993]

**Subpart B - Metallo-Organic Pesticide Chemicals Manufacturing Subcategory**

**§ 455.30 Applicability; description of the metallo-organic pesticide chemicals manufacturing subcategory.**

The provisions of this subpart are applicable to discharges resulting from the manufacture of metallo-organic active ingredients containing mercury, cadmium, arsenic, or copper. The manufacture of intermediates used to manufacture the active ingredients are excluded from coverage by this subpart.

**§ 455.31 Specialized definitions.**

- (a) "Metallo-organic active ingredients" means carbon containing active ingredients containing one or more metallic atoms in the structure.

**§ 455.32 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.**

Except as provided in §§ 125.30 through 125.32, any existing point source subject to this subpart, shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT). The following limitations establish the quantity or quality of pollutants or pollutant properties controlled by this paragraph which may be discharged from the manufacture of metallo-organic active ingredient: There shall be no discharge of process waste water pollutants to navigable waters.

[60 FR 33971, June 29, 1995]

**§ 455.33 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]****§ 455.34 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available control technology economically achievable (BAT). [Reserved]****§ 455.35 New source performance standards (NSPS). [Reserved]****§ 455.36 Pretreatment standards for existing sources (PSES). [Reserved]****§ 455.37 Pretreatment standards for new sources (PSNS). [Reserved]****Subpart C - Pesticide Chemicals Formulating and Packaging Subcategory****§ 455.40 Applicability; description of the pesticide formulating, packaging and repackaging subcategory.**

- (a) The provisions of this subpart are applicable to discharges resulting from all pesticide formulating, packaging and repackaging operations except as provided in paragraphs (b), (c), (d), (e) and (f) of this section.
- (b) The provisions of this subpart do not apply to repackaging of agricultural pesticides performed at refilling establishments, as described in § 455.60.
- (c) The provisions of this subpart do not apply to wastewater discharges from: the operation of employee showers and laundry facilities; the testing of fire protection equipment; the testing and emergency operation of safety showers and eye washes; storm water; Department of Transportation (DOT) aerosol leak test bath water from non-continuous overflow baths (batch baths) where no cans have burst from the time of the last water change-out; and on-site laboratories from cleaning analytical equipment and glassware and rinsing the retain sample container (except for the initial rinse of the retain sample container which is considered a process wastewater source for this subpart).
- (d) The provisions of this subpart do not apply to wastewater discharges from the formulation, packaging and/or repackaging of sanitizer products (including pool chemicals); microorganisms; inorganic wastewater treatment chemicals; group 1 mixtures and group 2 mixtures, as defined under § 455.10.



- (e) The provisions of this subpart do not apply to wastewater discharges from the development of new formulations of pesticide products and the associated efficacy and field testing at on-site or stand-alone research and development laboratories where the resulting pesticide product is not produced for sale.
- (f) The provisions of this subpart do not apply to wastewater discharges from the formulation, packaging and/or repackaging of liquid chemical sterilant products (including any sterilant or subordinate disinfectant claims on such products) for use on a critical or semi-critical device, as defined in Section 201 of the Federal Food, Drug and Cosmetic Act and in Section 2(u) of the Federal Insecticide, Fungicide and Rodenticide Act.

[61 FR 57549, Nov. 6, 1996]

## § 455.41 Special definitions.

- (a) **Initial Certification Statement** for this subpart means a written submission to the appropriate permitting authority, e.g., the local Control Authority (the POTW) or NPDES permit writer which must be signed by the responsible corporate officer as defined in 40 CFR 403.12(l) or 40 CFR 122.22 and which:
  - (1) Lists and describes those product families, process lines and/or process units for which the PFPR facility is implementing the Pollution Prevention Alternative ("P2 Alternative");
  - (2) Describes the PFPR facility specific practices for each product family/process line/process unit which are to be practiced as part of the P2 Alternative;
  - (3) Describes any justification allowing modification to the practices listed in Table 8 to this part 455; and
  - (4) Lists the treatment system being used to obtain a P2 allowable discharge (as defined in 455.41).
- (b) **Periodic Certification Statement** for this subpart means a written submission to the appropriate permitting authority, e.g., the local Control Authority (the POTW) or NPDES permit writer, which states that the P2 Alternative is being implemented in the manner set forth in the control mechanism (for indirect dischargers) or NPDES permit (for direct dischargers) or that a justification allowing modification of the practices listed in Table 8 to this part 455 has been implemented resulting in a change in the pollution prevention practices conducted at the facility. The Periodic Certification Statement must be signed by the responsible corporate officer as defined in 40 CFR 403.12(l) or 40 CFR 122.22.
- (c) **On-site Compliance Paperwork** for this subpart means data or information maintained in the offices of the PFPR facility which supports the initial and periodic certification statements as follows:
  - (1) Lists and describes those product families, process lines and/or process units for which the facility is implementing the P2 Alternative;
  - (2) Describes the facility specific practices for each product family/process line/process unit which are to be practiced as part of the P2 Alternative;
  - (3) Describes any justification allowing modification to the practices listed in Table 8 to this part 455;
  - (4) Includes a written discussion demonstrating that the treatment system being used contains the appropriate pollution control technologies (or equivalent systems/pesticide manufacturing systems) for removing the PAIs which may be found in the wastewater;
  - (5) Establishes a method for demonstrating to the permitting/control authority that the treatment system is well operated and maintained; and
  - (6) Includes a discussion of the rationale for choosing the method of demonstration.
- (d) For Indirect Dischargers:

**Pollution prevention (P2) allowable discharge (excluding interior wastewater sources, leak and spill clean-up water, and floor wash)** for this subpart means the quantity of/concentrations of pollutants in PFPR process wastewaters that remain after a facility has demonstrated that it is using the specified practices of the Pollution Prevention Alternative as listed in Table 8 to this part 455.

**Pollution prevention (P2) allowable discharge for interior wastewater sources, leak and spill cleanup water, and floor wash** for this subpart means the quantity of/concentrations of pollutants in PFPR process wastewaters that remain after a facility has demonstrated that it is using the specified practices of the Pollution Prevention Alternative as listed in Table 8 to this part 455 and that have been pretreated using appropriate pollution control technologies, as defined in § 455.10(g), or a pesticide manufacturer's treatment system, or an equivalent system, used individually, or in any combination to achieve a sufficient level of pollutant reduction. Pretreatment requirements may be modified or waived by

the Control Authority (POTW) to the extent that removal credits have been granted by the POTW in accordance with 40 CFR 403.7, provided the granting of such credits does not result in pass through or interference as defined in 40 CFR 403.3 and complies with the provisions of 40 CFR 403.5. The facility must demonstrate that the appropriate pollution control technology is properly maintained and operated.

(e) For Direct Dischargers:

**Pollution prevention (P2) allowable discharge** for this subpart means the quantity of/concentrations of pollutants in PFPR process wastewaters that remain after a facility has demonstrated that it is using the specified practices of the Pollution Prevention Alternative as listed in Table 8 to this part 455 and that have been treated using appropriate pollution control technologies, as defined in § 455.10(g), or a pesticide manufacturer's treatment system, or an equivalent system, used individually, or in any combination to achieve a sufficient level of pollutant reduction. The facility must demonstrate that the appropriate pollution control technology is properly maintained and operated.

(f) **Process wastewater**, for this subpart, means all wastewater associated with pesticide formulating, packaging and repackaging except for sanitary water, non-contact cooling water and those wastewaters excluded from the applicability of the rule in § 455.40.

[61 FR 57549, Nov. 6, 1996]

### **§ 455.42 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available, (BPT).**

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

(a) Except as provided in paragraph (b) of this section, the following limitations establish the quantity or quality of pollutants or pollutant properties controlled by this paragraph which may be discharged from the formulation, packaging or repackaging of pesticides: There shall be no discharge of process wastewater pollutants to navigable waters.

#### **Note:**

For existing PFPR/Manufacturer facilities, as defined in § 455.10(p), which are also subject to the provisions of § 455.22 or § 455.32, "zero discharge" means that permitting authorities shall provide no additional discharge allowance for those pesticide active ingredients (PAIs) in the pesticide formulating, packaging and repackaging wastewaters when those PAIs are also manufactured at the same facility.

(b) Any existing facility subject to paragraph (a) of this section may have a pollution prevention allowable discharge, as defined in § 455.41(e), of wastewater pollutants to navigable waters if the discharger agrees to NPDES permit conditions as follows:

- (1) The discharger will meet the requirements of the Pollution Prevention Alternative listed in Table 8 to this part 455 (or received a modification by Best Professional Judgement for modifications not listed in Table 8 of this part 455);
- (2) The discharger will notify its NPDES permit writer at the time of renewal or modification of its permit, of its intent to utilize the Pollution Prevention Alternative by submitting to the NPDES permit writer an initial certification statement as described in § 455.41(a);
- (3) The discharger will submit to its NPDES permitting authority a periodic certification statements as described in § 455.41(b) once each year of operation; and
- (4) The discharger will maintain at the office of the facility and make available for inspection the on-site compliance paperwork as described in § 455.41(c).

[61 FR 57550, Nov. 6, 1996]

### **§ 455.43 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).**

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

- (a) Except as provided in paragraph (b) of this section, the BCT limitations are established as follows: There shall be no discharge of process wastewater pollutants to navigable waters.

**Note:**

For existing PFPR/Manufacturer facilities, as defined in § 455.10(p), which are also subject to the provisions of §§ 455.23, *zero discharge* means that permitting authorities shall provide no discharge additional discharge allowance for those pesticide active ingredients (PAIs) in the pesticide formulating, packaging and repackaging wastewaters when those PAIs are also manufactured at the same facility.

- (b) Any existing facility subject to paragraph (a) of this section may have a pollution prevention allowable discharge, as defined in § 455.41(e), of wastewater pollutants to navigable waters if the discharger agrees to NPDES permit conditions as follows:
- (1) The discharger will meet the requirements of the Pollution Prevention Alternative listed in Table 8 to this part 455 (or received a modification by Best Professional Judgement for modifications not listed in Table 8 of this part 455);
  - (2) The discharger will notify its NPDES permit writer at the time of renewal or modification of its permit, of its intent to utilize the Pollution Prevention Alternative by submitting to the NPDES permit writer an initial certification statement as described in § 455.41(a);
  - (3) The discharger will submit to its NPDES permitting authority a periodic certification statement as described in § 455.41(b) once each year of operation; and
  - (4) The discharger will maintain at the office of the facility and make available for inspection the on-site compliance paperwork as described in § 455.41(c).

[61 FR 57550, Nov. 6, 1996]

**§ 455.44 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available control technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology (BAT).

- (a) Except as provided in paragraph (b) of this section, the BAT limitations are established as follows: There shall be no discharge of process wastewater pollutants to navigable waters.

**Note:**

For existing PFPR/Manufacturer facilities, as defined in § 455.10(p), which are also subject to the provisions of §§ 455.24, *zero discharge* means that permitting authorities shall provide no additional discharge allowance for those pesticide active ingredients (PAIs) in the pesticide formulating, packaging and repackaging wastewaters when those PAIs are also manufactured at the same facility.

- (b) Any existing facility subject to paragraph (a) of this section may have a pollution prevention allowable discharge, as defined in § 455.41(e), of wastewater pollutants to navigable waters if the discharger agrees to NPDES permit conditions as follows:
- (1) The discharger will meet the requirements of the Pollution Prevention Alternative listed in Table 8 to this part 455 (or received a modification by Best Professional Judgement for modifications not listed on Table 8 of this part 455);
  - (2) The discharger will notify its NPDES permitting authority at the time of renewal or modification of its permit, of its intent to utilize the Pollution Prevention Alternative by submitting to the NPDES permit writer an initial certification statement as described in § 455.41(a);
  - (3) The discharger will submit to its NPDES permit writer a periodic certification statement as described in § 455.41(b) once each year of operation; and

- (4) The discharger will maintain at the office of the facility and make available for inspection the on-site compliance paperwork as described in § 455.41(c).

[61 FR 57551, Nov. 6, 1996]

#### **§ 455.45 New source performance standards (NSPS).**

- (a) Any new source, except as provided in paragraph (b) of this section, subject to this subpart which discharges process wastewater must meet the following standards: There shall be no discharge of process wastewater pollutants to navigable waters.

**Note:**

For new PFPR/Manufacturer facilities, as defined in § 455.10(p), which are also subject to the provisions of §§ 455.25, zero discharge means that permitting authorities shall provide no additional discharge allowance for those pesticide active ingredients (PAIs) in the pesticide formulating, packaging and repackaging wastewaters when those PAIs are also manufactured at the same facility.

- (b) Any new source subject to paragraph (a) of this section may have a pollution prevention allowable discharge, as defined in § 455.41(e), of wastewater pollutants to navigable waters if the discharger agrees to NPDES permit conditions as follows:
  - (1) The discharger will meet the requirements of the Pollution Prevention Alternative listed in Table 8 to this part 455 (or received a modification by Best Professional Judgement for modifications not listed in Table 8 of this part 455);
  - (2) The discharger will notify its NPDES permit writer at the time of submitting its application for a permit, of its intent to utilize the Pollution Prevention Alternative by submitting to the NPDES permit writer an initial certification statement as described in § 455.41(a);
  - (3) The discharger will submit to its NPDES permitting authority a periodic certification statement as described in § 455.41(b) once each year of operation; and
  - (4) The discharger will maintain at the office of the facility and make available for inspection the on-site compliance paperwork as described in § 455.41(c).

[61 FR 57551, Nov. 6, 1996]

#### **§ 455.46 Pretreatment standards for existing sources (PSES).**

- (a) Except as provided in 40 CFR 403.7 and 403.13 or in paragraph (b) of this section, no later than November 6, 1999, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve PSES as follows: There shall be no discharge of process wastewater pollutants.
- (b) Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to paragraph (a) of this section which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and may have a pollution prevention allowable discharge of wastewater pollutants, as defined in § 455.41(d), if the discharger agrees to control mechanism or pretreatment agreement conditions as follows:
  - (1) The discharger will meet the requirements of the Pollution Prevention Alternative listed in Table 8 to this part 455 (or received a modification by Best Engineering Judgement for modifications not listed in Table 8 to this part 455);
  - (2) The discharger will notify its local Control Authority at the time of renewing or modifying its individual control mechanism or pretreatment agreement of its intent to utilize the Pollution Prevention Alternative by submitting to the local Control Authority an initial certification statement as described in § 455.41(a);
  - (3) The discharger will submit to its local Control Authority a periodic certification statement as described in § 455.41(b) during the months of June and December of each year of operation; and
  - (4) The discharger will maintain at the offices of the facility and make available for inspection the on-site compliance paperwork as described in § 455.41(c).

- (c) Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to § 455.46(b) which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and may submit a request to its Control Authority to waive pretreatment of: floor wash; and/or a non-reusable final rinse of a triple rinse, if the concentrations of pesticide active ingredients and priority pollutants in those wastewater sources have been demonstrated to be too low to be effectively pretreated at the facility. The Control Authority may waive pretreatment for these two wastewaters only if the existing source makes the demonstrations and is in compliance with 40 CFR 403.5.

[61 FR 57551, Nov. 6, 1996]

#### **§ 455.47 Pretreatment standards for new sources (PSNS).**

- (a) Except as provided in 40 CFR 403.7 and 403.13 or in paragraph (b) of this section, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve PSNS as follows: There shall be no discharge of process wastewater pollutants.
- (b) Except as provided in 40 CFR 403.7 and 403.13, any new source subject to paragraph (a) of this section which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and may have a pollution prevention allowable discharge of wastewater pollutants, as defined in § 455.41(d), if the discharger agrees to control mechanism or pretreatment agreement conditions as follows:
  - (1) The discharger will meet the requirements of the Pollution Prevention Alternative listed in Table 8 to this part 455 (or received a modification by Best Engineering Judgement for modifications not listed in Table 8 to this part 455);
  - (2) The discharger will notify its local Control Authority at the time of submitting its application for an individual control mechanism or pretreatment agreement of its intent to utilize the Pollution Prevention Alternative by submitting to the local Control Authority an initial certification statement as described in § 455.41(a);
  - (3) The discharger will submit to its local Control Authority a periodic certification statement as described in § 455.41(b) during the months of June and December of each year of operation; and
  - (4) The discharger will maintain at the offices of the facility and make available for inspection the on-site compliance paperwork as described in § 455.41(c).
- (c) Except as provided in 40 CFR 403.7 and 403.13, any new source subject to paragraph (b) of this section which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and may submit a request to its Control Authority to waive pretreatment of: floor wash; and/or a non-reusable final rinse of a triple rinse, if the concentrations of pesticide active ingredients and priority pollutants in those wastewater sources have been demonstrated to be too low to be effectively pretreated at the facility. The Control Authority may waive pretreatment for these two wastewaters only if the new source makes the demonstrations and is in compliance with 40 CFR 403.5.

