



# Proposed Acceptability for Continuing Registration

**PACR2004-39**

## **Re-evaluation of 5-Chloro-2-methyl-3(2H)-isothiazolone and 2-Methyl-3(2H)-isothiazolone**

The purpose of this document is to inform registrants, pesticide regulatory officials and the Canadian public that the Pest Management Regulatory Agency (PMRA) has completed a re-evaluation of 5-chloro-2-methyl-3(2H)-isothiazolone (IST) and 2-methyl-3(2H)-isothiazolone (ISL). The PMRA has determined that IST and ISL are acceptable for continued registration provided that the proposed mitigation measures are adopted. Additional data requirements are identified. Upon finalization of the re-evaluation decision, the PMRA will provide registrants of products containing IST and ISL with specific direction on how to address these measures and requirements.

This Proposed Acceptability for Continuing Registration (PACR) document provides a rationale for the proposed regulatory decision for IST and ISL. The PMRA will accept written comments on this proposal up to 45 days from the date of publication of this document. Please forward all comments to the Publications Coordinator at the address below.

*(publié aussi en français)*

**19 October 2004**

**This document is published by the Alternative Strategies and Regulatory Affairs Division,  
Pest Management Regulatory Agency. For further information, please contact:**

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ISBN: 0-662-38421-0 (0-662-38422-9)

Catalogue number: H113-18/2004-39E (H113-18/2004-39E-PDF)

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## 1.0 Background

The PMRA is re-evaluating all pesticides, both active ingredients and formulated end-use products (EPs), that were registered prior to 31 December 1994 to ensure that their continued acceptability is examined using current scientific approaches. Regulatory Directive [DIR2001-03](#), *PMRA Re-evaluation Program*, presents the details of the re-evaluation activities and program structure.

IST and ISL have been re-evaluated by the PMRA under Re-evaluation Program 1 as described in DIR2001-03. Under Program 1, the PMRA relies as much as possible on foreign reviews, typically United States Environmental Protection Agency (USEPA) Reregistration Eligibility Decision (RED) documents, to assess Canadian pest control products. For products to be re-evaluated under Program 1, there must exist a suitable foreign review that meets the following conditions:

- it covers the main science areas, such as human health and the environment, that are necessary for Canadian regulatory decisions;
- it addresses the active ingredient and the main formulation types registered in Canada; and
- it is relevant to registered Canadian uses.

Based on the outcome of foreign reviews, the PMRA will propose, under Program 1, a regulatory decision and appropriate mitigation measures for Canadian uses of an active ingredient.

The USEPA conducted a re-evaluation of IST and ISL and concluded that, on the basis of health and environmental risk assessments, they were eligible for reregistration with the implementation of mitigation measures. These conclusions were published in a 1998 RED document. In its re-evaluation of IST and ISL, the PMRA based its conclusions on this 1998 RED document, taking into account the Canadian use pattern and Canadian issues (e.g., the federal Toxic Substances Management Policy [TSMP]). A review of the chemistry of the Canadian technical active ingredients was also conducted.

## 2.0 Re-evaluation of IST and ISL

Active substance:	5-Chloro-2-methyl-4-isothiazolin-3-one (IST)	2-Methyl-4-isothiazolin-3-one (ISL)
IUPAC name:	5-Chloro-2-methyl-3(2H)isothiazolone	2-Methyl-3(2H)isothiazolone
CAS name:	5-Chloro-2-methyl-4-isothiazolin-3-one	2-Methyl-4-isothiazolin-3-one
CAS number:	26172-55-4	2682-20-4

In Canada, IST and ISL were first registered in 1978. IST and ISL always occur together in the currently registered Canadian technical and end-use products in approximately a 3:1 ratio, and this mixture will henceforth be referred to as IST/ISL. According to current EP labels, it is registered in Canada for controlling slime-forming bacteria, fungi and algae in:

