RECOMMENDATIONS

Recommendations to coating industry

Coatings can bring two improvements to PBS properties:

- Better gas barrier properties
- Lower migration (functional barrier effect)

The project studied mainly the improvement of **gas barrier properties**. Organic coatings allowed barrier improvement factors up to 4, and mineral coatings allowed barrier improvement factors up to 10:

- Elaborated water based coatings were studied by Topchim and Vito. For a good adhesion of coatings, a surface pre-treatment such as oxygen plasma is necessary. Water based coatings were shown to be sensitive to the contact with water ; as a consequence (i) the coatings are preferably put on the external side of the packaging film (ii) two different coatings are difficult to apply on the same surface ; for the combination of water barrier and oxygen barrier , water barrier can be put on the internal side of the packaging, and oxygen barrier on the external side
- Mineral coatings were tested with contrasted performances (high performances of SiOx when applied on PBSA , no performances of SiOx and CxHy coatings when applied on PBS); technical R&D efforts will have to be put to be able to generalise the use of these process on all types of PBS substrates

The use of mineral layer directly in contact with the food product should provide functional barrier effects (reduction of migration); this was not tested in the project;
R & D efforts should be devoted to this.

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