United States
Environmental Protection Agency

Office of Water
4603

EPA 811-F-95-003-C
October 1995

EPA NATIONAL PRIMARY DRINKING WATER REGULATIONS

Contaminant Specific Fact Sheets
Synthetic Organic Chemicals - Consumer Version

Adipate, (2-diethylhexyl)
Alachlor
Aldicarb/Aldicarb Metabolites

Atrazine
Benzo(a)pyrene
Carbofuran
Chlordane
2,4 - D
Dalapon
Dibromochloropropane
Dinoseb
Dioxin(2,3,7,8-TCDD)
Diquat
Endothall
Endrin
Ethylene Dibromide
Glyphosate
Heptachlor/Heptachlor Epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Lindane
Methoxychlor
Oxamyl (Vydate)
Pentachlorophenol
Phthalate, di(2-ethylhexyl)
Picloram
Polychlorinated Biphenyls
Simazine
Toxaphene
2,4,5 - TP (Silvex)

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 a-C October 1995

National Primary Drinking Water Regulations

Adipate, (2-diethylhexyl)

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: 0.4 ppm

MCL: 0.4 ppm

What is Adipate and how is it used?

Adipate is a light-colored, oily liquid with an aromatic odor. It is used in making plastics. It is also used as a solvent; in aircraft lubricants; as a hydraulic fluid; as a plasticizer or solvent in the following cosmetics: bath oils, eye shadow, cologne, foundations, rouge, blusher, nail-polish remover, moisturizers and indoor tanning preparations; in meat wrapping operations.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Adipate being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for adipate has been set at 0.4 parts per million (ppm) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.4 ppm because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

Adipol 2EH
Bisoflex DOA
Effomoll DOA
Kodiflex DOA
Monoplex DOA
Plastomoll DOA
Sicol 250
Truflex DOA
Vestinol OA
Wickenol 158
Witamol 320
Ergoplast AdDO
Kemester 5652
Reomol DOA
Rucoflex DOA
Staflex DOA

What are the Health Effects?

Short-term: Adipate is not known to cause any health problems when people are exposed to it at levels above the MCL for relatively short periods of time.

Long-term: Adipate has the potential to cause the following effects from a lifetime exposure at levels above the MCL: reduced body weight and bone mass; damage to liver and

RELEASES TO WATER AND LAND: 1987 TO 1993

	Water	Land
TOTALS (in pounds)	27,471	425,230
*Top Five States**		
OH	531	173,900
IN	5,500	93,275
VA	1,886	46,102
TN	18,480	26,409
MI	250	29,750
*Major Industries**		
Gray iron foundries	2,263	316,438
Aluminum foundries	250	50,409
Rubber, plastic hose/belts	10	32,078
Space propulsion units	0	20,363
Misc Indust. organics	11,996	131

* Water/Land totals only include facilities with releases greater than a certain amount - usually 1000 to 10,000 lbs.

testes; cancer.

HOW MUCH ADIPATE IS PRODUCED AND RELEASED TO THE ENVIRONMENT?

Adipate is released in fly ash from municipal waste incineration, wastewater effluents from sewage treatment plants and chemical manufacturing plants. Since adipates are known to leach from plumbing made of PVC plastic, they have been recognized as a potential drinking water contaminant.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, adipate releases to land and water totalled over 450,000 lbs. These releases were primarily from gray and ductile iron foundries. The largest releases occurred in Ohio and Indiana.

WHAT HAPPENS TO ADIPATE WHEN IT IS RELEASED TO THE ENVIRONMENT?

If released to soil or water, adipate is expected to be broken down by microbes. It will adhere to sediments in water bodies and will not leach through soil to ground water. Adipate does not tend to accumulate or persist in fish but may it may become concentrated in other aquatic organisms that are unable to metabolize adipate.

HOW WILL ADIPATE BE DETECTED IN AND REMOVED FROM MY DRINKING WATER?

The regulation for adipate became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if adipate is present above 0.6 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of adipate so that it is consistently below that level. The following treatment methods have been approved by EPA for removing adipate: Granular activated charcoal.

HOW WILL I KNOW IF ADIPATE IS IN MY DRINKING WATER?

If the levels of adipate exceed the MCL, 0.4 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 b-C October 1995

National Primary Drinking Water Regulations

Alachlor

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:
- **MCLG:** ZERO
- **MCL:** 2 PPB

What is Alachlor and how is it used?

Alachlor is an odorless, white solid. The greatest use of alachlor is as a herbicide for control of annual grasses and broadleaf weeds in crops, primarily on corn, sorghum and soybeans. Alachlor is the second most widely used herbicide in the United States, with particularly heavy use on corn and soybeans in Illinois, Indiana, Iowa, Minnesota, Nebraska, Ohio, and Wisconsin.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Alachlor being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for alachlor has been set at zero because EPA believes this level of protection would not cause any of the long-term effects described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 2 parts per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:
- Alochlor
- Lasagrin
- Lassagrin
- Lasso
- Lazo;
- Metachlor
- Pillarzo
- Alanox
- Alanex
- Chimichlor

What are the Health Effects?

Short-term: EPA has found alachlor to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: slight skin and eye irritation.

Long-term: Alachlor has the potential to cause the following effects from a lifetime exposure at levels above

the MCL: damage to liver, kidney, spleen; lining of nose and eyelids; cancer.

How much Alachlor is produced and released to the Environment?

The major source of environmental release of alachlor is through its manufacture and use as a herbicide. Alachlor was detected in rural domestic well water by EPA's National Survey of Pesticides in Drinking Water Wells. EPA's Pesticides in Ground Water Database reports detections of alachlor in ground water at concentrations above the MCL in at least 15 States.

What happens to Alachlor when it is released to the environment?

If released to soil, alachlor can be broken down by bacteria and sunlight, usually within two months. However, alachor does not bind to most soils very well and may either evaporate or leach into ground water.

Sunlight and bacterial action are also important for degrading alachlor in surface water, but evaporation generally does not occur. Once alachlor enters ground water, its break down is very slow.

The bioconcentration of alachlor in aquatic organisms is not important. Any alachlor taken up by plants or animals is quickly eliminated.

How will Alachlor be Detected in and Removed from My Drinking Water?

The regulation for alachlor became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if alachlor is present above 0.2 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of alachlor so that it is consistently below that level. The following treatment methods have been approved by EPA for removing alachlor: Granular activated charcoal.

How will I know if Alachlor is in my water?

If the levels exceed the MCL, 2 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

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National Primary Drinking Water Regulations

Aldicarb and its by-products

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: 1 ppb

MCL: 3 ppb

What is Aldicarb and how is it used?

Aldicarb is a white crystalline solid with a sulfurous odor. Aldicarb is an insecticide applied to the soil for control of chewing & sucking insects like aphids and on nematodes. It is used in glasshouse & outdoor ornamentals, and on crops: primarily cotton, but also sugar beet, strawberries, potatoes, onions, hops, and others.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Aldicarb being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals (MCLGs).

The MCLG for aldicarb has been set at 1 part per billion (ppb) because EPA believes this level of protection would not cause any of the potential health problems described below. MCLGs have also been set for aldicarb sulfone and aldicarb sulfoxide, since aldicarb quickly breaks down into these chemicals once it is applied to crops.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 3 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

Temik
Carbamyl
Carbanolate;
Sulfone
aldoxycarb
Union Carbide
21149

What are the Health Effects?

Short-term: EPA has found aldicarb or its breakdown products to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively

short periods of time: nausea, diarrhea and relatively minor neurological symptoms. These effects are reversible.

Long-term: Aldicarb has the potential to cause the following effects from a lifetime exposure at levels above the MCL: sweating, constricted eye pupils and leg weakness.

How much Aldicarb is produced and released to the Environment?

Release of aldicarb to the environment will occur due to its manufacture and use as a systemic insecticide, ascaricide and nematocide for soil use. As the result of the aldicarb contamination of drinking water wells, Union Carbide Corporation excluded the use of aldicarb products in Suffolk County, Long Island, New York. The company also limited the use of aldicarb products to once every two years and only after plant emergency in the States of Maine and Wisconsin and the Counties of Hartford in Connecticut, Kent and New Castle in Delaware, Franklin and Hampshire in Massachusetts, Worchester in Maryland, Atlantic, Burlington, Cumberland, Monmouth and Salem in New Jersey, Newport and Washington in Rhode Island, and Accomack and Northampton in Virginia.

Aldicarb may be applied at planting for aphid control in the State of Maine.

What happens to Aldicarb when it is released to the environment?

If aldicarb is released to the soil it should not bind to the soil. Microbes and chemicals in soils will breakdown aldicarb into its metabolites, aldicarb sulfoxide and aldicarb sulfone. It tends to persist in soils for up to 15 days. Aldicarb may leach to the groundwater in some soils where the rates of breakdown are relatively slow, as in acidic soils. If aldicarb is released to water it should not adsorb to sediments or bioconcentrate in aquatic organisms. It tends to persist in water longer than in soil.

How will Aldicarb be Detected in and Removed from My Drinking Water?

NOTE: ***The MCLs for aldicarb and its metabolites are not in effect at present.*** By December 31 1995, your water supplier must have completed its collection of a series of water samples - every 3 months for one year - and analyze them to find out if aldicarb or its metabolites are present.

Learn more about your drinking water!

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Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

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National Primary Drinking Water Regulations

Atrazine

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:
- **MCLG:** 3 ppb
- **MCL:** 3 ppb

What is Atrazine and how is it used?