- oil field injection waters
- drilling muds and workover or completion fluids
- well stimulation and fracturing (guar gum based)
- recirculating cooling water systems
  - evaporative condensers
  - heat exchange water systems
  - commercial and industrial cooling towers
  - influent systems, such as flow through filters, settling ponds and lagoons
  - industrial water scrubbing systems
  - brewery pasteurizers and can warmers
  - hydrostatic cookers and retort waters
- auxiliary water/service water and waste water systems
  - fire protection systems
  - pump or screen bays
  - waste material disposal
  - holding or recovery systems such as storage tanks
  - storage piles
  - associated piping
  - transport spillways or canals
  - disposal wells
- specialty industrial products
  - hydraulic fluids
  - conveyor lubricants

- industrial and household consumer products (all-purpose cleaners, polishes, anti-tarnish products, solid air freshener, carpet shampoos, pre-spotters)
- liquid dishwashing detergents
- automotive appearance products
- liquid laundry products
- printing inks and printing ink components
- photo processing systems (motion picture, radiographic, micrographic, graphic arts, photoprocessing film)
- lithographic printing components
- photo plate processing chemicals
- package utility products (i.e. pre-moistened sponges and mops)
- cutting oils
- fuel preservation (aviation fuels, kerosene, heating oils, diesel fuels, residual oils, coal slurries, liquified petroleum gases, petrochemical feedstocks)
- cooling towers
- pulp and paper mills
- industrial process water (including recirculating electrodeposition systems)
- air washers
- adhesives and paints (aqueous paints, inks, mastics, joint cements, caulks, slurries, concrete additives)
- industrial coatings
- polymer latices (acrylic, styrene/butadiene, carboxylated styrene/butadiene, ethylene, vinyl acetate, polyvinyl acetate, starch-based emulsions)
- biopolymers intended for industrial use, such as xanthan gum, gum arabic, guar gum, protein-derived polymers, starches and casein-derived polymers
- dispersed pigment preservation (kaolin clay, montmorillite clay titanium dioxide calcium carbonate, calcium sulfate, barium sulfate, magnesium silicate, kieselguhr used in paint and paper productions)
- wood and wood products such as landscape timbers, fences, posts, piling, cross ties, decks and similar structures (tank-mixed with chromated copper arsenate [CCA])

Currently registered Canadian products containing IST/ISL are listed in Appendix I.

Based on the comparison of American and Canadian use patterns, the USEPA assessment described in the RED document for IST/ISL is considered to be an adequate basis for the proposed Canadian re-evaluation decision. The details of the assessments conducted by the USEPA are presented in the USEPA RED for IST/ISL.

The federal TSMP and Regulatory Directive [DIR99-03](#) were taken into consideration during the review of IST/ISL, and it was concluded that neither IST nor ISL are TSMP Track 1 substances. The technical products are not expected to contain impurities of toxicological concern as identified in Regulatory Directive [DIR98-04](#) or TSMP Track 1 substances as identified in Appendix II of DIR99-03.

### **3.0 Proposed re-evaluation decision**

The USEPA published a RED document for IST/ISL addressing the main science areas that are necessary for Canadian regulatory decisions, i.e., human health and the environment. This document addressed uses of IST/ISL that are also registered in Canada. Based on the USEPA RED and Canadian use pattern, the PMRA has determined that IST/ISL is acceptable for continued registration provided that the mitigation measures specified in Section 4.0 are adopted. Additional data requirements are identified in Section 5.0.

It should be noted that for EPs containing more than one active ingredients under re-evaluation, registration status might change as a result of the re-evaluation of the remaining affected active ingredients.

The PMRA will accept written comments on this proposal up to 45 days from the date of publication of this document to allow interested parties an opportunity to provide input into the proposed re-evaluation decision. Registrants of products containing IST/ISL should not apply for label amendments or submit the additional data described in Section 5.0 during this comment period; they will be informed by letter of the specific instructions for addressing label changes and data requirements once the re-evaluation decision has been finalized.

### **4.0 Proposed regulatory actions**

Based on the USEPA RED and in consideration of the Canadian use pattern, all Canadian EP labels must be amended as follows to further protect workers and the environment.

