



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs  
Antimicrobials Division (7510P)  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

EPA Reg. Number:

92393-1

Date of Issuance:

5/15/17

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

Xypex Bio-San C-500 (Grey)

Name and Address of Registrant (include ZIP Code):

Xypex Chemical Corporation  
13731 Mayfield Place  
Richmond, BC  
Canada V6V 2G9

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

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

Registration is in no way to be construed as an endorsement or recommendation of this product by the 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 unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.

Signature of Approving Official:

Eric Miederhoff, Product Manager 31  
Regulatory Management Branch I  
Antimicrobials Division (7510P)  
Office of Pesticide Programs

Date:

5/15/17

2. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, “EPA Reg. No. 92393-1.”
3. Submit one copy of the revised final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated November 18, 2016

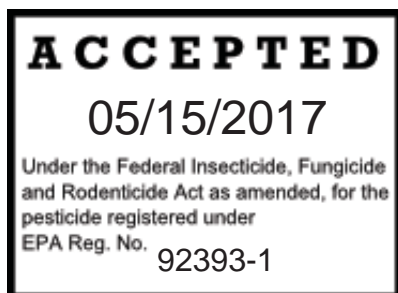
If you have any questions, please contact Joseph Daniels via email at [daniels.joseph@epa.gov](mailto:daniels.joseph@epa.gov)

Enclosure

(Note to Reviewer: [Bracketed] language is optional, (parenthetical) information is informative. Thiobacillus Novellus and Starkeya novella are synonyms. Either term may be used on the label.)

## Xypex Bio-San C-500 (Grey)

[Alternate Brand Name: Xypex Admix C-500S (Grey)]



### Active Ingredient:

Silver .....0.12%  
 Copper.....5.55%  
**Other Ingredients**.....94.33%  
 Total..... 100.00%

### KEEP OUT OF REACH OF CHILDREN WARNING

<b>FIRST AID</b>	
<b>If in Eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If Inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If Swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• Do not give anything to an unconscious person.</li> </ul>
<b>If on Skin</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<p>Call a poison control center or doctor immediately for treatment advice. Have the product container or label with you when calling a poison control center or doctor, or when going for treatment.</p>	

[See back/side panel for additional first aid / precautionary statements]

**EPA Reg. No:** 92393-R

**EPA Est. No.:**

**Net Contents:**

**Manufactured For/Sold By:**

Xypex Chemical Corporation  
 13731 Mayfield Place  
 Richmond, BC  
 Canada V6V 2G9

Toll-free: 1.800.961.4477

Tel: 604.273.5265

Fax: 604.270.0451

E-mail: [info@xypex.com](mailto:info@xypex.com)

Web: [www.xypex.com](http://www.xypex.com)

Xypex Bio-San C-500 (Grey) (92393-R)

Xypex Chemical Corporation

A540 – November 18, 2016, Label Version (3) May 15, 2017

Page 1 of 5

*(Note to Reviewer: [Bracketed] language is optional, (parenthetical) information is informative. Thiobacillus Novellus and Starkeya novella are synonyms. Either term may be used on the label.)*

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

**WARNING.** Causes substantial but temporary eye injury. Harmful if swallowed, absorbed through the skin, or inhaled. Do not get in eyes or on clothing. Avoid contact with skin. Avoid breathing dust. Wear appropriate protective eyewear such as goggles, face shield, or safety glasses. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

### Environmental Hazards

*(For container > 5 gallons)* This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

*(For containers ≤ 5 gallons)* This product is toxic to fish and aquatic invertebrates.

## DIRECTIONS FOR USE

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

Xypex Bio-San C-500 (Grey) is added to the concrete at the time of batching. It is important to obtain a homogeneous mixture of Xypex Bio-San C-500 (Grey) with the concrete. Do not add dry powder directly to wet mixed concrete as this could cause clumping and thorough dispersion may not occur. The sequence of procedures for addition will vary according to the type of batch plant operation and equipment. The following methods have been used successfully in the past and it is recommended that the local Xypex Technical Services Representative be consulted about the best method to use.

