



# Checklist Design for **Environmentally Sound Use**



## Project

Project name	<b>Example “Portion Packaging / Sachet”</b>
Project number	040 – 39 1002 – 0
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Date	12.05.2018

### Initial situation:

- An existing packaging for 10ml Ketchup is to be redesigned. Negative environmental impacts should be minimised.
- For the Eco Design Strategy, the strategy elements "Optimised Resource Use" (already applied) and "Environmentally Sound Use" were selected.
- The result from checklist „Optimised Resource Use“ provides the input for this checklist: Portion Packaging / Sachet with modified dimensions and reduced weight: 9cm \* 3,5 cm, weight 0,99 g



Question	Explanation	Instructions	Documentation of Results
<b>Approach 1: Avoiding Littering at System Level</b>			
Is there a functioning waste collection system in the particular delivery region?	The most important basis for avoiding littering is the existence of a functioning waste collection system.. Within the scope of these guidelines, a functioning return system is understood as one that covers at least 90 per cent of the household waste that arises (including packaging).	If <b>YES</b> (when at least 90 % of household waste is collected): go to approach 2 “ <i>Avoiding littering at packaging level</i> ” If <b>NO</b> : document and continue to the next item to be checked.	<b>Yes!</b> <i>Continue with approach 2.</i>
Can a (company’s own) return system be set up which has prospects of achieving a significant return volume in the foreseeable future?	In areas with a basically non-existent or inadequate waste collection infrastructure, it takes a long time to set up a comprehensive state-run system. The development of distributor-owned and/or sectoral return systems may take significantly less time and, consequently, be part of a responsible marketing solution. It is important to have effective incentives that ensure a high rate of response.	If <b>YES</b> : implement this approach and proceed to approach 2 “ <i>Avoiding littering at packaging level</i> ” If <b>NO</b> : state reasons and proceed to the next item to be checked.	(not relevant)
Is it possible for packaging to be designed in such a way that related market interest in recycling is generated which would effectively stop littering through packaging?	If packaging can also be recycled into easily usable basic materials with simple technical solutions, this also provides a market incentive to collect and recycle the packaging.	If <b>YES</b> : implement this approach and proceed to approach 2 “ <i>Avoiding littering at packaging level</i> ” If <b>NO</b> : state reasons and critically evaluate marketing of packaging in the particular delivery region.	(not relevant)
Is it possible for packaging to have a design so that it can be dealt with in the environment without any build-up of harmful substances?	The negative consequences of littering could also be alleviated if the packaging introduced into the environment were completely degraded without producing problematic substances. However it has to be checked, if such an approach is counteracting efforts to establish comprehensive functioning recycling structures in the particular delivery region.	If <b>YES</b> : implement this approach and proceed to approach 2 “ <i>Avoiding littering at packaging level</i> ” If <b>NO</b> : state reasons and continue to the next item to be checked.	(not relevant)
Is it possible for packaging to be designed in such a way that related market interest	For some types of packaging, there are functioning multi-use markets in many supply regions which ensure that certain used packaging/containers are	If <b>YES</b> : implement this approach and proceed to approach 2 “ <i>Avoiding littering at packaging level</i> ”	(not relevant)



Question	Explanation	Instructions	Documentation of Results
in re-use is generated which would effectively stop littering through packaging?	collected and reused. This applies, for example, to resealable, dimensionally stable plastic containers	If <b>NO</b> : state reasons and critically evaluate marketing of packaging in the particular delivery region.	
<b>Result: Packaging solution which was tested on a systemic level regarding litter-avoidance aspects. Serves as input for testing in the further optimisation approaches.</b>			