- On the primary display panel, the following statement must be added:
  - “POTENTIAL SKIN SENSITIZER.”
- In the “Precautions” section, the following statements are required:
  - 1) For all EPs,
    - “Potential skin sensitizer.”
    - “Do not get in eyes, on skin, or on clothing. Do not swallow. Avoid breathing vapours and spray mists. Wash skin thoroughly with soap and water after handling. Remove contaminated clothing and wash separately from other laundry before reuse.”
  - 2) For products with registration numbers 19229 and 25661,
    - “Avoid contamination of food.”

- 3) For all EPs, except for products formulated as premeasured packets,
  - “Wear long pants, a long-sleeved shirt, chemical-resistant gloves, a full face NIOSH-approved respirator and a chemical-resistant apron during mixing/loading, clean up and repair.”
- 4) For products applied as a spray (e.g., on waste piles),
  - “For spray application, wear chemical-resistant gloves, a full face NIOSH-approved respirator, chemical-resistant coveralls and rubber boots during mixing/loading, application, clean up and repair.”
- 5) For the product with Registration Number 18203, which is formulated as premeasured packet,
  - “Wear long pants, a long-sleeved shirt and chemical-resistant gloves during mixing/loading, clean up and repair.”
- In the “Environmental Hazards” sub-section of the “Precautions” section, the following statements must be added:
  - 1) For all EPs,
    - “This product is toxic to fish and other aquatic organisms. It is not to be used in circumstances that would cause or allow it to enter lakes, streams, ponds, estuaries, oceans or other waters in contravention of federal or provincial regulatory requirements. The requirements of applicable laws should be determined before using the product.”
  - 2) For products used on wood and wood products,
    - “Store treated lumber on a roofed drip pad until dripping has ceased. Slope lumber on the drip pad to expedite drainage and to ensure that no puddles remain on the surface of the wood. Contain drippage and other related wastes to prevent release in the environment.”
    - “DO NOT expose treated lumber to heavy rains immediately after treatment. DO NOT float treated lumber in lakes, rivers, streams, or oceans.”
- In the “Directions for Use” section, for products used on wood and wood products, the label must be modified so that it is not in contradiction with CCA treated wood use limitations. In addition, the following statement must be added,



- “For further information on storage, handling, use, and disposal of treated wood, contact the manufacturer of this product or the provincial regulatory agency.”

The label amendments presented above do not include all label requirements for individual EPs, such as first aid statements, disposal statements, precautionary statements and supplementary protective equipment. Additional information on labels of currently registered products should not be removed unless it contradicts the above label statements.

A submission to request label revisions is required within 90 days of finalization of the re-evaluation decision. Registrants should note that for products with dual classification (i.e. classified both as technical or manufacturing and as commercial), an application to register a separate commercial EP is required and the label of the technical or manufacturing use product must be amended to remove references to commercial uses.

Some Canadian EPs containing IST/ISL are registered for use at maximum application rates higher than those registered in the United States (products with registration numbers 18131, 19002, 21155, 21802, 26231 and 26662 for cooling towers; the product with registration number 25529 for cutting oils; and the product with registration number 28102 for air washers). Registrants of these Canadian EPs are required to submit a rationale to support these maximum application rates or to lower their rates on the label. This is required within 90 days of finalization of the re-evaluation decision.

## **5.0 Additional data requirements**

The technical registrant(s) of IST/ISL is required to submit the following within 24 months of finalization of the re-evaluation decision:

- all data (as they relate to the Canadian use pattern) submitted to the USEPA in response to the data call-in prior to the reregistration in the United States and USEPA Data Evaluation Reports (DERs);
- all data (as they relate to the Canadian use pattern) that were required by the USEPA as a condition of reregistration of IST/ISL; and
- a commitment and schedule to address Canadian requirements that are not addressed through submission of the data outlined above. These are outlined in the PMRA’s data code (DACO) tables for use-site categories (USC) #17, #18, #19 and #23. The registrant is required to address the following sections of DACO tables:
  - for the TGAI: DACOs 2 through 9, inclusive
  - for the EP: DACOs 5, 8, and 9

Normally, DACO 5.6 or 5.7 is conditionally required for Use-site Category #18; however, as a result of the sensitization concern for IST/ISL, this data is required.

