

Ohio EPA Policy	<b>PROCEDURE FOR SUBMITTING REQUESTS TO OBTAIN APPROVAL TO USE RECIRCULATING WATER, BOILER WATER AND NON- CONTACT COOLING WATER (NCCW) SYSTEM ADDITIVES</b>	
DSW-0100.022  <b>Final</b>	Statutory references: ORC 6111.03, ORC 6111.041 Rule references: OAC 3745-1-36, OAC 3745-33-05, OAC 3745-33-07	Ohio EPA, Division of Surface Water Revision 0, January 17, 1992 Revision 1, September 30, 1999 Revision 2, December 21, 2006
THIS POLICY DOES NOT HAVE THE FORCE OF LAW Pursuant to Section 3745.30 of the Revised Code, this policy was reviewed on the last revision date.		

### Purpose

The purpose of this policy is to define the process and data submission requirements a permittee may follow to obtain approval from Ohio EPA to use recirculating water, boiler water and non-contact cooling water system additives in lieu of maintaining a continuing monitoring program for the discharge of those additives.

### Background

Pursuant to Section 6111.03 of the Ohio Revised Code, Ohio EPA has the authority to regulate the discharge of pollutants to state surface waters through the National Pollutant Discharge Elimination System (NPDES) permit program. The Director of Ohio EPA has the authority to issue orders to require compliance with standards of water quality adopted under Section 6111.041 of the Ohio Revised Code. As specified by their NPDES permits, dischargers of once-through cooling water or, where on-site treatment is not available, the discharge of blowdown from either open or recirculating cooling or boiler water systems, are required to obtain written approval from Ohio EPA to use chemical additives. They are required to demonstrate that the expected discharge concentration of the additive(s) to be used will meet Ohio Water Quality Standards. The permittee may follow this policy in lieu of having a continuing monitoring program for the additives in the discharge.

### Procedure

Ohio EPA has determined that following this procedure ensures that water quality standards (OAC 3745-1) will be met. Permittees who choose to follow this procedure to obtain written permission for the use of water system treatment additives, in lieu of maintaining a continuing monitoring program, must submit the following information to Ohio EPA.

1. **The name of the additive(s) to be used and general product information.** This information should include the:
  - a. Material Safety Data Sheet (MSDS) for each additive,
  - b. list of individual constituents or ingredients (active and inert),
  - c. chemical structure of each constituent,
  - d. specified use of the additive, and
  - e. the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)/U.S. EPA registration number.

2. **The concentration(s) of the additive(s) to be used (mg/l).**

Identify the:

- a. frequency of additive applications (e.g. applications per month),
- b. duration of additive applications (e.g. hours per application), and
- c. application or feed system to be employed and appropriate safeguards to be taken to ensure accurate feed concentrations.

3. **The expected concentration(s) of the additive(s) contained in the discharge or blowdown immediately prior to entering state surface waters.**

- a. All available water from combined waste streams discharged through a common outfall should be considered when determining discharge concentrations. Also include the analytical detection limit of the additive. If whole product is not or cannot be measured, identify which active constituent or byproduct is to be measured and its detection limit.
- b. The following information should be submitted if detoxification or dehalogenation is needed to achieve the expected discharge concentration:
  1. the name of the detoxifying/dehalogenating agent(s),
  2. mechanism(s) of detoxification/dehalogenation (i.e. chemical reactions or processes),
  3. toxicity data for the detoxifying/dehalogenating agent(s) as specified in 6.a. below, and
  4. degradation, fate and persistence of the additive/detoxifying agent in the environment as specified in 6.b. below.

Additionally, if the additive is approved for use, Whole Effluent Toxicity (WET) testing may be required at the outfall in order to demonstrate that the additive is being detoxified/dehalogenated. The permittee would be required to conduct a minimum of 4 WET tests (acute and/or chronic) using *Ceriodaphnia dubia* and fathead minnows (*Pimephales promelas*). The number of tests will depend on the duration and frequency of use of the additive. If WET testing is required, Ohio EPA will specify the type and number of tests at the time of approval.