1. **ADDITION TO COARSE AGGREGATE BELT** Add Xypex Bio-San C-500 (Grey) powder directly to the coarse aggregate conveyor belt manually or through computer controlled mass batching system. Account for worker health and safety issues with moving belts and wind-blown dust issues.
2. **ADDITION TO CENTRAL MIXER** Load the Xypex Bio-San C-500 (Grey) in bulk powder form along with the other components. Mix as per standard batching practices to ensure thorough dispersal of the Admix resulting in a homogeneous mixture. Account for worker safety issues when accessing the equipment.
3. **TRUCK ADDITION (AT PLANT)** Add Xypex Bio-San C-500 (Grey) in bulk powder form to the drum of the ready-mix truck immediately prior to driving the truck under the batch plant and adding the balance of the materials in accordance with standard concrete batching practices. Avoid delays in adding other components and utilize high speed mixing to ensure homogeneity of mix. Where there may be insufficient water for

*Xypex Bio-San C-500 (Grey) (92393-R)*

Xypex Chemical Corporation

A540 – November 18, 2016, Label Version (3) May 15, 2017

Page 2 of 5

*(Note to Reviewer: [Bracketed] language is optional, (parenthetical) information is informative. Thiobacillus Novellus and Starkeya novella are synonyms. Either term may be used on the label.)*

thorough dispersion of the bulk powder a water slurry can be made with the Admix and added to the truck mixer drum prior to batching. Account for added water in the mix design and slump.

**NOTE:**

- i. For installations involving pan mixers, the recommended procedure would be to initially add some of the mix water and coarse aggregate to the pan mixer begin mixing and slowly add the Xypex Bio-San C-500 (Grey) powder. Mix until the Admix is thoroughly dispersed and forms a slurry, then add the balance of the materials and continue to mix as per normal.
- ii. Concrete containing the Xypex Bio-San C-500 (Grey) does not preclude the requirement for design of crack control, construction joint detailing, proper placement, consolidation and curing of the concrete and measures for repairing defects such as honeycombing, tie holes, cracks beyond specified limits.
- iii. Further guidelines are available that address the use of Xypex Bio-San C-500 (Grey) for a specific situation, (e.g. dry mixes, use of ice in hot ambient conditions, cold-weather concreting, etc.). Consult with a local Xypex Technical Services Representative or Xypex's Technical Services Department for further information.

**Setting Time and Strength**

The setting time of concrete is affected by the chemical and physical composition of ingredients, temperature of the concrete and climatic conditions. Xypex Bio-San C-500 (Grey) is designed for concrete mix designs where a normal or mildly delayed set is desired. Concrete containing the Xypex Bio-San C-500 (Grey) may develop higher ultimate strengths than plain concrete. Trial mixes should be carried out under project conditions to determine the setting time and strength of the concrete dosed with Xypex Bio-San C-500 (Grey). Consult with a Xypex Technical Services Representative for the most appropriate Xypex Bio-San C-500 (Grey) for your project.

Concrete should be a minimum of 28 days age prior to placement into service.

**Dosage Rates**

1% by weight of cementing materials (including: fly ash, slag, and other supplementary cementing materials).

**Recommended for:**

- Clarifiers
- Digesters
- Head Works
- Industrial Structures
- Lift Stations
- Manholes
- Pump Stations
- Septic Tanks
- Sewer Pipes
- repair and renewal of waste water structures

(Note to Reviewer: [Bracketed] language is optional, (parenthetical) information is informative. *Thiobacillus Novellus* and *Starkeya novella* are synonyms. Either term may be used on the label.)

### Limitations

When incorporating Xypex Bio-San C-500 (Grey), the temperature of the concrete mix should be above 40°F (4°C).

### STORAGE AND DISPOSAL

Do not contaminate food or feed by storage or disposal or cleaning of equipment.

**STORAGE:** Xypex products must be stored dry at a minimum temperature of 45°F (7°C). Store away from children. Reclose cap tightly after use. Store this product upright in a cool dry area away from direct sunlight and heat to avoid deterioration. In case of spill, sweep spilled material and flood areas with large quantities of water.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**CONTAINER HANDLING:** Non-refillable container. Do not reuse or refill container. Offer for recycling if available or reconditioning if appropriate or place in trash.