To assess the potential sensitization risk to workers and consumers handling treated materials containing IST and ISL, the EP registrants are required to generate a localized lymph node assay (DACO 4.6.6, OECD Test Guideline 429) and postapplication exposure data (DACO 5.6 or 5.7) for all material preservative uses of IST and ISL (including, but not limited to, metalworking fluids, adhesives, paints, polymer latices, industrial product, household consumer products, liquid dishwashing detergents, polymers latex emulsions, etc.).

The registrants should be advised that the localized lymph node assay data should be conducted with the liquid treated materials (e.g., dishwashing detergents, latex emulsions, adhesives, metalworking fluids). The postapplication exposure will assess the potential for sensitization to workers and consumers using the data from the localized lymph node assay. The data requirement must be addressed for each treated material identified on the label, either through data specific to the treated material or a scientific rationale. The registrants may wish to consider clustering several similar treated materials together or conducting a sensitization risk assessment for the worst case scenario and providing a scientific rationale justifying this approach.

The above data and additional data may be required sooner if expansion of current uses of IST/ISL is requested.

The PMRA is currently undertaking initiatives to address the labelling deficiencies for certain kinds of antimicrobial products, especially with respect to the “Directions for Use” section of product labels. The PMRA will announce in the near future the nature of these initiatives and any requirements to be addressed by registrants.

## 6.0 Supporting documentation

PMRA documents, such as DIR2001-03, and DACO tables can be found on our website at [www.pmra-arla.gc.ca](http://www.pmra-arla.gc.ca). PMRA documents are also available through the Pest Management Information Service. Phone: 1 800 267-6315 within Canada or 1 (613) 736-3799 outside Canada (long distance charges apply); Fax: (613) 736-3798; E-mail: [pmra\\_infoserv@hc-sc.gc.ca](mailto:pmra_infoserv@hc-sc.gc.ca).

The federal TSMP is available through Environment Canada’s website at [www.ec.gc.ca/toxics](http://www.ec.gc.ca/toxics).

The USEPA RED document (*Methylisothiazolinone*) is available on the Office of Pesticide Programs’ website at [www.epa.gov/pesticides/reregistration](http://www.epa.gov/pesticides/reregistration) under Chemical Status.



## Appendix I Products containing IST/ISL registered in Canada as of 31 March 2004

Product name	Registrant	Registration number	Guarantee (%)	Class*
Kathon 886 MW Microbiocide	Rohm and Haas Canada Inc.	15245	IST: 10.5 ISL: 3.5	C
Chemcide #2 Metalworking Fluid Microbiocide	Chem-Ecol Ltd.	15352	IST: 1.05 ISL: 0.35	C
Kathon WT Papermill Slimicide	Rohm and Haas Canada Inc.	15548	IST: 10.5 ISL: 3.5	C
Amerstat 320 Liquid for Microbiological Control	Drew Canada, Ashland Canada Corp.	15592	IST: 1.72 ISL: 0.52	C
Spectrum RX6202 Pulp & Paper Microbistat	Hercules Canada (2002) Inc.	17235	IST: 2.3 ISL: 0.7	C
Nalco 7330 Cooling Water Slimicide	Nalco Canada Co.	17338	IST: 1.13 ISL: 0.37	C
Slime-Trol RX-68 Papermill Antimicrobial Agent	Hercules Canada (2002) Inc.	17390	IST: 1.13 ISL: 0.37	C
Spectrus NX1106	GE Betz Canada	17391	IST: 1.13 ISL: 0.37	C
Grotan FS Metalworking Microbiocide	Gray Products, Troy Chemical Company Limited	17408	IST: 10.5 ISL: 3.5	C
Raisio 286X Liquid Slimicide	Raisio Chemicals Canada Inc.	17427	IST: 2.25 ISL: 0.75	C
Nalcon 7647 Slimicide Microbiological Control Chemical	Nalco Canada Co.	17444	IST: 1.15 ISL: 0.35	C
Kathon LX Polymer Latex Preservative	Rohm and Haas Canada Inc.	17445	IST: 10.5 ISL: 3.5	C
Kathon WT 1.5% Solution Papermill Slimicide	Rohm and Haas Canada Inc.	17446	IST: 1.13 ISL: 0.37	C
Kathon LX 1.5% Polymer Latex Preservative	Rohm and Haas Canada Inc.	17447	IST: 1.13 ISL: 0.37	C
Quatic Chemicals Series 3006 Liquid Industrial Biocide	Quatic Industries Inc.	17695	IST: 1.13 ISL: 0.37	C
Kathon CG/ICP Industrial Microbiocide	Rohm and Haas Canada Inc.	17726	IST: 1.13 ISL: 0.37	C
Magnatrol 41-A	Produits Chimiques Magnus Ltée	17962	IST: 2.63 ISL: 0.88	C
ML-27 Liquid Microbiocide	Rochester Midland Limited	17981	IST: 1.15 ISL: 0.38	C
Kathon MWX Microbiocide	Rohm and Haas Canada Inc.	18203	IST: 4.7 ISL: 1.6	C
Grotan U-15 Metalworking Micro-biocide	Gray Products, Troy Chemical Company Limited	18245	IST: 1.134 ISL: 0.378	C
Formula MMD-3480 Industrial Liquid Slimicide	Nalco Canada Co.	18313	IST: 1.13 ISL: 0.37	C
Chemicide #5 Metalworking Fluid Microbiocide	Chem-Ecol Ltd.	18317	IST: 8.6 ISL: 2.6	C
Quaker Biocide 300	Blachford, H.L. Ltd.	18411	IST: 8.6 ISL: 2.6	C