[61 FR 57552, Nov. 6, 1996]

### **Subpart D - Test Methods for Pesticide Pollutants**

#### **§ 455.50 Identification of test procedures.**

The pesticide active ingredients to which this section applies and for which effluent limitations guidelines and standards are specified in this part are named, together with the Chemical Abstracts Service (CAS) number (provided to assist in identifying the pesticide active ingredient only) and analytical method(s) designation(s) in Table IG at 40 CFR 136.3(a). Except as provided in 40 CFR 136.5, the discharge parameter values required under the Clean Water Act must be determined by one of the analytical methods cited and described in Table IG at 40 CFR 136.3(a). Pesticide manufacturers may not use the analytical method cited in Table IB, Table IC, or Table ID of 40 CFR 136.3(a) to make these determinations (except where the method cited in those tables is identical to the method specified in Table IG at 40 CFR 136.3(a)). The full texts of the analytical methods cited in Table IG at 40 CFR 136.3(a) are contained in the *Methods For The Determination of Nonconventional Pesticides In Municipal and Industrial Wastewater, Volume I*, EPA 821-R-93-010A (August 1993 Revision I) and *Volume II*, EPA 821-R-93-010B (August 1993) (the "Compendium"). Each pesticide chemical manufacturer that is required to determine discharge parameter values under this part using one of the analytical methods cited in Table IG at 40 CFR 136.3(a) must request in writing a copy of the Compendium from the permit authority or local control authority (as applicable) prior to determining such discharge parameter values, unless the manufacturer already has a copy.

[72 FR 11248, Mar. 12, 2007]

## Subpart E - Repackaging of Agricultural Pesticides Performed at Refilling Establishments

**Source:** 61 FR 57552, Nov. 6, 1996, unless otherwise noted.

### **§ 455.60 Applicability; description of repackaging of agricultural pesticides performed by refilling establishments subcategory.**

- (a) The provisions of this subpart are applicable to discharges resulting from all repackaging of agricultural pesticides performed by refilling establishments, as defined in § 455.10; whose primary business is wholesale or retail sales; and where no pesticide manufacturing, formulating or packaging occurs, except as provided in paragraphs (b), (c) and (d) of this section.
- (b) The provisions of this subpart do not apply to wastewater discharges from custom application or custom blending, as defined in 40 CFR 167.3.
- (c) The provisions of this subpart do not apply to wastewater discharges from: the operation of employee showers and laundry facilities; the testing of fire protection equipment; the testing and emergency operation of safety showers and eye washes; or storm water.
- (d) The provisions of this subpart do not apply to wastewater discharges from the repackaging of microorganisms or Group 1 Mixtures, as defined under § 455.10, or non-agricultural pesticide products.

### **§ 455.61 Special definitions.**

*Process wastewater*, for this subpart, means all wastewater except for sanitary water and those wastewaters excluded from the applicability of the rule in § 455.60.

### **§ 455.62 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable pollutant control technology (BPT).**

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable pollutant control technology: There shall be no discharge of process wastewater pollutants.

### **§ 455.63 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT).**

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollution control technology: There shall be no discharge of process wastewater pollutants.

### **§ 455.64 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).**

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable: There shall be no discharge of process wastewater pollutants.

### **§ 455.65 New source performance standards (NSPS).**

Any new source subject to this subpart which discharges process wastewater pollutants must meet the following standards: There shall be no discharge of process wastewater pollutants.

### **§ 455.66 Pretreatment standards for existing sources (PSES).**

Except as provided in 40 CFR 403.7 and 403.13, no later than November 6, 1999 subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the pretreatment standards for existing sources as follows: There shall be no discharge of process wastewater pollutants.

### § 455.67 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 and 403.13, any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the pretreatment standards for existing sources as follows: There shall be no discharge of process wastewater pollutants.

**Table 1 to Part 455 - List of Organic Pesticide Active Ingredients**

EPA census code	Pesticide code	Pesticide name	CAS No.
1	10501	Dicofol [1,1-Bis(chlorophenyl)-2,2,2-trichloroethanol]	00115-32-2
2	51501	Maleic Hydrazide	00123-33-1
3	42002	EDB [1,2-Ethylene dibromide]	00106-93-4
4	82901	Vancide TH [1,3,5-Triethylhexahydro-s-triazine]	07779-27-3
5	29001	Dichloropropene	00542-75-6
7	17901	Dowicil 75 [1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantanechloride]	04080-31-3
8	109901	Triadimefon	43121-43-3
9	44901	Hexachlorophene (nabac)	00070-30-4
10	55004	Tetrachlorophene	01940-43-8
11	55001	Dichlorophene	00097-23-4
12	84001	Dichlorvos	00062-73-7
13	102401	Landrin-2 [2,3,5-trimethylphenylmethylcarbamate]	02686-99-9
14	82601	Fenac [2,3,6-Trichlorophenylacetic acid]	00085-34-7
14	( <sup>1</sup> )	Fenac Salts and Esters	( <sup>1</sup> )

EPA census code	Pesticide code	Pesticide name	CAS No.
15	82001	2,4,5-T [2,4,5-Trichlorophenoxyacetic acid]	00093-76-5
15	( <sup>1</sup> )	2,4,5-T Salts and Esters	( <sup>1</sup> )
16	30001	2,4-D [2,4-Dichlorophenoxyacetic acid]	00094-75-7
16	( <sup>1</sup> )	2,4-D Salts and Esters	( <sup>1</sup> )
17	30801	2,4-DB [2,4-Dichlorophenoxybutyric acid]	00094-82-6
17	( <sup>1</sup> )	2,4-DB Salts and Esters	( <sup>1</sup> )
18	80811	Anilazine [2,4-Dichloro-6-(o-chloroanilino)-s-triazine]	00101-05-3
19	36001	Dinocap	39300-45-3
20	31301	Dichloran (2,6-dichloro-4-nitroaniline)	00099-30-9
21	8707	Busan 90 [2-Bromo-4-hydroxyacetophenone]	02491-38-5
22	15801	Mevinphos	07786-34-7
23	39001	Sulfallate [2-chloroallyldiethyldithiocarbamate]	00095-06-7
24	84101	Chlorfenvinphos	00470-90-6
25	10010	Cyanazine	21725-46-2
26	19101	Propachlor	01918-16-7
27	30501	MCPA [2-Methyl-4-chlorophenoxyacetic acid]	00094-74-6
27	( <sup>1</sup> )	MCPA Salts and Esters	( <sup>1</sup> )
28	99901	Octhilinone	26530-20-1
29	67703	Pindone	00083-26-1



EPA census code	Pesticide code	Pesticide name	CAS No.
30	31401	Dichlorprop [2-(2,4-Dichlorophenoxy) propionic acid]	00120-36-5
30	( <sup>1</sup> )	Dichlorprop Salts and Esters	( <sup>1</sup> )
31	31501	MCPD [2-(2-Methyl-4-chlorophenoxy)propionic acid]	00093-65-2
31	( <sup>1</sup> )	MCPD Salts and Esters	( <sup>1</sup> )
32	60101	Thiabendazole	00148-79-8
33	80815	Belclene 310 [2-(methylthio)-4-(ethylamino)-6-(1,2-dimethylamino)-s-triazine]	22936-75-0
34	21201	Cloprop [2-(m-Chlorophenoxy)propionic acid]	00101-10-0
34	( <sup>1</sup> )	Cloprop Salts and Esters	( <sup>1</sup> )
35	35603	TCMTB [2-(Thiocyanomethylthio)benzothiazole]	21564-17-0
36	99001	HAE [2-((Hydroxymethyl)amino) ethanol]	34375-28-5
37	6770	Chlorophacinone	03691-35-8
38	102401	Landrin-1 [3,4,5-trimethylphenylmethylcarbamate]	02686-99-9
39	101701	Pronamide	23950-58-5
40	100501	Methiocarb	02032-65-7
41	28201	Propanil	00709-98-8
42	107801	3-Iodo-2-propynyl butylcarbamate	55406-53-6
43	86001	3-(a-Acetylthiofurfuryl)-4-hydroxycoumarin [Coumafuryl]	00117-52-2
43	( <sup>1</sup> )	Coumafuryl Salts and Esters	( <sup>1</sup> )
44	37507	DNOC (4,6-dinitro-o-cresol)	00534-52-1

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
45	101101	Metribuzin	21087-64-9
46	19401	CPA (4-chlorophenoxyacetic acid)	00122-88-3
46	( <sup>1</sup> )	CPA Salts and Esters	( <sup>1</sup> )
47	19201	MCPB [4-(2-Methyl-4-chlorophenoxy)butyric acid]	00094-81-5
47	( <sup>1</sup> )	MCPB Salts and Esters	( <sup>1</sup> )
48	44401	Aminocarb [4-(dimethylamino)-m-tolylmethylcarbamate]	02032-59-9
49	84701	Etridiazole	02593-15-9
50	55501	Ethoxyquin	00091-53-2
51	59804	Quinoliol sulfate (8-Quinoliol sulfate)	00134-31-6
52	103301	Acephate	30560-19-1
53	114401	Acifluorfen	50594-66-6
53	114402	Acifluorfen Salts and Esters	62476-59-9
54	90501	Alachlor	15972-60-8
55	98301	Aldicarb	00116-06-3
56	69105	Hyamine 3500 [Alkyl* dimethyl benzyl ammonium chloride * (50% C14, 40% C12, 10% C16)]	68424-85-1
57	4001	Allethrin (all isomers and allethrin coil)	00584-79-2
58	80801	Ametryn	00834-12-8
59	106201	Amitraz	33089-61-1

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
60	80803	Atrazine	01912-24-9
61	105201	Bendiocarb	22781-23-3
62	99101	Benomyl and Carbendazim	17804-35-2
63	8901	Benzene Hexachloride	00608-73-1
64	9501	Benzyl benzoate	00120-51-4
65	10101	Lethane 384 [Beta-Thiocyanoethyl esters of mixed fatty acids containing from 10-18 carbons]	00301-11-1
66	104301	Bifenox	42576-02-3
68	12301	Bromacil	00314-40-9
68	12302	Bromacil, lithium	53404-19-6
69	35301	Bromoxynil	01689-84-5
69	35302	Bromoxynil octanoate	01689-99-2
70	112301	Butachlor	23184-66-9
70	101401	Giv-gard [ $\beta$ -Bromo- $\beta$ -nitrostyrene]	07166-19-0
73	81701	Captafol	02425-06-1
74	81301	Captan	00133-06-2
75	56801	Carbaryl [Sevin]	00063-25-2
76	90601	Carbofuran	01563-66-2

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
77	90602	Carbosulfan	55285-14-8
78	29901	Chloramben	00133-90-4
78	( <sup>1</sup> )	Chloramben Salts and Esters	( <sup>1</sup> )
79	58201	Chlordane	00057-74-9
80	27301	Chloroneb	02675-77-6
81	81501	Chloropicrin	00076-06-2
82	81901	Chlorothalonil	01897-45-6
83	25501	Chloroxuron	01982-47-4
84	83701	Stirofos	00961-11-5
85	59102	Chlorpyrifos methyl	05598-13-0
86	59101	Chlorpyrifos	02921-88-2
87	14504	Mancozeb	08018-01-7
90	109301	Fenvalerate	51630-58-1
91	43401	Cycloheximide	00066-81-9
92	28901	Dalapon (2,2-dichloropropionic acid)	00075-99-0
92	( <sup>1</sup> )	Dalapon Salts and Esters	( <sup>1</sup> )
93	27501	Dienochlor	02227-17-0
94	57601	Demeton [O,O-Diethyl O-(and S-) (2-ethylthio)ethyl) phosphorothioate]	08065-48-3

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
95	104801	Desmedipham	13684-56-5
96	14502	Diammonium ethylenebisdithiocarbamate	03566-10-7
97	11301	DBCP [Dibromo-3-chloropropane]	00096-12-8
98	29801	Dicamba [3,6-Dichloro-o-anisic acid]	01918-00-9
98	( <sup>1</sup> )	Dicamba Salts and Esters	( <sup>1</sup> )
99	29601	Dichlone (Phygon)	00117-80-6
100	103401	Thiophanate ethyl	23564-06-9
101	32101	Perthane [Diethyl diphenyl dichloroethane and related compounds]	00072-56-0
102	86501	EXD [Diethyl dithiobis (thionoformate)]	00502-55-6
103	57801	Diazinon	00333-41-5
104	108201	Diflubenzuron	35367-38-5
105	69122	Benzethonium chloride	00121-54-0
106	35001	Dimethoate	00060-51-5
107	53501	Parathion methyl	00298-00-0
108	35201	Dicrotophos	00141-66-2
109	58801	Crotoxyphos	07700-17-6
110	78701	DCPA [Dimethyl 2,3,5,6-tetrachloroterephthalate]	01861-32-1
111	57901	Trichlorofon	00052-68-6

EPA census code	Pesticide code	Pesticide name	CAS No.
112	37505	Dinoseb	00088-85-7
113	37801	Dioxathion	00078-34-2
114	67701	Diphacinone	00082-66-6
115	36601	Diphenamid	00957-51-7
116	38501	Diphenylamine	00122-39-4
116	47201	MGK 326 [Dipropyl isocinchomeronate]	00113-48-4
118	63301	Nabonate [Disodium cyanodithioimidocarbonate]	00138-93-2
119	35505	Diuron	00330-54-1
120	44303	Metasol DGH [Dodecylguanidine hydrochloride]	13590-97-1
121	44301	Dodine (dodecylguanidine acetate)	02439-10-3
122	79401	Endosulfan [Hexachlorohexahydromethano-2,4,3-benzodioxathiepin-3-oxide]	00115-29-7
123	38901	Endothall	00145-73-3
123	( <sup>1</sup> )	Endothall Salts and Esters	( <sup>1</sup> )
124	41601	Endrin	00072-20-8
125	113101	Ethalfluralin	55283-68-6
126	58401	Ethion	00563-12-2
127	41101	Ethoprop	13194-48-4
128	100601	Fenamiphos	22224-92-6

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
129	28801	Chlorobenzilate	00510-15-6
130	41405	Butylate	02008-41-5
131	59901	Famphur	00052-85-7
132	206600	Fenarimol	60168-88-9
133	53301	Fenthion	00055-38-9
134	34801	Ferbam	14484-64-1
135	35503	Fluometuron	02164-17-2
136	75002	Fluoroacetamide	00640-19-7
137	81601	Folpet	00133-07-3
138	103601	Glyphosate [N-(Phosphonomethyl) glycine]	01071-83-6
138	( <sup>1</sup> )	Glyphosate Salts and Esters	( <sup>1</sup> )
139	103602	Glyphosine	02439-99-8
140	44801	Heptachlor	00076-44-8
141	115601	Cycloprate	54460-46-7
142	107201	Hexazinone	51235-04-2
143	109401	Isofenphos	25311-71-1
144	100201	Isopropalin	33820-53-0
145	47601	Propham	00122-42-9

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
146	97401	Karbutilate	04849-32-5
147	9001	Lindane	00058-89-9
148	35506	Linuron	00330-55-2
149	39504	Malachite green [Ammonium(4-(p-(dimethylamino)-alpha-phenylbenzylidene)-2,5-cyclohexadien-1-ylidene)-dimethyl chloride]	00569-64-2
150	57701	Malathion	00121-75-5
151	14505	Maneb	12427-38-2
152	34802	Manganous dimethyldithiocarbamate	15339-36-3
153	114001	Mefluidide [N-(2,4-dimethyl-5-(((trifluoromethyl) sulfonyl)-amino) phenyl acetamide]	53780-34-0
153	( <sup>1</sup> )	Mefluidide Salts and Esters	( <sup>1</sup> )
154	101201	Methamidophos	10265-92-6
155	100301	Methidathion	00950-37-8
156	90301	Methomyl	16752-77-5
157	105401	Methoprene	40596-69-8
158	34001	Methoxychlor	00072-43-5
159	69134	Methylbenzethonium chloride	15716-02-6
160	53201	Methylbromide	00074-83-9
162	69129	Hyamine 2389 [Methyldodecylbenzyl trimethyl ammonium chloride 80% and methyldodecylxylylene bis (trimethylammoniumchloride) 20%]	01399-80-0
163	68102	Methylenebisthiocyanate	06317-18-6