Atrazine is a white, crystalline solid organic compound. It is a widely used herbicide for control of broadleaf and grassy weeds. Atrazine was estimated to be the most heavily used herbicide in the United States in 1987/89, with its most extensive use for corn and soybeans in Illinois, Indiana, Iowa, Kansas, Missouri, Nebraska, Ohio, Texas, and Wisconsin. Effective in 1993, its uses were greatly restricted.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Atrazine being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for atrazine has been set at 3 parts per billion (ppb) because EPA believes this level of protection would not cause any of the health effects described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 3 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:
- Aatrex
- Actinite PK
- Akticon
- Argezin
- Atazinax
- Atranex
- Atrataf
- Atred
- Candex
- Cekuzina-T
- Chromozin
- Crisatrina
- Cyazin
- Fenamin
- Fenatrol
- Gesaprim
- Griffex
- Hungazin
- Inakor
- Pitezin
- Primatol
- Radazin
- Strazine
- Vectal
- Weedex A
- Wonuk
- Zeapos
- Zeazine

What are the Health Effects?

Short-term: EPA has found atrazine to potentially cause the following health effects when people are exposed to it at levels

above the MCL for relatively short periods of time: congestion of heart, lungs and kidneys; low blood pressure; muscle spasms; weight loss; damage to adrenal glands.

Long-term: Atrazine has the potential to cause the following effects from a lifetime exposure at levels above the MCL: weight loss, cardiovascular damage, retinal and some muscle degeneration; cancer.

How much Atrazine is produced and released to the Environment?

Atrazine may be released to the environment in wastewater from manufacturing facilities and through its use as a herbicide. Atrazine was the second most frequently detected pesticide in EPA's National Survey of Pesticides in Drinking Water Wells. EPA's Pesticides in Ground Water Database indicates numerous detections of atrazine at concentrations above the MCL in ground water in several States, including Delaware, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska and New York.

What happens to Atrazine when it is released to the environment?

Microbial activity and other chemicals may breakdown atrazine in soil and water, particularly in alkaline conditions. Sunlight and evaporation do not reduce its presence. It may bind to some soils, but generally tends to leach to ground water.

Atrazine is not likely to be taken up in the tissues of plants or animals.

How will Atrazine be Detected in and Removed from My Drinking Water?

The regulation for atrazine became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if atrazine is present above 1 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of atrazine so that it is consistently below that level. The following treatment methods have been approved by EPA for removing atrazine: Granular activated charcoal.

How will I know if Atrazine is in my Drinking Water?

If the levels of atrazine exceed the MCL, 3 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

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For help in locating these agencies or for information on drinking water in general, call:

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For additional information on the uses and releases of chemicals in your state, contact the:

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National Primary Drinking Water Regulations

Benzo(a)pyrene

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:
MCLG: ZERO
MCL: 0.2 PPB

WHAT IS BENZO(A)PYRENE AND HOW IS IT USED?

Benzo(a)pyrene, or BaP, is one of a group of compounds called polycyclic aromatic hydrocarbons (PAHs). They are not produced or used commercially but are very commonly found since they are formed as a result of incomplete combustion of organic materials.

WHY IS BENZO(A)PYRENE BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for benzo(a)pyrene has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.2 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found benzo(a)pyrene to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: red blood cell damage, leading to anemia; suppressed immune system.

Long-term: Benzo(a)pyrene has the potential to cause the following effects from a lifetime exposure at levels above the MCL: developmental and reproductive effects; cancer.

TRADE NAMES AND SYNONYMS:
BaP
3,4-BENZ(A)PYRENE

PAHs are found in exhaust from motor vehicles and other gasoline and diesel engines, emission from coal-, oil-, and wood-burning stoves and furnaces, cigarette smoke; general soot and smoke of industrial, municipal, and domestic origin, and cooked foods, especially charcoal-broiled; in incinerators, coke ovens, and asphalt processing and use.

How much Benzo(a)pyrene is produced and released to the Environment?

There are two major sources of PAHs in drinking water: 1) contamination of raw water supplies from natural and man-made sources, and 2) leachate from coal tar and asphalt linings in water storage tanks and distribution lines. PAHs in raw water will tend to adsorb to any particulate matter and be removed by filtration before reaching the tap.

PAHs in tap water will mainly be due to the presence of PAH-containing materials in water storage and distribution systems. Though few data are available for estimating the potential for PAH release to water from these materials, there are reports that levels can reach 0.01 mg/L with optimum leaching conditions.

Released benzo(a)pyrene is moderately persistent in the environment. It readily binds to soils and should not leach to ground water, though it has been detected in some ground water. If released to water, it will adsorb very strongly to sediments and particulate matter. In most waters and in sediments it will resist breakdown by microbes or reactive chemicals, but it may evaporate or be degraded by sunlight. Benzo(a)pyrene is expected to bioconcentrate in aquatic organisms that can not metabolize it, including plankton, oysters and some fish.

What happens to Benzo(a)pyrene when it is released to the environment?

The regulation for BaP became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if BaP is present above 0.02 ppb. If it is present above this level, the system must continue to monitor this contaminant.

How will Benzo(a)pyrene be Detected in and Removed from My Drinking Water?

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of BaP so that it is consistently below that level. The following treatment methods have been approved by EPA for removing BaP: Granular activated charcoal.

If the levels of BaP exceed the MCL, 0.2 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

How will I know if Benzo(a)pyrene is in my Drinking Water?

Learn more about your drinking water!

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National Primary Drinking Water Regulations

Carbofuran

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: 40 ppb

MCL: 40 ppb

What is Carbofuran and how is it used?

Carbofuran is a white crystalline solid with a slightly phenolic odor. This broad spectrum insecticide is sprayed directly onto soil and plants just after emergence to control beetles, nematodes and rootworm. The greatest use of carbofuran is on alfalfa and rice, with turf and grapes making up most of the remainder. Earlier uses were primarily on corn crops.

Carbofuran is allowed for use on only a few U.S. crops, and will soon be banned from use on corn and sorghum in California.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Carbofuran being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for carbofuran has been set at 40 parts per billion (ppb) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has also been set at 40 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

- Niagara 10242
- Furadan 4F or 3G
- Brifur
- Crisfuran
- Chinufur
- Curaterr
- Yaltox
- Pillarfuran
- Kenofuran

What are the Health Effects?

Short-term: EPA has found carbofuran to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: headache,

sweating, nausea, diarrhea, chest pains, blurred vision, anxiety and general muscular weakness. These effects are reversible.

Long-term: Carbofuran has the potential to cause the following health effects from long-term exposures at levels above the MCL: damage to the nervous and reproductive systems.

How is Carbofuran released to the Environment?

Carbofuran enters surface water as a result of runoff from treated fields and enters ground water by leaching of treated crops.

EPA's 1990 National Pesticide Survey did not detect carbofuran levels above the MCL in rural domestic wells or Community Water System wells. EPA's Pesticides in Ground Water Database found very low levels of carbofuran in ground water between 1971 and 1991..

What happens to Carbofuran when it is released to the environment?

If released to soil or water, carbofuran will be broken down by reactive chemicals and microbes, particularly in alkaline conditions. Carbofuran may leach significantly in many soils, as has been seen in the detection of carbofuran in sandy aquifers in NY and WI. Leaching may not occur, however, in very high organic content soils. It is not expected to accumulate in aquatic organisms.

How will Carbofuran be Detected in and Removed from My Drinking Water?

The regulation for carbofuran became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if carbofuran is present above 0.9 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of carbofuran so that it is consistently below that level. The following treatment methods have been approved by EPA for removing carbofuran: Granular activated charcoal.

How will I know if Carbofuran is in my Drinking Water?

If the levels of carbofuran exceed the MCL, 40 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 g-C October 1995

National Primary Drinking Water Regulations

Chlordane

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: ZERO

MCL: 2 PPB

WHAT IS CHLORDANE AND HOW IS IT USED?

Chlordane is a viscous liquid, colorless to amber, with a slight chlorine-like aromatic odor. It was used on corn, citrus, deciduous fruits and nuts, vegetables; for home, garden and ornamentals; lawns, turf, ditchbanks and roadsides. It was applied directly to soil or foliage to control a variety of insect pests including parasitic roundworms and other nematodes, termites, cutworms, chiggers, leafhoppers. The only commercial use of chlordane products still permitted is for fire ant control in power transformers.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS CHLORDANE BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for chlordane has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 2 parts per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

TRADE NAMES AND SYNONYMS:

VELSICOL 1068
ASPON-CHLORDANE
BELT
CHLORINDAN
CHLOR-KIL
CORTILAN-NEU
DOWCHLOR
OKTACHLOR
OKTATERR
SYNKLOR
TAT CHLOR 4
TOPICLOR
TOXICHLOR
INTOX 8
GOLD CREST C-100
KILEX
KYPCHLOR
NIRAN
TERMI-DED
PRENTOX
PENTIKLOR

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found chlordane to potentially cause the following health effects when people are exposed to it at levels

above the MCL for relatively short periods of time: central nervous system effects - including irritability, excess salivation, labored breathing, tremors, convulsions, deep depression - and blood system effects such as anemia and certain types of leukemia.

Long-term: Chlordane has the potential to cause the following effects from a lifetime exposure at levels above the MCL: damage to liver, kidneys, heart, lungs, spleen and adrenal glands; cancer.

How much Chlordane is produced and released to the Environment?

Chlordane has been released into the environment primarily from its application as an insecticide. The amount of chlordane used annually in the US prior to 1983 was estimated in 1985 to be greater that 3.6 million pounds. As of April 14, 1988, however, all commercial use of chlordane in the US has been cancelled.

What happens to Chlordane when it is released to the environment?

Chlordane may persist for long periods of time in air, soil and water. Though chlordane tends to adhere to soil, its detection in various groundwaters in NJ and elsewhere indicates that it can leach to groundwater. It is only very slowly broken down by microbes. Chlordane has been detected in air samples in remote areas such as over the Pacific and Atlantic Oceans, and in the Arctic.

