

FAQ

COTREP PA/PE Webinar of 16 June 2026

Link to the replay: <https://www.cotrep.fr/en/event/>

Attention: This document is an excerpt from the questions and answers given during the webinar. All responses are based on the state of knowledge of COTREP as of the date of the event. The answers are subject to change depending on the state of knowledge and regulations.

This document will not be updated.

Can't find the answer to your question?

The COTREP team remains at your disposal at the following address: a.bellegarde@cotrep.org or via the contact section on the website (<https://www.cotrep.fr/en/contact-us/>)

Questions	COTREP response
1. What about the recyclability of PA/PP flexible packaging?	The test campaign presented today only concerns flexible packaging made of mechanically recycled PE. PA is classified as recyclable with PP flexible but with limited compatibility. PP flexible recyclers have a certain tolerance for PA as long as its quantity remains limited in the deposit. PA provides nitrogen that disrupts chemical recycling processes. Recommendations for PP flexible packaging can be found here: https://www.cotrep.fr/en/steps/films-and-flexibles/pp-and-pp-pe-flexibles/ You can find the PA ranking in the Barrier line.
2. Was the problem of unstable blown-film extrusion present in the 2021 study with the 2 types of PA?	In the 2021 study, this was found on the 2 types of structure with PA6, laminated and coextruded.

3. We are talking about PE here. What is true with the PE is also true with the PP?	No, the recommendations for PE and PP flexible packaging are different because the regeneration processes are different. PE flexible packaging are mechanically and chemically recycled, while PP flexible packaging are recycled only chemically. Mechanical recycling is more restrictive than chemical recycling, which is why the recommendations of PE flexible packaging are different from those of PP. You can find the recommendations for PE and PP/PE flexible packaging on our website: Flexible PE: https://www.cotrep.fr/en/steps/films-and-flexibles/ff-ldpe/ Flexible PP and PP/PE: https://www.cotrep.fr/en/steps/films-and-flexibles/pp-and-pe-flexibles/
4. If the PA is outside the bag to be sorted, does the sorting process determine that it goes into the flexible PE?	Mechanical PE flexible regenerators are very attentive to the presence of PA because depending on the composition of the packaging, it is not compatible and impacts the quality of the rPE. As it is not possible to differentiate between optical sorting structures, the regenerators will try to separate all the PE flexible packaging containing PA from the stream that goes into mechanical recycling. But the distinction between PE and PE/PA is difficult for optical sorting machines, so it often happens that packaging containing PA is still oriented in the flexible PE stream, resulting in quality impacts. In addition, if it is the PE side that is read by the optical sorting, then the packaging will be sent into the PE flexible stream.
5. Can you give the exact thicknesses and weights of the structures with details of each layer?	The samples tested are so-called industrial samples and therefore representative of market practices. Thicknesses and weights have no impact on the recommendations presented here.
6. I don't know why you are testing a structure with PE/PA/PE adhesive lamination, why didn't you do an OPA 12 or 15 / PE which is much more used?	The structure mentioned has already been tested during the first campaign in 2021 and is not compatible with recycling. The samples tested during this new campaign are commercial structures that have been developed by packaging manufacturers in consultation with marketers in order to improve their compatibility with recycling.
7. What temperature is the blown-film extrusion made with?	As indicated in the COTREP protocol, there is at least one zone at 210 °C. You can find the COTREP protocols for PE flexible packaging on the website: https://www.cotrep.fr/en/technical-study/#protocols Flexible PE-1 Protocol (Regeneration)