### OPTIONAL MARKETING CLAIMS

- Advantages
  - Resists extreme hydrostatic pressure
  - Resists microbial induced corrosion with H<sub>2</sub>S concentrations of 50 ppm
  - Highly resistant to aggressive chemicals
  - Can seal static hairline cracks up to 0.4 mm
  - Becomes an integral part of the substrate and cannot be punctured or damaged
  - Permanent
  - No VOCs
  - Less costly to apply than most other methods
  - Added to the concrete at the time of batching and therefore not subject to weather and surface moisture restraints
- [Boy in bucket]
- Independent tests showed that in concrete treated with Xypex Bio-San C-500 (Grey), the microbe *Thiobacillus novellus* / *Starkeya novella* was substantially reduced .
- Is recommended for use in sewage systems especially in areas where H<sub>2</sub>S gas is likely to accumulate. This includes areas of high turbulence such as lift stations, drop structures, force main outflows and headworks. It will also include areas where H<sub>2</sub>S is more likely to be generated or retained including sewer lines with long retention times (flat, long, low flow), sealed or unvented manholes and various areas within waste water treatment plants. As microbial growth rates are encouraged by higher temperature and humidity, certain geographical areas will benefit from the protection provided by Xypex Bio-San C-500 (Grey).
- Kills microbes that induce/cause concrete corrosion (MIC)
- Kills acid generating microbes present in sewage environments
- Protects concrete from high concentrations of hydrogen sulphide
- protects concrete in concentrations of H<sub>2</sub>S up to 50 ppm
- Waterproofing and Protection Against Microbial Induced Corrosion and Chemical Attack
- Will protect concrete from microbial induced corrosion

Xypex Bio-San C-500 (Grey) (92393-R)

Xypex Chemical Corporation

A540 – November 18, 2016, Label Version (3) May 15, 2017

Page 4 of 5

(Note to Reviewer: [Bracketed] language is optional, (parenthetical) information is informative. *Thiobacillus Novellus* and *Starkeya novella* are synonyms. Either term may be used on the label.)

- Will actively inhibit the generation of microbes thus preventing microbial induced corrosion
- Xypex Bio-San C-500 (Grey) is a unique, integral chemical treatment for the waterproofing, protection and improvement of concrete and is specially formulated to protect against acid and sulphate attack caused by microbial induced corrosion. Xypex Bio-San C-500 (Grey) has the same unique crystalline technology as the Xypex C-Series with the addition of bio-active mineral solids. The Xypex crystalline technology consists of Portland cement and various active, proprietary chemicals that react with the moisture in fresh concrete and with the by-products of cement hydration to cause a catalytic reaction. This reaction generates a nonsoluble crystalline formation throughout the pores and capillary tracts of the concrete that becomes permanently sealed against the penetration of water and any other liquids from any direction. The acid and sulphate resistance properties of Xypex Bio-San C-500 (Grey) are further enhanced by the addition of bio-active mineral solids which fix permanently within the cement matrix preventing bio-film formation and microbial induced corrosion. Xypex Bio-San C-500 (Grey) significantly extends the life of sewer and waste water infrastructure by inhibiting the growth of acid-producing sewer bacteria such as *Thiobacillus* that cause MIC (microbial induced corrosion) as well as increasing both acid and sulfate resistance of the concrete. Test show a substantial reduction in sewer bacteria *Thiobacillus Novellus* / *Starkeya novella* / MIC causing bacteria indicating a definite antibacterial effect. Long term exposure trials showed that treated concrete had seven times less concrete mass loss compared to control samples when exposed for 6 years in a wastewater facility. The protection provided by Xypex Bio-San C-500 (Grey) stays effective even if the concrete surface is abraded. Xypex Bio-San C-500 (Grey) provides a broad spectrum protection against bacteria.<sup>1 and/or 2</sup>

### Technical Services

For more instructions, alternative installation methods, or information concerning the compatibility of the Xypex treatment with other products or technologies, contact the Technical Services Department of Xypex Chemical Corporation or your local Xypex Technical Services Representative.

### Warranty

The Manufacturer warrants that the products manufactured by it shall be free from material defects and will be consistent with its normal high quality. Should any of the products be proven defective, the liability to the Manufacturer shall be limited to replacement of the product ex factory. The Manufacturer makes no warranty as to merchantability or fitness for a particular purpose and this warranty is in lieu of all other warranties expressed or implied. The user shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith.

---

<sup>1</sup> Excluding public health bacteria.

<sup>2</sup> Acid-producing sewer bacteria.