



Evaluation Report for Category B, Subcategory 2.1 Application

Application Number: 2011-5542
Application: B.2.1 – New EP - Guarantee
Product: Chem-Saver Swimming Pool System
Registration Number: 30976
Active ingredients (a.i.): Device
PMRA Document Number: 2306552

Purpose of Application

The purpose of this application was to register Chem-Saver Swimming Pool System, a copper ions producing device for commercial swimming pools, with an “oxidize mode” (O₂ production by electrolysis).

Health Assessment

Installation of the Chem-Saver Swimming Pool system, and operation and maintenance of the device and swimming pools treated by the device are not expected to result in any significant oral or dermal exposures to pool water treated by the device.

Although the copper ion generating component of the Chem-Saver Swimming Pool System is considered to be similar to other currently registered copper ion pool devices, the concentrations of copper ions generated by the device are higher than those from previously registered devices, so exposure to copper ion for swimmers in treated pools is expected to be increased. However, the increased concentrations of copper in the pool water are less than Canadian and international drinking water quality guidelines and standards, and are within the range of copper concentrations for pools treated with registered copper algaecides. Consequently, the risks to swimmers from exposure to copper ions are expected to be very low.

The levels of dissolved oxygen produced by the device are within existing ambient water quality guidelines which are minimum concentrations for the protection of aquatic life. Based on information submitted by the applicant, the majority of the dissolved oxygen compounds produced by the device will be in the form of O₂, and it is likely that only small concentrations of hydrogen peroxide and hydroxyl radicals will be formed and will react with algae and organic matter in the pool water. Consequently, it is unlikely that there will be any unacceptable risks from dissolved oxygen compounds for swimmers in the treated pool water.

The purity of the copper and titanium electrodes in the device used for the generation of the copper ions and dissolved oxygen, respectively, is very high and the proprietary noble metals coating on the titanium electrodes is designed for durability in prolonged use. Consequently, the potential for the release of these metals or impurities during the normal operation of the device and any resulting risks to workers or swimmer are expected to be very low.

Finally, based on information submitted by the applicant, the Chem-Saver System copper/oxidation technology has been certified against the NSF/ANSI-61 Drinking Water System Components – Health Effects international standard, and water treated by this technology has been shown to meet Australian drinking water guidelines and drinking water maximum contaminant levels in accordance with the NSF/ANSI-50 – Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities international standard.

Value Assessment

Three operational trials have been provided to support the use of the Chem-Saver Swimming Pool System. By monitoring the copper levels in the water at close time intervals, these trials have shown the ability of the device to generate an appropriate copper output per day (0.275 ppm) in the maximum volume of 200 000L identified on the label.

Chemistry and Environmental Assessment

Chemistry and environmental assessments were not required for this application.

Conclusion

PMRA has reviewed the information provided in support of the registering Chem-Saver Swimming Pool System. Based on this review, PMRA has determined Chem-Saver Swimming Pool System is acceptable for full registration.

References

PMRA#	Name	DACO
2195935	Mode of action	10.2.1
2195936	Mode of action	10.2.1
2195937	Operational trials	10.2.3.4
2195938	CSA certificate	10.6
2130357	CSA certificate	10.6
2130355	Operational Trials - DER, DACO:	10.2.3.4
2130356	Operational Trials - Pool Testimonials, DACO:	10.2.3.4
2130357	Electrical Safety, DACO:	10.6
2130358	Toxicology Summary, DACO:	4.1
2130359	1 Manufacturing Information, DACO:	4.8
2130361	2 Electrode Components (CBI), DACO:	4.8 CBI
2130362	3 Drinking Water Quality Reports - DER, DACO:	4.8
2130363	4 EPA Reports, DACO:	4.8
2195935	Def - Mode of Action - 1, DACO:	10.2.1
2195936	Def - Mode of Action - 2 Patent No. 5098546, DACO:	10.2.1
2195937	Def - Operational Trials - DER, DACO:	10.2.3.4
2195938	Def - Other Data ECOPPR, DACO:	10.6
2297908	Health Canada, 1992, Guidelines for Canadian Drinking Water Quality Copper, February, 1992, Federal-Provincial-Territorial Committee on Drinking Water, DACO:	4.8
2297909	World Health Organization (WHO), 2008, Guidelines for Drinking-water Quality, Chemical Fact Sheets, Chapter 12, World Health Organization, DACO:	12.5.4
2297910	U.S. Environmental Protection Agency, 2009, National Primary Drinking Water Regulations US EPA, May, 2009, http://water.epa.gov/drink/contaminants/upload/mcl-2.pd , DACO:	12.5.4
2297911	Government of British Columbia Ministry of the Environment, 1997, Ambient Water Quality Criteria for Dissolved Oxygen, 5.0 Other Water Uses, BC MOE, DACO:	12.5.4
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2299421	Agency for Toxic Substances and Disease Registry (ATSDR), Toxicological Profile for Copper 2004, ATSDR, 2002, Hydrogen Peroxide, CAS # 7722-84-1, ToxFAQs, Agency for Toxic Substances and Disease Registry, US Department of Health and Human Services, Public Health Service, DACO:	12.5.4
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2301063	Lambert, J.B., Tantalum and Tantalum Compounds 2011, Lambert, J.B., 2011, Tantalum and Tantalum Compounds, Kirk-Othmer Encyclopedia of Chemical Technology, January 14, 2011, John Wiley & Sons, Inc., DACO:	12.5.5
2301079	Seymour, R.J. and O'Farrelly, J., Platinum-Group Metals 2012, Seymour, R.J. and O'Farrelly, J., 2012, Platinum-Group Metals, Kirk-Othmer Encyclopedia of Chemical Technology, January 13, 2012, John Wiley & Sons, Inc., DACO:	12.5.5

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