

Blu52 + 4 Week Pool Sanitiser

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Background

Eezi Pool proposes to register a new product, *Blu52 + 4 Week Pool Sanitiser* that is similar to its currently registered products, Eezi Pool All-In-One Monthly Pool Care (Product Number 81351) and Eezi Pool All-in-One Stabilized Monthly Pool Care (Product Number 89245).

Eezi Pool All-In-One Monthly Pool Care is a 4-week swimming pool maintenance product available in two pack sizes – 1.2 kg and 1.8 kg. The 1.2 kg pack size consists of two separately packaged and administered formulations:

Part A (400g; Active Constituent: 75 g/kg copper present as copper sulphate pentahydrate; Other Constituents: 180 g/kg zinc present as zinc sulphate monohydrate) is applied once a month directly to the skimmer box after ensuring correct water balance.

Parts 1- 4 are four equal 200-gram doses of calcium hypochlorite (650 g/kg available chlorine (Cl) present as calcium hypochlorite). The first dose is added to the pool immediately after administering Part A. The remaining three doses are then applied weekly after backwashing and adjusting water balance.

Eezi Pool All-in-One Stabilized Monthly Pool Care is also a 4-week swimming pool maintenance product available in two pack sizes – 1.2kg and 1.8 kg. The pattern of use for this product is identical to that of Eezi Pool All-In-One Monthly Pool Care. The 1.2 kg pack size consists of two separately packaged and administered formulations:

Part A is identical in composition to Part A of Eezi Pool All-In-One Monthly Pool Care described above. Parts 1 – 4 consists of four equal 200-gram doses of trichloroisocyanuric acid (900 g/kg available chlorine).

The proposed new product:

- is identical to the currently registered products with respect to Part A
- the chlorine source is 250g sodium dichloroisocyanurate in place of 200g calcium hypochlorite or 200g trichloroisocyanuric acid
- sodium dichloroisocyanurate has a chlorine content of 560g/kg (compared with 650 g/kg chlorine in calcium hypochlorite and 900 g/kg in trichloroisocyanuric acid)
- the packaging of Part A is identical to that of the currently registered products
- the packaging of Part B is identical to that of the currently registered products (HDPE pod/sachet)
- the pattern of use of the currently registered products and that of the proposed new product are identical

This report discusses the differences between calcium hypochlorite, trichloroisocyanuric acid and sodium dichloroisocyanurate as chlorine sources and provides argument that the efficacy of the proposed new product is at least equivalent to that of the currently registered product Eezi Pool All-In-One Monthly Pool Care.

Calcium Hypochlorite and Trichloroisocyanuric Acid

Calcium hypochlorite and trichloroisocyanuric acid are both sources of available chlorine that are commonly used in swimming pool chemical products. The APVMA website (PUBCRIS) lists 80 products registered containing calcium hypochlorite as the active constituent and over 100 products registered containing trichloroisocyanuric acid as the active constituent.

Calcium hypochlorite is relatively inexpensive and fast-acting. For these reasons, it is often used as a shock treatment to rapidly increase chlorine levels in pool water. However, it has a few disadvantages:

- Calcium hypochlorite provides a relatively low amount of chlorine per unit weight; in this case, 650 g/kg available chlorine.
- Prolonged use of calcium hypochlorite can lead to an unacceptable buildup of calcium which in turn may lead to precipitation of insoluble calcium salts or staining of pool surfaces.
- Calcium hypochlorite is not stabilised resulting in rapid loss of chlorine in hot sunny weather unless a pool stabiliser is added separately to the pool water.

Trichloroisocyanuric acid has some advantages over calcium hypochlorite:

- High chlorine per unit weight, typically 900 g/kg available chlorine.
- Does not contribute to calcium build up.
- The use of trichloroisocyanuric acid adds cyanuric acid to the pool water which acts as a stabiliser for chlorine under adverse conditions.

The main disadvantage of trichloroisocyanuric acid is that the level must be monitored regularly to ensure that the concentration of isocyanurate in the pool water does not exceed 100mg/L.

Sodium dichloroisocyanurate

Sodium dichloroisocyanurate is also a source of available chlorine commonly used in swimming pool chemical products. The APVMA website (PUBCRIS) lists 91 registered products containing sodium dichloroisocyanurate or sodium dichloroisocyanurate dihydrate as the active constituent.

Sodium dichloroisocyanurate is a relatively slow-release chlorine source and provides a relatively low amount of chlorine per unit weight (650 g/kg available chlorine). As with trichloroisocyanuric acid, the concentration must be monitored to ensure the concentration of isocyanurate does not exceed 100 mg/L.

The main advantage of sodium dichloroisocyanurate is that it is not classified as Dangerous Goods for transport by road or rail whereas calcium hypochlorite and trichloroisocyanuric acid are both classified as Dangerous Goods when transported in other than individual pack sizes (Reference 1).