<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
164	54101	Quinmethionate	02439-01-2
165	108801	Metolachlor	51218-45-2
166	44201	Mexacarbate	00315-18-4
167	14601	Metiram	09006-42-2
168	35502	Monuron TCA	00140-41-0
169	35501	Monuron	00150-68-5
170	103001	Napropamide	15299-99-7
171	80301	Deet	00134-62-3
172	14503	Nabam	00142-59-6
173	34401	Naled	00300-76-5
174	35801	Norea	18530-56-8
175	105801	Norflurazon	27314-13-2
176	30701	N-1-Naphthylphthalimide	05333-99-3
176	30702	Naptalam [N-1-Naphthylphthalamic acid]	00132-66-1
176	30703	Naptalam Salts and Esters	00132-67-2
177	57001	MGK 264 [N-2-Ethylhexyl bicycloheptene dicarboximide]	00136-45-8
178	84301	Benfluralin	01861-40-1

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
179	79501	Sulfotepp	03689-24-5
180	79101	Aspon	03244-90-4
181	36501	Coumaphos	00056-72-4
182	32701	Fensulfothion	00115-90-2
183	32501	Disulfoton	00298-04-4
184	105901	Fenitrothion	00122-14-5
185	59201	Phosmet	00732-11-6
186	58001	Azinphos Methyl	00086-50-0
187	58702	Oxydemeton methyl	00301-12-2
192	( <sup>1</sup> )	Organo-tin pesticides	( <sup>1</sup> )
194	104201	Oryzalin	19044-88-3
195	103801	Oxamyl	23135-22-0
196	111601	Oxyfluorfen	42874-03-3
197	111501	Bolstar [Sulprofos]	35400-43-2
198	219900	Sulprofos Oxon	38527-90-1
199	41801	Santox (O-Ethyl O-(p-nitrophenyl) phenylphosphonothioate	02104-64-5
200	41701	Fonofos	00944-22-9
201	47802	Propoxur (o-Isopropylphenylmethylcarbamate)	00114-26-1

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
202	57501	Parathion	00056-38-2
203	108501	Pendimethalin	40487-42-1
204	56502	Pentachloronitrobenzene	00082-68-8
205	63001	Pentachlorophenol	00087-86-5
206	63003	Pentachlorophenol Salts and Esters	00131-52-2
207	108001	Perfluidone	37924-13-3
208	109701	Permethrin	52645-53-1
209	98701	Phenmedipham	13684-63-4
210	64501	Phenothiazine	00092-84-2
211	64103	Phenylphenol	00090-43-7
212	57201	Phorate	00298-02-2
213	97701	Phosalone	02310-17-0
214	18201	Phosphamidon	13171-21-6
215	5101	Picloram	01918-02-1
215	5104	Picloram Salts and Esters	02545-60-0
216	67501	Piperonyl butoxide	00051-03-6
217	69183	PBED (Busan 77) [Poly (oxyethylene (dimethylimino) ethylene (dimethylimino) ethylene dichloride]	31512-74-0

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
218	34803	Busan 85 [Potassium dimethyldithiocarbamate]	00128-03-0
219	102901	Busan 40 [Potassium N-hydroxymethyl-N-methyldithiocarbamate]	51026-28-9
220	39002	KN Methyl [Potassium N-methyldithiocarbamate]	00137-41-7
221	101301	Metasol J26 [Potassium N-(alpha-(nitroethyl) benzyl)-ethylenediamine]	53404-62-9
222	111401	Profenofos	41198-08-7
223	80804	Prometon	01610-18-0
224	80805	Prometryn	07287-19-6
225	97601	Propargite	02312-35-8
226	80808	Propazine	00139-40-2
227	77702	Propionic acid	00079-09-4
228	119301	Propamocarb and Propamocarb HCL	24579-73-5
229	69004	Pyrethrin coils	00121-21-1
230	69001	Pyrethrin I	
231	69002	Pyrethrum (other than pyrethrins)	08003-34-7
232	69006	Pyrethrin II	00121-29-9
233	97801	Resmethrin	10453-86-8
234	58301	Ronnel	00299-84-3
235	71003	Rotenone	00083-79-4

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
236	74801	DEF [S,S,S-Tributyl phosphorotrithioate]	00078-48-8
237	35509	Siduron	01982-49-6
238	82501	Silvex [2-(2,4,5-Trichlorophenoxypropionic acid)]	00093-72-1
238	( <sup>1</sup> )	Silvex Salts and Esters	( <sup>1</sup> )
239	80807	Simazine	00122-34-9
240	103901	Bentazon	25057-89-0
241	34804	Carbam-S [Sodium dimethyldithiocarbamate]	00128-04-1
242	75003	Sodium monofluoroacetate	00062-74-8
243	39003	Vapam [Sodium methyldithiocarbamate]	00137-42-8
244	57101	Sulfoxide	00120-62-7
245	41301	Cycloate	01134-23-2
246	41401	EPTC [S-Ethyl dipropylthiocarbamate]	00759-94-4
247	41402	Molinate	02212-67-1
248	41403	Pebulate	01114-71-2
249	41404	Vernolate	01929-77-7
250	35604	HPTMS [S-(2-Hydroxypropyl) thiomethanesulfonate]	29803-57-4
251	9801	Bensulide	00741-58-2
252	105501	Tebuthiuron	34014-18-1

<b>EPA census code</b>	<b>Pesticide code</b>	<b>Pesticide name</b>	<b>CAS No.</b>
253	59001	Temephos	03383-96-8
254	12701	Terbacil	05902-51-2
255	105001	Terbufos	13071-79-9
256	80814	Terbuthylazine	05915-41-3
257	80813	Terbutryn	00886-50-0
258	63004	Tetrachlorophenol	25167-83-3
258	63007	Tetrachlorophenol Salts and Esters	( <sup>1</sup> )
259	35602	Dazomet	00533-74-4
260	102001	Thiophanate methyl	23564-05-8
261	79801	Thiram	00137-26-8
262	80501	Toxaphene	08001-35-2
263	74901	Merphos [Tributyl phosphorotrithioate]	00150-50-5
264	36101	Trifluralin	01582-09-8
265	86002	Warfarin [3-(a-Acetylbenzyl)-4-hydroxycoumarin]	00081-81-2
265	( <sup>1</sup> )	Warfarin Salts and Esters	( <sup>1</sup> )
266	51705	Zinc MBT [Zinc 2-mercaptobenzothiazolate]	00155-04-4
267	14506	Zineb	12122-67-7
268	34805	Ziram	00137-30-4

EPA census code	Pesticide code	Pesticide name	CAS No.
269	78802	S-(2,3,3-trichloroallyl) diisopropylthiocarbamate	02303-17-5
270	69005	Phenothrin	26002-80-2
271	69003	Tetramethrin	07696-12-0
272	18301	Chloropropham	00101-21-3

Note:

<sup>1</sup> Multiple compounds for active ingredient.

[58 FR 50691, Sept. 28, 1993]

**Table 2 to Part 455 - Organic Pesticide Active Ingredient Effluent Limitations Best Available Technology Economically Achievable (BAT) and Pretreatment Standards for Existing Sources (PSES)**

Pesticide	kg/kg (lb/1,000 lb) Pounds of pollutant per 1000 lbs. product		Notes
	Daily maximum shall not exceed	Monthly average shall not exceed	
2,4-D	$1.97 \times 10^{-3}$	$6.40 \times 10^{-4}$	
2,4-D Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
2,4-DB Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
Acephate	$6.39 \times 10^{-4}$	$1.97 \times 10^{-4}$	
Acifluorfen	2.45	$9.3 \times 10^{-1}$	
Alachlor	$5.19 \times 10^{-3}$	$1.54 \times 10^{-3}$	
Aldicarb	$7.23 \times 10^{-4}$	$3.12 \times 10^{-4}$	
Ametryn	$7.72 \times 10^{-3}$	$2.53 \times 10^{-3}$	
Atrazine	$5.12 \times 10^{-3}$	$1.72 \times 10^{-3}$	
Azinphos Methyl	$2.74 \times 10^{-2}$	$1.41 \times 10^{-2}$	
Benfluralin	$3.22 \times 10^{-4}$	$1.09 \times 10^{-4}$	1
Benomyl and Carbendazim	$3.50 \times 10^{-2}$	$8.94 \times 10^{-3}$	2
Bolstar	$1.69 \times 10^{-2}$	$8.72 \times 10^{-3}$	

Pesticide	kg/kg (lb/1,000 lb) Pounds of pollutant per 1000 lbs. product		Notes
	Daily maximum shall not exceed	Monthly average shall not exceed	
Bromacil	$3.83 \times 10^{-1}$	$1.16 \times 10^{-1}$	
Bromacil, lithium	( <sup>1</sup> )	( <sup>1</sup> )	
Bromoxynil	$3.95 \times 10^{-3}$	$1.27 \times 10^{-3}$	
Bromoxynil octanoate	$3.95 \times 10^{-3}$	$1.27 \times 10^{-3}$	
Busan 40 [Potassium N-hydroxymethyl -N-methyldithiocarbamate]	$5.74 \times 10^{-3}$	$1.87 \times 10^{-3}$	
Busan 85 [Potassium dimethyldithiocarbamate]	$5.74 \times 10^{-3}$	$1.87 \times 10^{-3}$	
Butachlor	$5.19 \times 10^{-3}$	$1.54 \times 10^{-3}$	
Captafol	$4.24 \times 10^{-6}$	$1.31 \times 10^{-6}$	
Carbam-S [Sodium dimethyldithiocarbamate]	$5.74 \times 10^{-3}$	$1.87 \times 10^{-3}$	
Carbaryl	$1.6 \times 10^{-3}$	$7.3 \times 10^{-4}$	
Carbofuran	$1.18 \times 10^{-4}$	$2.80 \times 10^{-5}$	
Chloroneb	$8.16 \times 10^{-2}$	$3.31 \times 10^{-2}$	
Chlorothalonil	$1.51 \times 10^{-3}$	$4.57 \times 10^{-4}$	
Chlorpyrifos	$8.25 \times 10^{-4}$	$2.43 \times 10^{-4}$	
Cyanazine	$1.03 \times 10^{-2}$	$3.33 \times 10^{-3}$	
Dazomet	$5.74 \times 10^{-3}$	$1.87 \times 10^{-3}$	
DCPA	$7.79 \times 10^{-2}$	$2.64 \times 10^{-2}$	
DEF [S,S,S-Tributyl phosphorotrithioate]	$1.15 \times 10^{-2}$	$5.58 \times 10^{-3}$	
Diazinon	$2.82 \times 10^{-3}$	$1.12 \times 10^{-3}$	
Dichlorprop Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
Dichlorvos	$9.6 \times 10^{-5}$	$2.95 \times 10^{-5}$	
Dinoseb	4.73	1.43	
Dioxathion	$3.40 \times 10^{-2}$	$1.29 \times 10^{-2}$	
Disulfoton	$7.33 \times 10^{-3}$	$3.79 \times 10^{-3}$	
Diuron	$3.15 \times 10^{-2}$	$1.4 \times 10^{-2}$	
Endothall Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	



Pesticide	kg/kg (lb/1,000 lb) Pounds of pollutant per 1000 lbs. product		Notes
	Daily maximum shall not exceed	Monthly average shall not exceed	
Endrin	$2.2 \times 10^{-2}$	$5.1 \times 10^{-3}$	
Ethalfuralin	$3.22 \times 10^{-4}$	$1.09 \times 10^{-4}$	1
Ethion	$5.51 \times 10^{-3}$	$1.57 \times 10^{-3}$	
Fenarimol	$1.02 \times 10^{-1}$	$3.61 \times 10^{-2}$	
Fensulfothion	$1.48 \times 10^{-2}$	$7.64 \times 10^{-3}$	
Fenthion	$1.83 \times 10^{-2}$	$9.45 \times 10^{-3}$	
Fenvalerate	$5.40 \times 10^{-3}$	$2.08 \times 10^{-3}$	
Heptachlor	$8.8 \times 10^{-3}$	$2.9 \times 10^{-3}$	
Isopropalin	$7.06 \times 10^{-3}$	$2.49 \times 10^{-3}$	1
KN Methyl [Potassium N-methyldithiocarbamate]	$5.74 \times 10^{-3}$	$1.87 \times 10^{-3}$	
Linuron	$2.69 \times 10^{-3}$	$1.94 \times 10^{-3}$	
Malathion	$2.35 \times 10^{-4}$	$9.55 \times 10^{-5}$	
MCPA Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
MCPP Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
Merphos	$1.15 \times 10^{-2}$	$5.58 \times 10^{-3}$	
Methamidophos	$1.46 \times 10^{-2}$	$7.53 \times 10^{-3}$	
Methomyl	$3.82 \times 10^{-3}$	$1.76 \times 10^{-3}$	
Methoxychlor	$3.23 \times 10^{-3}$	$1.31 \times 10^{-3}$	
Metribuzin	$1.36 \times 10^{-2}$	$7.04 \times 10^{-3}$	
Mevinphos	$1.44 \times 10^{-4}$	$5.10 \times 10^{-5}$	
Nabam	$5.74 \times 10^{-3}$	$1.87 \times 10^{-3}$	
Nabonate	$5.74 \times 10^{-3}$	$1.87 \times 10^{-3}$	
Naled	( <sup>1</sup> )	( <sup>1</sup> )	
Norflurazon	$7.20 \times 10^{-4}$	$3.10 \times 10^{-4}$	
Organo-tin pesticides	$1.72 \times 10^{-2}$	$7.42 \times 10^{-3}$	3
Parathion	$7.72 \times 10^{-4}$	$3.43 \times 10^{-4}$	

Pesticide	kg/kg (lb/1,000 lb) Pounds of pollutant per 1000 lbs. product		Notes
	Daily maximum shall not exceed	Monthly average shall not exceed	
Parathion methyl	$7.72 \times 10^{-4}$	$3.43 \times 10^{-4}$	
PCNB	$5.75 \times 10^{-4}$	$1.90 \times 10^{-4}$	
Pendimethalin	$1.30 \times 10^{-2}$	$3.99 \times 10^{-3}$	
Permethrin	$2.32 \times 10^{-4}$	$6.06 \times 10^{-5}$	
Phorate	$3.12 \times 10^{-4}$	$9.37 \times 10^{-5}$	
Phosmet	( <sup>1</sup> )	( <sup>1</sup> )	4
Prometon	$7.72 \times 10^{-3}$	$2.53 \times 10^{-3}$	
Prometryn	$7.72 \times 10^{-3}$	$2.53 \times 10^{-3}$	
Pronamide	$6.64 \times 10^{-4}$	$2.01 \times 10^{-4}$	
Propachlor	$5.19 \times 10^{-3}$	$1.54 \times 10^{-3}$	
Propanil	$1.06 \times 10^{-3}$	$4.84 \times 10^{-4}$	
Propazine	$7.72 \times 10^{-3}$	$2.53 \times 10^{-3}$	
Pyrethrin I and Pyrethrin II	$1.24 \times 10^{-2}$	$3.33 \times 10^{-3}$	
Simazine	$7.72 \times 10^{-3}$	$2.53 \times 10^{-3}$	
Stirofos	$4.10 \times 10^{-3}$	$1.35 \times 10^{-3}$	
TCMTB	$3.89 \times 10^{-3}$	$1.05 \times 10^{-3}$	
Tebuthiuron	$9.78 \times 10^{-2}$	$3.40 \times 10^{-2}$	
Terbacil	$3.83 \times 10^{-1}$	$1.16 \times 10^{-1}$	
Terbufos	$4.92 \times 10^{-4}$	$1.26 \times 10^{-4}$	
Terbuthylazine	$7.72 \times 10^{-3}$	$2.53 \times 10^{-3}$	
Terbutryn	$7.72 \times 10^{-3}$	$2.53 \times 10^{-3}$	
Toxaphene	$1.02 \times 10^{-2}$	$3.71 \times 10^{-3}$	
Triadimefon	$6.52 \times 10^{-2}$	$3.41 \times 10^{-2}$	
Trifluralin	$3.22 \times 10^{-4}$	$1.09 \times 10^{-4}$	1
Vapam [Sodium methyldithiocarbamate]	$5.74 \times 10^{-3}$	$1.87 \times 10^{-3}$	
Ziram [Zinc dimethyldithiocarbamate]	$5.74 \times 10^{-3}$	$1.87 \times 10^{-3}$	

<sup>1</sup> No discharge of process wastewater pollutants.