Chlordane has a great tendency to accumulate in aquatic organisms, but there is evidence that this is reversible once exposure is stopped.

How will Chlordane be Detected in and Removed from My Drinking Water?

The regulation for chlordane became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if chlordane is present above 0.2 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of chlordane so that it is consistently below that level. The following treatment methods have been approved by EPA for removing chlordane: granular activated charcoal.

How will I know if Chlordane is in my Drinking Water?

If the levels of chlordane exceed the MCL, 2 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency
Office of Water 4601
EPA 811-F-95-003 h-C
October 1995

National Primary Drinking Water Regulations

2,4 - D

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: 70 ppb

MCL: 70 ppb

What is 2,4-D and how is it used?

2,4-D is a colorless, odorless powder used as a herbicide for the control of broad-leaf weeds in agriculture, and for control of woody plants along roadsides, railways, and utilities rights of way. It has been most widely used on such crops as wheat and corn, and on pasture and rangelands.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is 2,4-D being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for 2,4-D has been set at 70 parts per billion (ppb) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 70 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

"Agent White"
Bladex-B
Brush Killer 64
Dicofur
Dormon
Ipaner
Moxon
Netagrone
Pielik
Verton 38
Mota Maskros
Silvaprop 1
Agricorn D
Acme LV4
Croprider
Fernesta
Lawn-Keep
Pennamine D
Plantgard
Tributon
Weed-B-Gon
Weedatul
Agroxone
Weedar
Salvo
Green Cross
Weed-No-More 80
Red Devil Dry Weed Killer
Scott's 4XD
Weed-Rhap LV40
Weedone 100
2,4-Dichloro-phenoxyacetic acid

What are the Health Effects?

Short-term: EPA has found 2,4-D to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: nervous system damage.

Long-term: 2,4-D has the potential to cause the following

RELEASES TO WATER AND LAND: 1987 TO 1993

	Water	Land
TOTALS (in pounds)	3,444	113,358
Top Five States		
HI	0	73,679
FL	5	38,456
MO	1,817	0
MI	822	8
TX	800	0
Major Industries		
Cane sugar	0	99,886
Agri. chems.	2,616	815
Plastics, resins	696	0
Misc. manufact.	0	400
Gen. Chemical	126	8

* Water/Land totals only include facilities with releases greater than a certain amount - usually 1000 to 10,000 lbs.

effects from a lifetime exposure at levels above the MCL: damage to the nervous system, kidneys and liver.

HOW MUCH 2,4-D IS PRODUCED AND RELEASED TO THE ENVIRONMENT?

Production of 2,4-D was 45.1 million lbs in 1982. 1991 data indicates only that production exceeded 5000 lbs. Major environmental releases of 2,4-D are due to agricultural applications of systemic herbicides. It is also released as a result of the production or disposal of 2,4-D or its by-products.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, 2,4-D releases to land and water totalled over 116,000 lbs. These releases were primarily from cane sugar-related industries (except refineries). The largest releases occurred in Hawaii.

WHAT HAPPENS TO 2,4-D WHEN IT IS RELEASED TO THE ENVIRONMENT?

2,4-D is readily degraded by microbes in soil and water. Leaching to ground water may occur in coarse-grained sandy soils with low organic content or with very basic soils. In general little runoff occurs with 2,4-D or its amine salts. There is no evidence that bioconcentration of 2,4-D occurs through the food chain. This has been known from large-scale monitoring studies of soils, foods, feedstuffs, wildlife, human beings, and from other environmental cycling studies.

HOW WILL 2,4-D BE DETECTED IN AND REMOVED FROM MY DRINKING WATER?

The regulation for 2,4-D became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if 2,4-D is present above 0.5 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of 2,4-D so that it is consistently below that level. The following treatment methods have been approved by EPA for removing 2,4-D: Granular activated charcoal.

HOW WILL I KNOW IF 2,4-D IS IN MY DRINKING WATER?

If the levels of 2,4-D exceed the MCL, 70 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 i-C October 1995

National Primary Drinking Water Regulations

Dalapon

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: 0.2 PPM

MCL: 0.2 PPM

WHAT IS DALAPON AND HOW IS IT USED?

Dalapon is a colorless liquid with an acrid odor sold as sodium or magnesium salt. Dalapon is a herbicide used to control grasses in a wide variety of crops, including fruit trees, beans, coffee, corn, cotton and peas. It is also registered for use in a number of non-crop applications such as lawns, drainage ditches, along railroad tracks, and in industrial areas.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS DALAPON BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for dalapon has been set at 0.2 parts per million (ppm) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has also been set at 0.2 ppm because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

TRADE NAMES AND SYNONYMS:

- REVENGE
- ALATEX
- BASFAPON
- BASINEX
- CRISAPON
- DAWPON-RAE
- DED-WEED
- DOWPON
- GRAMEVIN
- KENAPON
- LIROPON
- PROPON
- RADAPON
- UNIPON
- S-1315
- S-95
- 2,2-DPA
- 2,2-DICHLORO-PROPRIONIC ACID

WHAT ARE THE HEALTH EFFECTS?

Short-term: Dalapon is not known to cause any health problems when people are exposed to it at levels above the MCL for relatively short periods of time.

Long-term: Dalapon has the potential to cause the following effects from a lifetime exposure at levels above the MCL: in-

creased kidney-to-body weight.

How much Dalapon is produced and released to the Environment?

Dalapon is released directly to the environment in its use as a herbicide for the control of annual and perennial grasses. Domestic production of dalapon in 1982 ranged between 7 and 9 million lbs. active ingredient. In 1984, its use in California was reported as follows: Non-food use, 92.9% (mostly on rights of way); main food crop treated was sugarbeet (6.7% of total).

What happens to Dalapon when it is released to the environment?

Dalapon leaches readily in soil, though in some soils, microbes may break it down fast enough to prevent ground water contamination. Still, a persistence of six months has been observed in soils of various forests and tree nurseries. Microbes will also degrade most of any releases to water. Accumulation in aquatic life is not expected to be a problem.

How will Dalapon be Detected in and Removed from My Drinking Water?

The regulation for dalapon became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if dalapon is present above 1 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of dalapon so that it is consistently below that level. The following treatment methods have been approved by EPA for removing dalapon: Granular activated charcoal.

How will I know if Dalapon is in my Drinking Water?

If the levels of dalapon exceed the MCL, 0.2 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 j-C October 1995

National Primary Drinking Water Regulations

Dibromochloropropane

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: - ppm/ppb

MCL: - ppm/ppb

What is Dibromochloropropane and how is it used?

Dibromochloropropane, or DBCP is a dense yellow organic liquid with a pungent odor. It is used primarily as an unclassified nematocide for soil fumigation of cucumbers, summer squash, cabbage, cauliflower, carrots, snap beans, okra, aster, shasta daisy, lawn grasses and ornamental shrubs.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is DBCP being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for DBCP has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.2 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

DBCP
BBC 12
Fumagon
Fumazone
Nemabrom
Nemafum
Nemagon
Nemanax
Nemapaz
Nemaset
Nemazon
Gro-Tone
Nematode
Durham Nematocide

What are the Health Effects?

Short-term: EPA has found DBCP to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: kidney and liver damage and atrophy of the testes.

Long-term: DBCP has the potential to cause the following effects from a lifetime exposure at levels above the MCL: kidney damage and antifertility; cancer.

How much DBCP is produced and released to the Environment?

In the past, release of DBCP to the environment occurred primarily from its fumigant and nematocide uses. In 1977, 831,000 pounds of DBCP was used in CA alone, mainly on grapes and tomatoes. In 1974, USA farmers applied 9.8 million pounds of DBCP on crops.

All registrations of end use products were cancelled in 1979 except for the use as a soil fumigant against nematodes on pineapples in Hawaii. This use was cancelled in 1985.

What happens to DBCP when it is released to the environment?

DBCP released to soil will most likely evaporate or leach to groundwater. Break down by microbes is slow by comparison. Once in the atmosphere, DBCP is expected to be broken down fairly quickly by sunlight. DBCP is not likely to accumulate in aquatic life.

How will DBCP be Detected in and Removed from My Drinking Water?

The regulation for DBCP became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if DBCP is present above 0.02 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of DBCP so that it is consistently below that level. The following treatment methods have been approved by EPA for removing DBCP: Granular activated charcoal together with Packed Tower Aeration.

How will I know if DBCP is in my Drinking Water?

If the levels of DBCP exceed the MCL, 0.2 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 k-C October 1995

National Primary Drinking Water Regulations

Dinoseb

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: 7 ppb

MCL: 7 ppb

What is Dinoseb and how is it used?

Dinoseb is an organic solid - yellowish crystals with a pungent odor. Its greatest use is as a contact herbicide for post-emergence weed control in cereals, undersown cereals, seedling lucerne and peas. Dinoseb is also used as a corn yield enhancer and an insecticide and miticide.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Dinoseb being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for dinoseb has been set at 7 parts per billion (ppb) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 7 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

- Aatox
- Chemox
- Gebutox
- Knox-weed
- Basanite
- BNP 20
- Butaphene
- Dibutox
- Dinitrall
- Dinitro
- Desicoil
- Dow Selective Weed Killer
- Hivertox
- Ladob
- Laseb
- Nitropone C
- Dytop
- Premerge
- Hel-fire
- Caldon
- Kiloseb
- Sinox General
- Subitex
- Dinitrobutyl-phenol

What are the Health Effects?

Short-term: EPA has found dinoseb to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: sweating, headache, mood changes.

Long-term: Dinoseb has the potential to cause the following

effects from a lifetime exposure at levels above the MCL: decreased body and thyroid weight, degeneration of testes; thickening of intestinal lining.

