

Ohio EPA Policy	Bis(2-ethylhexyl) phthalate (DEHP)	
DSW-0700.006 Removed	Statutory references: Rule references:	Ohio EPA, Division of Surface Water Revision 0, December 30, 1987 Revision 1, September 30, 1999 Removed, 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 and removed.		

This policy has been replaced by the reasonable potential language adopted in rules 3745-2-06 and 3745-33-07 of the Ohio Administrative Code.

For more information contact:

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

Ohio EPA Policy	Bis(2-ethylhexyl) phthalate (DEHP)	
DSW-0700.006 Final	Statutory references: ORC 6111.03, ORC 6111.041 Rule references: OAC 3745-1, OAC 3745-33-07	Ohio EPA, Division of Surface Water Revision 0, December 30, 1987 Revision 1, September 30, 1999
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

This policy serves to characterize the amounts of DEHP discharged into the environment. The monitoring data will be used to evaluate the magnitude of environmental hazards associated with the discharge of DEHP. Where potential environmental hazards are identified appropriate controls will be implemented.

Background

Basis of Chronic Water Quality Criterion

The chronic aquatic life criterion for DEHP was last calculated on October 23, 1997 using the procedures in OAC 3745-1-36 for the Lake Erie drainage basin and OAC 3745-1-40 for the Ohio River drainage basin. Using the procedures in OAC 3745-1-36 an initial chronic water quality criterion of 140 µg/l is calculated. Using the procedures in OAC 3745-1-40 an initial chronic water quality criterion of 49 µg/l is calculated. Using either sets of procedure results in a lowering of the initial criterion to the chronic value of the rainbow trout (8.4 µg/l). The final chronic water quality criterion statewide, therefore, is 8.4 µg/l.

Uses of DEHP

Phthalate esters are widely used as plasticizers, primarily in the production of polyvinyl chloride (PVC) resins. Plasticizers are added to synthetic plastic resins to impart flexibility to the finished product, improve workability during fabrication and extend or modify properties not present in the original resins. PVC resins are used in a wide diversity of products including cable insulation, flooring, furniture upholstery, wall coverings, car upholstery and seat covers, footwear and food and medical packaging material. Phthalates also are used in cosmetics, industrial oils and insect repellants. The most widely used phthalate plasticizer is DEHP. DEHP is a colorless liquid, has low volatility, is soluble in organic solvents and oils and has low solubility in water.

Environmental Fate of DEHP

The fate of phthalate compounds in the aquatic environment is not well documented. Available information indicates that DEHP is readily bioconcentrated by aquatic organisms - both plants and animals - with bioconcentration factors ranging from 14 to 2680 in laboratory tests conducted over a period of 14 to 56 days. DEHP, however, is readily eliminated from aquatic organisms (via excretion and metabolism) when placed in uncontaminated water. DEHP does possess qualities of a persistent pollutant - it is highly lipophilic (partitions strongly in the lipids of plants and animals), moderately persistent, and bioconcentrates in organisms. In natural waters receiving discharges of phthalates, the compounds have been found to adsorb to particles. These particles are then incorporated into the sediment, which

consequently becomes the major reservoir for the contaminants in the aquatic ecosystem. DEHP has been found to have a low degree of acute toxicity and a high excretion rate; however, data suggest that this compound can be detrimental to the reproduction of aquatic organisms at low chronic concentrations.

Procedure

If effluent data for a NPDES permittee reveals DEHP in excess of 10 percent of the wasteload allocation determined pursuant to OAC Chapter 3745-2, then, pursuant to OAC Chapter 3745-33-07, Ohio EPA will implement a monitoring program for the entity. The discharger shall monitor the effluent wastewater on a quarterly basis for the effective period of the NPDES permit, and report the results to the Ohio EPA. The recommended method of analysis for phthalate esters is Method 606 (gas chromatograph method) as prescribed in 40 CFR, Part 136, July 1, 1986 update. The approximate testing cost using Method 606 ranges from 100 to 200 dollars.

Effluent limits will not be recommended for DEHP unless a concentrated process or source is known. Effluent limits based upon the chronic water quality criterion and applicable wasteload allocation procedures will be implemented if a concentrated process or source is suspected. Compliance schedules to meet any such limits will need to consider the ability to reduce and treat DEHP to the required levels.

For more information contact:

Ohio EPA, Division of Surface Water
Standards and Technical Support Section
P.O. Box 1049
Columbus OH 43216-1049
(614) 644-2001

P:\SHARE\Sts\Policy\RE_POLMA\07_06u.wpd