Product name	Registrant	Registration number	Guarantee (%)	Class*
Busan 1078 Liquid Microbicide	Buckman Laboratories of Canada, Ltd.	19001	IST: 1.12 ISL: 0.38	C
Busan 1081 Liquid Microbicide	Buckman Laboratories of Canada, Ltd.	19002	IST: 2.84 ISL: 0.95	C
Amerstat 325 Microbiocide for Metalworking Fluids	Drew Canada, Ashland Canada Corp.	19029	IST: 2.24 ISL: 0.75	C
Biosperse 250 Cooling Tower Microbiocide	Drew Canada, Ashland Canada Corp.	19076	IST: 1.125 ISL: 0.375	C
Nalco 6C40 Slimicide Microbiological Control Chemical	Nalco Canada Co.	19229	IST: 2.898 ISL: 0.966	C
X-Cide 207	Baker Petrolite Corporation	19368	IST: 5.25 ISL: 1.75	C
Biomate SAN9366	GE Betz Canada	19393	IST: 2.1 ISL: 0.7	C
Kathon CG/ICP II Microbicide In-container Preservative	Rohm and Haas Canada Inc.	19697	IST: 1.13 ISL: 0.37	C
Kathon 886 MW 1.5% Metalworking Fluid Microbicide	Rohm and Haas Canada Inc.	19830	IST: 1.13 ISL: 0.37	C
Isothiocide Microbiocide	Drew Canada, Ashland Canada Corp.	20506	IST: 1.125 ISL: 0.375	C
Aquarian C-407 Water Cooling Tower Microbicide	Aquarian Chemicals Inc.	21155	IST: 0.29 ISL: 0.09	C
Thor Acticide SPX-C Polymer Latex Preservative	Thor GmbH	21427	IST: 1.12 ISL: 0.38	C
Kathon 886 Technical Industrial Microbiocide	Rohm and Haas Canada Inc.	21799	IST: 10.5 ISL: 3.5	T
ControlChem 2650 Industrial Liquid Microbiocide	ControlChem Canada Ltd.	21802	IST: 1.13 ISL: 0.37	C
Kathon PFM Printing Fluid Microbicide	Rohm and Haas Canada Inc.	21966	IST: 1.13 ISL: 0.37	C
Kathon FP 1.5 Industrial Microbicide	Rohm and Haas Canada Inc.	21970	IST: 1.13 ISL: 0.37	C
Kathon FP Industrial Microbicide	Rohm and Haas Canada Inc.	22039	IST: 10.5 ISL: 3.5	C
Biosperse 1740 Industrial Microbicide	Drew Canada, Ashland Canada Corp.	22147	IST: 10.5 ISL: 3.5	C
IsoKlenz KT	Klenzoid Co., Ltd.	22260	IST: 0.37 ISL: 1.13	C
Kathon ED Industrial Biocide	Rohm and Haas Canada Inc.	22382	IST: 10.5 ISL: 3.5	C
Kathon EDC 1.5% Industrial Microbiocide	Rohm and Haas Canada Inc.	22386	IST: 1.13 ISL: 0.37	C
H-510 Microbiocide	Nalco Canada Co.	22485	IST: 1.13 ISL: 0.37	C
Metasol CMI-150 Paper Mill Slimicide	Nalco Canada Co.	22486	IST: 1.13 ISL: 0.37	C
Aquarian C406	Aquarian Chemicals Inc.	22560	IST: 1.13 ISL: 0.37	C

