

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

EPA REGISTRATION NO.

48525-18

DATE OF ISSUANCE

AUG 6 1986

TERM OF ISSUANCE

NOTICE OF PESTICIDE:

☒ REGISTRATION
☐ REREGISTRATION

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

NAME OF PESTICIDE PRODUCT

ENCHEN 41-J15

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Betz Energy Chemicals, Inc.
1029 Cindy Lane
Carpinteria, CA 93013

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.

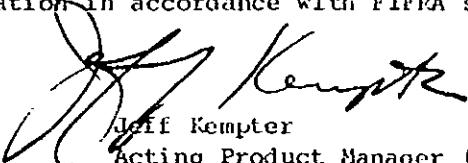
Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any 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 registration notice is being issued in accordance with section 3(c)(7)(A) of FIFRA subject to the following conditions.

1. It is understood that you will submit/cite all data required for registration/reregistration of your product under section 3(c)(5) of the FIFRA when the Agency requires all registrants of similar products to submit such data.

2. You will submit five (5) copies of your finished printed labels complying with the requirements or revisions specified in the attachment to this Registration Notice. These labels must be submitted to the Agency before the product is released for shipment as required by PR Notice 82-2 of June 1982.

A stamped copy of the draft label is enclosed for your records. Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e).


Jeff Kempter
Acting Product Manager (32)
Disinfectants Branch
Registration Division (TS-767C)

Enclosures

☐ ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

DATE

OFFICE OF PESTICIDE REGISTRATION
WASHINGTON, D.C. 20460

PESTICIDES ATTACHMENT TO EPA REGISTRATION NOTICE

EPA Registration No. 48525-18 Date Issued AUG 6 1986

Company Name Betz Energy Chemicals, Inc.

Product Name ENCHEM 41-J15

The following requirements or revisions apply to the label which was accepted with this Registration Notice:

1. An edited copy of the proposed label is enclosed indicating the revisions which must be made to your label to satisfy our requirements.
2. The Registration Number which has been assigned to this product must appear on the label as EPA Reg. No. 48525-18.
3. Five (5) copies of the finished printed labels, as defined in the A-79 Enclosure, must be submitted to the Agency before the product is released for shipment to comply with the PR Notice 82-2 of June 18, 1982.
4. The finished printed labels must comply with the general labeling requirements of Section 162.10 of Title 40 of the Code of Federal Regulations. If the label does not satisfy these requirements it will be rejected.

FILE NUM: 41J15.EPA

2/5/86

[LOGO] BETZ	BETZ EnChem	41-J15	Chlorine Dioxide Precursor
ENERGY	MICROBIAL		
CHEMICALS,	CONTROL		
INC.	AGENT		

(FIRST PANEL)

PRECAUTIONARY STATEMENTS[14b-f]

HAZARDS TO HUMANS AND[12b-f]
DOMESTIC ANIMALS[12b-f]

DANGER[13b-f]

HARMFUL IF SWALLOWED. CAUSES SKIN AND EYE IRRITATION. Do not take internally. Do not get into eyes, on skin or on clothing. Do not inhale vapor or mist. Use with adequate ventilation. Wear goggles or face shield, rubber gloves, rubber boots or shoes, and rubber apron when handling. Do NOT wear leather gloves, shoes or belts. Immediately remove contaminated clothing and wash before reuse. Wash thoroughly after handling. Do not smoke when handling.

ENVIRONMENTAL HAZARDS[14b-f]

This pesticide is toxic to fish and wildlife. Do not apply in marine and/or estuarine oil fields. Do not discharge into lakes, streams, ponds or public water unless in accordance with a VPOES permit. For guidance, contact your Regional Office of the EPA. Do not contaminate water by cleaning of container and equipment (disposal of wastes. Apply this product only as specified on this label.

PHYSICAL AND CHEMICAL HAZARDS[14b-f]

CHEMICAL HAZARD: STRONG OXIDIZING AGENT. Contact with combustible material may cause fire. Keep away from fire, heat and open flame. Do not permit to dry. May ignite if dried. Clothing contaminated with chlorite or its solutions are dangerously flammable. If spilled, flush spillage to drain with large quantities of water.

ACCEPTED
with COMMENTS
In EPA Letter Dated:

AUG 06 1986

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

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

EnChem 41-J15 may be used as a precursor to generate chlorine dioxide for use as a bactericide for oil field systems. It is particularly effective in killing sulfate-reducing and slime-forming bacteria.

Feed rates and the exact dosage will depend upon the severity of contamination and the degree of control desired. EnChem 41-J15 generates chlorine dioxide may be added to the system either intermittently or continuously below the surface of the liquid at a point where good mixing will occur.

(Directions for Use continued on third panel.)

EN40HC43-5004

Business Phone: 805-684-6991 ETC Energy Chemicals, Inc. [Cont'd bottom 2nd panel.]

