原 著

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安定化した微酸性化電解次亜水

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Stabilization of hypochlorite solution by specific acidification

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Hypochlorous acid is effective against bacteria, viruses and fungi, although it is an unstable chlorine species. Therefore, it is desirable to prepare hypochlorous acid water just before use. In order to sustain the available chlorine concentration (ACC) of hypochlorous acid water for long period, a breakthrough has been made by the acidification of hypochlorite with carbon dioxide microbubbles (CMB) or carbon dioxide and nitrogen gases microbubbles (CNMB), resulting in the generation of stabilized hypochlorous acid aqueous solution containing CMB or CNMB. Interestingly, the CMB hypochlorous acid aqueous solutions in the PET bottles (closed and dark conditions) maintained over 70% of the initial recognized ACC at 10~40℃ for 314 days. The remained ACCs of CNMB hypochlorous acid aqueous solution under the closed and dark conditions for 602 days at 20℃ and 30℃ were 72.2% and 44.4%, respectively. The remained ACCs of CNMB hypochlorous acid aqueous solution under the same storage conditions at 50℃ for 71 days and 230days were 60.7% and 31.5%, respectively. In addition, the nano-bubbles ranging from 100nm to 400nm in size were detected at the level of 10^7/mL in the CNMB hypochlorous acid aqueous solutions stored at 20℃ or 30℃ for 391 days.