	Flexible PE-2 protocol (processing = blown-film extrusion)
8. Are you going to tackle the complex BOPA/PE structures?	The impact is no different between the PA and the OPA or BOPA, the new COTREP recommendations are also valid for oriented PAs.
9. Can you share the impact on MFI? is it more than the variation of LDPE/HDPE?	When we talk about an impact on the MFI, we mean a variation of plus or minus 10% compared to the MFI of the reference, as specified in our test protocol (https://www.cotrep.fr/en/technical-study/#protocols).
10. What is a "PE-type compatibilizer with MAH"? Is it an initial feature of the film or a product that is added?	It is a polyethylene base with maleic anhydride grafted onto it. It is an additive that is added to the PE matrix of the film produced to improve the compatibility between PE and PA, this allows for a better association between the two resins.
11. Who adds this compatibilizer to the structure?	It is the packaging manufacturer because the addition of the compatibilizer is done at the time of manufacturing the packaging.
12. Why did you only do the tests on bubble extrusion processes (=blown-film) and not on flat extrusion (=Cast) which is a technology widely used on Polyamide	Today, the main outlet for rPE from French flexible household packaging is a film application that is produced by blown-film extrusion. This is why COTREP studies this transformation process in its test protocol, which you can find on the website: https://www.cotrep.fr/en/technical-study/#protocols
13. Have you noticed any differences between printed and unprinted samples?	The samples tested were unprinted. The COTREP protocol provides for a qualitative assessment of the appearance of the films (without being a criterion of success) and there are no specific observations on this point. You can consult the "Decorations" section of the recommendations to find out the impact of printing on flexible packaging. There is also a "Color" line relating to the coloring in blend.
14. Can we consider that the limited compatibility defined here is also valid in a PPWR scope?	Until 2030, the COTREP recommendations apply to Citeo's marketing customers in France. The members of COTREP will report these new findings to the European level to continue to feed the debates, always with a view to reaching the best possible European consensus on the subject. The standards will apply from 2030.

15. What about Ceflex's position on this subject?	We invite you to consult CEFLEX's recommendations on this subject: https://guidelines.ceflex.eu/resources/
16. What is the unit of the amount of tie layer? 0.5 g per m² of film?	The amount is expressed in grams (g) of tie layer per gram (g) of PA in the structure.
17. Why is the melting temperature integrated into the analysis? The mechanism in question does not seem to be related to a fusion process, but rather to the chemistry of the terminal groups.	By definition, a PA6/6.6 is a copolymer of PA6 and PA6.6 that has melting points ranging from 180 °C to 205 °C depending on the grade. The melting temperature for the grades of PA 6/6.6 was therefore integrated because we observed different results depending on the grades of PA 6/6.6 used.
18. But how can these percentages be calculated? And is this really feasible at the industrial level?	It is your supplier who will have to certify that they meet the thresholds set out in the recommendations or provide you with the necessary information.
19. What TREE rating corresponds to limited compatibility?	An orange classification gives a maximum rating of C in the TREE tool.
20. Does the presence of EVOH in a PA/PE classify it in other non-compatible structures?	EVOH is classified as light green (compatible with recycling) in the flexible PE by COTREP: it is therefore not its presence that will lead to a classification as non-compatible. The EVOH can be associated with the PA within the limits of compatible PA structures.
21. What alternatives to PE/PA are recommended in this case to have a total recyclability accounting?	You can consult the COTREP recommendations for PE flexible packaging to find out which solutions are compatible with the recycling sector. Priority should be given to solutions classified as green: https://www.cotrep.fr/en/steps/films-and-flexibles/ff-ldpe/
22. Can you specify whether the 15% threshold applies to a PE bale balance mass or per consumer unit?	The recommendations presented give maximum thresholds to be integrated into the structure, i.e. per consumer unit (15% and 25% depending on the structure). On the other hand, the tests are based on market PA levels that can be found in a bale of packaging waste (1%, 4% and 7%).

23. In France, with the Citeo call for tenders, the most flexible products are sent to the pyrolysis chemical recycling sector (Total - Indaver - Machaon), what is the impact of the PA on this sector?	The sorting centres send the flexible stream (where the PE and PP flexible flexible packaging are mixed) to the regenerators. PE flexible packaging are sent for mechanical or chemical recycling. For some actors, a separation between PEs and PPs is made. The PP flexible packaging are sent for chemical recycling. Some PE packaging can therefore be chemically recycled, but it is not possible to know which packaging will be sent for mechanical or chemical recycling. As the mechanical recycling process is more sensitive, the recommendations are therefore based on mechanical recycling to preserve the sector.
24. Do you propose a standard questionnaire to be sent to our suppliers to check the compatibility of the films they deliver to us with the flexible PE sector?	This type of document does not exist. You can ask your suppliers if they comply with COTREP's recommendations and/or ask them to use Citeo's TREE tool to assess the recyclability of packaging.
25. What about EVOH to replace PA?	Depending on the packaged product, and therefore according to the necessary barrier needs, an EVOH barrier could effectively replace a PA barrier. COTREP has already issued a General Opinion on the EVOH barrier (AG68) and has classified it as light green in its recommendations.
26. The CEN standards have been published, do they go in the same direction as the evaluation you have just presented to us?	It is not possible to disclose the content of the standards and we can only discuss their content with people who have purchased them. We cannot answer this question at an event such as this one or via the FAQ that will be published on the website.
27. Will PA/PE still be considered as complex packaging by CITEO, and therefore taxed more than mono-material packaging available on the market?	PE/PA flexible packaging is multi-layer packaging. COTREP does not intervene in the pricing decisions of eco-organisms, we invite you to contact Citeo directly for more information on this subject.