How much Dinoseb is produced and released to the Environment?

1982 production of dinoseb was reported as 6.2 million pounds, used primarily on soybeans and vegetables. Release of dinoseb has resulted primarily from its use as an herbicide on a variety of weeds.

What happens to Dinoseb when it is released to the environment?

Dinoseb is degraded slowly by soil bacteria and binds weakly to soil. Therefore, leaching in soil is possible and dinoseb has been detected in groundwater. In water, dinoseb is mainly broken down by sunlight. It is not likely to accumulate in aquatic life.

How will Dinoseb be Detected in and Removed from My Drinking Water?

The regulation for dinoseb became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if dinoseb is present above 0.2 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of dinoseb so that it is consistently below that level. The following treatment methods have been approved by EPA for removing dinoseb: Granular activated charcoal.

How will I know if Dinoseb is in my Drinking Water?

If the levels of dinoseb exceed the MCL, 7 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

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For additional information on the uses and releases of chemicals in your state, contact the:

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United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 I-C October 1995

National Primary Drinking Water Regulations

Dioxin (2,3,7,8-TCDD)

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: ZERO

MCL: 0.03 PPB

WHAT IS DIOXIN AND HOW IS IT USED?

Dioxin is an organic solid of white crystalline needles. Dioxin is not produced or used commercially in the US. It is a contaminant formed in the production of some chlorinated organic compounds, including a few herbicides such as silvex. It may also be formed during combustion of a variety of chlorinated organic compounds.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS DIOXIN BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for dioxin has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.03 parts per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found dioxin to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: liver damage, weight loss, wasting of glands important to the body's immune system.

Long-term: Dioxin has the potential to cause the following effects from a lifetime exposure at levels above the MCL: a variety of reproductive effects, from reduced fertility to birth defects;

TRADE NAMES AND SYNONYMS:

DIOXIN

TETRADIOXIN

cancer.

How much Dioxin is produced and released to the Environment?

Dioxin is released to the environment in emissions from the incineration of municipal refuse and certain chemical wastes, in exhaust from automobiles powered by leaded gasoline, in emissions from wood burning in the presence of chlorine, in accidental fires involving transformers containing PCBs and chlorinated benzenes, and from the improper disposal of certain chlorinated chemical wastes. It has been released to the environment as a low level impurity in various pesticides.

What happens to Dioxin when it is released to the environment?

Dioxin is one of the most toxic and environmentally stable tricyclic aromatic compounds of its structural class.

Due to its very low water solubility, most of the dioxin occurring in water will adhere to sediments and suspended silts. Similarly, it tends to adhere to soil if released to land, and is not likely to leach to ground water. Two processes which may be able to remove dioxin from water and soil are evaporation and breakdown by sunlight. Dioxin is generally resistant to microbial breakdown. Dioxin has a very great tendency to accumulate in aquatic life, from algae to fish.

How will Dioxin be Detected in and Removed from My Drinking Water?

The regulation for dioxin became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if dioxin is present above 5 parts per trillion. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of dioxin so that it is consistently below that level. The following treatment methods have been approved by EPA for removing dioxin: Granular activated charcoal.

How will I know if Dioxin is in my Drinking Water?

If the levels of dioxin exceed the MCL, 0.03 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 m-C October 1995

National Primary Drinking Water Regulations

Diquat

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: 20 PPB

MCL: 20 PPB

WHAT IS DIQUAT AND HOW IS IT USED?

Diquat is an organic solid of colorless or yellow crystals. A water solution is dark red-brown. Diquat is a herbicide that has been used extensively in the US since the late 1950s to control both crop and aquatic weeds. It is used on potatoes; as an aid in harvesting cotton, rapeseed and other oil seed crops; to wilt and dry out silage, standing hay, etc. for storage; a plant growth regulator and sugar cane-flowering suppressant.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS DIQUAT BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for diquat has been set at 20 parts per billion (ppb) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 20 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

TRADE NAMES AND SYNONYMS:

REGLONE

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found diquat to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: dehydration.

Long-term: Diquat has the potential to cause the following

effects from a lifetime exposure at levels above the MCL: cataracts.

How much Diquat is produced and released to the Environment?

Diquat usage in 1980 was estimated to be 200,000 lbs. of active ingredient. 1982 data indicates that diquat was not produced domestically, but imports were nearly 835,000 lbs. Diquat is released into the environment during its use as a contact herbicide, aquatic weed control agent, harvesting aid, or plant growth regulator. It may also be released into wastewater or in spills during its manufacture, transport and storage.

What happens to Diquat when it is released to the environment?

Diquat rapidly adheres to soil particles. Though it is resistant to breakdown by microbes or other means, this binding to soil serves to deactivate it. Still, diquat has some potential to leach to ground water.

Diquat is removed rapidly from water, disappearing in 2-4 weeks. It has little or no tendency to accumulate in fish.

How will Diquat be Detected in and Removed from My Drinking Water?

The regulation for diquat became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if diquat is present above 0.4 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of diquat so that it is consistently below that level. The following treatment methods have been approved by EPA for removing diquat: Granular activated charcoal.

How will I know if Diquat is in my Drinking Water?

If the levels of diquat exceed the MCL, 20 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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National Primary Drinking Water Regulations

Endothall

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

- MCLG: 0.1 ppm
- MCL: 0.1 ppm

What is Endothall and how is it used?

Endothall is an organic solid of white odorless crystals. Endothall is used as a defoliant for a wide range of crops and as a herbicide for both terrestrial and aquatic weeds. It is used as a desiccant on lucerne and on potato, for the defoliation of cotton, to control aquatic weeds and as an aquatic algicide growth regulator. It has been used for: sugar beets, turf, hops sucker suppression; alfalfa, clover desiccants; potato vine killers.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Endothall being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for endothall has been set at 0.1 parts per million (ppm) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.1 ppm because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

- Accelerate
- Aquathol
- Des-i-cate
- Endothall Turf Herbicide
- Endothall Weed Killer
- Herbicide 273
- Hydrothol
- Herbon
- Pennout
- Hydout

What are the Health Effects?

Short-term: EPA has found endothall to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: depressed breathing and heart rate.

Long-term: Endothall has the potential to cause the following effects from a lifetime exposure at levels above the MCL: increase in size of some internal organs, particularly the stomach and intestine.

How much Endothall is produced and released to the Environment?

EPA estimated total domestic usage in 1982 to have been approximately 1.5 million lbs. Release of endothall to the environment is expected to occur primarily during its use as a pre-emergence, post-emergence, turf and aquatic herbicide and harvest aid. Other sources of release include loss during manufacturing, formulation, packaging or disposal of this herbicide.

What happens to Endothall when it is released to the environment?

Endothall is expected to be quickly broken down by microbes in soil or water. It is also able to leach through soil into ground water; however, rapid degradation would limit the extent of leaching. Endothall is not likely to accumulate in aquatic life.

How will Endothall be Detected in and Removed from My Drinking Water?

The regulation for endothall became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if endothall is present above 9 parts per billion. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of endothall so that it is consistently below that level. The following treatment methods have been approved by EPA for removing endothall: Granular activated charcoal.

How will I know if Endothall is in my Drinking Water?

If the levels of endothall exceed the MCL, 0.1 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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United States Environmental Protection Agency
Office of Water 4601
EPA 811-F-95-003 o-C
October 1995

National Primary Drinking Water Regulations

Endrin

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:
- MCLG: 2 ppb
- MCL: 2 ppb

What is Endrin and how is it used?

Endrin is an organic solid of odorless white crystals. Endrin is an insecticide which has been used mainly on field crops such as cotton, maize, sugarcane, rice, cereals, ornamentals, and other crops. It has also been used for grasshoppers in non-cropland and to control voles and mice in orchards. Once widely used in the US, most uses were cancelled in 1980.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Endrin being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for endrin has been set at 2 parts per billion (ppb) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 2 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:
- Nendrin
- EN 57
- Endrex
- Endricol
- Hexadrin
- Mendrin
- Oktanex
- Compound 269

What are the Health Effects?

Short-term: EPA has found endrin to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: tremors, labored breathing, mental confusion, convulsions.

Long-term: Endrin has the potential to cause the following

effects from a lifetime exposure at levels above the MCL: convulsions and damage to liver tissue.

How much Endrin is produced and released to the Environment?

Production in 1980 was reported to be 100,000 lbs. Endrin's former source in the environment is from use as an insect, bird and rat-killer. It has been used on agricultural crops, cotton seeds, control of birds on buildings and mice in orchards. Its major use has been on cotton crops. The EPA presently considers the pesticide cancelled.

What happens to Endrin when it is released to the environment?

Endrin is very persistent, but it is known to be broken down by sunlight. Endrin released to soils will persist for up to 14 years or more. Its strong adsorption to soil makes leaching into groundwater unlikely. However, the detection of endrin in certain groundwater samples suggest that leaching may be possible in some soils. Endrin released to water systems will also persist, mainly in sediments.

It has a very high potential to accumulate in fish and shellfish.

How will Endrin be Detected in and Removed from My Drinking Water?

The regulation for endrin became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if endrin is present above 0.01 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of endrin so that it is consistently below that level. The following treatment methods have been approved by EPA for removing endrin: Granular activated charcoal.

How will I know if Endrin is in my Drinking Water?

If the levels of endrin exceed the MCL, 2 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 p-C October 1995

National Primary Drinking Water Regulations

Ethylene Dibromide

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: - PPM/PPB

MCL: - PPM/PPB

What is Ethylene Dibromide and how is it used?

