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PackAlliance:
European alliance for innovation training
& collaboration towards future packaging

Linking Academy to Industry.

Training program: New materials and biomaterials

Plastic packaging in the context of development of new materials and biobased materials technology

Food packaging materials part 2

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The analysis of the packaging in terms of its safety should take into account:

- Features of the packaging
- Interaction with the packed product
- Labelling, warnings and instructions
- User categories

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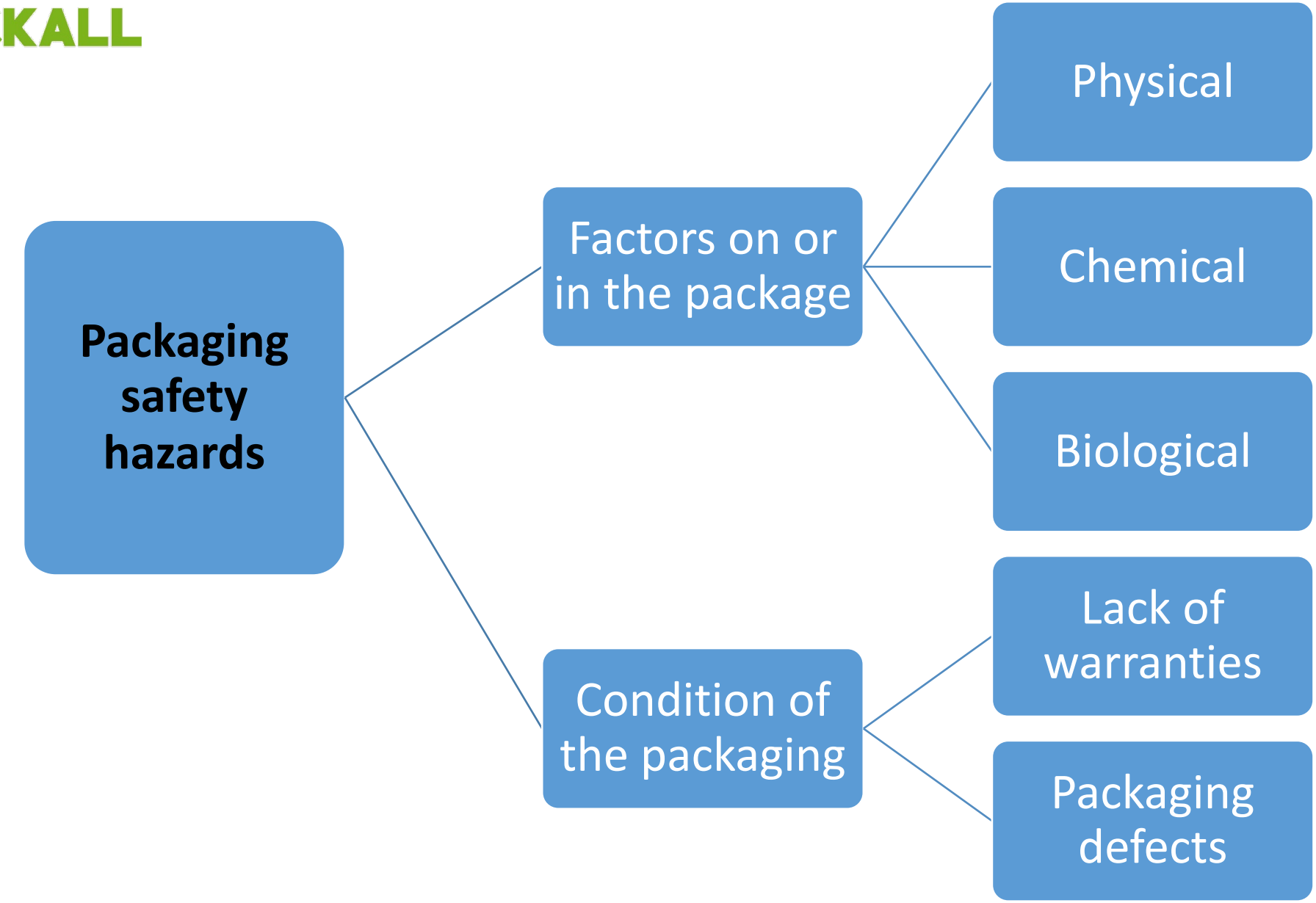

