

To : Screening Officer
Veronica Lansom / Sue Weld
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DD : 20/05/2005

Re : Application for Registration of ECOsmarte CopperPlus
Application Number 36163, Product Number 59599

Dear Officers,

This is a reply to your letter dated 22 February 2005 regarding the above application. In this letter you stated that you needed some additional information and requirements before full evaluation can take place.

I have had extensive phone conversations with Ms Veronica Lansom about your letter and what needed to be done to complement the application for registration. She has been able to direct us in the right direction and I've summarised the gist of our conversations in a letter dated 14 March 2005, which she acknowledged in return. I've included a copy of this for your perusal (Addendum A).

1. General description and information

ECOsmarte Planet Friendly Inc, USA is a company which produces swimming pool ionisation systems. Generally this equipment consists of an electronic control box which is connected to an ionisation chamber. This chamber is installed in the circulation line of swimming pools and features one or more pairs of electrodes. A weak current is deployed to these electrodes which has the effect of dispersing tiny amounts of ionic copper in the water. This copper acts as an algaecide.

To illustrate this equipment and process I have included an owners manual (requested by Ms Lansom). See addendum B.

2. Models, dimensioning, sizing

This equipment is sized and dimensioned for its intended use and comes in models suitable for regular domestic swimming pools up to 45,000 liters, larger pools up to 200,000 liters and spa's. Commercial applications as in public swimming pools are dimensioned locale specific.

Pool size	Product name	Size-base
< 45,000 liter	ECOPS - Standard	1.5 inch (40 mm)
< 200,000 liter	ECOPT - Turbo	2 inch (50 mm)
Spa	ECOSS - Spa	1.5 inch (40 mm)

This application for registration is for the copper bar components in this equipment. These copper bars come in two sizes relating to the dimensioning of the intended use situation as indicated in the table above.

The reason for the size difference is in getting an appropriate surface area for the ionisation to take place. Bigger pools need bigger surface area for increased ionisation. There is no difference in operation, use or handling in these copper electrodes.

The labelling is amended to reflect these models, uses and sizes and is attached as Addendum C.

3. Dosing.

Normal operation regarding maintaining the level of ionic copper in a pool involves regular testing and operating the equipment. Periodically the pool maintainer/operator tests a water sample taken from the pool and determines the copper-concentration. Testkits are supplied with every pool system and can be purchased separately. If the concentration is below the minimum level, the ionisation unit is switched on until a suitable level is obtained.

Minimum level 0.4 ppm

Optimum level 0.7 ppm

Testfrequency weekly

Ionisation period depending, usually some 8 hours once every 2-3 weeks

4. Registration criteria.

Attached is the Chemical Information Sheet for Copper as published by NICNAS, see Addendum D.

Area's addressed are :

- Human health. No specific concerns are listed. There are greater health risks associated with copper deficiency than from excess copper intake.
- OH&S. The copper bars are chunky and solid and can't be ingested or inhaled (dust or fume).
- Regulatory status. Copper is not listed as a drug, poison or hazardous substance and can be freely transported.
- At all times the concentration of copper is below 1.0 ppm which is the limit in both the World Health Organisation for Drinking Water and the Australian Standards for Drinking Water and Private Swimming Pool Water Quality AS3633-1989.
- The EPA indicates that discharges within the drinking water standards don't have environmental impacts.

We would also like to refer the updated INCHEM studies on copper toxicity and deficiency which can be found at

<http://www.inchem.org/documents/jecfa/jecmono/v17je31.htm>

5. Data.

As stipulated in our prior conversations, see Addendum A, we have provided testdata on the dispersion of ionic copper thru the system. We installed an ECOPT (Turbo) swimming pool system in a 52,000 liter pool, emptied, cleaned and refilled it with fresh townwater and measured the dispersion of copper over a period of time. Measurements have been done by a suitable measuring device (LaMotte 1200 ColoriMeter with digital readout) to avoid any ambiguity in readings. We invited a qualified JP to act as an observer and have included his diary of the whole process as Addendum E.

Also the copper bars have been precision weighed before and after the trial. The difference in weight is obviously copper which has been dispersed in the pool and can be expressed in a concentration, which should match the copper concentration measurements. The report by a NATA accredited lab (SGS Environmental Services) is attached as Addendum F.

Findings :

In a period of 35 hours the system raised the copper concentration from 0.03 to 0.71 ppm in a regular pool sized 52,200 liters. This was expected behaviour. These readings have been checked by different test methods (digital readouts, colori-testing) and also by comparing the weight-difference of the copper bars before and after this trial.

The weight-difference was found to be 35.7 grams, which equates to a concentration of 0.69 ppm in a body of water of 52,000 liters, which is in the same ballpark as the final sample measurement of 0.71 ppm.

The aim of this test has been to show the ability of the system to disperse ionic copper in relevant concentrations in regular swimming pools in a relevant timeframe.

Please find included the data sheet in the appropriate format as Addendum G.

6. Comparison.

As stipulated in our prior conversations, see Addendum A, we're comparing our product to a regular registered algaecide : Pool Drops from Algafree Australia, NRA approval number 46425/0998. This copper based algaecide is recommended to be used in a concentration of 1 liter per 100,000 liter pool water and has an active constituent of 60 g/L copper (Cu). Which means that it is an effective algaecide at a concentration of 0.6 ppm Cu.

I believe we have answered your questions truthfully and completely.

As always we'll be happy to supply you with additional information if warranted or answer any other questions which may arise.

Regards

N. Wouterse (Nico)

P. Keller (Sarva)