Ethylene dibromide (EDB) is a colorless, heavy organic liquid with a mildly sweet chloroform-like odor. Ethylene dibromide is mainly used in anti-knock gasoline mixtures, particularly in aviation fuel. Other uses include: as a solvent for resins, gums, and waxes; in waterproofing preparations; in making dyes and drugs; and as a pesticide for grains and fruit.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Ethylene Dibromide being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for EDB has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.05 parts per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

EDB
Glycol dibromide
Bromofume
Dowfume W 85
Aadibroom
Iscobrome-D
Nefis
Pestmaster EDB-85
Soilbrom
Soilfume
Kopfume

What are the Health Effects?

Short-term: EPA has found EDB to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: damage to the liver, stomach, and adrenal glands, along with significant reproductive system toxicity, particularly the testes.

Long-term: EDB has the potential to cause the following

RELEASES TO WATER AND LAND: 1987 TO 1993

	Water	Land
TOTALS (in pounds)	2,554	2,670
Top Six States		
CA	344	500
MS	342	500
HI	750	0
NJ	0	700
TX	110	466
PR	500	0
Top Industrial Sources		
Petroleum refining	2,119	1,716
Industrial organic chemicals, fertilizers	355	700

effects from a lifetime exposure at levels above the MCL: damage to the respiratory system, nervous system, liver, heart, and kidneys; cancer.

HOW MUCH ETHYLENE DIBROMIDE IS PRODUCED AND RELEASED TO THE ENVIRONMENT?

EDB is released during the use, storage, and transport of leaded gasoline, as well as during any spills; from its former use as a pesticide; wastewater and emissions from processes and waste waters of the chemical industries that use it.

From 1987 to 1993, according to the Toxics Release Inventory EDB releases to land and water totalled over 3,000 lbs. These releases were primarily from petroleum refineries. The largest of these releases occurred in California and Missouri.

WHAT HAPPENS TO ETHYLENE DIBROMIDE WHEN IT IS RELEASED TO THE ENVIRONMENT?

When spilled on land or applied to land during soil fumigation, ethylene dibromide may leach to groundwater. Its persistence can vary greatly from soil to soil, from a few weeks to as much as 19 years.

EDB released to water will mainly evaporate. It can be degraded by microbes and chemical reaction in some types of groundwater. It does not tend to accumulate in aquatic life.

HOW WILL ETHYLENE DIBROMIDE BE DETECTED IN AND REMOVED FROM MY DRINKING WATER?

The regulation for EDB became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if EDB is present above 0.01 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of EDB so that it is consistently below that level. The following treatment methods have been approved by EPA for removing EDB: Granular activated charcoal.

HOW WILL I KNOW IF ETHYLENE DIBROMIDE IS IN MY DRINKING WATER?

If the levels of EDB exceed the MCL, 0.05 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 q-C October 1995

National Primary Drinking Water Regulations

Glyphosate

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: - ppm/ppb

MCL: - ppm/ppb

What is Glyphosate and how is it used?

Glyphosate is an organic solid of odorless white crystals. It is a non-selective herbicide used on many food and non-food crops as well as non-crop areas such as roadsides. When applied at lower rates, it serves as a plant growth regulator. The most common uses include control of broadleaf weeds and grasses in: hay/pasture, soybeans, field corn; ornamentals, lawns, turf, forest plantings, greenhouses, rights-of-way.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Glyphosate being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for glyphosate has been set at 0.7 parts per million (ppm) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.7 ppm because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

- Glialka
- Roundup
- Sting
- Rodeo
- Spasor
- Muster
- Tumbleweed
- Sonic
- Glifonox
- Glycel
- Rondo

What are the Health Effects?

Short-term: EPA has found glyphosate to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: congestion of the lungs; increased breathing rate.

Long-term: Glyphosate has the potential to cause the following effects from a lifetime exposure at levels above the MCL: kidney damage, reproductive effects.

How much Glyphosate is produced and released to the Environment?

Glyphosate is released to the environment in its use as a herbicide for controlling woody and herbaceous weeds on forestry, right-of-way, cropped and non-cropped sites. These sites may be around water and in wetlands.

It may also be released to the environment during its manufacture, formulation, transport, storage, disposal and cleanup, and from spills. Glyphosate is among the most widely used pesticides by volume. Usage in 1990 was estimated to be 11,595,000 pounds. It ranked eleventh among conventional pesticides in the US during 1990-91. In recent years, 13 to 20 million acres were treated with 18.7 million lbs. annually.

What happens to Glyphosate when it is released to the environment?

Glyphosate is strongly adsorbed to soil, with little potential for leaching to ground water. Microbes in the soil readily and completely degrade it even under low temperature conditions. It tends to adhere to sediments when released to water. Glyphosate does not tend to accumulate in aquatic life.

How will Glyphosate be Detected in and Removed from My Drinking Water?

The regulation for glyphosate became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if glyphosate is present above 6 parts per billion. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of glyphosate so that it is consistently below that level. The following treatment methods have been approved by EPA for removing glyphosate: Granular activated charcoal.

How will I know if Glyphosate is in my Drinking Water?

If the levels of glyphosate exceed the MCL, 0.7 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

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United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 r-C October 1995

National Primary Drinking Water Regulations

Heptachlor and Heptachlor Epoxide

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG:

Heptachlor-	zero
- epoxide-	zero

MCL:

Heptachlor-	0.4 ppb
- epoxide-	0.2 ppb

What is Heptachlor and how is it used?

Heptachlor is a white to tan waxy organic solid with a camphor-like odor. The epoxide is formed from heptachlor in the environment. It was once used as a non-agricultural insecticide. Most uses of the product were cancelled in 1978. The only permitted commercial use of heptachlor products is for fire ant control in buried, pad-mounted electric power transformers, and in underground cable television and telephone cable boxes.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Heptachlor being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLGs for heptachlor and its epoxide have been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on these MCLGs, EPA has set enforceable standards called Maximum Contaminant Levels (MCLs). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL for heptachlor has been set at 0.4 parts per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water. The MCL for the epoxide is 0.2 ppb.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

- Aahepta
- Agroceres
- Hepta
- Heptachlordane
- Heptagran
- Heptamul
- Heptox
- Gold Crest H-60
- Rhodiachlor
- Velsicol 104
- Basaklor
- Soleptax
- Termide

What are the Health Effects?

Short-term: EPA has found heptachlor and its epoxide to potentially cause the following health effects when people are

exposed to it at levels above the MCL for relatively short periods of time: liver and central nervous system damage.

Long-term: Heptachlor and its epoxide have the potential to cause the following effects from a lifetime exposure at levels above the MCL: extensive liver damage; cancer.

How much Heptachlor is produced and released to the Environment?

Heptachlor may be released directly to the soil in connection with its use in termite and fire ant control. However, heptachlor has been found in treated wastewater from some types of industrial facilities. Production of heptachlor in 1982 was nearly 100,000 lbs.

Heptachlor epoxide is not produced commercially, but rather is formed by the chemical and biological transformation of heptachlor in the environment.

What happens to Heptachlor when it is released to the environment?

Heptachlor can evaporate from soil surfaces, and is degraded by bacteria once it passes into the soil. Heptachlor is expected to adsorb strongly to soil and so resist leaching to groundwater. Heptachlor epoxide also adsorbs strongly to soil but is extremely resistant to biodegradation, persisting for many years in the upper soil layers. Similarly in water, heptachlor will be broken down while the epoxide will persist, usually in sediments.

Heptachlor epoxide is concentrated extensively in aquatic life. It is taken up into the food chain by plants and bioconcentrates into fish, animals and milk.

How will Heptachlor be Detected in and Removed from My Drinking Water?

The regulation for heptachlor became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if heptachlor is present above 0.04 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of heptachlor so that it is consistently below that level. The following treatment methods have been approved by EPA for removing heptachlor: Granular activated charcoal.

How will I know if Heptachlor is in my Drinking Water?

If the levels of heptachlor exceed the MCL, 0.4 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 s-C October 1995

National Primary Drinking Water Regulations

Hexachlorobenzene

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: ZERO

MCL: 1 PPB

WHAT IS HEXACHLOROBENZENE AND HOW IS IT USED?

Hexachlorobenzene (HCB) is an organic solid of white crystalline needles. It is produced as a by-product from the manufacture of a variety of other regulated organic chemicals. It is also a contaminant in the production of some pesticides. The greatest use of HCB is in making other organic compounds such as rubber, dyes, wood preservatives. Other uses of include: as a fungicide on grains, especially wheat.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS HEXACHLOROBENZENE BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for HCB has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 1 part per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

TRADE NAMES AND SYNONYMS:

HEXA CB
HCB
PHENYL PERCHLORYL
PERCHLOROBENZENE
PENTACHLOROPHENYL CHLORIDE
ANTICARIE
BUNT-CURE
CO-OP HEXA
JULIN'S CARBON CHLORIDE
NO BUNT 40
NO BUNT 80
SANOCIDE
SNIECIOTOX
SMUT-GO
GRANOX NM
VORONIT C

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found HCB to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: skin lesions, nerve and liver damage.

Long-term: HCB has the potential to cause the following effects from a lifetime exposure at levels above the MCL: damage

RELEASES TO WATER AND LAND: 1987 TO 1993

	Water	Land
TOTALS (in pounds)	1,286	1
Top States		
LA	677	1
TX	609	0
Major Industries		
Alkalies, chlorine	854	1
Agricultural chemicals	297	0

to liver and kidneys; reproductive effects; benign tumors of endocrine glands; cancer.

HOW MUCH HEXACHLOROBENZENE IS PRODUCED AND RELEASED TO THE ENVIRONMENT?

In 1982, imports were reported to be 38,000 lbs, with no evidence of commercial domestic production. However, 2 to 5 million lbs may be generated each year as a waste by-product of chlorination processes in chemical manufacture.