(SECOND PANEL)

Contents: LIQUID

Active Ingredient:

Sodium chlorate39.5%

Inert Ingredients:.....60.5%

Total.....100.0%

EPA Reg. No. 45615-

WEIGHT PER GALLON OF PRODUCT
11.1 Pounds (77F)

NET WEIGHT OR VOLUME
AS MARKED ON CONTAINER

ACCEPTED
with COMMENTS
In EPA Letter Dated:

AUG 06 1986

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

48-525-18

5/1

DANGER[12b-f]

STATEMENT OF PRACTICAL TREATMENT[14b-f]

In case of contact with skin, wash immediately with plenty of soap and water.

In case of contact with eyes, flush promptly and thoroughly with clear water for at least 15 minutes. Immediately contact physician.

In case of ingestion, do NOT induce vomiting. Dilute with large amounts of water or milk. Immediately contact physician. Never give anything by mouth to an unconscious person.

A Material Safety Data Sheet containing more detailed information relative to this product is available upon request.

See left panel for additional Precautionary Statements.

CARPINTERIA, CA 93013 Emergency (health or [Cont'd bottom 3rd panel.]

(THIRD PANEL)

Before using this product to generate chlorine dioxide, consult with your BETZ Energy Chemicals representative. Process fact sheets describing the operation of BETZ EnChem chlorine dioxide generators are available upon request.

BADLY FOULED SYSTEMS should be cleaned before treatment is begun.

Usual treating methods include the following:

OIL FIELD WATER SYSTEMS[12b-f]

INTERMITTENT METHOD

Treatments once or twice a day for 2-4 hours of EnChem 41-J15 to generate chlorine dioxide at the rate of 50 to 200 ppm are generally effective in controlling bacteria that cause corrosion, particularly sulfate-reducing bacteria. Some waters require much more frequent treatments at the source wells. Slug treatments at a level of 400 ppm chlorine dioxide for periods greater than 4 hours may be utilized in cases of severe contamination.

CONTINUOUS METHOD

Continuous injection of chlorine dioxide generated from EnChem 41-J15 at the rate of 5 to 50 ppm is normally required in waterflood

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Under the Federal Insecticide,
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48525-78

STORAGE AND DISPOSAL[12bfc]

STORAGE: Keep container tightly closed. Protect from freezing. Store in a dry place. Do not store at elevated temperatures. Store EnChem 41-J15 solutions only in polyethylene tanks, FRP or epoxy lined steel tanks. Tanks should be kept shut securely at all times.

Do not contaminate sodium chlorate with foreign materials such as dirt, organic matter, chemicals, soap products, solvents, acids or paint products. Contamination may start a chemical reaction with generation of heat and emission of chlorine dioxide gas. Fire or explosion may result.

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

Pesticide wastes are acutely hazardous and/or toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Metal and Plastic Containers[bf]: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incinerate or burn, if allowed by state and local authorities. If burned, stay out of smoke.

FOR INDUSTRIAL USE ONLY. Technical advice regarding specific site problems is available from ECI Energy Chemicals, Inc.

Accident): 215-355-3300

(FOURTH LABEL)

OXICIDE DIAMOND

DO NOT Proper Shipping Name[bf]

SODIUM CHLORATE SOLUTION[bf]

UN 1495[bf]

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In EPA Letter Dated:

AUG 06 1986

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

48525-18

2/12/86

ACCEPTED
with COMMENTS
In EPA Letter Dated:

PRODUCT PUBLICATION

LATE MODEL 40% SODIUM CHLORATE SOLUTION
SULF-CHLORINE DIOXIDE GENERATION

AUG 06 1986

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, the U.S. EPA
registered under FIFRA and
EPA 401.100.

late model 39.5% NaClO_3 solution is offered as a precursor for the generation of chlorine dioxide for the treatment of oilfield systems. This solution of sodium chlorate is used to charge chlorine dioxide generators.

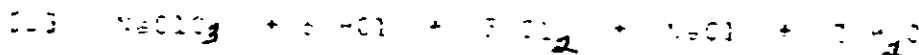
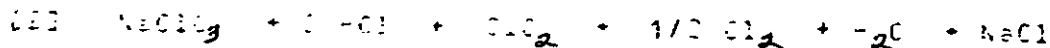
GENERATION OF CHLORINE DIOXIDE

Chlorine dioxide can be generated by activation 39.5% sodium chlorate solution with an acidic solution of sulfur dioxide gas. The principle reaction of sodium chlorate with sulfur dioxide gas:



Stoichiometrically, 1.07 lbs. of sodium chlorate react with 0.47 lbs. of sulfur dioxide to produce 1.1 lb. of chlorine dioxide. As this process is conducted by late model Energy Chemicals, Inc., the reaction is carried out by dissolving SO_2 gas in a NaClO_3 solution inside a reaction column. A slight excess of sulfur dioxide or mineral acid is fed to insure that the reaction stays below 1. The preferred mineral acid is hydrochloric acid.

