**The Turkish Journal of Occupational / Environmental Medicine and Safety**



**Vol:1, No:1(2), 2017 Web:** [http://www.turjoem.com](http://www.turjoem.com/) **ISSN : 2149-4711**



**SS-014.**  **Evaluation of biodegrability of tanned leathers treated with biocide**

İhsan Yaşa, Ahmet Aslan, Bahri Başaran

Ege University, Fundamental and Industrial Microbiology Division, Biology Department, Faculty of Science , Ege University, Department of Leather Engineering, Faculty of Engineering

Aim: Biodegradability is a process for disposition to disintegrate as the result of natural processes. The determination of biodegradability would provide some information about persistancies for example millions tones of leather especially shoes used every year and wasted every year and also would give rise to possibilities utilization of those wastes as by-products. Although leather is a biological and best comfortable material for human body, as a result of tanning procedure it would become so durable that it’s normal life needs to keep on. Usage of biocidal in leather production has increased a lot in recent years. Herein the question is how much durability should necessarily be executed and should the durability turn to persistency during usage of biocide. From this viewpoint biodegradability is to assess tanning quality and effect of biocide, enough or far beyond, and to evaluate its lifecycle in the environment, easily decomposable or traceble for many years. Methods: Biodegradability tests, as a reference being developed for leathers, is based on the determination of generated CO2 titrimetrically. In this study, in addition to the generation rates of CO2 assessed by titration of leather samples with and without commercial biocides prepared according to ISO/DIS 20136 final draft standard biodegradability were attributed to DHA measurements. Results: DHA test one of the fastest and reliable standard method for determination of total metabolic activity were compared by effect of biocides used leather tanning on its biodegrability. Conclusion: In conclusion this study proved that DHA measurements for the biodegradibility observations is appropriate as compared to the biodegradability tests based on the rates of CO2 occurrences.

**Keywords:** Biocide, biodegradability, leather, CO2, DHA measurement

TURJOEM , 2017 , 1 ,1 (2)