Major environmental releases of HCB are due to air and water discharges from its production as a by-product of chemical manufacture, or from pesticide applications. It is also released by some waste incineration processes. It has been detected in treated waste water from non-ferrous metal manufacturing.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, HCB releases to land and water totalled 1,287 lbs., all of which was to water. These releases were primarily from alkali, chlorine and agricultural chemical industries. The largest releases occurred in Louisiana and Texas.

WHAT HAPPENS TO HEXACHLOROBENZENE WHEN IT IS RELEASED TO THE ENVIRONMENT?

HCB is a very persistent environmental chemical due to its chemical stability and resistance to break down by microbes in soil or water. HCB strongly to soils and to lake and river sediments. It is not likely to migrate through soil to ground water. Hexachlorobenzene will accumulate in fish. It has been detected in food during market basket surveys.

HOW WILL HEXACHLOROBENZENE BE DETECTED IN AND REMOVED FROM MY DRINKING WATER?

The regulation for HCB became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if HCB is present above 0.1 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of HCB so that it is consistently below that level. The following treatment methods have been approved by EPA for removing HCB: Granular activated charcoal.

HOW WILL I KNOW IF HEXACHLOROBENZENE IS IN MY DRINKING WATER?

If the levels of HCB exceed the MCL, 1 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 t-C October 1995

National Primary Drinking Water Regulations

Hexachlorocyclopentadiene

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: 50 PPB

MCL: 50 PPB

WHAT IS HEX AND HOW IS IT USED?

Hexachlorocyclopentadiene (HEX) is an oily, yellow-green organic liquid with a pungent odor. Its greatest use is as a raw material in manufacturing other chemicals, including pesticides, flame retardants, resins, dyes, pharmaceuticals, plastics, etc. HEX has no end uses of its own.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS HEX BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for HEX has been set at 50 parts per billion (ppb) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 50 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found HEX to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: gastrointestinal distress; damage to liver, kidneys and heart.

Long-term: HEX has the potential to cause the following effects from a lifetime exposure at levels above the MCL: damage to the stomach and kidneys.

TRADE NAMES AND SYNONYMS:

HEX

HEXACHLORO-PENTADIENE

How much HEX is produced and released to the Environment?

It has been estimated that between 8 and 15 million lbs. of HEX are produced each year. Major sources of its release are emissions and contaminated wastewater from facilities which manufacture or use this compound as a chemical intermediate, and from the application of pesticides where it may remain as an impurity. From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, HEX releases to land and water totalled only 78 lbs., all of which was to water. These releases were primarily from alkalis and chlorine industries. The largest releases occurred in New York.

What happens to HEX when it is released to the environment?

HEX is not a persistent environmental contaminant. If released to soil, it is likely to adhere to soil where it will be degraded by microbes. In water it evaporates quickly and is attacked by sunlight and other reactive chemicals. Its tendency to accumulate in aquatic life varies greatly from one species to another.

How will HEX be Detected in and Removed from My Drinking Water?

The regulation for HEX became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if HEX is present above 0.2 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of HEX so that it is consistently below that level. The following treatment methods have been approved by EPA for removing HEX: Granular activated charcoal combined with Packed tower aeration.

How will I know if HEX is in my Drinking Water?

If the levels of HEX exceed the MCL, 50 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

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United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 u-C October 1995

National Primary Drinking Water Regulations

Lindane

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: 0.2 PPB

MCL: 0.2 PPB

WHAT IS LINDANE AND HOW IS IT USED?

Lindane is a white crystalline organic solid. Most uses being restricted in 1983, lindane is currently used primarily for treating wood-inhabiting beetles and seeds. It is also used as a dip for fleas and lice on pets, and livestock, for soil treatment, on the foliage of fruit and nut trees, vegetables, timber, ornamentals and for wood protection.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS LINDANE BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for lindane has been set at 0.2 parts per billion (ppb) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.2 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

TRADE NAMES AND SYNONYMS:

GAMMA-HEXACHLORO-CYCLOHEXANE
EXAGAMMA
FORLIN
GALLOGAMMA
GAMMAPHEX
INEXIT
KWELL
LINDAGRANOX
LINDATERRA
LOVIGRAM
SILVANOL

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found lindane to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: high body temperature and pulmonary edema.

Long-term: Lindane has the potential to cause the following

effects from a lifetime exposure at levels above the MCL: liver and kidney damage.

How much Lindane is produced and released to the Environment?

Lindane enters surface water as a result of runoff from agricultural land and from home and garden applications where it is used as an insecticide.

From 1987 to 1993, according to EPA's Toxics Release Inventory, lindane releases to land and water totalled 1115 lbs.

What happens to Lindane when it is released to the environment?

When released to water, lindane is not broken down by microbes, but it is attacked by chemicals in basic waters. It is degraded by soil microbes, and may evaporate from the surface, or slowly leach to ground water. Lindane will accumulate slightly in fish and shellfish.

How will Lindane be Detected in and Removed from My Drinking Water?

The regulation for lindane became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if lindane is present above 0.02 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of lindane so that it is consistently below that level. The following treatment methods have been approved by EPA for removing lindane: Granular activated charcoal.

How will I know if Lindane is in my Drinking Water?

If the levels of lindane exceed the MCL, 0.2 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

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United States Environmental Protection Agency
Office of Water 4601
EPA 811-F-95-003 v-C
October 1995

National Primary Drinking Water Regulations

Methoxychlor

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: 40 PPB

MCL: 40 PPB

WHAT IS METHOXYCHLOR AND HOW IS IT USED?

Methoxychlor is a colorless organic solid with a slightly fruity odor. It is an insecticide preferred to DDT for use on animals, in animal feed, and on DDT-sensitive crops such as squash, melons, etc. Since methoxychlor is more unstable than DDT, it has less residual effect. It has been used extensively in Canada for the control of biting flies, and is also effective against mosquitoes and houseflies.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS METHOXYCHLOR BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for methoxychlor has been set at 40 parts per billion (ppb) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 40 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

TRADE NAMES AND SYNONYMS:

DIMETHOXY-DDT
METHOXY-DDT
CHEMFORM
MARALATE
METHOXO
METHOXCIDE
METOX
MOXIE

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found methoxychlor to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: central nervous system depression, diarrhea, and damage to liver, kidney and

heart tissue.

Long-term: Methoxychlor has the potential to cause the following effects from a lifetime exposure at levels above the MCL: damage to liver, kidney and heart tissue; retards growth.

How much Methoxychlor is produced and released to the Environment?

Production of methoxychlor has decreased: from 3.7 million lbs. in 1978 to 700,000 lbs in 1982. Release of methoxychlor to the environment occurs due to its use as an insecticide and from losses during the manufacture, formulation, packaging, and disposal of methoxychlor.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, methoxychlor releases to land and water totalled only about 2000 lbs.

What happens to Methoxychlor when it is released to the environment?

Methoxychlor does not tend to persist when released to soil or water. If released to soil, methoxychlor will adhere to soils, though some may leach into groundwater as suggested by the detection of methoxychlor in some groundwater samples. It is broken down by soil and sediment microbes under some conditions. In water, methoxychlor degrades quite rapidly - within days compared to months as in soil. It may accumulate in some shellfish, but not in fish.

How will Methoxychlor be Detected in and Removed from My Drinking Water?

The regulation for methoxychlor became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if methoxychlor is present above 0.1 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of methoxychlor so that it is consistently below that level. The following treatment methods have been approved by EPA for removing methoxychlor: Granular activated charcoal.

How will I know if Methoxychlor is in my Drinking Water?

If the levels of methoxychlor exceed the MCL, 40 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

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For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency
Office of Water 4601
EPA 811-F-95-003 w-T
October 1995

National Primary Drinking Water Regulations

Oxamyl (Vydate)

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: 0.2 PPM

MCL: 0.2 PPM

WHAT IS OXAMYL AND HOW IS IT USED?

Oxamyl is a white crystalline organic solid with a slight sulfurous odor. It is widely used for control of insects, mites and nematodes on field crops, fruits and ornamentals. The majority of oxamyl is applied to apples, potatoes, and tomatoes.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS OXAMYL BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for oxamyl has been set at 0.2 parts per million (ppm) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.2 ppm because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found oxamyl to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: tremors, salivation and tearing due to interference with nerve function.

Long-term: Oxamyl has the potential to cause the following effects from a lifetime exposure at levels above the MCL: decreased body weight.

TRADE NAMES AND SYNONYMS:

VYDATE K
THIOXAMYL
DIOXAMYL
DPX 1410
DUPONT 1410

How much Oxamyl is produced and released to the Environment?

Oxamyl is released directly to the environment in its use as an insecticide and during its manufacture, handling and storage. EPA estimated that 400,000 lbs. of oxamyl were produced in the US in 1982.

What happens to Oxamyl when it is released to the environment?

Oxamyl is highly soluble in water, and is relatively stable in acidic waters. Otherwise it is readily broken down. Degradation is also rapid in soils which makes it unlikely that oxamyl will leach to ground water. Accumulation in aquatic life is not expected as oxamyl is rapidly absorbed, metabolized and eliminated in toxicological tests.

How will Oxamyl be Detected in and Removed from My Drinking Water?

The regulation for oxamyl became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if oxamyl is present above 2 parts per billion. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of oxamyl so that it is consistently below that level. The following treatment methods have been approved by EPA for removing oxamyl: Granular activated charcoal.

How will I know if Oxamyl is in my Drinking Water?

If the levels of oxamyl exceed the MCL, 0.2 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

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United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 x-C October 1995

National Primary Drinking Water Regulations

Pentachlorophenol

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: ZERO

MCL: 1 PPB

What is Pentachlorophenol and how is it used?