## Notes:

1 Monitor and report as total Trifluralin.

2 Pounds of product include Benomyl and any Carbendazim production not converted to Benomyl.

3 Monitor and report as total tin.

4 Applies to purification by recrystallization portion of the process.

[58 FR 50695, Sept. 28, 1993, as amended at 63 FR 39443, July 22, 1998]

**Table 3 to Part 455 - Organic Pesticide Active Ingredient New Source Performance Standards (NSPS) and Pretreatment Standards for New Sources (PSNS)**

Pesticide	kg/kg (lb/1,000 lb) pounds of pollutant per 1000 lbs product		Notes
	Daily maximum shall not exceed	Monthly average shall not exceed	
2,4-D	$1.42 \times 10^{-3}$	$4.61 \times 10^{-4}$	
2,4-D Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
2,4-DB Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
Acephate	$6.39 \times 10^{-4}$	$1.97 \times 10^{-4}$	
Acifluorfen	1.77	$6.69 \times 10^{-1}$	
Alachlor	$3.74 \times 10^{-3}$	$1.11 \times 10^{-3}$	
Aldicarb	$5.21 \times 10^{-4}$	$2.25 \times 10^{-4}$	
Ametryn	$5.56 \times 10^{-3}$	$1.82 \times 10^{-3}$	
Atrazine	$3.69 \times 10^{-3}$	$1.24 \times 10^{-3}$	
Benfluralin	$3.22 \times 10^{-4}$	$1.09 \times 10^{-4}$	1
Benomyl and Carbendazom	$2.52 \times 10^{-2}$	$6.44 \times 10^{-3}$	2
Bolstar	$1.22 \times 10^{-2}$	$6.28 \times 10^{-3}$	
Bromacil	$2.76 \times 10^{-1}$	$8.36 \times 10^{-2}$	
Bromacil, lithium	( <sup>1</sup> )	( <sup>1</sup> )	
Bromoxynil	$2.84 \times 10^{-3}$	$9.14 \times 10^{-4}$	
Bromoxynil Octanoate	$2.84 \times 10^{-3}$	$9.14 \times 10^{-4}$	
Busan 40 [Potassium N-hydroxymethyl-N-methyldithiocarbamate]	$4.14 \times 10^{-3}$	$1.35 \times 10^{-3}$	
Busan 85 [Potassium dimethyldithiocarbamate]	$4.14 \times 10^{-3}$	$1.35 \times 10^{-3}$	

Pesticide	kg/kg (lb/1,000 lb) pounds of pollutant per 1000 lbs product		Notes
	Daily maximum shall not exceed	Monthly average shall not exceed	
Butachlor	$3.74 \times 10^{-3}$	$1.11 \times 10^{-3}$	
Captafol	$4.24 \times 10^{-6}$	$1.31 \times 10^{-6}$	
Carbam-S [Sodium dimethyldithiocarbamate]	$4.14 \times 10^{-3}$	$1.35 \times 10^{-3}$	
Carbaryl	$1.18 \times 10^{-3}$	$5.24 \times 10^{-4}$	
Carbofuran	$1.18 \times 10^{-4}$	$2.80 \times 10^{-5}$	
Chloroneb	$5.87 \times 10^{-2}$	$2.39 \times 10^{-2}$	
Chlorothalonil	$1.09 \times 10^{-3}$	$3.29 \times 10^{-4}$	
Chlorpyrifos	$5.94 \times 10^{-4}$	$1.75 \times 10^{-4}$	
Cyanazine	$7.42 \times 10^{-3}$	$2.40 \times 10^{-3}$	
Dazomet	$4.14 \times 10^{-3}$	$1.35 \times 10^{-3}$	
DCPA	$5.61 \times 10^{-2}$	$1.90 \times 10^{-2}$	
DEF [S,S,S-Tributyl phosphorotrithioate]	$1.15 \times 10^{-2}$	$5.58 \times 10^{-3}$	
Diazinon	$2.05 \times 10^{-3}$	$8.13 \times 10^{-4}$	
Dichlorprop Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
Dichlorvos	$6.88 \times 10^{-5}$	$2.13 \times 10^{-5}$	
Dinoseb	3.41	1.03	
Dioxathion	$2.54 \times 10^{-2}$	$9.31 \times 10^{-3}$	
Disulfoton	$5.28 \times 10^{-3}$	$2.72 \times 10^{-3}$	
Diuron	$2.27 \times 10^{-2}$	$1.01 \times 10^{-2}$	
Endothall Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
Endrin	$1.57 \times 10^{-2}$	$3.69 \times 10^{-3}$	
Ethalfuralin	$3.22 \times 10^{-4}$	$1.09 \times 10^{-4}$	1
Ethion	$3.97 \times 10^{-3}$	$1.33 \times 10^{-3}$	
Fenarimol	$1.02 \times 10^{-1}$	$3.61 \times 10^{-2}$	
Fensulfothion	$1.06 \times 10^{-2}$	$5.50 \times 10^{-3}$	
Fenthion	$1.32 \times 10^{-2}$	$6.79 \times 10^{-3}$	
Fenvalerate	$3.91 \times 10^{-3}$	$1.50 \times 10^{-3}$	

Pesticide	kg/kg (lb/1,000 lb) pounds of pollutant per 1000 lbs product		Notes
	Daily maximum shall not exceed	Monthly average shall not exceed	
Guthion	$1.97 \times 10^{-2}$	$1.02 \times 10^{-2}$	
Heptachlor	$6.31 \times 10^{-3}$	$2.06 \times 10^{-3}$	
Isopropalin	$5.07 \times 10^{-3}$	$1.82 \times 10^{-3}$	
KN Methyl [Potassium N-methyldithiocarbamate]	$4.14 \times 10^{-3}$	$1.35 \times 10^{-3}$	
Linuron	$1.94 \times 10^{-3}$	$1.40 \times 10^{-3}$	
Malathion	$1.69 \times 10^{-4}$	$6.88 \times 10^{-5}$	
MCPA Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
MCPP Salts and Esters	( <sup>1</sup> )	( <sup>1</sup> )	
Merphos	$1.15 \times 10^{-2}$	$5.58 \times 10^{-3}$	
Methamidophos	$1.05 \times 10^{-2}$	$5.42 \times 10^{-3}$	
Methomyl	$2.75 \times 10^{-3}$	$1.27 \times 10^{-3}$	
Methoxychlor	$2.34 \times 10^{-3}$	$9.25 \times 10^{-4}$	
Metribuzin	$9.80 \times 10^{-3}$	$5.06 \times 10^{-3}$	
Mevinphos	$1.03 \times 10^{-4}$	$3.69 \times 10^{-5}$	
Nabam	$4.14 \times 10^{-3}$	$1.35 \times 10^{-3}$	
Nabonate	$4.14 \times 10^{-3}$	$1.35 \times 10^{-3}$	
Naled	( <sup>1</sup> )	( <sup>1</sup> )	
Norflurazon	$7.20 \times 10^{-4}$	$3.10 \times 10^{-4}$	
Organo-tin pesticides	$1.25 \times 10^{-2}$	$5.36 \times 10^{-3}$	3
Parathion Ethyl	$5.56 \times 10^{-4}$	$2.45 \times 10^{-4}$	
Parathion Methyl	$5.56 \times 10^{-4}$	$2.45 \times 10^{-4}$	
PCNB	$4.16 \times 10^{-4}$	$1.38 \times 10^{-4}$	
Pendimethalin	$1.30 \times 10^{-2}$	$3.99 \times 10^{-3}$	
Permethrin	$1.68 \times 10^{-4}$	$4.39 \times 10^{-5}$	
Phorate	$3.12 \times 10^{-4}$	$9.37 \times 10^{-5}$	
Phosmet	( <sup>1</sup> )	( <sup>1</sup> )	4

Pesticide	kg/kg (lb/1,000 lb) pounds of pollutant per 1000 lbs product		Notes
	Daily maximum shall not exceed	Monthly average shall not exceed	
Prometon	$5.56 \times 10^{-3}$	$1.82 \times 10^{-3}$	
Prometryn	$5.56 \times 10^{-3}$	$1.82 \times 10^{-3}$	
Pronamide	$4.78 \times 10^{-4}$	$1.45 \times 10^{-4}$	
Propachlor	$3.74 \times 10^{-3}$	$1.11 \times 10^{-3}$	
Propanil	$7.63 \times 10^{-4}$	$3.48 \times 10^{-4}$	
Propazine	$5.56 \times 10^{-3}$	$1.82 \times 10^{-3}$	
Pyrethrin I and Pyrethrin II	$8.91 \times 10^{-3}$	$2.40 \times 10^{-3}$	
Simazine	$5.89 \times 10^{-3}$	$1.91 \times 10^{-3}$	
Stirofos	$2.95 \times 10^{-3}$	$9.72 \times 10^{-4}$	
TCMTB	$2.80 \times 10^{-9}$	$7.54 \times 10^{-4}$	
Tebuthiuron	$9.78 \times 10^{-2}$	$3.41 \times 10^{-2}$	
Terbacil	$2.76 \times 10^{-1}$	$8.36 \times 10^{-2}$	
Terbufos	$4.92 \times 10^{-4}$	$1.26 \times 10^{-4}$	
Terbuthylazine	$5.56 \times 10^{-3}$	$1.82 \times 10^{-3}$	
Terbutryn	$5.56 \times 10^{-3}$	$1.82 \times 10^{-3}$	
Toxaphene	$7.35 \times 10^{-3}$	$2.67 \times 10^{-3}$	
Triadimefon	$4.69 \times 10^{-2}$	$2.46 \times 10^{-2}$	
Trifluralin	$3.22 \times 10^{-4}$	$1.09 \times 10^{-4}$	1
Vapam [Sodium methyldithiocarbamate]	$4.14 \times 10^{-3}$	$1.35 \times 10^{-3}$	
Ziram [Zinc dimethyldithiocarbamate]	$4.14 \times 10^{-3}$	$1.35 \times 10^{-3}$	

<sup>1</sup> No discharge of process wastewater pollutants.

Notes:

1 Monitor and report as total Trifluralin.

2 Pounds of product shall include Benomyl and any Carbendazim production not converted to Benomyl.

3 Monitor and report as total tin.

4 Applies to purification by recrystallization portion of the process.

[58 FR 50696, Sept. 28, 1993, as amended at 63 FR 39443, July 22, 1998]

**Table 4 to Part 455 - BAT and NSPS Effluent Limitations for Priority Pollutants for Direct Discharge Point Sources That use End-of-Pipe Biological Treatment**

[Micrograms per liter (µg/l)]

<b>Pollutant</b>	<b>Daily maximum shall not exceed</b>	<b>Monthly average shall not exceed</b>
1,1-Dichloroethylene	25	16
1,1,1-Trichloroethane	54	21
1,2-Dichloroethane	211	68
1,2-Dichloropropane	230	153
1,2-Dichlorobenzene	163	77
1,2-trans-Dichloroethylene	54	21
1,3-Dichloropropene	44	29
1,4-Dichlorobenzene	28	15
2-chlorophenol	98	31
2,4-Dichlorophenol	112	39
2,4-Dimethylphenol	36	18
Benzene	136	37
Bromodichloromethane	380	142
Bromomethane	380	142
Chlorobenzene	28	15
Chloromethane	190	86
Cyanide (Total)	640	220
Dibromochloromethane	794	196
Dichloromethane	89	40
Ethylbenzene	108	32
Lead (Total)	690	320
Naphthalene	59	22
Phenol	26	15
Tetrachloroethylene	56	22
Tetrachloromethane	38	18
Toluene	80	26

Pollutant	Daily maximum shall not exceed	Monthly average shall not exceed
Tribromomethane	794	196
Trichloromethane	46	21

[58 FR 50698, Sept. 28, 1993]

**Table 5 to Part 455 - BAT and NSPS Effluent Limitations for Priority Pollutants for Direct Discharge Point Sources That Do Not Use End-of-Pipe Biological Treatment**

[Micrograms per liter (µg/l)]

Pollutant	Daily maximum shall not exceed	Monthly average shall not exceed
1,1-Dichloroethylene	60	22
1,1,1-Trichloroethane	59	22
1,2-trans-Dichloroethylene	66	25
1,2-Dichlorobenzene	794	196
1,2-Dichloropropane	794	196
1,2-Dichloroethane	574	180
1,3-Dichloropropene	794	196
1,4-Dichlorobenzene	380	142
2,4-Dimethylphenol	47	19
Benzene	134	57
Bromodichloromethane	380	142
Bromomethane	380	142
Chlorobenzene	380	142
Chloromethane	295	110
Cyanide (Total)	640	220
Dibromochloromethane	794	196
Dichloromethane	170	36
Ethylbenzene	380	142
Lead (Total)	690	320
Naphthalene	47	19
Phenol	47	19
Tetrachloroethylene	164	52



Pollutant	Daily maximum shall not exceed	Monthly average shall not exceed
Tetrachloromethane	380	142
Toluene	74	28
Tribromomethane	794	196
Trichloromethane	325	111

[58 FR 50698, Sept. 28, 1993]

**Table 6 to Part 455 - PSES and PSNS for Priority Pollutants**

[Micrograms per liter (µg/l)]

Pollutant	Daily maximum shall not exceed	Monthly maximum shall not exceed
1,1-Dichloroethylene	60	22
1,1,1-Trichloroethane	59	22
1,2-trans-Dichloroethylene	66	25
1,2-Dichlorobenzene	794	196
1,2-Dichloropropane	794	196
1,2-Dichloroethane	574	180
1,3-Dichloropropene	794	196
1,4-Dichlorobenzene	380	142
Benzene	134	57
Bromodichloromethane	380	142
Bromomethane	380	142
Chlorobenzene	380	142
Chloromethane	295	110
Cyanide (Total)	640	220
Dibromochloromethane	794	196
Dichloromethane	170	36
Ethylbenzene	380	142
Lead (Total)	690	320
Naphthalene	47	19
Tetrachloroethylene	164	52

Pollutant	Daily maximum shall not exceed	Monthly maximum shall not exceed
Tetrachloromethane	380	142
Toluene	74	28
Tribromomethane	794	196
Trichloromethane	325	111

[58 FR 50699, Sept. 28, 1993]

## Table 7 to Part 455 [Reserved]

## Table 8 to Part 455 - List of Pollution Prevention Alternative Practices

A modification to the list of practices on this table that an individual facility must comply with to be eligible for the pollution prevention alternative is allowed with acceptable justification as listed on this table as approved by the permit writer or control authority (using BPJ/BEJ) after submittal by the facility of a request for modification. A modification, for purposes of this table, means that a facility would no longer have to perform a listed practice or would need to comply with a modified practice. However, the modification only applies to the specific practice for which the modification has been justified and to no other listed practices. Facilities are required to thoroughly discuss all modifications in the on-site compliance paperwork as described above in the limitations and standards (§ 455.41(c)).

1. Must use water conservation practices. These practices may include, but are not limited to using: spray nozzles or flow reduction devices on hoses, low volume/high pressure rinsing equipment, floor scrubbing machines, mop(s) and bucket(s), and counter current staged drum rinsing stations.

[Modification allowed when: Rinsing narrow transfer lines or piping where sufficient rinsing is better achieved by flushing with water.]

2. Must practice good housekeeping:

- (a) Perform preventative maintenance on all valves and fittings and repair leaky valves and fittings in a timely manner;
- (b) Use drip pans under any valves or fittings where hoses or lines are routinely connected and disconnected, collect for reuse when possible; and
- (c) Perform quick cleanup of leaks and spills in outdoor bulk storage or process areas.

3. Must sweep or vacuum dry production areas prior to rinsing with water.

4. Must clean interiors of dry formulation equipment with dry carrier prior to any water rinse. The carrier material must be stored and reused in future formulation of the same or compatible product or properly disposed of as solid waste.

5. If operating continuous overflow Department of Transportation (DOT) aerosol leak test baths - >

Must operate with some recirculation.

6. If operating air pollution control wet scrubbers - >

Must operate as recirculating scrubbers (periodic blowdown is allowed as needed).

[Modification allowed when: Facility demonstrates that they would not be able to meet Resource Conservation Recovery Act or Clean Air Act (CAA) requirements.]

7. When performing rinsing of raw material drums, storage drums, and/or shipping containers that contained liquid PAI(s) and/or inert ingredients for the formulation of water-based products - >

Must reuse the drum/shipping container rinsate DIRECTLY into the formulation at the time of formulation; or store for use in future formulation of same or compatible product; or use a staged drum rinsing station (counter current rinsing).