Question	Explanation	Instructions	Documentation of Results
<b>Approach 2: Avoiding Littering at Packaging Level</b>			
Are instructions for appropriate disposal clearly communicated?	In addition to easy-to-read consumer instructions on the consumer packaging itself, it should be examined whether there are other options (e.g. at the point of sale) to inform consumers about the need for the orderly disposal of used packaging. Advertising activities should also look for ways of positively presenting the benefits of proper disposal. Consumer communication should be simple and focus on the central aspect: the disposal of used packaging in appropriate collection containers.	If <b>YES</b> : document and proceed to the next item to be checked.  If <b>NO</b> : improve communication and proceed to the next item to be checked.	<b>Yes</b> , the communication is considered as sufficient.
Has the design been optimised in such a way that during use no (small) parts need to be detached from the packaging?	If small parts have to be separated from the packaging in order to use the contents the packaging (such as seals, caps etc), there is a high risk that these small parts will be thrown away carelessly ('littering'). This applies in particular to packaging that is (also) used while travelling. Design solutions that dispense with such small parts that have to be separated or that ensure these parts remain attached to the overall packaging are preferable in the design.	If <b>YES</b> : document and proceed with approach 3.  If <b>NO</b> : improve the (anti-littering) design and proceed with approach 3.	<b>No</b> . So far, the packaging is designed in a way that when opening a small part is separated. This has to be optimised: The opening mechanism will be designed in a way, that the packaging is only „torn“ a little instead of „torn-off“.
<b>Result: Packaging solution which was tested at packaging level regarding litter-avoidance aspects. Serves as input for testing in the further optimisation approaches.</b>			



Question	Explanation	Instructions	Documentation of Results
<b>Approach 3: Safe Resealing</b>			
Does the packaging contain a quantity of packaged goods which (in part) can only be used in several cycles?	Resealing is not an environmental issue for packaging whose contents are regularly consumed (i.e. under all normal conditions/types of use) immediately after they are used	If <b>NO</b> : document and conclude this strategy element.  If <b>YES</b> : document and proceed to the next item to be checked.	<b>No.</b>
Is safe resealing required after initial use in order to protect the packaged goods (e.g. against spoiling or contamination), or is this necessary for protecting the environment from them?	Since the environmental effects associated with the production of the contents are normally significantly higher than those associated with their packaging, protection of the contents is of great importance even after the packaging is initially opened. If a contribution to the protection of the contents can be made by reclosing, this justifies allocating additional resources to packaging as a rule. If the contents are harmful to human beings and/or the environment, re-establishing a safe closed state must be provided for	If <b>NO</b> : state reasons and proceed to approach 4.  If <b>YES</b> : document the requirements of the resealing and proceed to the next item to be checked.	<i>(not relevant)</i>
Has the packaging been optimised with regard to secure resealing?	When choosing from a packaging point of view between different alternatives for safe resealing, care should be taken that, if possible, these solutions do not reduce the effects of other optimisation objectives (optimal use of packaging material resources, recyclability and anti-littering design) or do so as little as possible.	If <b>NO</b> : modify the packaging in this regard and proceed to approach 4  If <b>YES</b> : document and proceed with the approach.	<i>(not relevant)</i>
<b>Result: : Packaging tested for resealing and, if necessary, modified packaging solutions as input for review in further optimisation approaches.</b>			

Question	Explanation	Instructions	Documentation of Results
<b>Approach 4: Easy Portioning and Complete Emptying</b>			
Has it been established that the packaged goods can be completely removed from the packaging without any special equipment? (able to be completely emptied)	If the packaged goods can be removed completely from the packaging simply without special aids or with the use of usually generally available household appliances, then it can be avoided that environmental resources used in the production of the packaged goods are wasted. In addition, it is also prevented that due to residual amounts remaining in the packaging the sorting and recycling processes are disrupted.	If <b>YES</b> : document and continue to the next item to be checked. If <b>NO</b> : adjust packaging geometry/characteristics, document the modifications and continue to the next item to be checked.	<b>Yes</b> , the design allows <i>(almost) complete emptying by the user</i>
Does the packaging contain a quantity of packaged goods which (in part) can only be consumed after multiple use cycles?	If the packaging contents are normally consumed (i.e. under all intended conditions/types of use) immediately after opening, the portioning issue is not relevant from the point of view of packaging design.	If <b>YES</b> : document and continue to the next item to be checked. If <b>NO</b> : document and conclude this strategy element.	<b>No.</b>