Pentachlorophenol (PCP) is a white organic solid with needle-like crystals and a phenolic odor. The greatest use of pentachlorophenol is as a wood preservative (fungicide). Though once widely used as an herbicide, it was banned in 1987 for these and other uses, as well as for any over-the-counter sales.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Pentachlorophenol being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for pentachlorophenol has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 1 part per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

PCP
Penchlorol
Dowicide 7
Permasan
Fungifen
Grundier
arbezol
Lauxtol
Liroprem
Chlon
Dura Treet II
Santophen 20
Woodtreat
Penta Ready
Penta WR
Forpen-50
OntrackWE
Herbicide
OrthoTriox
OsmoseWPC
Watershed WP
Weed and
Brush KillerH

What are the Health Effects?

Short-term: EPA has found pentachlorophenol to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: damage to the central nervous system

Long-term: Pentachlorophenol has the potential to cause the following effects from a lifetime exposure at levels above the

RELEASES TO WATER AND LAND: 1987 TO 1993

	Water	Land
TOTALS (in pounds)	18,700	79,780
Top Five States		
NV	0	64,100
OR	4,313	5,405
WA	3,310	5,995
AR	2,735	1,615
GA	783	1,255
Major Industries		
Explosives	0	34,100
Wood preserving	17,720	15,678
Misc. Chemicals	250	30,000

* Water/Land totals only include facilities with releases greater than a certain amount - usually 1000 to 10,000 lbs.

MCL: reproductive effects and damage to liver and kidneys; cancer.

HOW MUCH PENTACHLOROPHENOL IS PRODUCED AND RELEASED TO THE ENVIRONMENT?

Production of pentachlorophenol was 45 million lbs in 1983. It may be released to the environment as a result of its manufacture, storage, transport, or use as an industrial wood preservative.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, releases to land and water totalled nearly 100,000 lbs. The most widespread releases were primarily from wood preserving industries in many states. However, the greatest volume of releases occurred at a military munitions plant in Nevada.

WHAT HAPPENS TO PENTACHLOROPHENOL WHEN IT IS RELEASED TO THE ENVIRONMENT?

When released to soil or water, PCP will be slowly broken down by microbes and may gradually leach into ground water. If released in water, it will adsorb to sediment, or be degraded by sunlight. Its accumulation in fish will be moderate.

HOW WILL PENTACHLOROPHENOL BE DETECTED IN AND REMOVED FROM MY DRINKING WATER?

The regulation for pentachlorophenol became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if pentachlorophenol is present above 0.04 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of pentachlorophenol so that it is consistently below that level. The following treatment methods have been approved by EPA for removing pentachlorophenol: Granular activated charcoal.

HOW WILL I KNOW IF PENTACHLOROPHENOL IS IN MY DRINKING WATER?

If the levels of pentachlorophenol exceed the MCL, 1 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 y-C October 1995

National Primary Drinking Water Regulations

Phthalate, di (2-ethylhexyl)

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: ZERO

MCL: 6 PPB

What is Phthalate and how is it used?

Di (2-ethylhexyl) Phthalate, or DEHP, is the most commonly used of a group of related chemicals called phthalates or phthalic acid esters. The greatest use of DEHP is as a plasticizer for polyvinylchloride (PVC) and other polymers including rubber, cellulose and styrene. A number of packaging materials and tubings used in the production of foods and beverages are polyvinyl chloride contaminated with phthalic acid esters, primarily DEHP.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Phthalate being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for phthalate has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 6 parts per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

- DEHP
- BEHP
- Dioctyl phthalate
- Pittsburgh PX-138
- Platinol AH
- RC Plasticizer DOP
- Reomol D79P
- Sicol 150
- Staflex DOP
- Truflex DOP
- Vestinol AH
- Vinicizer 80
- Palatinol AH
- Hercoflex 260
- Kodaflex DOP
- Mollan O
- Nuoplaz DOP
- Octoil
- Eviplast 80
- Fleximel
- Flexol DOP
- Good-rite GP264
- Hatcol DOP
- Ergoplast FDO
- DAF 68
- Bisoflex 81

What are the Health Effects?

Short-term: EPA has found phthalate to potentially cause the following health effects when people are exposed to it at

RELEASES TO WATER AND LAND: 1987 TO 1993

	Water	Land
TOTALS* (in pounds)	16,910	471,191
*Top Five States**		
WI	500	255,000
TN	3,491	80,419
OH	268	62,982
NJ	3,956	23,139
NY	500	13,284
Major Industries		
Misc rubber products	274	311,900
Rubber, plastic hose	10	80,019
Cyclic crudes, intermed.	3,099	12,200

* Water/Land totals only include facilities with releases greater than 100 lbs.

levels above the MCL for relatively short periods of time: mild gastrointestinal disturbances, nausea, vertigo.

Long-term: Phthalate has the potential to cause the following effects from a lifetime exposure at levels above the MCL: damage to liver and testes; reproductive effects; cancer.

HOW MUCH PHTHALATE IS PRODUCED AND RELEASED TO THE ENVIRONMENT?

Disposal of polyvinyl chloride and other DEHP-containing materials by incineration, landfill, etc., will result in the release of DEHP into the environment. DEHP has been detected in the effluent of numerous industrial plants.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, DEHP releases to land and water totalled over 500,000 lbs., of which about 95 percent was to land. These releases were primarily from rubber and plastic hose industries. The largest releases occurred in Wisconsin and Tennessee.

WHAT HAPPENS TO PHTHALATE WHEN IT IS RELEASED TO THE ENVIRONMENT?

DEHP will adhere to soil, and so will neither evaporate nor leach into groundwater. DEHP has a strong tendency to adsorb to soil and sediments. In water, it will be degraded by microbes in a matter of weeks. DEHP does have a tendency to accumulate in aquatic organisms.

HOW WILL PHTHALATE BE DETECTED IN AND REMOVED FROM MY DRINKING WATER?

The regulation for phthalate became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if phthalate is present above 0.6 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of phthalate so that it is consistently below that level. The following treatment methods have been approved by EPA for removing phthalate: Granular activated charcoal.

HOW WILL I KNOW IF PHTHALATE IS IN MY DRINKING WATER?

If the levels of phthalate exceed the MCL, 6 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003 z-C October 1995

National Primary Drinking Water Regulations

Picloram

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: 0.5 PPM

MCL: 0.5 PPM

WHAT IS PICLORAM AND HOW IS IT USED?

Picloram is a crystalline organic solid with a chlorine-like odor. It is used in salt form as a systemic herbicide for controlling annual weeds on crops, and in combination with 2,4-D or 2,4,5-T against perennials on non-croplands for brush control. Picloram is used to control bitterweed, knapweed, leafy spurge, loco-weed, larkspur, mesquite, prickly pear, and snakeweed on rangeland in the western states.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS PICLORAM BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for picloram has been set at 0.5 parts per million (ppm) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has also been set at 0.5 ppm because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found picloram to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: damage to central nervous system, weakness, diarrhea, weight loss.

Long-term: Picloram has the potential to cause the following

TRADE NAMES AND SYNONYMS:

"AGENT WHITE"

TORDON

effects from a lifetime exposure at levels above the MCL: liver damage.

How much Picloram is produced and released to the Environment?

EPA estimates that 300,000 lbs. of picloram were produced in the US in 1982.

Picloram is released to the environment primarily from its application as a herbicide, and also during its production and handling.

What happens to Picloram when it is released to the environment?

Picloram is the most persistent of its family of herbicides.

It does not adhere to soil and so may leach to groundwater, and has in fact been detected there. It is degraded in soil and water mainly by microbes. Picloram has very little tendency to accumulate in aquatic life.

How will Picloram be Detected in and Removed from My Drinking Water?

The regulation for picloram became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if picloram is present above 0.1 part per billion. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of picloram so that it is consistently below that level. The following treatment methods have been approved by EPA for removing picloram: Granular activated charcoal.

How will I know if Picloram is in my Drinking Water?

If the levels of picloram exceed the MCL, 0.5 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

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United States Environmental Protection Agency
Office of Water 4601
EPA 811-F-95-003aa-C
October 1995

National Primary Drinking Water Regulations

Polychlorinated Biphenyls (PCBs)

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: ZERO

MCL: 0.5 PPB

WHAT ARE PCBs AND HOW IS IT USED?

Polychlorinated biphenyls (PCBs) are a group of organic chemicals which can be odorless or mildly aromatic solids or oily liquids. They were formerly used in the USA as hydraulic fluids, plasticizers, adhesives, fire retardants, way extenders, de-dusting agents, pesticide extenders, inks, lubricants, cutting oils, in heat transfer systems, carbonless reproducing paper.

WHY ARE PCBs BEING REGULATED?

The list of trade names given below may help you find out whether you are using this chemical at home or work.

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for PCBs has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.5 parts per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

TRADE NAMES AND SYNONYMS:

PCB
CHLORINATED DIPHENYL
CLOPHEN
KANECHLOR
AROCLOR
FENCLOR
CHLOREXTOL
DYKANOL
INERTEEN
MONTER
PYRALENE
SANTOTHERM
SOVOL
THERMINOL
NOFLAMOL

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found PCBs to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: acne-like eruptions and pigmentation of the skin; hearing and vision problems; spasms.

Long-term: PCBs has the potential to cause the following effects from a lifetime exposure at levels above the MCL: effects

RELEASES TO WATER AND LAND: 1987 TO 1993

	Water	Land
TOTALS (in pounds)	784	73,632
Top Five States		
CA	0	58,178
NJ	0	13,188
KY	250	750
WA	0	998
TN	255	251
Major Industries		
Non-ferrous wire	0	58,178
Steel pipe/tubing	0	13,183
Pulp mills	0	998

similar to acute poisonings; irritation of nose, throat and gastrointestinal tracts; changes in liver function; cancer.