4. **The average flow rate (MGD) and the outfall number of each outfall containing the additive(s).**

If boiler or recirculating cooling water additives are used, report the volume of blowdown entering the waste stream, as well as the total flow rate at the outfall. **Include detailed line diagrams that show all wastewater systems of the plant.**

5. **Name of the state surface water(s) that receive the discharge.**

The subsequent downstream network should also be included.

6. **Toxicity and environmental information for the additive(s).**

- a. The applicant should submit the following toxicity information for each additive (whole

product as formulated) and, if available, for each active ingredient in order for the Agency to calculate instream acute and chronic toxicity values.

One **48-hour LC50** or **EC50** (if adverse effects other than lethality are evident) value determined by acute toxicity tests using a **Daphnid species** and at least one **96-hour LC50** or **EC50** value determined by acute toxicity tests using a **fish species** should be submitted. The following test durations and species are acceptable to Ohio EPA for conducting acute toxicity tests:

- 48-hour - *Daphnia magna***
- 48-hour - *Daphnia pulex***
- 48-hour - *Ceriodaphnia dubia***
- 96-hour - Rainbow Trout (*Oncorhynchus mykiss*)**
- 96-hour - Fathead Minnow (*Pimephales promelas*)**
- 96-hour - Bluegill Sunfish (*Lepomis macrochirus*)**

Chronic data for any of the test organisms specified above may be submitted in order to determine an acute/chronic ratio for the additive. If no chronic data are available, the procedures specified in rule 3745-1-36 of the Ohio Administrative Code (OAC) will be used to set a default value.

Calculation procedures for the acute criterion and the chronic criterion are contained in OAC 3745-1-36. Depending on the toxicity data available, calculation procedures may vary. Less conservative calculation procedures are applied when acute toxicity data are available for species in at least eight families (as specified in OAC 3745-1-36) than when only the minimum toxicity data are available.

Toxicity tests shall be conducted using procedures contained in the Ohio EPA Manual of Laboratory Standard Operating Procedures, Volume IV, Bioassay, 1995 (or current revision). Copies may be obtained by contacting Ohio EPA at the address provided below. Ohio EPA procedures are in accordance with accepted U.S. EPA and ASTM protocols. Any requests to use a different methodology need to be approved by Ohio EPA prior to the initiation of testing.

- b. The n-octanol/water partition coefficient (P) for each organic chemical and degradation/fate studies of the additive(s) should be submitted. This information will be used to evaluate the chemical's persistence in the environment and potential for it to bioaccumulate/bioconcentrate in aquatic organisms. Any other relevant information or studies that may aid in the evaluation of the additive may also be submitted.

**7. Requests for approval and questions regarding this procedure should be directed to:**

Ohio Environmental Protection Agency  
Division of Surface Water  
122 S. Front St., P.O. Box 1049  
Columbus, Ohio 43216-1049

Proprietary information regarding the chemical composition of any additive will be kept confidential

by Ohio EPA at the discharger's or manufacturer's request.

The proposed use of the additive(s) will be denied if all the required information specified above is not submitted. Ohio EPA will approve the use of the additive(s) if the required information indicates the product will be neither harmful nor inimical to aquatic life (e.g. meeting the Final Acute Value (FAV), AAC and CAC criteria) or is not expected to pose significant risks to wildlife or human health based on bioconcentration/bioaccumulation data.

The permittee shall evaluate the use of non-intrusive methods for cooling and/or boiler system maintenance in order to minimize chemical use at the plant and subsequent discharge to state surface waters.

**Related Policy or guidance**

Ohio EPA. 1995. Manual of Laboratory Standard Operating Procedures. Volume IV.  
Bioassay. 66 pages.

**For more information contact:**

Ohio EPA, Division of Surface Water  
Permits & Compliance Section  
P.O. Box 1049  
Columbus, OH 43216-1049  
(614) 644-2001

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