Product name	Registrant	Registration number	Guarantee (%)	Class*
IsoKlenz RW	Klenzoid Co., Ltd.	22564	IST: 0.565 ISL: 0.185	C
Magnacide MW (Control of Bacteria)	Produits Chimiques Magnus Ltée	22765	IST: 2.63 ISL: 0.88	C
AMA-415C A Mineral Slurry Preservative	Kemira Chemicals, Inc.	22799	IST: 0.37 ISL: 1.13	C
X-cell 426 Papermill Slimicide	DiverseyLever Canada Inc.	22895	IST: 0.37 ISL: 1.13	C
Nalco 7647 Cooling Water Slimicide	Nalco Canada Co.	22946	IST: 1.13 ISL: 0.37	C
Spectrus NX1111 Microbicide	GE Betz Canada	22952	IST: 1.31 ISL: 0.44 Glutaraldehyde: 7.5	C
Amerstat 251 Biocide	Drew Canada, Ashland Canada Corp.	23162	IST: 1.125 ISL: 0.375	C
VIP 915 Slimicide Microbiocide	Venerus International Purification Inc.	23291	IST: 1.13 ISL: 0.37	C
VIP 915 MW Microbiocide	Venerus International Purification Inc.	23294	IST: 0.37 ISL: 1.13	C
Legend MK Microbicide In-container Preservative	Rohm and Haas Canada Inc.	23394	IST: 1.13 ISL: 0.37	C
Omnitrol Formula 300-K Liquid Microbicide	Nalco Canada Co.	23564	IST: 0.28 ISL: 0.09	C
Omnitrol Formula 600-K Liquid Microbicide	Nalco Canada Co.	23595	IST: 0.142 ISL: 0.047	C
AMA-115-C Papermill Slimicide	Vinings Industries Inc.	23747	IST: 1.13 ISL: 0.37	C
Spec-aid 8Q700 (Industrial Microbicide)	GE Betz Canada	23911	IST: 1.13 ISL: 0.37	C
Omnitrol 600-CK Liquid Microbicide (Non Foaming)	Nalco Canada Co.	23927	IST: 0.142 ISL: 0.047	C
Omnitrol 300-CK Liquid Microbicide (Non Foaming)	Nalco Canada Co.	23930	IST: 0.28 ISL: 0.09	C
Bulab 6057 Liquid Microbicide	Buckman Laboratories of Canada, Ltd.	24001	IST: 1.13 ISL: 0.37	C
Gax-26 Industrial Recirculation Water Cooling Tower Microbicide	DiverseyLever Canada Inc.	24220	IST: 1.13 ISL: 0.37	C
ControlChem 2729 A Metalworking Microbicide	ControlChem Canada Ltd.	24373	IST: 1.13 ISL: 0.37	C
Kathon 886f Industrial Microbicide	Rohm and Haas Canada Inc.	24535	IST: 10.5 ISL: 3.5	C
Arch Mold Inhibitor K-18500	Arch Wood Protection Canada Corp.	24624	IST: 10.5 ISL: 3.5	C
Timber Specialties Mold Inhibitor	Timber Specialties Co.	24791	IST: 10.5 ISL: 3.5	C
Kathon SF-886 Technical Microbicide	Rohm and Haas Canada Inc.	24982	IST: 74.3 ISL: 24.2	C+T