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Is a portioning aid necessary in order to support the goal of optimal use of the packaged goods?	With many kinds of content (e.g. detergents, food), (also) from an environmental perspective, it is highly desirable that (only) the precise quantity of the contents required is removed/used. Here, aids to removing the right quantity as part of the packaging can be useful. Simple portioning aids (such as measuring marks or dosing caps etc.) can in many cases fully implement the stated goal of removal of optimal quantities. The fact is that such simple aids are feasible without additional environmental costs	If <b>YES</b> : state reasons and continue to the next item to be checked. If <b>NO</b> : document and conclude this strategy element.	(Not relevant)
Is a simple portioning aid helpful and sufficient to guarantee optimal use of the packaged goods?	Simple portioning aids (such as measuring marks or dosing caps etc.) can in many cases fully implement the stated goal of removal of optimal quantities. The fact is that such simple aids are feasible without additional environmental costs. When choosing between possible costly portioning aids from the point of view of packaging technology, care should be taken that these do not negatively affect other optimisation objectives (such as recyclability and anti-littering design), or that such effects are as small as possible. Simple portioning aids may not be sufficient if the packaged goods tend to spoil after opening (e.g. due to contact with oxygen in the air); the need to use elaborate portioning aids must be checked here.	If <b>YES</b> : state reasons and if necessary design such a “simple” portioning aid and then conclude this strategy element. If <b>NO</b> : state reasons and continue to the next item to be checked.	(Not relevant)
Can an elaborate portioning aid be designed?	From an environmental perspective portioning aids are considered as „elaborate“, when for its realisation an environmental extra effort is necessary (even if this extra effort in the overall consideration is justified by the additional protection of the packaged goods).  Such elaborate portioning aids range from (additional) sachets to very special dosing aids (such as in resin curing systems of engineering adhesives or the like). When selecting the from a packaging-technical point of view possible elaborate portioning aids, it should be noted that these do not impair or minimize the other optimization objectives (such as, for example, recyclability and anti-littering design)	If <b>YES</b> : state reasons, check, and if appropriate design such an “elaborate” portioning aid and then conclude this strategy element. If <b>NO</b> : state reasons and conclude this strategy element.	(Not relevant)
<b>Result: No additional packaging options from this approach.</b>			



Question	Explanation	Instructions	Documentation of Results
<b>Approach 5: Reviewing Reduction of Substance Risks Due to Improper Disposal.</b>			
<p>Has an assessment been made of whether potential environmental and health risks associated with haphazard disposal or other misuse of packaging waste can be reduced by the choice of input materials?            (To be used in delivery regions with inadequate disposal structures.)</p>	<p>From a precautionary perspective, however, the aim is to ensure that the packaging is free as far as possible of substances that, under the uncontrolled conditions outlined above, have an increased likelihood of causing harm to health or environmental damage. This applies for instance to substances:</p> <ul style="list-style-type: none"> <li>• that are classified as of very high concern (SVHC substances)               <ul style="list-style-type: none"> <li>• which are persistent bioaccumulating and toxic substances (PBT properties)</li> </ul> </li> </ul> <p>In addition, it may be expedient to perform a professional assessment of potential health hazards and individual substances and mixtures.</p>	<p>If <b>YES</b>: packaging is “low in problematic substances”.</p> <p>If <b>NO</b>: avoid shipping to regions with ‘critical’ disposal structures or carry out a targeted evaluation and, if necessary, change the materials used or modify formulas for packaging materials.</p>	<p><b>Yes.</b></p>



## Result: New Packaging Option

With modified dimensions and reduced weight (result of checklist „Optimised Resource Use“) and without tear-off closure

