US ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES PROGRAMS
REGISTRATION DIVISION (TS-767)
WASHINGTON, DC 20460

NOTICE OF PESTICIDE: ☒ REGISTRATION ☐ REREGISTRATION

(Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended)

EPA REGISTRATION NO.	DATE OF ISSUANCE
40810-6	17 JAN 1986
TERM OF ISSUANCE	

NAME OF PESTICIDE PRODUCT

Belclene 32

NAME AND ADDRESS OF REGISTRANT *(Include ZIP code)*

Ciba-Geigy Corporation
Plastics & Additives Division
Three Skyline Drive
Hawthorne, NY 10532

NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) section 3(c)(7)(A) and (B), since you have agreed to the conditions in our letter of August 6, 1985.

1. Make the labeling changes listed below before you release the product for shipment:

a. The ingredient statement and the statement "KEEP OUT OF REACH OF CHILDREN" must be placed on the center panel of the label.

b. Revise the statement (center panel only):

KEEP OUT OF REACH OF CHILDREN

to read:

KEEP OUT OF REACH OF CHILDREN
CAUTION

See side panel for additional precautionary statements.

☒ ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL	DATE

EPA Form 8570-6 (Rev. 5-76) PREVIOUS EDITION MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

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c. The heading: Precautionary Statements" is preferred to be placed directly above the subheading "Hazards to Humans and Domestic Animals."

2. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

John H. Lee
Product Manager (31)
Disinfectants Branch
Registration Division (TS-767C)

Enclosures

"DRAFT LABEL"

PA 1822
9/25/85

Belclene 329

For Industrial or Institutional Use Only

Active Ingredient:
Terbuthylazine:
2-(tert-butylamino)-
4-chloro-6 (ethylamine)-s-
triazine **44.7%**

Inert Ingredients: **55.3%**

Total: **100.0%**

EPA Reg. No. 40810-6
EPA Est. No. 34733-SW-01

BELCLENE 329 is a flowable aqueous dispersion

Keep Out of Reach of Children

Additives Department
CIBA-GEIGY Corporation
Plastics & Additives Division
Three Skyline Drive
Hawthorne, NY 10532
914 347 4700

CIBA–GEIGY

Caution! Hazard to Humans and Domestic Animals

Precautionary Statements

Harmful if swallowed or absorbed through the skin. Avoid contact with skin and clothing. Wash thoroughly after handling. Remove and wash contaminated clothing before reuse.

Statement of Practical Treatment
Eyes: Flush eyes with plenty of water for at least 15 minutes.
Get medical attention.
Skin: Flush skin with plenty of water or wash with mild soap and water.
Ingestion: If conscious, give plenty of water and induce vomiting by placing finger in back of throat. Get medical attention.

Environmental Hazards
Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Important
Read the entire Conditions of Sale and Warranty and label directions before using this product.

General Information
Heavy algae growth contributes to restricted water flow through water cooling towers, thereby impairing the efficiency of the system, especially heat-exchange efficiency. A combination of Belclene 329 and chlorine or a chlorine release agent (such as sodium, calcium, or lithium hypochlorite) used regularly controls algae and prevents re-establishment of algae when used according to directions.

Clean badly fouled systems before treatment. It is recommended that treatment be used prior to the first signs of algal infestation; otherwise, begin treatment in the early stage of algal growth, or after cleaning a system whose efficiency is already impaired by algal growth. Apply at a point in the system where Belclene 329 will be uniformly mixed, such as in the tower sump.

Belclene 329 is compatible with other waste treatment products, including polymeric anionic scale inhibitors and dispersants, has low-foaming properties, and is non-corrosive to piping and equipment.

The use of Belclene 329 will not replace the need for chlorine to fully control algal growth, but does relieve the need for excessive quantities of chlorine to combat algae. Since the combination of Belclene 329 and chlorine gives a synergistic effect, it is essential that the use of chlorine or a chlorine-release agent be continued as usual in the system.

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Disposal
Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal
Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

When to Apply
Treat cooling towers early in the algae growth period before the system is in jeopardy of becoming affected, or after cleaning of badly fouled systems.

Treatment
Mixing Instructions
Mix the correct dosage in a container of clear water, and shake or agitate thoroughly.

Initial Dose: Apply 8 fluid ounces of Belclene 329 per 10,000 gallons of water in the system. (This dosage is equivalent to 6.7 ppm of product or 3 ppm of active ingredient.) Belclene 329 may be applied to the cooling tower system by slug dosing or continuous addition. Depending upon the strain of algae present, concentrations below 6.7 ppm of product (3 ppm active ingredient) may give adequate control. Experience will demonstrate what concentration should be maintained. Apply Belclene 329 at a point in the system where there is good mixing, such as in the tower sump near the recirculating pump.

Maintenance Dose: When control of algae is evident, apply the amount of Belclene 329 per 10,000 gallons of water in the system needed to keep the system clear. Do not exceed 8 fluid ounces of Belclene 329 per 10,000 gallons of water in system.

Precaution
Do not use Belclene 329 in cooling towers where the treated water will come into contact with lawns, trees, shrubs, or other desirable plants, since injury may result.

59.51.01

34.44.03

65% Reduction

ACCEPTED
with COMMENTS
In EPA Letter Dated:

JAN 17 1986

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 40810-6

A new algicide for use in recirculating cooling tower waters.

Chemical Composition

BELCLENE 329 is a 45% stabilized dispersion of a chlorodialkyl-s-triazine in water.