28. Do you have an idea of the order of magnitude of the tariff gap for the addition of the compatibilizer in the structure?	We do not have any precise figures to provide at this stage, but adding a compatibiliser to the formulation is likely to result in additional costs. We would advise you to contact your suppliers directly for further information on the associated costs.
29. Were the blown-film extrusion tests carried out on a pilot or industrial line?	The tests for this campaign were carried out on a pilot scale at the CT-IPC laboratory, a partner of COTREP, to carry out the recyclability tests of the PE flexible packaging.
30. Have you cross-referenced your results with the new European PPWR EN 18120 reccos?	COTREP members follow the work of the CEN and have made a significant contribution to it. These new results on polyamide will be presented to CEN experts to feed the debates.
31. What about PA/EVOH/PE in coextrusion with compatibilizer?	The combination of PA with EVOH is possible within the limits of the newly classified PA recommendations. COTREP has shown that the use of compatibilizer improves recyclability only for PAs in laminated structures.
32. What does limited compatibility mean in concrete terms ? Can the film be considered recyclable?	The COTREP recommendations are divided into 4 colours representing 4 categories: - Dark green: full compatibility - ideal - Light green: partial compatibility – tolerated - Orange: limited compatibility - to be avoided - Red: Not compatible and/or disruptive The green and orange categories are considered recyclable. The orange classification means that incorporation into the recycled stream poses problems, but the sector has adapted to limit the impacts to an acceptable level under current marketing conditions.
33. Have you tested shrink bags with special properties and on which there is no recyclability solution?	We have had a structure-based approach, in particular in order to test existing solutions on the market and not by products.
34. At the end of the regeneration, we obtain recycled PE material even	This test was carried out to verify the compatibility for recycling of the PA used as a barrier in a flexible PE. The objective is to mix PA with recycled PE to improve the properties of this

if in the upstream waste, we have flexible PE mixed with flexible PA/PE?	mixture. PA is not PE and its incorporation as a mixture into PE remains limited as demonstrated by these test results. The same principle applies to EVOH.
35. In the end, PA remains a sorting / recyclable disruptor, so it is preferable to stay on a monoPE when possible?	Indeed, the ideal approach is to use only PE. It is essential to design the packaging correctly to meet the barrier requirements of the product it contains. For some products, a barrier is not necessary, or an EVOH barrier – which is more compatible with recycling – may be sufficient. Other alternatives to PA exist and are more compatible with the mechanical recycling of flexible PE. Wherever possible, it is preferable to opt for solutions classified as ‘green’ in the COTREP recommendations: https://www.cotrep.fr/en/steps/films-and-flexibles/ff-ldpe/
36. Is recyclable packaging also recyclable according to the PPWR regulation?	The COTREP recommendations are valid in France pending the application of PPWR from 2030. PPWR will rely on European standards to assess recyclability. The method will be published in a delegated act by January 2028. It is already known that differences in classification between COTREP and the standards exist and are likely to change between now and the publication of the delegated act, with the revisions of these standards.
37. Given the share recycled in chemicals in France, why take the results of the tests at 7% (with a strong safety margin) in the guidelines and not the rate of 4% (rate corresponding to 100% of films recycled in mechanics)?	The vast diversity of existing PE/PA structures makes it difficult to draw a general conclusion regarding the classification of PA. Results vary depending on the quantity of the tie-layer or its composition. COTREP has examined the scenario of recycling 100 % of the PE/PA structures placed on the market in France, representing a current concentration of 4 % PA in the flexible PE waste stream. To enable this assessment, it is essential to examine a scenario involving a peak concentration in a bale, namely 7 % in this case. If the peak concentration indicates risks for the recycling sector, COTREP takes this into account in its conclusions.
38. Is the limited compatibility valid if EVOH (less than 5% in the structure) is added to these structures?	Yes, the addition of EVOH is compatible. See question 22.
39. PA and OPA same results?	COTREP's recommendations are valid for OPA structures.