HOW MUCH PCBs ARE PRODUCED AND RELEASED TO THE ENVIRONMENT?

Production of PCBs has decreased drastically: from over 86 million lbs. in 1970 to 35 million lbs in 1977. Since EPA banned most uses of PCBs in 1979, current releases are due mainly to the cycling of this persistent contaminant from soil to air to soil again. PCBs are also currently released from landfills, incineration of municipal refuse and sewage sludge, and improper (or illegal) disposal of PCB materials, such as waste transformer fluid, to open areas.

From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, PCB releases to land and water totalled over 74,000 lbs. The bulk of these releases occurred in 1990 and were primarily from non-ferrous wire drawing and insulating industries. The largest releases occurred in California.

WHAT HAPPENS TO PCBs WHEN RELEASED TO THE ENVIRONMENT?

PCBs are very persistent in soil and water, with no known break down processes other than slow degradation by microbes. They adhere to soils or evaporate, and so will not usually leach to ground water. PCB-contaminated sediments in lakes or rivers can slowly release PCB back into water, from which it eventually evaporates.

HOW WILL PCBs BE DETECTED IN AND REMOVED FROM MY DRINKING WATER?

The regulation for PCBs became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if PCBs are present above some lowest detectable level. If it is present above this level, which differs for each type of PCB, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of PCBs so that it is consistently below that level. The following treatment methods have been approved by EPA for removing PCBs: Granular activated charcoal.

HOW WILL I KNOW IF PCBs ARE IN MY DRINKING WATER?

If the levels of PCBs exceed the MCL, 0.5 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.

United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003bb-C October 1995

National Primary Drinking Water Regulations

Simazine

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

DRINKING WATER STANDARDS:

MCLG: 4 PPB

MCL: 4 PPB

WHAT IS SIMAZINE AND HOW IS IT USED?

Simazine is an organic white solid, used as a pre-emergence herbicide used for control of broad-leaved and grassy weeds on a variety of deep-rooted crops such as artichokes, asparagus, berry crops, broad beans, citrus, etc., and on non-crop areas such as farm ponds and fish hatcheries. Its major use is on corn where it is often combined with AAtrex. Other herbicides with which simazine is combined include: paraquat, on apples, peaches; Roundup or Oust for noncrop use; Surflan on Christmas trees; Dual on corn and ornamentals.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

WHY IS SIMAZINE BEING REGULATED?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for simazine has been set at 4 parts per billion (ppb) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has also been set at 4 ppb because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

TRADE NAMES AND SYNONYMS:

- AKTINIT
- BATAZINA
- BITEMOL
- CAT(HERBICIDE)
- CDT
- CEKUZINA-S
- GEIGY 27,692
- GESATOP
- HERBAZIN
- HERBEX
- HUNGAZIN
- PREMAZINE
- PRIMATOL S
- PRICEP
- PRINTOP
- RADOCON
- SIMADEX
- TAFAZINE
- ZEAPUR

WHAT ARE THE HEALTH EFFECTS?

Short-term: EPA has found simazine to potentially cause the following health effects when people are exposed to it at levels

above the MCL for relatively short periods of time: weight loss, changes in blood.

Long-term: Simazine has the potential to cause the following effects from a lifetime exposure at levels above the MCL: tremors; damage to testes, kidneys, liver and thyroid; gene mutations; cancer.

How much Simazine is produced and released to the Environment?

The amount of simazine used annually in the USA was estimated in 1985 to be 4.8 billion pounds. Simazine may be released into the environment via effluents at manufacturing sites and at points of application where it is employed as a herbicide.

What happens to Simazine when it is released to the environment?

If released to water, simazine will not bind to sediments or evaporate. It may leach to ground water. Its persistence varies from a few months to a few years, depending mainly on the rate of degradation by microbes. Simazine has a low potential to bioaccumulate in fish.

How will Simazine be Detected in and Removed from My Drinking Water?

The regulation for simazine became effective in 1994. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if simazine is present above 0.07 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of simazine so that it is consistently below that level. The following treatment methods have been approved by EPA for removing simazine: Granular activated charcoal.

How will I know if Simazine is in my Drinking Water?

If the levels of simazine exceed the MCL, 4 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

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United States
Environmental Protection
Agency

Office of Water
4601

EPA 811-F-95-003cc-C
October 1995

National Primary Drinking Water Regulations

Toxaphene

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: ZERO

MCL: 3 PPB

What is Toxaphene and how is it used?

Toxaphene is an amber, waxy organic solid with a piney odor. Toxaphene was used as an insecticide for cotton and vegetables, and on livestock and poultry. These uses have been restricted, and toxaphene is now used only for special needs, mainly in southern states.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is Toxaphene being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for toxaphene has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 3 parts per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

- Chlorinated camphene
- Octachlorocamphene
- Camphochlor
- Agricide Maggot Killer
- Alltex
- Crestoxo
- Compound 3956
- Estonox
- Fasco-Terpene
- Geniphene
- Hercules 3956
- M5055
- Melipax
- Motox
- Penphene
- Phenacide
- Phenatox
- Strobane-T
- Toxadust
- Toxakil
- Vertac 90%
- Toxon 63
- Attac
- Anatox
- Royal Brand Bean Tox 82
- Cotton Tox MP82
- Security Tox-Sol-6
- Security Tox-MP cotton spray
- Security Motox 63 cotton spray
- Agro-Chem Brand Torbidan 28
- DrRoger'sTOXENE

What are the Health Effects?

Short-term: EPA has found toxaphene to potentially cause the following health effects when people are exposed to it at

levels above the MCL for relatively short periods of time: central nervous system effects including restlessness, hyperexcitability, tremors, spasms or convulsions.

Long-term: Toxaphene has the potential to cause the following effects from a lifetime exposure at levels above the MCL: liver and kidney degeneration; central nervous system effects; possible immune system suppression; cancer.

How much Toxaphene is produced and released to the Environment?

Production of toxaphene in 1977 was nearly 40 million pounds. By 1982, when EPA cancelled most of its uses, consumption was reported at 12 million pounds. Toxaphene is released into the environment primarily from its application as an insecticide for the protection of cotton, mostly in southern states.

What happens to Toxaphene when it is released to the environment?

Toxaphene is very persistent, remaining in soil for up to 14 years. It is not expected to leach to groundwater. It will not break down by microbial or other means. Though it strongly binds to soils and the sediments of water bodies, it may gradually evaporate to the air where it is slowly broken down by sunlight. Toxaphene has a high potential to accumulate in aquatic life.

How will Toxaphene be Detected in and Removed from My Drinking Water?

The regulation for toxaphene became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if toxaphene is present above 1 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of toxaphene so that it is consistently below that level. The following treatment methods have been approved by EPA for removing toxaphene: Granular activated charcoal.

How will I know if Toxaphene is in my Drinking Water?

If the levels of toxaphene exceed the MCL, 3 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

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United States Environmental Protection Agency | Office of Water 4601 | EPA 811-F-95-003dd-C October 1995

National Primary Drinking Water Regulations

2,4,5 - TP (Silvex)

This is a factsheet about a chemical that may be found in some public or private drinking water supplies. It may cause health problems if found in amounts greater than the health standard set by the United States Environmental Protection Agency (EPA).

Drinking Water Standards:

MCLG: 0.05 ppm

MCL: 0.05 ppm

What is 2,4,5-TP and how is it used?

2,4,5-TP is a white organic powder with little odor. Its use has been banned since 1985. The greatest use of 2,4,5-TP was as a postemergence herbicide for control of woody plants, and broadleaf herbaceous weeds in rice and bluegrass turf, in sugarcane, in rangeland improvement programs, on lawns. Aquatic uses included control of weeds in ditches and riverbanks, on floodways, along canals, reservoirs, streams, and along southern waterways.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

Why is 2,4,5-TP being Regulated?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which do or may cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for 2,4,5-TP has been set at 0.05 parts per million (ppm) because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 0.05 ppm because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

Trade Names and Synonyms:

- Weed-B-Gon
- Propon
- Silvi-Rhap
- Sta-fast
- Miller Nu Set
- Aqua-Vex
- Color-Set
- Ded-Weed
- Fenoprop
- Fenormone
- Fruitone T
- Garlon
- Kuran
- Kurosal G/SL
- Silvex

What are the Health Effects?

Short-term: EPA has found 2,4,5-TP to potentially cause the following health effects when people are exposed to it at levels above the MCL for relatively short periods of time: depression and other nervous system effects, weakness, stomach irritation

and minor damage to liver and kidneys.

Long-term: 2,4,5-TP has the potential to cause the following effects from a lifetime exposure at levels above the MCL: minor liver and kidney damage.

How much 2,4,5-TP is produced and released to the Environment?

In 1982, 2,4,5-TP production was 500,000 pounds. Former releases were from spraying on rangelands, runoff from fields, and direct release to water for control of aquatic weeds.

What happens to 2,4,5-TP when it is released to the environment?

2,4,5-TP will strongly bind to soils and is degraded by microbes, so it isn't likely to leach to ground water. If released to water, 2,4,5-TP will bind to sediment, where microbes will slowly degrade it. It has a very low potential for accumulating in aquatic life.

How will 2,4,5-TP be Detected in and Removed from My Drinking Water?

The regulation for 2,4,5-TP became effective in 1992. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if 2,4,5-TP is present above 0.2 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of 2,4,5-TP so that it is consistently below that level. The following treatment methods have been approved by EPA for removing 2,4,5-TP: Granular activated charcoal.

How will I know if 2,4,5-TP is in my Drinking Water?

If the levels of 2,4,5-TP exceed the MCL, 0.05 ppm, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

Learn more about your drinking water!

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone book's government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call:

EPA's Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the:

Community Right-to-Know Hotline: (800) 535-0202.