Eezi Pool All-In-One Monthly Pool Care and Eezi Pool All-in-One Stabilized Monthly Pool Care

Part A in both these products is identical. The function of Part A (a mixture of copper, zinc and aluminium sulphates) is to supply copper to control algae, zinc to control staining and aluminium to act as a flocculant and filtration aid (References 2 and 3).

The function of Part B is to supply chlorine as the primary disinfectant. Calcium hypochlorite is the chlorine source in Eezi Pool All-In-One Monthly Pool Care and trichloroisocyanuric acid is the chlorine source in Eezi Pool All-in-One Stabilized Monthly Pool Care.

The recommended use pattern for both products is to dose Part A every four weeks and Part B weekly.

The efficacy of Part A and Part B in Eezi Pool All-In-One Monthly Pool Care was established with field trials of four pools (Reference 4). The field trials were performed over a 10-week period on four pools of varying size, type and environmental location. The trials demonstrated that the weekly use pattern provided AS 3633-compliant free chlorine residuals.

In the submission for registration of Eezi Pool All-in-One Stabilized Monthly Pool Care, we provided argument that the efficacy of trichloroisocyanuric acid was equivalent or superior to that of calcium hypochlorite in Eezi Pool All-In-One Monthly Pool Care (Reference 4).

Blu52 + 4 Week Pool Sanitiser

The composition of *Blu52 + 4 Week Pool Sanitiser*, the proposed new product, is shown in Tables 1 and 2.

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The proposed pack size is 1.4 kg consisting of 4 x 250 g sodium dichloroisocyanurate in granular form and 400 g Part A, also in granular form.

This pack size is comparable with the 1.2 kg pack sizes for Eezi Pool All-In-One Monthly Pool Care and Eezi Pool All-in-One Stabilized Monthly Pool Care, outlined in the **Background** to this report.

Since the function of Part A is not affected by the source of available chlorine and there is no change to Part A or the proposed pattern of use of Part A, the efficacy of Part A is considered to have been established.

The efficacy of calcium hypochlorite in Eezi Pool All-In-One Monthly Pool Care was established with field trials of four pools (Reference 4) and we provided argument that the efficacy of trichloroisocyanuric acid Eezi Pool All-In-One Monthly Pool Care was equivalent to or superior to that of calcium hypochlorite. (Reference 4).

The amount of available chlorine per weekly dose for the two registered products and the proposed new product is summarised in Table 3 below.

Table 3. Comparison of Available Chlorine in *Eezi Pool All-In-One Monthly Pool Care*, *Eezi Pool All-in-One Stabilized Monthly Pool Care* and *Blu52 + 4 Week Pool Sanitiser* (proposed new product)

Product Name	Active Constituent	Weekly Dose (g)	Available Chlorine (g)
Eezi Pool All-In-One Monthly Pool Care	650 g/kg available chlorine present as calcium hypochlorite	200	130
Eezi Pool All-in-One Stabilized Monthly Pool Care	900 g/kg available chlorine present as trichloroisocyanuric acid	200	180
Blu52 + 4 Week Pool Sanitiser	560 g/kg available chlorine present as sodium dichloroisocyanurate	250	140

Table 3 shows that the calculated amount of chlorine derived from sodium dichloroisocyanurate in the proposed new product (140 g per 250 g weekly dose) falls between that derived from calcium hypochlorite contained in *Eezi Pool All-In-One Monthly Pool Care* (130 g per 200 g weekly dose) and that derived from trichloroisocyanuric acid (180 g per 200 g weekly dose) in *Eezi Pool All-in-One Stabilized Monthly Pool Care*.

These figures demonstrate that the sodium dichloroisocyanurate active constituent contained in the proposed new product is sufficient to match that of the existing registered products. It will still be necessary for the user to monitor the chlorine level in order to ensure a safe chlorine concentration is maintained especially during adverse weather conditions or high pool usage.

Conclusion

The proposed new product, *Blu52 + 4 Week Pool Sanitiser*, is practically identical in function to the currently registered products *Eezi Pool All-In-One Monthly Pool Care* and *Eezi Pool All-in-One Stabilized Monthly Pool Care*.

The proposed use of sodium dichloroisocyanurate as the chlorine source will have no adverse effect on the efficacy of the product or require any change to the use pattern compared with the currently registered products.

The proposed new product does not replace the need for regular testing and, if necessary, addition of supplementary chlorine to maintain a safe level of disinfection during adverse weather conditions or heavy use of the pool.

The use of the proposed new product will require the pool water to be tested regularly to ensure that the isocyanurate level does not exceed 100 mg/L.

References

1. Australian Code for the Transport of Dangerous Goods by Road & Rail, Edition 7.8, 2022
2. CM03 - Module 2.3 Chem & Mfr Report - BLU52 All-In-One Pool Solution (From reference product file 81351)
3. Blu52 All-In-One Pool Solution S159 (1)(a) May 2017 (From reference product file 81351)
4. CM07 - Efficacy Field Trials Report - BLU52, Dr. G. R. O'Connell, 7 December 2013
5. Platinum Eezi Pool All-In-One Monthly Pool Care, Roger Franklin, 4 February 2020