40. Does CITEO consider this partially compatible packaging to be recyclable? since they are not categorized as disruptive...	Citeo takes into account the COTREP eco-design recommendations in its recyclability assessment method. These new recommendations on the PA will also be taken into account.
41. Are there simply mono-material alternatives with the same characteristics?	You can consult the recommendations for PE flexible packaging to find out which solutions are compatible with the recycling sector. We must give priority to solutions classified as green. https://www.cotrep.fr/etapes/films-souples-complexes/fs-pebd/
42. By what methodology do you convert the penetration rate into the maximum PA content in the structure? Is this limit the result of the fact that the tests were exclusively conducted at 15%?	We used the volume of PE/PA structures brought to market and the total volume of PE structures brought to market in the French market to calculate the ratio of PE/PA structures within the flexible PE stream. We then used an average PA content rate for the PE/PA structures brought to market (averaging ~30 per cent) to calculate the gross PA ratio within the French PE stream.
43. Can the recycled material be reincorporated into films in contact with food?	Today, there is no return to food contact from recycled rPE resulting from the mechanical regeneration of French household flexible packaging. Mechanical regenerators are studying possibilities to be able to install it. On the other hand, it is possible with rPE and rPP from chemical regeneration.
44. OK until 2030, but do you think that this work will be transcribed at the PPWR level with an alignment of positions?	The topic of the PA was already widely debated during the development of the first version of the CEN standards. COTREP will bring this work up to the European level via its members to reopen the debate and try to integrate these positions.
45. The CEN standards were published in April 2026. Are they applicable now in Europe and in particular in France?	The standards will be taken up via delegated acts that will be published at the beginning of 2028 for application at the beginning of 2030. In this transition period, the recommendations of COTREP remain valid.

46. 4% of PA in the 140 kt deposit = 5.6 Kt of PA or 28% in the 20 Kt of PE/PA. You already know how to manage this rate since the sector is open. Why then limit rates to 15% – 25%? Knowing that this study shows that there is a way to make structures more compatible?	We have chosen to limit the PA levels in the structures in light of the results obtained, which may vary and may fall outside the protocol's tolerance limits depending on the structures tested and the penetration rates assessed. This represents a first step in updating the recommendations on PE/PA structures, based on the results available to date through the COTREP protocol.
47. You say that these trials will not be conducted again, so for 2030 the status will remain orange?	We have changed our position since 2021. We are aware that this does not meet all the market's needs. Perhaps by 2030, new structures will have emerged and will need to be examined. The testing protocols established by COTREP and those set out in the european standard are designed to test innovations and to amend the current classifications, with a view to improving the recyclability of packaging whilst ensuring that the protection needs of the packaged products are met.
48. And the combination of PA in PE rigids is classified in which category?	The results presented relate only to flexible PE packaging regenerated by mechanical recycling. The PA barrier in PE rigids is classified as not compatible with recycling. You can consult the recommendations for rigid PE packaging to find out which barriers are compatible with this sector: https://www.cotrep.fr/en/steps/pots-and-trays/pt-hdpe/
49. Can you specify which process parameter(s) should be optimized in PA/PE structures? The notion of limited compatibility is not clear since all the tests seem to be compliant.	The orange category – limited compatibility – means that the packaging design affects recycling processes or the quality of the recycled material and must therefore be restricted. Recyclers can manage this material by adapting within certain limits, but this is an area of concern that COTREP monitors to ensure the sustainability of the sector. If there are more compatible alternatives, this helps to ensure the sector's long-term viability. You can consult AG70 for more detailed test results; various impacts were noted, leading to different conclusions depending on the packaging structures. (https://www.cotrep.fr/en/technical-study/?fwptechtechnical_studies_type=general&fwptechtechnical_studies_packaging=films-and-flexibles&fwptechtechnical_studies_element=body-barriers)