If it is undesirable to utilize sulfur dioxide gas, a less efficient process employing hydrochloric acid to react with sodium chlorate will produce chlorine dioxide as well as chlorine. The main reactions govern this process:



The exact yield of chlorine dioxide from this process is difficult to determine because reaction (2) (which produces no chlorine dioxide) competes with reaction (1). This reaction takes place most efficiently as a ratio of 0.5 to 1.

CONCLUSION

Commercial chlorine dioxide generators are available to employ the above described chemistry. The principle generation of chlorine dioxide from sodium chlorate in a closed system is illustrated in Figure 1, using reaction with sulfur dioxide as an example.

A 39.5% solution of sodium chlorate is drawn by vacuum to a reaction column where it mixes with gaseous sulfur dioxide. The resulting chlorine dioxide solution is drawn into a vacuum reaction where it mixes with water to form a ClO_2 solution. A solution of 10% to 20% ClO_2 can be used to charge chlorine dioxide generators for use in oilfield systems.

TABLE 1

39.5% sodium chlorate solution has the following physical properties:

4.0 lbs NaClO_3 /gal	
Sodium chlorate	- 39.5%
Flash point (closed cup)	- >200°
Water	- 60.5%
Color/appearance	- Clear, light yellow solution

CHLORINE DIOXIDE APPLICATIONS

Bacteria, particularly sulfate reducing strains, promote serious fouling and corrosion problems in oil production facilities. Chlorine dioxide, as generated from sodium chlorate, is an excellent microbicide for use against bacteria occurring in oil production fluids. Chlorine dioxide can control the formation of sludge masses and sulfate reducer colonies.

Proper treatment programs employing chlorine dioxide depend on many factors. Some of these are: Chlorine dioxide demand of the treated water, sulfate-reducing bacteria population levels, system deposition and other factors unique to the system being treated.

Chlorine dioxide can be applied continuously or be fed in intermittent slug treatments. Dosage levels will depend on the needs of the particular treatment program and the severity of the problem being treated. Typical treatment levels range from 1 to 400 ppm of chlorine dioxide.

STORAGE AND HANDLING

Use sodium chlorate solutions only in polyethylene, FRP or epoxy lined steel tanks. Tanks should be kept shut securely, at all times.

Do not contaminate sodium chlorate with foreign materials such as dirt, organic matter, chemicals, soap products, solvents, acids or paint products. Contamination may start a chemical reaction with generation of heat and emission of chlorine dioxide gas. Fire or explosion may result.

In the event that sodium chlorate solution is spilled, flush the spilled material thoroughly with water.

TOXICOLOGICAL PROPERTIES

Do not get in eyes or skin or on clothing. Sodium chlorate may cause skin or eye irritation. It may be harmful if swallowed.

PERSONAL PROTECTION

Do not breathe vapor or mist. Use with adequate ventilation. Wear goggles or face shield, rubber gloves, rubber boots or shoes and rubber apron when handling. Do not wear leather gloves, shoes or belts. Immediately remove contaminated clothing and wash before reuse. Wash thoroughly after handling. Do not smoke when handling.

FIRST AID

Contact with skin: Rinse off with cool water and flush skin with copious water for at least 15 minutes.

Contact with eyes: Flush eyes with cool water for at least 15 minutes. Call physician.

ACCEPTED
with COMMENTS
in EPA Letter D-44-1

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Under the Federal Insecticide,
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48525-18

Remove all sources of ignition. Wear NIOSH/MSHA approved self contained breathing apparatus. Follow OSHA regulation for respirator use. (See MSDS.) Wear goggles, coveralls and rubber gloves and boots. Clean up in a manner to avoid contamination with organic material. Do not return material to original container. Place in a fresh container and isolate outside or in a well-ventilated area. Do not seal the container. Flush any residual material with large quantities of water. Do not allow spilled solution to dry as the solid residue may be lymephoric on certain surfaces and may form an explosive mixture with combustibles, organic or other easily oxidizable materials.

WARNING: Highly toxic fumes when involved in a fire. Fire fighters should wear a self-contained breathing apparatus.

PAGE 3

DISPOSAL

Dispose of unused product in a manner described on the label for this material. Consult the appropriate federal, state, or local agencies to ascertain proper disposal procedures.

TECHNICAL SERVICE

Betz Energy Chemicals, Inc. Maintains sales offices in Carpinteria and Oxnard, California. Technical sales and service representatives are available at these sales offices to assist in evaluating and designing chlorine dioxide treatment programs. If you have a specific question, desire a sample, or need more information, please write or call your nearest Betz Energy Chemicals, Inc. sales office.

AVAILABILITY

Betz product 41-01, special chlorine formulation is available in tank truck quantities or in drums, if preferred.

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In EPA Letter Dated:

AUG 06 1986

Under the Federal Insecticide,
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Act, amended, for the pest
registered under EPA Reg. No.
48525-18