[Modification allowed when: the drum/shipping container holds inert ingredient(s) only and (1) the facility can demonstrate that, after using water conservation practices, the large concentration of inert ingredient in the formulation creates more volume than could feasibly be reused; or (2) the facility can demonstrate that the concentration of the inert in the formulation is so small that the reuse would cause a formulation to exceed the ranges allowed in the Confidential Statement of Formula (CSF) (40 CFR 158.155).]

8. When performing rinsing of raw material drums, storage drums, and/or shipping containers that contained liquid PAI(s) and/or inert ingredients for the formulation of solvent-based products - >

Must reuse the drum/shipping container rinsate DIRECTLY into the formulation at the time of formulation or store for use in future formulation of same or compatible product.

[Modification allowed when:

- (a) The drum/shipping container holds inert ingredient(s) only and:
  - (1) The facility can demonstrate that, after using water conservation practices, the large concentration of inert ingredient in the formulation creates more volume than could feasibly be reused; or
  - (2) the facility can demonstrate that the concentration of the inert in the formulation is so small that the reuse would cause a formulation to exceed the ranges allowed in the Confidential Statement of Formula (CSF) (40 CFR 158.155);  
or
- (b) Drums/shipping containers are going to a drum refurbisher/recycler who will only accept drums rinsed with water.]

9. Must dedicate PFPR production equipment by water-based versus solvent-based products. Dedicated solvent-based or water-based equipment may be used on a non-routine basis for non-dedicated operations; however the facility may not discharge the solvent/aqueous changeover rinsate as part of their P2 allowable discharge (*i.e.*, the facility must achieve zero discharge of those process wastewater pollutants).

[Modification allowed when: Facility has installed and is using a solvent recovery system for the changeover rinsate (can also be used for other solvent recovery).]

10. Must store the rinsate from interior rinsing (does not include drum/shipping container rinsate) for reuse in future formulation of same or compatible product.

[Modification allowed when:

- (a) Facility has evidence of biological growth or other product deterioration over a typical storage period;
- (b) Facility has space limitations, BUT must still store rinsates for most frequently produced products;
- (c) Manufacturer (or formulator contracting for toll formulating) has directed otherwise (*i.e.*, send back to them or send for off-site disposal);
- (d) Facility is dropping registration or production of the formulation and there is no compatible formulation for reuse of the rinsates or facility can provide reasonable explanation of why it does not anticipate formulation of same or compatible formulation within the next 12 months;
- (e) Facility only performs packaging of the pesticide product from which interior rinsate is generated; or
- (f) Facility has demonstrated that it must use a detergent to clean the equipment.]

## Notes

**For indirect dischargers:** After following the practices above, some wastewaters may require pretreatment prior to discharge to POTWs. See definition of pollution prevention allowable discharge for indirect dischargers (§ 455.41(d)).

**For direct dischargers:** After following the practices above, all wastewaters require treatment prior to discharge directly to the nation's waters. See definition of pollution prevention allowable discharge for direct dischargers (§ 455.41(e)).

**Additional information and guidance** on implementing these P2 practices as well as evaluating compliance with these practices will be available in a P2 Guidance Manual for the PFPR Industry.

[61 FR 57553, Nov. 6, 1996]

**Table 9 to Part 455 - Group 2 Mixtures**

Shaughnessey code	Chemical name <sup>1</sup>
002201	Sabadilla alkaloids.
006501	Aromatic petroleum derivative solvent.
006602	Heavy aromatic naphtha.
016601 <sup>2</sup>	Dry ice.
022003	Coal tar.
025001	Coal tar neutral oils.
025003	Creosote oil (Note: Derived from any source).
025004	Coal tar creosote.
031801	Ammonium salts of C8-18 and C18' fatty acids.
055601	BNOA.
063501	Kerosene.
063502	Mineral oil - includes paraffin oil from 063503.
063503	Petroleum distillate, oils, solvent, or hydrocarbons; also p.
063506	Mineral spirits.
067003	Terpineols (unspec.).
067205	Pine tar oil.
067207	Ester gum.
067302	Amines, N-coco alkyltrimethylenedi-, acetates.
069152	Amines, coco alkyl, hydrochlorides.
070801	Red Squill glycoside.
071004	Cube Resins other than rotenone.
071501	Ryania speciosa, powdered stems of.
072602 <sup>2</sup>	Silica gel.
072605 <sup>2</sup>	Silicon dioxide.

Shaughnessey code	Chemical name <sup>1</sup>
079014	Turkey red oil.
079021	Potassium salts of fatty acids.
079029	Fatty alcohols (52-61% C10, 39-46% C8, 0-3% C6, 0-3% C12).
079034	Methyl esters of fatty acids (100% C8-C12)
079059	Fatty alcohols (54.5% C10, 45.1% C8, 0.4% C6)
086803	Xylene range aromatic solvent
107302	Polyhedral inclusion bodies of Douglas fir tussock moth nucl.
107303	Polyhedral inclusion bodies of gypsy moth nucleopolyhedrosis.
107304	Polyhedral inclusion bodies of n. sertifer
116902	Gibberellin A4 mixt. with Gibberellin A7.
117001	Nosema locustae.
128888	Lactofen (ANSI).
128934 <sup>2</sup>	Nitrogen, liquid.
129029	Bergamot Oil.
224600	Diethanolamides of the fatty acids of coconut oil (coded 079).
505200	Isoparaffinic hydrocarbons.

<sup>1</sup> Shaughnessey codes and chemical names are taken directly from the FATES database. Several chemical names are truncated because the chemical names listed in the FATES database are limited to 60 characters.

<sup>2</sup> EPA does not believe this PAI will persist in sanitary streams long enough to reach a POTW.

[61 FR 57554, Nov. 6, 1996]

### Table 10 to Part 455 - List of Appropriate Pollution Control Technologies

This table contains those pollutant control technologies, such as hydrolysis, chemical oxidation, precipitation and activated carbon adsorption, which have been used for estimating compliance costs on a PAI specific basis. In general, these treatment technologies have been determined to be effective in treating pesticide containing wastewaters in literature, in bench or pilot scale treatability studies or in the Pesticide Manufacturing effluent guidelines. These are the same technologies that are presented as part of the Universal Treatment System. However, these technologies are PAI specific and may need to be used in conjunction with one another to provide treatment for all PAIs used at a facility over a period of time. In addition, facilities may experience difficulties treating wastewaters that contain emulsions, therefore, "appropriate" treatment for emulsified wastewaters must include an emulsion breaking step. For PAIs whose technology is listed as "Pollution Prevention", the permitting authority/control authority can determine if additional treatment is necessary through best professional judgement/best engineering judgement, respectively.

#### List of Appropriate Pollution Control Technologies<sup>1</sup>

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessey code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
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PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Dicofol	001	10501	DDT	Hydrolysis.
Maleic Hydrazide	002	51501	Hydrazide	Activated Carbon.
EDB	003	42002	EDB	Activated Carbon.
Vancide TH	004	82901	s-Triazine	Activated Carbon.
1,3-Dichloropropene	005	29001	EDB	Hydrolysis.
Thenarsazine Oxide	006	12601	Organoarsenic	Precipitation.
Dowicil 75	007	17901	NR4	Activated Carbon.
Triadimefon	008	109901	s-Triazine	Activated Carbon.
Hexachlorophene	009	44901	Chlorophene	Activated Carbon.
Tetrachlorophene	010		Chlorophene	Activated Carbon.
Dichlorophene	011	55001	Chlorophene	Activated Carbon.
Dichlorvos	012	84001	Phosphate	Hydrolysis.
Landrin-2	013		Carbamate	Activated Carbon.
2,3,6-T, S&E or Fenac	014	82605	2,4-D	Activated Carbon.
2,4,5-T and 2,4,5-T, S&E	015	(*)	2,4-D	Activated Carbon.
2,4-D (2,4-D, S&E)	016	(*)	2,4-D	Chemical Oxidation.
2,4-DB, S&E	017	(*)	2,4-D	Activated Carbon.
Dyrene or Anilazine	018	80811	s-Triazine	Activated Carbon.
Dinocap	019	36001	Phenylcrotonate	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Dichloran or DCNA	020	31301	Aryl Halide	Activated Carbon.
Busan 90	021	8707	Miscellaneous Organic	Activated Carbon.
Mevinphos	022	15801	Phosphate	Hydrolysis.
Sulfallate	023		Dithiocarbamate	Activated Carbon.
Chlorfenvinphos	024	84101	Phosphate	Activated Carbon.
Cyanazine or Bladex	025	100101	s-Triazine	Activated Carbon.
Propachlor	026	19101	Acetanilide	Activated Carbon.
MCPA, S&E	027	(*)	2,4-D	Activated Carbon.
Octhilinone	028	99901	Heterocyclic	Activated Carbon.
Pindone	029	67703	Miscellaneous Organic	Activated Carbon.
Dichlorprop, S&E	030	(*)	2,4-D	Activated Carbon.
MCPP, S&E or Mecoprop	031	(*)	2,4-D	Activated Carbon.
Thiabendazole	032	60101	Heterocyclic	Activated Carbon.
Belclene 310	033	80815	s-Triazine	Activated Carbon.
Chlorprop, S&E	034	21202	2,4-D	Activated Carbon.
Busan 72 or TCMTB	035	35603	Heterocyclic	Hydrolysis.
Chlorophacinone	037	67707	Miscellaneous Organic	Activated Carbon.
Landrin-1	038		Carbamate	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Pronamide	039	101701	Chlorobenzamide	Activated Carbon.
Methiocarb or Mesurol	040	100501	Carbamate	Hydrolysis.
Propanil	041	28201	Chloropropionanilide	Activated Carbon.
Polyphase <sup>6</sup>	042	107801	Carbamate	Activated Carbon.
Coumafuryl or Fumarin	043	86001	Coumarin	Activated Carbon.
DNOC	044		Phenol	Activated Carbon.
Metribuzin	045	101101	Triazathione	Activated Carbon.
CPA, S&E	046	(*)	2,4-D	Activated Carbon.
MCPB, S&E	047	19202	2,4-D	Activated Carbon.
Aminocarb	048		Carbamate	Hydrolysis.
Etridiazole	049	84701	Heterocyclic	Activated Carbon.
Ethoxyquin	050	55501	Quinolin	Activated Carbon.
Acephate or Orthene	052	103301	Phosphoroamidothioate	Activated Carbon.
Acifluorfen	053	114402	Benzoic Acid	Activated Carbon.
Alachlor	054	90501	Acetanilide	Activated Carbon.
Aldicarb	055	98301	Carbamate	Hydrolysis.
Allethrin	057	(*)	Pyrethrin	Activated Carbon.
Ametryn	058	80801	s-Triazine	Activated Carbon.
Amitraz	059	106201	Iminamide	Activated Carbon.



PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Atrazine	060	80803	s-Triazine	Hydrolysis.
Bendiocarb	061	105201	Carbamate	Hydrolysis.
Benomyl	062	99101	Carbamate	Hydrolysis.
BHC	063		Lindane	Hydrolysis.
Benzyl Benzoate	064	9501	Ester	Activated Carbon.
Lethane 60	065		Thiocyanate	Activated Carbon.
Bifenox	066	104301	Nitrobenzoate	Activated Carbon.
Biphenyl	067	17002	Aryl	Activated Carbon.
Bromacil (Lithium Salt)	068	(*)	Uracil	Activated Carbon.
Bromoxynil	069	(*)	Benzonitrile	Activated Carbon.
Butachlor	070		Acetanilide	Activated Carbon.
Giv-gard	071	101401	Miscellaneous Organic	Activated Carbon.
Cacodylic Acid	072	(*)	Organoarsenic	Precipitation.
Captafol	073		Phthalimide	Hydrolysis.
Captan	074	81301	Phthalimide	Hydrolysis.
Carbaryl	075	56801	Carbamate	Hydrolysis.
Carbofuran	076	90601	Carbamate	Hydrolysis.
Carbosulfan	077		Carbamate	Activated Carbon.
Chloramben	078	(*)	Benzoic Acid	Activated Carbon.
Chlordane	079	58201	Tricyclic	Activated Carbon.
Chloroneb	080	27301	Aryl Halide	Chemical Oxidation.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Chloropicrin	081	81501	Alkyl Halide	Chemical Oxidation.
Chlorothalonil	082	81901	Chloropropionanilide	Activated Carbon.
Chloroxuron	083		Urea	Activated Carbon.
Stirofos	084	83701	Phosphate	Hydrolysis.
Chlorpyrifos Methyl	085	59102	Phosphorothioate	Hydrolysis.
Chlorpyrifos	086	59101	Phosphorothioate	Chemical Oxidation.
Mancozeb	087	14504	Dithiocarbamate	Activated Carbon.
Bioquin (Copper)	088	24002	Organocopper	Precipitation.
Copper EDTA	089	39105	Organocopper	Precipitation.
Pydrin or Fenvalerate	090	109301	Pyrethrin	Activated Carbon.
Cycloheximide	091		Cyclic Ketone	Activated Carbon.
Dalapon	092	(*)	Alkyl Halide	Activated Carbon.
Dienochlor	093	27501	HCp	Activated Carbon.
Demeton	094		Phosphorothioate	Hydrolysis.
Desmedipham	095	104801	Carbamate	Hydrolysis.
Amobam	096		Miscellaneous Organic	Activated Carbon.
DBCP	097		EDB	Activated Carbon.
Dicamba	098	(*)	Aryl Halide	Activated Carbon.
Dichlone	099	29601	Quinone	Activated Carbon.
Thiophanate Ethyl	100	103401	Carbamate	Hydrolysis.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Perthane	101		DDT	Activated Carbon.
EXD	102		Dithiocarbamate	Activated Carbon.
Diazinon	103	57801	Phosphorothioate	Hydrolysis.
Diflubenzuron	104	108201	Urea	Activated Carbon.
Dimethoate	106	35001	Phosphorodithioate	Hydrolysis.
Parathion Methyl	107	53501	Phosphorothioate	Hydrolysis.
Dicrotophos	108	35201	Phosphate	Activated Carbon.
Crotoxyphos	109	58801	Phosphate	Activated Carbon.
DCPA	110	78701	Aryl Halide	Activated Carbon.
Trichlorofon	111	57901	Phosphonate	Activated Carbon.
Dinoseb	112	37505	Phenol	Activated Carbon.
Dioxathion	113	37801	Phosphorodithioate	Hydrolysis.
Diphacinone	114	67701	Indandione	Activated Carbon.
Diphenamide	115	36601	Acetamide	Activated Carbon.
Diphenylamine	116	38501	Aryl Amine	Activated Carbon.
MGK 326	117	47201	Ester	Activated Carbon.
Nabonate	118	63301	Isocyanate	Chemical Oxidation.
Diuron	119	35505	Urea	Activated Carbon.
Metasol DGH	120	44303	NR4	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Dodine	121	44301	NR4	Activated Carbon.
Endosulfan	122	79401	Tricyclic	Activated Carbon.
Endothall (Endothall S&E)	123	(*)	Bicyclic	Activated Carbon.
Endrin	124	41601	Tricyclic	Activated Carbon.
Ethalfuralin	125	113101	Toluidine	Activated Carbon.
Ethion	126	58401	Phosphorodithioate	Hydrolysis.
Ethoprop	127	41101	Phosphorodithioate	Activated Carbon.
Fenamiphos	128	100601	Phosphoroamidate	Activated Carbon.
Chlorobenzilate	129	28801	Aryl Halide	Activated Carbon.
Butylate	130	41405	Thiocarbamate	Activated Carbon.
Famphur	131		Phosphorothioate	Hydrolysis.
Fenarimol	132	206600	Pyrimidine	Activated Carbon.
Fenthion or Baytex	133	53301	Phosphorothioate	Hydrolysis.
Ferbam	134	34801	Dithiocarbamate	Activated Carbon.
Fluometuron	135	35503	Urea	Activated Carbon.
Fluoroacetamide	136		Acetamide	Activated Carbon.
Folpet	137	81601	Phthalimide	Hydrolysis.
Glyphosate (Glyphosate S&E)	138	(*)	Phosphoroamidate	Chemical Oxidation.
Glyphosine	139		Phosphoroamidate	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Heptachlor	140	44801	Tricyclic	Activated Carbon.
Cycloprate	141		Thiocarbamate	Activated Carbon.
Hexazinone	142	107201	s-Triazine	Activated Carbon.
Isofenphos	143	109401	Phosphoroamidothioate	Activated Carbon.
Isopropalin	144	100201	Toluidine	Activated Carbon.
Propham	145		Carbamate	Hydrolysis.
Karabutilate	146	97401	Carbamate	Hydrolysis.
Lindane	147	9001	Lindane	Activated Carbon.
Linuron	148	35506	Urea	Chemical Oxidation.
Malachite Green	149	39504	NR4	Activated Carbon.
Malathion	150	57701	Phosphorodithioate	Hydrolysis.
Maneb	151	14505	Dithiocarbamate	Activated Carbon.
Manam	152		Dithiocarbamate	Activated Carbon.
Mefluidide	153	114002	Carbamate	Activated Carbon.
Methamidophos	154	101201	Phosphoroamidothioate	Activated Carbon.
Methidathion	155	100301	Phosphorodithioate	Activated Carbon.
Methomyl	156	90301	Carbamate	Hydrolysis.
Methoprene	157	(*)	Ester	Activated Carbon.
Methoxychlor	158	34001	DDT	Hydrolysis.
Methyl Bromide	160	53201	Alkyl Halide	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Monosodium Methyl Arsenate	161	(*)	Organoarsenic	Precipitation.
Nalco D-2303	163	68102	Thiocyanate	Activated Carbon.
Quinomethionate	164	54101	Miscellaneous Organic	Activated Carbon.
Metolachlor	165	108801	Acetanilide	Activated Carbon.
Mexacarbate	166		Carbamate	Hydrolysis.
Metiram	167	14601	Dithiocarbamate	Activated Carbon.
Monuron TCA	168	35502	Urea	Activated Carbon.
Monuron	169	35501	Urea	Activated Carbon.
Napropamide	170	103001	Carbamate	Activated Carbon.
Deet	171	80301	Toluamide	Activated Carbon.
Nabam	172	14503	Dithiocarbamate	Chemical Oxidation.
Naled	173	34401	Phosphate	Hydrolysis.
Norea	174		Urea	Activated Carbon.
Norflurazon	175	105801	Heterocyclic	Activated Carbon.
Naptalam or Neptalam	176	30703	Phthalamide	Activated Carbon.
MGK 264	177	57001	Bicyclic	Activated Carbon.
Benfluralin	178	84301	Toluidine	Activated Carbon.
Sulfotepp	179	79501	Phosphorothioate	Activated Carbon.
Aspon	180		Phosphorothioate	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Coumaphos	181	36501	Phosphorothioate	Hydrolysis.
Fensulfothion	182	32701	Phosphorothioate	Hydrolysis.
Disulfoton	183	32501	Phosphorodithioate	Hydrolysis.
Fenitrothion	184	105901	Phosphorothioate	Hydrolysis.
Phosmet	185	59201	Phosphorodithioate	Hydrolysis.
Azinphos Methyl (Guthion)	186	58001	Phosphorodithioate	Hydrolysis.
Oxydemeton Methyl	187	58702	Phosphorothioate	Activated Carbon.
Organo-Arsenic Pesticides	188		Organoarsenic	Precipitation.
Organo-Cadmium Pesticides	189		Organocadmium	Precipitation
Organo-Copper Pesticides	190	(*)	Organocopper	Precipitation.
Organo-Mercury Pesticides	191	(*)	Organomercury	Precipitation.
Organo-Tin Pesticides	192	(*)	Organotin	Precipitation.
o-Dichlorobenzene	193	59401	Aryl Halide	Activated Carbon.
Oryzalin	194	104201	Sulfanilamide	Activated Carbon.
Oxamyl	195	103801	Carbamate	Hydrolysis.
Oxyfluorfen	196	111601	Miscellaneous Organic	Activated Carbon.
Bolstar	197	111501	Phosphorodithioate	Activated Carbon.
Sulprofos Oxon	198		Phosphorothioate	Hydrolysis.
Santox (EPN)	199	41801	Phosphorodithioate	Hydrolysis.
Fonofos	200	41701	Phosphorodithioate	Hydrolysis.
Propoxur	201	47802	Carbamate	Hydrolysis.
p-Dichlorobenzene	202	61501	Aryl Halide	Activated Carbon.
Parathion Ethyl	203	57501	Phosphorothioate	Hydrolysis.
Pendimethalin	204	108501	Benzeneamine	Activated Carbon.