50. Can you explain why we talk about 7% and 25% of PA?	7 % corresponds to the PA content tested, representing a peak concentration in a flexible PE package sourced from a sorting centre, whilst 25 % corresponds to the PA limit within the laminated structure containing PA 6. Given that not all flexible PE packaging requires PA, the 7 % figure corresponds to a diluted PA content depending on the number of packages placed on the market.
51. Are films with acrylic, metal or other coatings recyclable?	We invite you to consult our recommendation tables on these subjects: https://www.cotrep.fr/en/steps/films-and-flexibles/ff-ldpe/
52. If our provider does not provide us with the information (tie layer rate), can this be determined by analysis?	It is not always easy to obtain information on the composition of the tie-layer or its quantity in relation to confidentiality. Today, there is no standardized method for measuring the level of MAH. You have to be able to rely on the data provided by the resin suppliers on their technical data sheets. You can communicate the content of COTREP's recommendations and ask them if they are complying with them without having to know the rates they are using.
53. Has a similar study been or will be done for PP/PA flexible products?	PP flexible packaging are oriented towards chemical recycling, the recommendations have been built on the basis of feedback from regenerators. Today, the PA is classified as orange in these recommendations. There are no plans to conduct studies on PP/PAs to date. There is no change in the classification of the PA in these recommendations unless the regenerators report an unidentified problem.
54. In the context of PPWR, a certain rate of recycling is required in food packaging, but on the other hand you indicate that this mechanical recycling cannot be integrated into food contact for the moment... We impose rules on conditioners that are impossible to keep	The PPWR Regulation is a European regulation; its objectives have therefore been set by the European Commission. COTREP is the Technical Committee for the Recycling of Household Plastic Packaging in France. Our role is to build knowledge on recyclability to help manufacturers develop recyclable packaging. The current mechanical recycling process for flexible PE packaging does not currently allow for its use in food contact applications, but recyclers are exploring ways to expand the current applications of rPE. For other packaging types, it is already possible to incorporate recycled material suitable for food contact, for example in PET bottles, flexible PP and chemically recycled PP/PE, or PS.

55. Why do we limit ourselves to mechanical recycling? Is chemical recycling possible?	Today, sorting centres send the flexible products to the regenerators where they are recycled in this way: the PE flexible via mechanical or chemical recycling and the PP flexible via chemical recycling. It is not possible to know at the time of its design whether the flexible PE packaging will be oriented towards chemical recycling or mechanical recycling. It is therefore the strictest recommendations that apply (those of mechanical recycling) to preserve the existing sectors.
56. Hello, How do we know if we are flexible or rigid? Is a drinking pouch, for example, considered flexible or rigid packaging?	COTREP uses the behaviour in the sorting centre to determine whether the packaging is flexible or rigid based on its ballistic behaviour in the sorting centre. Currently, drinking pouches are considered rigid because they are 50% oriented towards the rigid recycling channel, which made it possible to consider mainly PP drinking pouches as recyclable before the implementation of the PP flexible recycling channel. The EN 18120 series standards provide a new definition of flexible and rigid packaging that COTREP will apply in 2030 via PPWR.
57. If we have to lower the % of PA from 30 to 15% but we have to compensate for the general thickness by an increase of 20/30%, what is the ecological meaning of these orientations...	COTREP is well aware that eco-design choices to achieve recyclability are not always in favour of reducing environmental impacts during the production and use of packaging. PPWR requires recyclability to be authorized to be marketed from 2030 and therefore imposes the choice of recyclability before the reduction and reduction of environmental impacts during production and use. This framework, which prioritizes recyclability, provides avenues to explore for innovation in order to limit the environmental impact of packaging as much as possible.
58. We have PP/PA/PE packaging, can we use this recommendation? Or is it mainly for PE/PA (without PP)?	It depends on the amount of PE or PP in your packaging. If your packaging contains more than 50% PE, you should use the recommendations for PE flexible packaging. As PP is disruptive to the PE flexible sector, this structure would in any case be classified as red. If you have more than 50% PP, you should look at the recommendations for PP flexible packaging that tolerate a maximum amount of 30% PE in order to ensure that the regenerators of this PP/PE complex are properly directed to the PP hose sector in chemical recycling. PA in flexible PP is tolerated. https://www.cotrep.fr/en/steps/films-and-flexibles/pp-and-pp-pe-flexibles/