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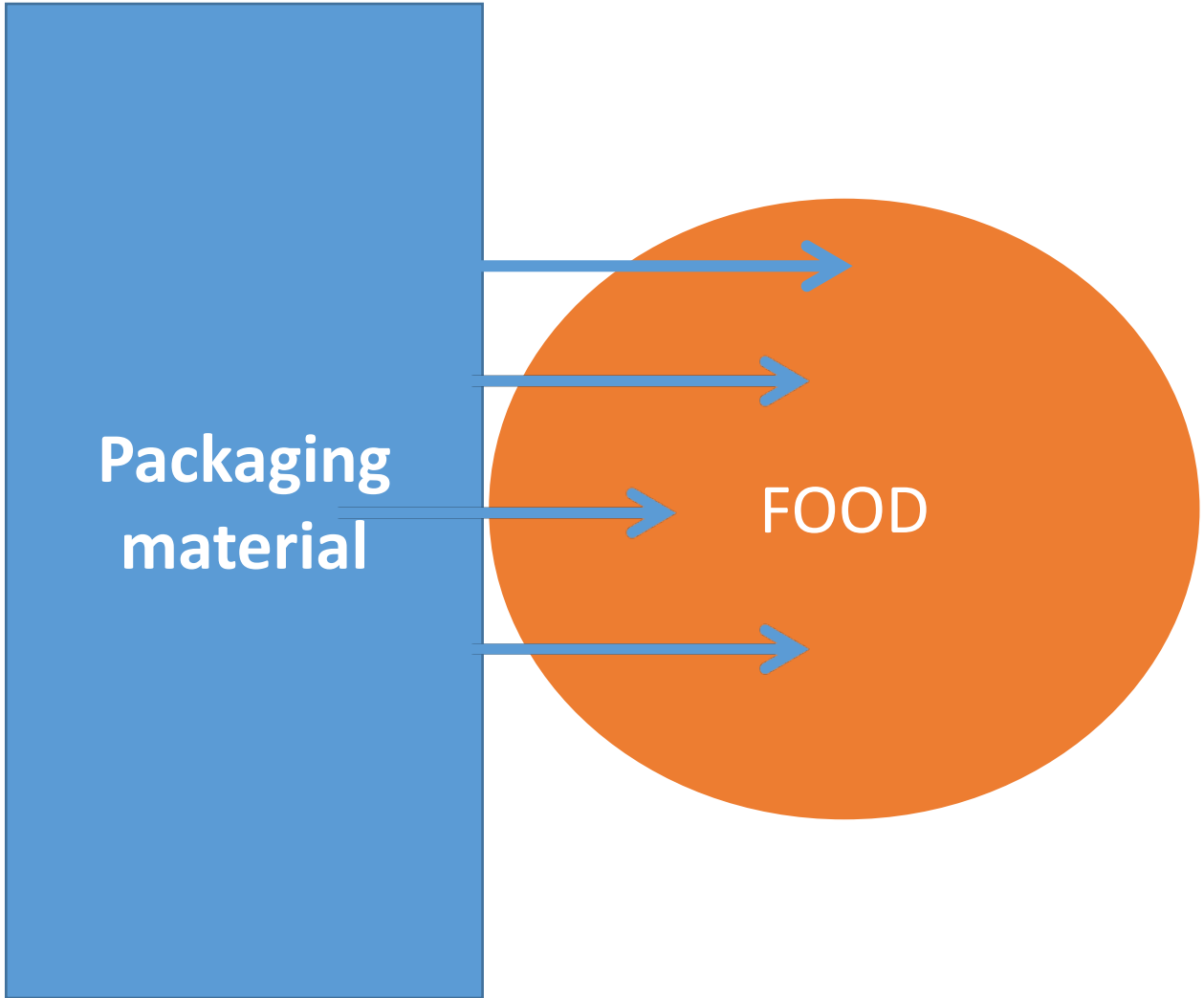
Migration



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Overall migration limit

Plastic materials and articles shall not transfer their constituents to food simulants in quantities exceeding 10 milligrams of total constituents released per dm^2 of food contact surface (mg/dm^2) or 60 milligrams of total of constituents released per kg of food symulant.

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Food simulants

Food simulant	Abbreviation
Ethanol 10 % (v/v)	Food simulant A
Acetic acid 3 % (w/v)	Food simulant B
Ethanol 20 % (v/v)	Food simulant C
Ethanol 50 % (v/v)	Food simulant D1
Vegetable oil	Food simulant D2
poly(2,6-diphenyl-p-phenylene oxide), particle size 60-80 mesh, pore size 200 nm	Food simulant E

For testing migration from materials and articles not yet in contact with food the food simulants that corresponds to a certain food category shall be chosen according Table from Commission Regulation 10/2011.

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Contact time

Contact time in worst foreseeable use	Test time
t ≤ 5 min	5 min
5 min < t ≤ 0,5 hour	0,5 hour
0,5 hours < t ≤ 1 hour	1 hour
1 hour < t ≤ 2 hours	2 hours
2 hours < t ≤ 6 hours	6 hours
6 hours < t ≤ 24 hours	24 hours
1 day < t ≤ 3 days	3 days
3 days < t ≤ 30 days	10 days
Above 30 days	See specific conditions

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Contact temperature

Conditions of contact in worst foreseeable use	Test conditions
Contact temperature	**Test temperature**
T ≤ 5 °C	5 °C
5 °C < T ≤ 20 °C	20 °C
20 °C < T ≤ 40 °C	40 °C
40 °C < T ≤ 70 °C	70 °C
70 °C < T ≤ 100 °C	100 °C or reflux temperature
100 °C < T ≤ 121 °C	121 °C
121 °C < T ≤ 130 °C	130 °C
130 °C < T ≤ 150 °C	150 °C
150 °C < T < 175 °C	175 °C
T > 175 °C	Adjust the temperature to the real temperature at the interface with the food

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Specific migration limits

Plastic materials and articles shall not transfer their constituents to foods in quantities exceeding the specific migration limits (SML) set out in Annex I. Those specific migration limits (SML) are expressed in mg of substance per kg of food (mg/kg).

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Plastic materials and articles shall not release the following substances in quantities exceeding the specific migration limits below:

Barium = 1 mg/kg food or food simulant.

Cobalt = 0,05 mg/kg food or food simulant.

Copper = 5 mg/kg food or food simulant.

Iron = 48 mg/kg food or food simulant.

Lithium = 0,6 mg/kg food or food simulant.

Manganese = 0,6 mg/kg food or food simulant.

Zinc = 25 mg/kg food or food simulant.

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Summary

Packaging that under normal or other reasonably foreseeable conditions of its use, taking into account the time of use of the packaging, and depending on the type of packaging and the type of the packed product, does not pose any risk to the consumer or poses a negligible risk. accept its ordinary use and take into account the high level of requirements for the protection of human health and life.

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