<b>PAI name<sup>2</sup></b>	<b>PAI code<sup>3</sup></b>	<b>Shaughnessy code<sup>4</sup></b>	<b>Structural group<sup>5</sup></b>	<b>Treatment technology</b>
PCNB	205	56502	Aryl Halide	Activated Carbon.
PCP or Penta	206	(*)	Phenol	Activated Carbon.
Perfluidone	207		Sulfonamide	Activated Carbon.
Permethrin	208	109701	Pyrethrin	Activated Carbon.
Phenmedipham	209	98701	Carbamate	Hydrolysis.
Nemazine	210	64501	Heterocyclic	Activated Carbon.
Phorate	212	57201	Phosphorodithioate	Hydrolysis.
Phosalone	213	97701	Phosphorodithioate	Hydrolysis.
Phosphamidon	214	18201	Phosphate	Hydrolysis.
Picloram	215	(*)	Pyridine	Activated Carbon.
Piperonyl Butoxide	216	67501	Ester	Activated Carbon.
PBED or WSCP (Busan 77)	217	69183	NR4	Activated Carbon.
Busan 85 or Arylane	218	34803	Dithiocarbamate	Chemical Oxidation.
Busan 40	219	102901	Dithiocarbamate	Chemical Oxidation.
KN Methyl	220	39002	Dithiocarbamate	Chemical Oxidation.
Metasol J26	221	101301	Miscellaneous Organic	Activated Carbon.
Profenofos	222	111401	Phosphorothioate	Activated Carbon.
Prometon or Caparol	223	80804	s-Triazine	Chemical Oxidation.
Prometryn	224	80805	s-Triazine	Activated Carbon.



<b>PAI name<sup>2</sup></b>	<b>PAI code<sup>3</sup></b>	<b>Shaughnessy code<sup>4</sup></b>	<b>Structural group<sup>5</sup></b>	<b>Treatment technology</b>
Propargite	225	97601	Miscellaneous Organic	Activated Carbon.
Propazine	226	80808	s-Triazine	Activated Carbon.
Propionic Acid	227	77702	Alkyl Acid	Activated Carbon.
Previcur N	228	119301	Carbamate	Hydrolysis.
Pyrethrin Coils	229	69004	Pyrethrin	Activated Carbon.
Pyrethrum I	230	69001	Pyrethrin	Hydrolysis.
Pyrethrum II	231	69002	Pyrethrin	Hydrolysis.
Pyrethrins	232	(*)	Pyrethrin	Hydrolysis.
Resmethrin	233	(*)	Pyrethrin	Activated Carbon.
Fenchlorphos or Ronnel	234	58301	Phosphorothioate	Hydrolysis.
Mexide or Rotenone	235	71003	Miscellaneous Organic	Activated Carbon.
DEF	236	74801	Phosphorotrithioate	Activated Carbon.
Siduron or Tupersan	237	35509	Urea	Activated Carbon.
Silvex	238	(*)	2,4-D	Activated Carbon.
Simazine	239	80807	s-Triazine	Activated Carbon.
Sodium Bentazon	240	103901	Heterocyclic	Chemical Oxidation.
Carbam-S or Sodam	241	34804	Dithiocarbamate	Chemical Oxidation.
Sodium Fluoroacetate	242	75003	Acetamide	Activated Carbon.
Vapam or Metham Sodium	243	39003	Dithiocarbamate	Chemical Oxidation.
Sulfoxide	244	57101	Miscellaneous Organic	Activated Carbon.

<b>PAI name<sup>2</sup></b>	<b>PAI code<sup>3</sup></b>	<b>Shaughnessy code<sup>4</sup></b>	<b>Structural group<sup>5</sup></b>	<b>Treatment technology</b>
Cycloate or Ro-Neet	245	41301	Thiocarbamate	Activated Carbon.
EPrecipitationC or Eptam	246	41401	Thiocarbamate	Activated Carbon.
Molinate	247	41402	Thiocarbamate	Activated Carbon.
Pebulate or Tillman	248	41403	Thiocarbamate	Activated Carbon.
Vernolate or Vernam	249	41404	Thiocarbamate	Activated Carbon.
HPrecipitationMS	250	35604	Thiosulphonate	Activated Carbon.
Bensulide or Betesan	251	9801	Phosphorodithioate	Activated Carbon.
Tebuthiuron	252	105501	Urea	Activated Carbon.
Temephos	253	59001	Phosphorothioate	Hydrolysis.
Terbacil	254	12701	Uracil	Activated Carbon.
Terbufos or Counter	255	105001	Phosphorodithioate	Activated Carbon.
Terbuthylazine	256	80814	s-Triazine	Activated Carbon.
Terbutryn	257	80813	s-Triazine	Activated Carbon.
Tetrachlorophenol	258	63004	Phenol	Activated Carbon.
Dazomet	259	35602	Heterocyclic	Chemical Oxidation.
Thiophanate Methyl	260	102001	Carbamate	Hydrolysis.
Thiram	261	79801	Dithiocarbamate	Activated Carbon.
Toxaphene	262	80501	Bicyclic	Activated Carbon.
Merphos	263	74901	Phosphorotrithioate	Hydrolysis.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Trifluralin or Treflan	264	36101	Toluidine	Activated Carbon.
Warfarin	265	(*)	Coumarin	Activated Carbon.
Zinc MBT	266	51705	Organozinc	Precipitation.
Zineb	267	14506	Dithiocarbamate	Activated Carbon.
Ziram	268	34805	Dithiocarbamate	Activated Carbon.
Triallate	269	78802	Thiocarbamate	Activated Carbon.
Phenothrin	270	69005	Pyrethrin	Activated Carbon.
Tetramethrin	271	69003	Pyrethrin	Activated Carbon.
Chloropropham	272	18301	Carbamate	Hydrolysis.
<b>Non-272 PAIs</b>				
CFC 11		13	Alkyl Halide	Activated Carbon.
CFC 12		14	Alkyl Halide	Activated Carbon.
Polyethylene		152	Polymer	Activated Carbon.
Acrolein		701	Alcohol	Activated Carbon.
Dimethyl-m-dioxan-4-ol acetate		1001	Heterocyclic	Activated Carbon.
Dodecyl alcohol		1509	Alcohol	Activated Carbon.
Tetradecyl alcohol		1510	Alcohol	Activated Carbon.
Rosin amine D acetate		4201	Alkyl Acid	Activated Carbon.
Dihydroabietylamine acetate		4213	Alkyl Acid	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Amitrole		4401	Heterocyclic	Activated Carbon.
Allyl isothiocyanate		4901	Thiocyanate	Activated Carbon.
AMS		5501	Inorganic	Pollution Prevention.
Calcium sulfate		5602	Inorganic	Pollution Prevention.
Tartar emetic		6201	Inorganic	Pollution Prevention.
Diphenylstibene 2-ethylhexanoate		6202	Aryl	Activated Carbon.
Streptomycin		6306	Heterocyclic	Activated Carbon.
Oxytetracycline hydrochloride		6308	Phthalamide	Activated Carbon.
Streptomycin sesquisulfate		6310	Heterocyclic	Activated Carbon.
Neomycin sulfate		6313	Benzeneamine	Activated Carbon.
Antimycin A		6314	Heterocyclic	Activated Carbon.
Calcium oxytetracycline		6321	Phthalamide	Activated Carbon.
Espesol 3A		6601	Phosphorothioate	Activated Carbon.
Arsenic acid		6801	Metallic	Precipitation.
Arsenic acid anhydride		6802	Metallic	Precipitation.
Arsenous acid anhydride		7001	Metallic	Precipitation.
Copper oxychloride		8001	Metallic	Precipitation.
Basic cupric sulfate		8101	Metallic	Precipitation.
Basic copper III - zinc sulfate complex (Declare copper and		8102	Metallic	Precipitation.
Bromophos		8706	Phosphorothioate	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Benzyl bromoacetate		8710	Benzoic acid	Activated Carbon.
Benzoic acid		9101	Benzoic acid	Activated Carbon.
Benzyl diethyl ((2,6-xylylcarbamoyl)methyl) ammonium benzoate		9106	NR4	Activated Carbon.
Benzyl alcohol		9502	Aryl	Activated Carbon.
3-Chloro-p-toluidine hydrochloride		9901	Chloropropionanilide	Activated Carbon.
Butoxyethoxy)ethyl thiocyanate		10002	Thiocyanate	Activated Carbon.
2-Naphthol		10301	Phenol	Activated Carbon.
Boric acid		11001	Inorganic	Pollution Prevention.
Barium metaborate		11101	Inorganic	Pollution Prevention.
Boron sodium oxide (B8Na2O13), tetrahydrate (12280-03-4)		11103	Inorganic	Pollution Prevention.
Sodium metaborate (NaBO2)		11104	Inorganic	Pollution Prevention.
Boron sodium oxide (B8Na2O13) (12008-41-2)		11107	Inorganic	Pollution Prevention.
Boron sodium oxide (B4Na2O7), pentahydrate (12179-04-3)		11110	Inorganic	Pollution Prevention.
Boron sodium oxide (B4Na2O7) (1330-43-4)		11112	Inorganic	Pollution Prevention.
Polybutene		11402	Polymer	Activated Carbon.
Polyisobutylene		11403	Polymer	Activated Carbon.
Butyl cellosolve		11501	Alcohol	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Butoxypolypropylene glycol		11901	Polymer	Activated Carbon.
Neburon (ANSI)		12001	Chloropropionanilide	Activated Carbon.
Methyltrimethylenedioxy)bis(4-methyl-1,3,2-dioxaborinane)		12401	Bicyclic	Activated Carbon.
Oxybis(4,4,6-trimethyl-1,3,2-dioxaborinane)		12402	Bicyclic	Activated Carbon.
Cadmium chloride		12902	Metallic	Precipitation.
Lead arsenate, basic		13502	Metallic	Precipitation.
Lead arsenate		13503	Metallic	Precipitation.
Sodium arsenate		13505	Metallic	Precipitation.
Sodium arsenite		13603	Metallic	Precipitation.
Potassium bromide		13903	Inorganic	Pollution Prevention.
Camphor		15602	Bicyclic	Activated Carbon.
Carbon disulfide		16401	Inorganic	Pollution Prevention.
Carbon tetrachloride		16501	Alkyl Halide	Activated Carbon.
Barban (ANSI)		17601	Carbamate	Activated Carbon.
Chloro-2-propenyl)-3,5,7, triaza-1-azoniatricyclo(3.3.1.1)sup		17902	Tricyclic	Activated Carbon.
Chlormequat chloride		18101	NR4	Activated Carbon.
Chloromethoxypropylmercuric acetate		18401	Metallic	Precipitation.
Allidochlor		19301	Acetanilide	Activated Carbon.
Chromic acid		21101	Metallic	Precipitation.
Chromic oxide		21103	Metallic	Precipitation.
Cresol (unspec) (Cresylic acid)		22101	Phenol	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Cresol		22102	Phenol	Activated Carbon.
Copper (metallic)		22501	Metallic	Precipitation.
Copper ammonium carbonate		22703	Metallic	Precipitation.
Copper carbonate		22901	Metallic	Precipitation.
Copper hydroxide		23401	Metallic	Precipitation.
Copper chloride hydroxide (Cu <sub>2</sub> Cl(OH) <sub>3</sub> )		23501	Metallic	Precipitation.
Copper oxychloride sulfate		23503	Metallic	Precipitation.
Copper sulfate		24401	Metallic	Precipitation.
Copper (from triethanolamine complex)		24403	Metallic	Precipitation.
Copper as metallic (in the form of chelates of copper citrat)		24405	Metallic	Precipitation.
Copper as elemental from copper - ethylenediamine complex		24407	Metallic	Precipitation.
Copper sulfate (anhydrous)		24408	Metallic	Precipitation.
Copper(I) oxide		25601	Metallic	Precipitation.
Cuprous thiocyanate		25602	Metallic	Precipitation.
Cyclohexane		25901	Aryl	Activated Carbon.
Cyclohexanone		25902	Cyclic Ketone	Activated Carbon.
Dichlobenil		27401	Chloropropionanilide	Activated Carbon.
Diquat dibromide		32201	NR4	Activated Carbon.
Dimethrin (ANSI)		34101	Pyrethrin	Activated Carbon.
Dicapthon		34502	Phosphorothioate	Activated Carbon.
Ziram, cyclohexylamine complex		34806	Dithiocarbamate	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Butyl dimethyltrithioperoxycarbamate		34807	Dithiocarbamate	Activated Carbon.
Daminozide		35101	Acetanilide	Activated Carbon.
Bis(trichloromethyl) sulfone		35601	Miscellaneous Organic	Activated Carbon
Bis(bromoacetoxy)-2-butene		35605	Alkyl Halide	Activated Carbon.
Dazomet, sodium salt		35607	Heterocyclic	Activated Carbon.
Butonate		35701	Phosphonate	Activated Carbon.
Trifluoro-4-nitro-m-cresol(**) = alpha,alpha,alpha-		6201	Phenol	Activated Carbon.
Triethanolamine dinoseb (2-sec-Butyl-4,6-dinitrophenol)		37506	Phenol	Activated Carbon.
Sodium 4,6-dinitro-o-cresylate		37508	Phenol	Activated Carbon.
Dinitrophenol		37509	Phenol	Activated Carbon.
Alkanol* amine dinoseb (2-sec-butyl-4,6-dinitrophenol) *(s		37511	Phenol	Activated Carbon.
Sodium dinoseb (2-sec-Butyl-4,6-dinitrophenol)		37512	Phenol	Activated Carbon.
Nitrilotriacetic acid, trisodium salt		39106	Acetamide	Activated Carbon.
Trisodium(2-hydroxyethyl)ethylene diaminetriacetate		39109	Acetanilide	Activated Carbon.
Ammonium ethylenediaminetetraacetate		39117	Acetamide	Activated Carbon.
Pentasodium diethylenetriaminepentaacetate		39120	Acetanilide	Activated Carbon.
Ethyl-1,3-hexanediol		41001	Alcohol	Activated Carbon.
Ethylene		41901	Miscellaneous Organic	Pollution Prevention.



PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
EDC		42003	EDB	Activated Carbon.
Methylene chloride		42004	Alkyl Halide	Activated Carbon.
Methoxyethanol		42202	Alcohol	Activated Carbon.
Ethylene glycol		42203	Alcohol	Activated Carbon.
Butylene glycol		42205	Alcohol	Activated Carbon.
Ethylene oxide		42301	Miscellaneous Organic	Pollution Prevention.
Copper(II) oxide		42401	Metallic	Precipitation.
Cuprous and cupric oxide, mixed		42403	Metallic	Precipitation.
Propylene oxide		42501	Miscellaneous Organic	Pollution Prevention.
Formaldehyde		43001	Miscellaneous Organic	Pollution Prevention.
Paraformaldehyde		43002	Polymer	Activated Carbon.
Bis(2-butylene) tetrahydro-2-furaldehyde		43302	Tricyclic	Activated Carbon.
Giberellic acid		43801	Tricyclic	Activated Carbon.
Potassium gibberellate		43802	Tricyclic	Activated Carbon.
Glutaral		43901	Alcohol	Activated Carbon.
Copper citrate		44005	Metallic	Precipitation.
Methyl nonyl ketone		44102	Miscellaneous Organic	Activated Carbon.
Methyl-2-pentanone		44105	Miscellaneous Organic	Activated Carbon.
Monosodium 2,2'-methylenebis (3,4,6-trichlorophenate)		44902	Chlorophene	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Potassium 2,2'-methylenebis (3,4,6-trichlorophenate)		44904	Chlorophene	Activated Carbon.
Hexachloroepoxyoctahydro-endo, exo-dimethanoaphthalene 85%		45001	Tricyclic	Activated Carbon.
Chlorhexidine diacetate		45502	Chloropropionanilide	Activated Carbon.
Hydrocyanic acid		45801	Inorganic	Activated Carbon.
Hydroxyethyl octyl sulfide		46301	Alcohol	Activated Carbon.
Heptadecenyl-2-(2-hydroxyethyl)-2-i midazolinium chloride		46608	NR4	Activated Carbon.
Hydroxyethyl)-2-alkyl-2-imidazoline (as in fatty acids of t		46609	NR4	Activated Carbon.
IBA		46701	Bicyclic	Activated Carbon.
Dihydropyrone		46801	Cyclic ketone	Activated Carbon.
Butoxypolypropoxypolyethoxyethanol-iodine complex		46901	Polymer	Activated Carbon.
Polyethoxypolypropoxyethanol-iodine complex		46904	Polymer	Activated Carbon.
Use code no. 046904 (polyethoxypolypropoxy ethanol-iodine complex)		46909	Polymer	Activated Carbon.
Iodine-potassium iodide complex		46917	Inorganic	Pollution Prevention.
Alkyl-omega-hydroxypoly(oxyethylene)-iodine complex *(100%		46921	Polymer	Activated Carbon.
Lead acetate		48001	Metallic	Precipitation.
Nickel sulfate hexahydrate		50505	Metallic	Precipitation.
Maleic hydrazide, diethanolamine salt		51502	Hydrazide	Activated Carbon.
Maleic hydrazide, potassium salt		51503	Hydrazide	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Sodium 2-mercaptobenzothiolate		51704	Heterocyclic	Activated Carbon.
Mercuric chloride		52001	Metallic	Precipitation.
Mercurous chloride		52201	Metallic	Precipitation.
Metaldehyde		53001	Miscellaneous Organic	Activated Carbon.
Methylated naphthalenes		54002	Aryl	Activated Carbon.
Sodium 2,2'-methylenebis(4-chlorophenate)		55005	Chlorophene	Activated Carbon.
Naphthalene		55801	Aryl	Activated Carbon.
NAD		56001	Benzoic Acid	Activated Carbon.
NAA (1-Naphthaleneacetic Acid)		56002	Benzoic Acid	Activated Carbon.
Potassium 1-naphthaleneacetate		56003	Benzoic Acid	Activated Carbon.
Ammonium 1-naphthaleneacetate		56004	Benzoic Acid	Activated Carbon.
Sodium 1-naphthaleneacetate		56007	Benzoic Acid	Activated Carbon.
Ethyl 1-naphthaleneacetate		56008	Benzoic Acid	Activated Carbon.
Nitrophenol		56301	Phenol	Activated Carbon.
Nicotine		56702	Pyridine	Activated Carbon.
Carbophenothion (ANSI)		58102	Phosphorodithioate	Activated Carbon.
Sodium 5-chloro-2-(4-chloro-2-(3-(3,4-dichlorophenyl)ureido)		58802	Aryl Halide	Activated Carbon.
Monocrotophos		58901	Phosphate	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Chlordimeform		59701	Chloropropionanilide	Activated Carbon.
Chlordimeform hydrochloride		59702	Chloropropionanilide	Activated Carbon.
Thiabendazole hypophosphite		60102	Hydrazide	Activated Carbon.
Hexachlorobenzene		61001	Lindane	Activated Carbon.
Butyl paraben		61205	Phenol	Activated Carbon.
Paraquat dichloride		61601	Pyridine	Activated Carbon.
Chloro-4-phenylphenol		62206	Chlorophene	Activated Carbon.
Chloro-2-phenylphenol		62208	Chlorophene	Activated Carbon.
Chloro-2-biphenylol, potassium salt		62209	Chlorophene	Activated Carbon.
Chloro-2-phenylphenol		62210	Chlorophene	Activated Carbon.
Chloro-2-phenylphenol, potassium salt		62211	Chlorophene	Activated Carbon.
Sodium phenate		64002	Phenol	Activated Carbon.
Butylphenol, sodium salt		64115	Phenol	Activated Carbon.
Ammonium 2-phenylphenate		64116	Phenol	Activated Carbon.
Chloro-2-cyclopentylphenol		64202	Chlorophene	Activated Carbon.
Bithionolate sodium		64203	Chlorophene	Activated Carbon.
Chloro-3-cresol		64206	Chlorophene	Activated Carbon.
Sodium 2,4,5-trichlorophenate		64217	Chlorophene	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Aluminum phosphide		66501	Inorganic	Pollution Prevention.
Phosphorus		66502	Inorganic	Pollution Prevention.
Magnesium phosphide		66504	Inorganic	Pollution Prevention.
1-(Alkyl*amino)-3-aminopropane* (Fatty acids of coconut oil)		67301	Iminamide	Activated Carbon.
Alkyl* amino)-3-aminopropane * (53%C12, 19%C14, 8.5%C16, 7%C8)		67305	Iminamide	Activated Carbon.
Alkyl*amino)-3-aminopropane benzoate*(fatty acids of coconut		67307	Iminamide	Activated Carbon.
Alkyl* dipropoxyamine *(47% C12, 18% C14, 10% C18, 9% C10, 8		67308	Iminamide	Activated Carbon.
Alkyl*amino)-3-aminopropane hydroxyacetate* (acids of coconut		67309	Iminamide	Activated Carbon.
Alkyl* amino)-3-aminopropane * (42%C12, 26%C18, 15%C14, 8%C16)		67310	Iminamide	Activated Carbon.
Alkyl*amino)-3-aminopropane diacetate* (fatty acids of coconut		67313	Iminamide	Activated Carbon.
Octadecenyl-1,3-propanediamine monogluconate		67316	Acetamide	Activated Carbon.
Alkyl* amine acetate *(5%C8, 7%C10, 54%C12, 19%C14, 8%C16,		67329	Iminamide	Activated Carbon.
Pindone sodium salt		67704	Indandione	Activated Carbon.
Diphacinone, sodium salt		67705	Indandione	Activated Carbon.
Isovaleryl-1,3-indandione, calcium salt		67706	Indandione	Activated Carbon.
Methyl isothiocyanate		68103	Thiocyanate	Pollution Prevention.
Potassium dichromate		68302	Inorganic	Pollution Prevention.
Sodium chromate		68303	Inorganic	Pollution Prevention.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Sodium dichromate		68304	Metallic	Precipitation.
Alkenyl* dimethyl ethyl ammonium bromide *(90%C18', 10%C16')		69102	NR4	Activated Carbon.
Alkyl*-N-ethyl morpholinium ethyl sulfate *(92%C18, 8%C16)		69113	Heterocyclic	Activated Carbon.
Alkyl* isoquinolinium bromide *(50% C12, 30% C14, 17% C16, 3)		69115	Quinolin	Activated Carbon.
Alkyl* methyl isoquinolinium chloride *(55%C14, 12%C12, 17%C)		69116	Quinolin	Activated Carbon.
Cetyl trimethyl ammonium bromide		69117	NR4	Activated Carbon.
Cetyl pyridinium bromide		69118	Pyridine	Activated Carbon.
Dodecyl dimethyl benzyl ammonium naphthenate		69127	NR4	Activated Carbon.
Alkyl* dimethyl ethylbenzyl ammonium cyclohexylsulfamate *(5)		69135	NR4	Activated Carbon.
Alkyl*-N-ethyl morpholinium ethyl sulfate *(66%C18, 25%C16)		69147	Heterocyclic	Activated Carbon.
Alkyl* trimethyl ammonium bromide *(95%C14, 5%C16)		69153	NR4	Activated Carbon.
Benzyl((dodecylcarbamoyl) methyl)di methyl ammonium chloride		69159	NR4	Activated Carbon.
Cetyl pyridinium chloride		69160	Pyridine	Activated Carbon.
Alkyl* dimethyl ethyl ammonium bromide *(85%C16, 15%C18)		69186	NR4	Activated Carbon.
Cetyl-N-ethylmorpholinium ethyl sulfate		69187	Heterocyclic	Activated Carbon.
Use code no. 069102 (Alkenyl* Dimethyl Ethyl Ammonium bromide)		69198	NR4	Activated Carbon.
p-Aminopyridine		69201	Pyridine	Activated Carbon.
Nitrapyrin (ANSI)		69203	Pyridine	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Alkyl pyridines		69205	Pyridine	Activated Carbon.
Pyrazon (ANSI)		69601	Heterocyclic	Activated Carbon.
Capsaicin (in oleoresin of capsicum)		70701	Phenol	Activated Carbon.
Ryanodine		71502	Tricyclic	Activated Carbon.
Silver		72501	Inorganic	Pollution Prevention.
Silver chloride		72506	Inorganic	Pollution Prevention.
Silver thiuronium acrylate co-polymer		72701	Polymer	Activated Carbon.
Sodium chlorate		73301	Inorganic	Pollution Prevention.
Calcium cyanide		74001	Inorganic	Pollution Prevention.
Sodium cyanide		74002	Inorganic	Pollution Prevention.
Cryolite		75101	Inorganic	Pollution Prevention.
Sodium fluoride		75202	Inorganic	Pollution Prevention.
Ammonium fluosilicate		75301	Inorganic	Pollution Prevention.
Sodium fluosilicate		75306	Inorganic	Pollution Prevention.
Potassium iodide		75701	Inorganic	Pollution Prevention.
Potassium tetrathionate		75903	Inorganic	Pollution Prevention.
Potassium nitrate		76103	Inorganic	Pollution Prevention.
Sodium nitrate		76104	Inorganic	Pollution Prevention.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Sodium nitrite		76204	Inorganic	Pollution Prevention.
Benzenesulfonamide, N-chloro-, sodium salt		76501	Sulfonamide	Activated Carbon.
Salicylic acid		76202	Benzoic Acid	Activated Carbon.
Ethoxyethyl p-methoxycinnamate		76604	Aryl	Activated Carbon.
Calcium polysulfide		76702	Polymer	Activated Carbon.
Strychnine		76901	Tricyclic	Activated Carbon.
Strychnine sulfate		76902	Tricyclic	Activated Carbon.
Niclosamide		77401	Chlorobenzamide	Activated Carbon.
Dibromosalicylamilide		77402	Chlorobenzamide	Activated Carbon.
Tribromsalan		77404	Chlorobenzamide	Activated Carbon.
Dibromosalicylanilide		77405	Chlorobenzamide	Activated Carbon.
Chlorosalicylanilide		77406	Chlorobenzamide	Activated Carbon.
Sulfur		77501	Inorganic	Pollution Prevention.
Sulfaquinoxaline		77901	Sulfanilamide	Activated Carbon.
Sulfacetamide		77904	Sulfanilamide	Activated Carbon.
Sulfuryl fluoride		78003	Inorganic	Pollution Prevention.
Sodium bisulfite		78201	Inorganic	Pollution Prevention.
Tetrachloroethylene		78501	EDB	Activated Carbon.



PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Ethoxylated isooctylphenol		79004	Phenol	Activated Carbon.
Lauric diethanolamide		79018	Acetanilide	Activated Carbon.
Triethanolamine oleate		79025	NR4	Activated Carbon.
Dioctyl sodium sulfosuccinate		79027	Thiosulfonate	Activated Carbon.
Use code no. 069179 (alkyl*mono-ethanolamide)		79036	Miscellaneous Organic	Activated Carbon.
Alkyl* diethanolamide *(70%C12, 30%C14)		79045	Miscellaneous Organic	Activated Carbon.
Tetradecyl formate		79069	Alkyl Acid	Activated Carbon.
Polyoxyethylene sorbitol oleate-laurate		79075	Polymer	Activated Carbon.
Polyethoxylated stearylamine		79094	Polymer	Activated Carbon.
Capric diethanolamide		79099	Acetanilide	Activated Carbon.
Calcium thiosulfate		80101	Inorganic	Pollution Prevention.
Ammonium thiosulfate		80103	Inorganic	Pollution Prevention.
Thymoxydichloroacetic acid		80401	Benzoic Acid	Activated Carbon.
Thymol		80402	Phenol	Activated Carbon.
Sodium trichloroacetate		81001	Alkyl Halide	Activated Carbon.
Trichloroacetic acid		81002	Alkyl Halide	Activated Carbon.
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine		83301	s-Triazine	Activated Carbon.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol		83902	Alcohol	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Bomyl		84201	Phosphate	Activated Carbon.
Turpentine		84501	Miscellaneous Organic	Activated Carbon.
Chloro-1-(2,5-dichlorophenyl)vinyl) O,O-diethyl phosphorothi		84901	Phosphorothioate	Activated Carbon.
Zinc chloride		87801	Metallic	Precipitation.
Zinc 2-pyridinethiol-1-oxide		88002	Metallic	Precipitation.
Hydroxy-2-(1H)-pyridinethione, sodium salt		88004	Pyridine	Activated Carbon.
Omadine TBAO		88005	Pyridine	Activated Carbon.
Zinc naphthenate		88301	Metallic	Precipitation.
Zinc oxide		88502	Metallic	Precipitation.
Zinc phosphide (Zn <sub>3</sub> P <sub>2</sub> )		88601	Metallic	Precipitation.
Zinc phenol sulfonate		89002	Metallic	Precipitation.
Zinc sulfate, basic		89101	Metallic	Precipitation.
Dimetilan		90101	Carbamate	Activated Carbon.
Carboxin		90201	Heterocyclic	Activated Carbon.
Oxycarboxin		90202	Heterocyclic	Activated Carbon.
Benzocaine		97001	Benzeneamine	Activated Carbon.
Piperalin		97003	2,4-D	Activated Carbon.
Tetracaine hydrochloride		97005	Benzeneamine	Activated Carbon.
Formetanate hydrochloride		97301	Toluamide	Activated Carbon.
Azacosterol HCl		98101	Tricyclic	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Use code no. 039502 (gentian violet)		98401	NR4	Activated Carbon.
Ammonium alum		98501	Inorganic	Pollution Prevention.
Bismuth subgallate		98601	Metallic	Precipitation.
Chlorflurenol, methyl ester		98801	Aryl Halide	Activated Carbon.
Benzisothiazolin-3-one		98901	Heterocyclic	Activated Carbon.
Methyl 2-benzimidazolecarbamate phosphate		99102	Carbamate	Activated Carbon.
Ethephon		99801	Phosphate	Activated Carbon.
Pentanethiol		100701	Miscellaneous Organic	Activated Carbon.
Nitrobutyl)morpholine		100801	Heterocyclic	Activated Carbon.
Ethyl-2-nitrotrimethylene)dimorpholine		100802	Heterocyclic	Activated Carbon.
Tolyl diiodomethyl sulfone		101002	Thiosulfonate	Activated Carbon.
Isobutyric acid		101502	Alkyl Acid	Activated Carbon.
Dibromo-3-nitrilopropionamide		101801	Acetamide	Activated Carbon.
Polyethoxylated oleylamine		101901	Acetamide	Activated Carbon.
Dinitramine (ANSI)		102301	Nitrobenzoate	Activated Carbon.
Phenylethyl propionate		102601	Phenylcrotonate	Activated Carbon.
Eugenol		102701	Phenol	Activated Carbon.
Tricosene		103201	Miscellaneous Organic	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Tricosene		103202	Miscellaneous Organic	Activated Carbon.
Sodium 1,4',5'-trichloro-2'-(2,4,5-trichlorophenoxy)methanes		104101	2,4-D	Activated Carbon.
Hexahydro-1,3,5-tris(2-hydroxypropyl)-s-triazine		105601	s-Triazine	Activated Carbon.
Methazole		106001	Hydrazide	Activated Carbon.
Difenzoquat methyl sulfate		106401	Hydrazide	Activated Carbon.
Butralin		106501	Benzeneamine	Activated Carbon.
Fosamine ammonium		106701	Carbamate	Activated Carbon.
Asulam		106901	Carbamate	Activated Carbon.
Sodium asulam		106902	Carbamate	Activated Carbon.
Hydroxymethoxymethyl-1-aza-3,7-dioxabicyclo(3.3.0)octane		107001	Bicyclic	Activated Carbon.
Hydroxymethyl-1-aza-3,7-dioxabicyclo(3.3.0)octane		107002	Bicyclic	Activated Carbon.
Hydroxypoly(methyleneoxy)* methyl-1-aza-3,7-dioxabicyclo(3.3)		107003	Bicyclic	Activated Carbon.
Chloro-2-methyl-3(2H)-isothiazolone		107103	Heterocyclic	Activated Carbon.
Methyl-3(2H)-isothiazolone		107104	Heterocyclic	Activated Carbon.
Trimethoxysilyl)propyl dimethyl octadecyl ammonium chloride		107401	NR4	Activated Carbon.
Kinoprene		107502	Ester	Activated Carbon.
Triforine (ANSI)		107901	Hydrazide	Activated Carbon.
Pirimiphos-methyl (ANSI)		108102	Phosphorothioate	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Thiobencarb		108401	Thiocarbamate	Activated Carbon.
Ancymidol (ANSI)		108601	Pyrimidine	Activated Carbon.
Oxadiazon (ANSI)		109001	Hydrazide	Activated Carbon.
Mepiquat chloride		109101	NR4	Activated Carbon.
Fluvalinate		109302	Toluamide	Activated Carbon.
Chloro-N-(hydroxymethyl)acetamide		109501	Acetamide	Activated Carbon.
Dikegulac sodium		109601	Tricyclic	Activated Carbon.
Iprodione (ANSI)		109801	Hydrazide	Activated Carbon.
Phenylmethyl)-9-(tetrahydro-2H-pyran-2-yl)-9H-purin-6-amine		110001	Pyrimidine	Activated Carbon.
Prodiamine		110201	Benzeneamine	Activated Carbon.
Erioglaucine		110301	Benzeneamine	Activated Carbon.
Tartrazine		110302	Hydrazide	Activated Carbon.
Dodemorph acetate		110401	Heterocyclic	Activated Carbon.
Ethofumesate (ANSI)		110601	Bicyclic	Activated Carbon.
Aldoxycarb (ANSI)		110801	Carbamate	Activated Carbon.
Diclofop-methyl		110902	Aryl Halide	Activated Carbon.
Bromo-1-(bromomethyl)-1,3-propanediCarbon.itrile		111001	Isocyanate	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Poly (imino imidocarbonyl iminoimidocarbonyl iminohexamethylene)		111801	Polymer	Activated Carbon.
Imazalil		111901	Aryl Halide	Activated Carbon.
Bromadiolone		112001	Coumarin	Activated Carbon.
Brodifacoum		112701	Coumarin	Activated Carbon.
Bromethalin (ANSI)		112802	Aryl Amine	Activated Carbon.
Fluridone (ANSI)		112900	Aryl Halide	Activated Carbon.
Vinclozolin		113201	Aryl Halide	Activated Carbon.
Metalaxyl		113501	Benzeneamine	Activated Carbon.
Propetamphos (ANSI)		113601	Phosphoroamidothioate	Activated Carbon.
Methyl-1-naphthyl)maleimide		113701	Phthalamide	Activated Carbon.
Hexadecadien-1-yl acetate		114101	Ester	Activated Carbon.
Hexadecadien-1-yl acetate		114102	Ester	Activated Carbon.
Epoxy-2-methyloctadecane		114301	Heterocyclic	Activated Carbon.
Thiodicarb (ANSI)		114501	Thiocarbamate	Activated Carbon.
Dimethyloxazolidine (8CA & 9CA)		114801	Heterocyclic	Activated Carbon.
Trimethyloxazolidine		114802	Heterocyclic	Activated Carbon.
Hydroxyphenyl) oxoacetohydroxamic chloride		114901	Phenol	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
EEEEBC		115001	Carbamate	Activated Carbon.
MDM Hydantoin		115501	Hydrazide	Activated Carbon.
DMDM Hydantoin		115502	Hydrazide	Activated Carbon.
Triclopyr (ANSI)		116001	Pyridine	Activated Carbon.
Triethylamine triclopyr		116002	Pyridine	Activated Carbon.
Butoxyethyl triclopyr		116004	Pyridine	Activated Carbon.
Decenyl) dihydro-2(3H)-furanone		116501	Ester	Activated Carbon.
Cytokinins		116801	Toluidine	Activated Carbon.
Benzyladenine		116901	Pyrimidine	Activated Carbon.
Clopyralid, monoethanolamine salt		117401	Pyridine	Activated Carbon.
Clopyralid (ANSI)		117403	Pyridine	Activated Carbon.
Flucythrinate (ANSI)		118301	Pyrethrin	Activated Carbon.
Hydramethylnon (ANSI)		118401	Iminimide	Activated Carbon.
Chlorsulfuron		118601	s-Triazine	Activated Carbon.
Dimethipin		118901	Heterocyclic	Activated Carbon.
Hexadecenal		120001	Miscellaneous Organic	Activated Carbon.
Tetradecenal		120002	Miscellaneous Organic	Activated Carbon.
Thidiazuron		120301	Urea	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Metronidazole		120401	Hydrazide	Activated Carbon.
Erythrosine B		120901	Tricyclic	Activated Carbon.
Sethoxydim		121001	Cyclic Ketone	Activated Carbon.
Clethodim		121011	Heterocyclic	Activated Carbon.
Cyromazine		121301	s-Triazine	Activated Carbon.
Tralomethrin		121501	Pyrethrin	Activated Carbon.
Azadirachtin		121701	Tricyclic	Activated Carbon.
Tridecen-1-yl acetate		121901	Ester	Activated Carbon.
Tridecen-1-yl acetate		121902	Ester	Activated Carbon.
Sulfometuron methyl		122001	Pyrimidine	Activated Carbon.
Metsulfuron-methyl		122010	s-Triazine	Activated Carbon.
Propiconazole		122101	Aryl Halide	Activated Carbon.
Furanone, dihydro-5-pentyl		122301	Cyclic Ketone	Activated Carbon.
Furanone, 5-heptyldihydro-		122302	Cyclic Ketone	Activated Carbon.
Abamectin (ANSI)		122804	Tricyclic	Activated Carbon.
Fluazifop-butyl		122805	Pyridine	Activated Carbon.
Fluazifop-R-butyl		122809	Pyridine	Activated Carbon.
Flumetralin		123001	Nitrobenzoate	Activated Carbon.



PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Fosetyl-Al		123301	Phosphate	Activated Carbon.
Methanol, (((2-(dihydro-5-methyl-3(2H)-oxazolyl)-1-methyl)et		123702	Heterocyclic	Activated Carbon.
Fomesafen		123802	Nitrobenzoate	Activated Carbon.
Tridiphane		123901	Aryl Halide	Activated Carbon.
POE isooctadecanol		124601	Alcohol	Activated Carbon.
Periplanone B		124801	Bicyclic	Activated Carbon.
Fenoxycarb		125301	Carbamate	Activated Carbon.
Clomazone		125401	Aryl Halide	Activated Carbon.
Clofentezine		125501	Aryl Halide	Activated Carbon.
Paclobutrazol		125601	Hydrazide	Activated Carbon.
Flurprimidol		125701	Pyrimidine	Activated Carbon.
Isoxaben		125851	Heterocyclic	Activated Carbon.
Isazofos		126901	Phosphorothioate	Activated Carbon.
Triadimenol		127201	Hydrazide	Activated Carbon.
Fenpropathrin		127901	Pyrethrin	Activated Carbon.
Sulfosate		128501	Phosphorothioate	Activated Carbon.
Fenoxaprop-ethyl		128701	Heterocyclic	Activated Carbon.
Quizalofop-ethyl		128711	Phthalimide	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Bensulfuron-methyl		128820	Pyrimidine	Activated Carbon.
Imazapyr		128821	Hydrazide	Activated Carbon.
Bifenthrin		128825	Pyrethrin	Activated Carbon.
Imazapyr, isopropylamine salt		128829	Hydrazide	Activated Carbon.
Sodium salt of 1-carboxymethyl-3,5,7-triaza-1-azoniatricyclo		128832	s-Triazine	Activated Carbon.
Linalool		128838	Alcohol	Activated Carbon.
Imazaquin, monoammonium salt		128840	Pyrimidine	Activated Carbon.
Imazethabenz		128842	Pyrimidine	Activated Carbon.
Thifensulfuron methyl		128845	s-Triazine	Activated Carbon.
Imazaquin		128848	Pyrimidine	Activated Carbon.
Myclobutanil (ANSI)		128857	s-Triazine	Activated Carbon.
Zinc borate (3ZnO, 2B <sub>2</sub> O <sub>3</sub> , 3.5H <sub>2</sub> O; mw 434.66)		128859	Metallic	Precipitation.
Cyhalothrin		128867	Pyrethrin	Activated Carbon.
Potassium cresylate		128870	Phenol	Activated Carbon.
Triflumizole		128879	Toluidine	Activated Carbon.
Tribenuron methyl		128887	s-Triazine	Activated Carbon.
Cyhalothrin		128897	Pyrethrin	Activated Carbon.
Chlorimuron-ethyl		128901	Pyrimidine	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Dodecen-1-yl acetate		128906	Ester	Activated Carbon.
Dodecen-1-yl acetate		128907	Ester	Activated Carbon.
DDOL		128908	Alcohol	Activated Carbon.
Farnesol		128910	Alcohol	Activated Carbon.
Nerolidol		128911	Alcohol	Activated Carbon.
Tefluthrin		128912	Pyrethrin	Activated Carbon.
Bromoxynil heptanoate		128920	Chloropropionanilide	Activated Carbon.
Imazethapyr		128922	Pyrimidine	Activated Carbon.
Imazethapyr, ammonium salt		128923	Pyrimidine	Activated Carbon.
Chitosan		128930	Polymer	Activated Carbon.
Sulfuric acid, monourea adduct		128961	Urea	Activated Carbon.
Hydroprene		128966	Miscellaneous Organic	Activated Carbon.
Triasulfuron		128969	Urea	Activated Carbon.
Primisulfuron-methyl		128973	Urea	Activated Carbon.
Uniconazole (ANSI)		128976	s-Triazine	Activated Carbon.
Tetradecenyl acetate		128980	Miscellaneous Organic	Activated Carbon.
Chitin		128991	Polymer	Activated Carbon.
Sulfluramid		128992	Sulfonamide	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Dithiopyr (ANSI)		128994	Pyridine	Activated Carbon.
Nicosulfuron		129008	Pyrimidine	Activated Carbon.
Zinc		129015	Metallic	Precipitation.
Tetradecen-1-ol, acetate, (E)-		129019	Alkyl Acid	Activated Carbon.
Imazaquin, sodium salt		129023	Pyrimidine	Activated Carbon.
Dodecadien-1-ol		129028	Alcohol	Activated Carbon.
Ionone		129030	Miscellaneous Organic	Activated Carbon.
Dicamba, aluminum salt		129042	Aryl Halide	Activated Carbon.
Benzenemethanaminium, N-(2-((2,6-dimethylphenyl)amino)-2-oxo		129045	NR4	Activated Carbon.
Fenoxaprop-p-Ethyl		129092	Tricyclic	Activated Carbon.
Alkyl* bis(2-hydroxyethyl) ammonium acetate *(as in fatty ac		169103	NR4	Activated Carbon.
Alkenyl* dimethyl ammonium acetate *(75% C18', 25% C16')		169104	NR4	Activated Carbon.
Amines, N-coco alkyltrimethylenedi-, adipates		169109	Iminamide	Activated Carbon.
Dialkyl* dimethyl ammonium bentonite *(as in fatty acids of		169111	NR4	Activated Carbon.
Alkyl* bis(2-hydroxyethyl) amine acetate *(65% C18, 30% C16,		169125	Acetamide	Activated Carbon.
Dodecyl bis(hydroxy ethyl) dioctyl ammonium phosphate		169154	NR4	Activated Carbon.
Dodecyl bis(2-hydroxyethyl) octyl hydrogen ammonium phosphat		169155	NR4	Activated Carbon.
Didecyl - N - methyl - 3 - (trimethoxysilyl) propanaminium chloride		169160	NR4	Activated Carbon.

PAI name <sup>2</sup>	PAI code <sup>3</sup>	Shaughnessy code <sup>4</sup>	Structural group <sup>5</sup>	Treatment technology
Cholecalciferol		202901	Bicyclic	Activated Carbon.
Use code no. 202901 (Vitamin D3)		208700	Bicyclic	Activated Carbon.
Alkyl* N,N-bis(2-hydroxyethyl)amine * (100% C8-C18)		210900	NR4	Activated Carbon.
Bromo-2-nitropropane-1,3-diol		216400	Alcohol	Activated Carbon.
Use code no. 114601 (cyclohexyl-4, 5-dichloro- 4-isothiazolin-3-one)		229300	Heterocyclic	Activated Carbon.
Diethyl ethyl		279500	Toluidine	Activated Carbon.
Hydroprene (ANSI)		486300	Miscellaneous Organic	Activated Carbon.
Zinc sulfate monohydrate		527200	Metallic	Precipitation
Geraniol		597501	Alcohol	Activated Carbon.

<sup>1</sup> The 272 Pesticide Active Ingredients (PAIs) are listed first, by PAI code, followed by the non-272 PAIs from the 1988 FIFRA and TSCA Enforcement System (FATES) Database, which are listed in Shaughnessy code order. PAIs that were exempted or reserved from the PFPR effluent guidelines are not listed in the table.

<sup>2</sup> The non-272 PAI names are taken directly from the 1988 FATES database. Several of the PAI names are truncated because the PAI names listed in the FATES database are limited to 60 characters.

<sup>3</sup> The non-272 PAIs do not have PAI codes.

<sup>4</sup> All Shaughnessy codes are taken from the 1988 FATES database. Some of the 272 PAIs are not listed in the 1988 FATES database; therefore, no Shaughnessy codes are listed for these PAIs.

<sup>5</sup> Structural groups are based on an analysis of the chemical structures of each PAI.

<sup>6</sup> EPA has also received data indicating that acid hydrolysis may also be effective in treating this PAI.

\* This PAI code represents a category or group of PAIs; therefore, it has multiple Shaughnessy codes.

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