



São Paulo - Brazil - May - 20<sup>th</sup> to 22<sup>nd</sup> - 2015

# Academic<sup>th</sup>

## INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

“CLEANER PRODUCTION TOWARDS A SUSTAINABLE TRANSITION”

---

### **Flexible PVC, Plasticizers and New Trends**

MANCINI, S. D. <sup>a</sup>, MATTOS, B. B. <sup>a</sup>; PINTO, L. M. H. <sup>a</sup>; SILVA, G. B. <sup>a</sup>; RODOLFO JUNIOR, A. <sup>b</sup>

*a. Universidade Estadual Paulista "Júlio de Mesquita Filho, São Paulo*

*b. Braskem, Unidade Vinílicos*

*\*Corresponding author, mancini@sorocaba.unesp.br*

---

#### **Abstract**

In 2011, the polyvinyl chloride (PVC) consumption in Brazil was more than double than the total of polyethylene terephthalate (PET), reaching more than 1.16 million tons. From this, almost 38% were employed in flexible application such as packaging (films, mainly), laminates (e.g. floorings), wire, cables and hoses. In this application, it is common the use of plasticizers, chemical components that stay between polymeric chains, decreasing the attraction between them by diminishing the strength of the secondary bonds that, and consequently, decreases the material resistance to deformation. The objective of this paper was to present the national and international trends related to the replacement of plasticizers employed in flexible PVC, mainly the most consumed of them, the dicotylphthalte (DOP). This plasticizer, despite the excellent cost/performance ratio, presents restrictions related to its use in some applications (for instance, packaging, toys and school supplies), due to the possibility of contaminating the products in which they are employed. Outside Brazil, one of the most common options is dioctylterephthalate, that can be produced from chemical recycling of PET bottles and does not present any restrictions.

**Keywords:** *PVC, PET, DOP, DOTP, plasticizer*

---

---

“CLEANER PRODUCTION TOWARDS A SUSTAINABLE TRANSITION”

São Paulo – Brazil – May 20<sup>th</sup> to 22<sup>nd</sup> - 2015