Product name	Registrant	Registration number	Guarantee (%)	Class*
Eclipse 602 Microbicide	Buckman Laboratories of Canada, Ltd.	25220	IST: 1.13 ISL: 0.37	C
Supatimber H.E. 14 Wood Mildewcide	Chemical Specialties Inc.	25389	IST: 10.5 ISL: 3.5	C
Spectrum RX6820 Slime Control Agent	Hercules Canada (2002) Inc.	25501	IST: 0.97 ISL: 2.90	C
Process B1003 Paper Mill Slimicide	E.Q.U.I.P. International Inc.	25515	IST: 2.26 ISL: 0.74	C
Biomate SAN9363 Antimicrobial Agent	GE Betz Canada	25529	IST: 1.13 ISL: 0.37	C
Spectrum RX9100 Antimicrobial Agent	Hercules Canada (2002) Inc.	25660	IST: 1.9 ISL: 0.6 Bronopol: 5.3	C
Spectrus NX1100	GE Betz Canada	25661	IST: 1.9 ISL: 0.6 Bronopol: 5.3	C
WCS 102 Industrial Recirculating Water Cooling Tower Microbiocide	Ecolab Textile Care Division	25694	IST: 0.37 ISL: 1.13	C
Biomate SAN9361 Antimicrobial Agent	GE Betz Canada	25722	IST: 1.9 ISL: 0.6 Bronopol: 5.5	C
Biochek 430	Bayer Chemical Corporation	25731	IST: 0.059 ISL: 0.018 1,2-dibromo-2,4-dicyanobutane: 23.725	C
Kathon CF 150 Microbicide	Rohm and Haas Canada Inc.	25888	IST: 1.13 ISL: 0.37	C
Mitco CC-33L Papermill Slimicide	Mitco Inc.	26231	IST: 1.13 ISL: 0.37	C
BIO/TEC 081 Industrial Microbicide	Southwest Engineers	26242	IST: 1.13 ISL: 0.37	C
BIO/TEC 076 Papermill Slimicide	Southwest Engineers	26249	IST: 1.13 ISL: 0.37	C
Thor Acticide LG Microbiocide	Thor GmbH	26252	IST: 1.1 ISL: 0.4	C+T
Thor Acticide 14 Industrial Microbiocide	Thor GmbH	26253	IST: 10.2 ISL: 4.0	C+T
Fennosan IT15	Kemira Chemicals, Inc.	26394	IST: 1.13 ISL: 0.37	C
Kathon LX 1400 Polymer Latex Preservative	Rohm and Haas Canada Inc.	26409	IST: 10.5 ISL: 3.5	C
Nalcon 7678 Paper Mill Slimicide	Nalco Canada Co.	26428	IST: 1.02 ISL: 3.06	C
Chemtreat CL-2150 Microbicide	ChemTreat, Inc.	26537	IST: 1.13 ISL: 0.37	C
KTND 1.5% Microbicide	Buckman Laboratories of Canada, Ltd.	26556	IST: 1.13 ISL: 0.37	C
BPC 68915 Microbicide	Baker Petrolite Corporation	26662	IST: 1.13 ISL: 0.37	C

<b>Product name</b>	<b>Registrant</b>	<b>Registration number</b>	<b>Guarantee (%)</b>	<b>Class*</b>
Kathon CF 1400 Microbiocide	Rohm and Haas Canada Inc.	26908	IST: 3.5 ISL: 10.5	C
Biomate MBC781	GE Betz Canada	27247	IST: 1.13 ISL: .37	C
Fennosan 115-C Papermill Slimicide	Kemira Chemicals, Inc.	27262	IST: 1.13 ISL: 0.37	C
MB-215	Chem-Aqua, Division of NCH Canada Inc.	27326	IST: 1.13 ISL: 0.37	C
Duracool 6493	Nalco Canada Co.	27452	IST: 1.13 ISL: 0.37	C

\* T: Technical  
C: Commercial