Physical Properties

appearance	white to beige paste with a low viscosity
odor	slight chalky odor
specific gravity	1.10
pH of paste	7.5-8.5
viscosity of 25°C	350-700 cP
suspended solids	95% minimum
particle size	95% less than 15 µm
storage stability	stable between -10°C and 40°C
dilution with water	miscible with water in all properties

ACCEPTED
with COMMENTS
In EPA Letter Dated:

JAN 17 1986

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 4081d-6

Chemical Reactivity

The active ingredient of BELCLENE 329 is a chlorodialkyl-s-triazine and is stable in neutral, slightly acidic and slightly alkaline solutions. It is not broken down by strong oxidizng agents such as chlorine or chlorine-release agents and can therefore be used in conjunction with these products.

Physical Effects in Aqueous Media

Algae and Microbiological Fouling

The micro-organisms most commonly found in natural waters are bacteria, fungi and algae. All can be responsible for impairing the efficiency of cooling towers. Algae require air and light in order to grow, and their growth usually

appear initially in the form of microbial slime. They play a key role in the propagation of bacteria and fungi since they produce organic material from atmospheric carbon dioxide dissolved in the medium in question, using light as an energy source. The organic material so produced acts as an additional nutrient for further microbiological growth, particularly of bacteria. For this reason the efficient control of algal activity is vital to the success of any program designed to control microbiological growth in natural waters.

Triazines for the Control of Algae

The active ingredient in BELCLENE 329 is an s-triazine; this class of compound has been widely used for many years as the basis of herbicides. Some s-triazine derivatives are used for weed control in aquatic systems and in general they are active over a wide pH range. Triazines act as algal control agents by inhibiting the photosynthetic Hill reaction and, as a consequence, the production of starch in the cell structure. The s-triazines are thus essentially algistatic in action and do not have a rapid algicidal action at the low dose level recommended.

The commonly available s-triazines, despite their broad spectrum of activity, vary in their effectiveness against different strains of algae. This means that in order to achieve total inhibition across the range of algae found in natural waters, it is necessary to use relatively high concentrations, which tends to be costly.

BELCLENE 329 contains an algistat which has been selected specifically for use in industrial microbiological control programs and/or formulations. It has a broad spectrum of activity at relatively low concentrations.

Dose Level

Depending on the particular strains of algae present in the cooling system, BELCLENE 329 should be dosed to give a concentration of 6.7 ppm product. As algistat BELCLENE 329 is an algistat, the required concentration must be maintained, otherwise the algae will continue to grow. BELCLENE 329 can be dosed continuously or slug dosed to maintain the required concentration, depending on the half-life of the system. For optimum efficacy, however, it must be used in combination with chlorine or a chlorine-release agent (such as sodium, calcium, or lithium hypochlorite).

Applications

Microbiological Control in Industrial Cooling Systems

The conditions encountered in open evaporative recirculating water cooling systems are ideal for the growth and reproduction of micro-organisms. The rate of microbiological reproduction is largely determined by the availability

of organic material in the aqueous phase. This nutrient material is generally introduced by the make-up water, aerial or process contaminants and (as described above) by algal growth and activity. Since light is essential for the growth of algae, they are normally only found in reservoirs, spray ponds and within those parts of cooling towers and ancillary equipment which are exposed to daylight and subjected to constant wetting. Algae can also form slimes during their initial growth and these can be carried into the system by the water flow where they can cause fouling. The growths which occur in the unexposed parts of a system are usually classified as 'slime,' which is an accumulation of different varieties of fungi and bacteria. Because these microbiological deposits are sticky, they act as a binding agent for suspended solids and other organic debris from the water to form a slimy deposit which acts as a barrier to heat transfer.

The presence of a thriving microbial colony in a cooling system can cause the following problems:

- reduced heat transfer efficiency, which may lead to increased water usage or higher process side temperatures, or an unscheduled plant shutdown for cleaning.

- wood delignification in cooling towers.

- restricted water flow, due to blocked 'in line' filters and cooling tower screens; attachments to pipework and vessels (usually caused by iron bacteria).

- reduced cooling tower efficiency due to poor distribution.

- pitting corrosion of metals.

- obnoxious smells: these actually become noticeable when cleaning operations disturb the slimes.

ACCEPTED
with [illegible]
JAN [illegible]
Under [illegible]
Fungicide, [illegible]
as amended, for the pesticide
registered under EPA Reg. No.
40810-6

The efficient operation of an open evaporative recirculating water cooling tower requires an effective biocide treatment program, which must include reduction of the nutrient available for micro-organism reproduction. The control of algal activity is particularly important in this respect since successful control of algae minimizes the general microbiological problems associated with the growth of bacteria and fungi.

BELCLENE 329 has an algistatic mode of action, that it, at the low dose level recommended it does not kill the algae but prevents the growth of new algal cells. The algae that are already present in the system die off through natural processes. Although there is no immediate visual evidence of algal control, such as bleaching of the green algal deposits which occurs when certain oxidizing biocides are used, there are no live algae remaining in the system 10-20 days after starting treatment with BELCLENE 329.

The algistatic activity of BELCLENE 329 is unaffected by temperature, pH, or water hardness, which means that BELCLENE 329 can be used to control algae in most cooling systems.

BELCLENE 329 is extremely cost-effective, a concentration of only 2 ppm is required to control algal deposits. It can be used alone or in conjunction with other microbiocides in systems where control of bacterial or fungal growths is also required.

BELCLENE 329 is compatible with many conventional scale and corrosion inhibitors and does not foam.

ACCEPTED
with COMMENTS

JAN 1

Under ... Act as amended, for the pesticide registered under EPA Reg. No. 40810-6

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